DIAGNOSING AND PRESCRIBING BY NURSES IN DIFFERENT HEALTH CARE SETTINGS: PERCEPTIONS AND EXPERIENCES OF KEY STAKEHOLDERS IN CAMEROON.

WINNIFRED GROVES

A thesis submitted in partial fulfilment of the requirements of Kingston University, London for the degree of Doctor of Philosophy.

Kingston University, Business School, Kingston, United Kingdom.

KINGSTON UNIVERSITY LIBRARY
Acc No
AUGUST, 2012
Class No

List of Contents

Page

Preliminaries

Title Page....i

List of Contents....ii

List of Tables....x

List of figures....x

Acknowledgements....xi

Abstract....xii

INTRODUCTION....1

An autobiographical account....2

Rationale for study....3

Definition of terms....6

Aims of research / research questions....8

Outline of chapters....8

1. Chapter One-Background/Context of the Thesis.

1.1 Historical overview of Cameroon....10

1.2 Education/ gender roles....10

1.3 Poverty....11

1.4 Health profile of Cameroon/epidemiological changes....14

1.5 Human resources/health resources....17

1.6 Health system....19

1.6.1 Organization of the health care system....21

1.6.2 Infrastructure and equipment....24

Summary of chapter One....24

Chapter Two-Literature Review

2.1 Literature search strategy....26

2.1.1 Search results....27

2.2 The Context of the changing role of nurses

2.2.1A comprehensive review/ factors responsible for changing role of nurses.

2.2.1.1 Gender/changing professional attitudes....28

2.2.1.2 Doctor-nurse professional relationships/medical power....29

2.2.2 Quest for professionalism/advances in nurse training....30

2.2.2.1Nurse training in Cameroon....30

2.2.2.2 Training curriculum of State Registered Nurses....32

2.2.2.3 Training of nurses for their role in diagnosing and prescribing in the UK and selected countries....34

2.3 Doctor- nurse substitution....36

2.4 The changing role and functions of the nurse/international variations....39

2.5 Drivers of diagnosing and prescribing by nurses in the UK....42

2.6 International variations in patterns of diagnosing and prescribing....45

2.7 Nurse prescribing process....48

2.8 How stakeholders impact on nurses' role in diagnosing and prescribing

2.8.1 Facilitating factors.

2.8.1.1 Training....52

2.8.1.2 Peer support....54

2.8.1.3Gender/literacy level....55

2.8.2 ***Barrier Factors.***

2.8.2.1Nurses' lack of confidence....56

2.8.2.2 Lack of role clarity....57

2.8.2.3 Poor remuneration....58

2.8.2.4 Grade/ gender and staff attitude....59

2.8.2.5 Lack of resources/support from managers....59

2.8.2.6 Lack of training/ pharmacological knowledge....60

2.8.2.7 Risks of diagnosing and prescribing....62

2.8.2.8 Professional conflict between doctors and nurses....62

2.8.2.9 Health belief system/cost implications....64

2.9 Patient's acceptance of nurse prescribing....66

2.10 Benefits of diagnosing and prescribing by nurses.....66

2.11 Disadvantages of diagnosing and prescribing by nurses.....72

2.12 Limitations of literature on nurse prescribing.....74

2.13 Summary of chapter key themes emerging from the literature review.....75

2.14 Rationale for using a conceptual framework.....80

3. Chapter Three- Research Design and Methodology.

3 Case study research and its scientific basis.....85

3.1 Research design.....85

3.2 Rationale for use of case studies in the study.....86

3.3 Units of analysis.....87

3.4 Ethical considerations/consent..... .87

3.5 Sampling and sample selection.....88

3.5.1a Selection of health care establishments.....88

3.5.1b Summary of health care set up.....89

3.5.2 Selection criteria.....90

3.6 Selection of study participants.....91

3.7 Definition and measurement of concepts.....96

3.8 Data collection methods.....101

3.8.1 Self administered questionnaires.....101

3.8.2 Concepts addressed in questionnaire.....102

3.8.3 Piloting of questionnaire.....102

3.8.4 Procedure for distribution of questionnaire.....103

3.9 Semi-structured face-to-face in-depth interviews.....104

3.9.1 Concepts addressed in semi-structured interviews.....105

3.10 Field study procedure.....106

3.11 Interview procedure.....107

3.12 Data analysis methods.....109

3.12.1 Framework analysis/data saturation and how operationalized.....110

Summary of chapter Three.....114

4. Chapter Four- Findings and Analysis.

4.1 Sample characteristics and description of organizations.....115

4.2 Demographics of study participants..... 120

4.3 The formal system and role of nurses within the health care system.....127

4.3.1 Legislation relating to the official role of the nurse.....128

4.3.2 Legislation regarding diagnosing and prescribing by nurses/ stakeholder perceptions.....131

4.4 Perception of role of nurses by stakeholders.....135

4.5 Types of drugs which nurses are allowed to prescribe.....142

4.6 Types of diseases treated by nurses.....144

4.7 Typology of diagnosing and prescribing by nurses.....148

4.7.1 Independent diagnosing and prescribing.....148

4.7.2 Counter referrals between nurses and doctors.....150

4.7.3 Adjusting of doctor's prescriptions.....150

4.7.4 Diagnosing without prescribing.....151

4.7.5 Diagnosing and prescribing in a team.....151

4.8 Factors explaining variations in diagnosing and prescribing by nurses.....152

4.8.1 *The State:*

4.8.1.1 Shortages of medical doctors.....153

4.8.1.2 Poor working conditions.....154

4.8.1.3 Poor pay.....155

4.8.1.4 Outdated prescribing protocols.....156

4.8.1.5 Poor communication infrastructure/ lack of equipment.....157

4.8.1.6 Training and development of nurses.....158

4.8.1.7 Organizational factors.....159

4.8.1.7 Organizational culture.....160

4.8.2 *Doctors:*

*4.8.2.1*Continuing professional development opportunities for nurses.....160

4.8.2.2 Absence of doctors from the workplace.....161

4.8.2.3 Doctor's attitudes/professional relationships with nurses.....163

4.8.2.4 Poor attitudes of doctors/cost.....164

4.8.3 *Nursing Managers:*

4.8.3.1 Nursing managers.....164

4.8.3.2 Inadequate post-training opportunities.....165

4.8.3.3 Lack of mentors.....166

4.8.3.4 Lack of resources/equipment.....167

4.8.4 *Patients*:

4.8.4.1 Socio-cultural factors.....168

4.8.4.2 Patient's health beliefs / health status.....168

4.8.4.3 Patient's expectations of the nurse.....169

4.8.4.4 Socio-cultural expectations.....170

4.8.4.5 Educational/literacy level of patient.....171

4.8.4.6 Patient's ability to pay.....171

4.8.5 *Nurses:*

4.8.5.1 Adequacy of training and confidence in nurses' abilities to diagnose and prescribe.....172

4.8.5.2 Nurses' clinical experience and longevity in service.....173

4.8.5.3 Availability of continuing professional development.....175

4.8.5.4 Teamwork / peer support.....176

4.8.5.5 Learning from role models.....176

4.8.5.6 Nurses' attitudes towards learning.....177

4.8.5.7 Economic incentives.....177

4.8.5.8 Level of motivation.....179

4.9 Perceived impact of diagnosing and prescribing on key stakeholders.....180

4.9.1 Doctor Vs nurse professional relationship.....180

4.9.2 The nurse-patient consultation process.....182

4.9.3 Interpersonal skills of the nurse.....184

4.9.4 Lack of patient involvement and participation in their care.....187

4.9.5 Nurses' increasing practice of medicine ad not nursing.....188

4.10 Benefits of nurse diagnosing and prescribing by nurses to the state, health care establishment, the community and patients.....188

4.10.1 Benefits to the doctors.....188

4.10.2 Benefits to nurses/nursing managers.....189

4.11 Disadvantages of diagnosing and prescribing by nurses.....190

4.11.1 Poor communication and interpersonal skills of the nurse.....190

4.11.2 Risks.....190

4. 12 *Evaluation of diagnosing and prescribing by nurses using Maxwell's 1982 dimensions of qualities of care:*

4.12.1 Effectiveness.....191

4.12.2 Accessibility.....192

4.12.3 Acceptability.....195

4.12.4 Efficiency.....197

4.12.5 Equity.....197

Summary of chapter four.....199

5.1 Chapter Five - DISCUSSION

5. 1 The extent to which nurses are involved in diagnosing and prescribing.....203

5.2 Impact of different stakeholders on diagnosing and prescribing by nurses....213

5.2.1 Legislation for diagnosing and prescribing.....213

5.2.2 Training of nurses for their role in diagnosing and prescribing.....214

5.2.3 Impact of doctors on diagnosing and prescribing by nurses..... .215

5.2.4 Impact of nursing managers on diagnosing and prescribing by nurses.....217

5.2.5 Impact of patients on diagnosing and prescribing by nurses.....218

Post- study theoretical framework.....222

5.3 Human resource implications and training.....223

6. Chapter Six - CONCLUSION

Implications of findings, recommendations/Contribution to theory.....227

Recommendations for future research.....236

Limitations of the study.....237

References.....240

Appendices.

Appendix 1 **Context-political, socio-economic, cultural and health care system.**

1.1 Geography....270

1.2 Politics....270

1.3 Families....271

1.4 Economic/poverty....272

1.5 Millennium Development Goals....273

1.6 Culture....273

1.7Traditional beliefs/ use of traditional healers....273

1.8 Public health spending....275

1.9 Government reforms....275

Appendix 2 Organization of the Health Care System in Cameroon....277

Appendix 3 Breakdown of hours of studies....279

Appendix 4: Standards of proficiency for nurse prescribers....280

Appendix 5: Prescribing competencies for nurse prescribers....280

Appendix 6: Decision-making competencies....282

Appendix 7: Research cover letter....284

Appendix 8: Self-completion questionnaire....285

Appendix 9: Interview questions....288

- Nurse....288
- The State....292
- Patients....294
- Doctors....296
- Nurse Managers.... 297

List of Tables.

Table 1.4.1 Life expectancy at birth....14

Table1.4.2 Infant mortality rate (below1)....14

Table1.4.3 Infant mortality rate (below 5)....14

Table 1.4.4 Healthy life expectancy....15

Table1.4.5 Adult mortality rate.....15
Table 1.4.6 Infant mortality for selected countries.....15
Table 1.4.7 Types of disease.....16
Table 1.5.1 Nurses and physician ratio for selected countries.....18
Table 2.2.2.1 Nurse training in Cameroon.....31
Table 2.2.2.2Training curriculum for state registered nurses.....32
Table 2.4.1 Functions of the Registered General Nurse.....39
Table 2.5.1 Summary of the development of nurse prescribing in different countries.....43
Table 2.6.1Models for nurse involvement in drug prescribing Activities.....47
Table 3.7.1 Measurement of concepts.....98
Table 4.1.1 Characteristics of organizations.....116
Table 4.2.1 Demographics of nurses and nursing managers.....120
Table 4.2.2 Demographics of doctors.....122
Table 4.2.3 Demographics of patients.....123
Table 4.3.1.1 Legislation relating to the role of the nurse.....128
Table 4.3.1.2 Official role of the nurse.....129
Table 4.4.1 Role of nurses as perceived by different stakeholders.....135
Table 4.5.1 Types of drugs nurses are allowed to prescribe.....142
Table 4.8.1.3a Salaries of government health personnel.....155
Table 4.8.1.3b Salaries of health personnel in mission hospitals.....156

List of figures.

Figure 2.1 Pre-study theoretical framework.....79
Figure 3.4.1Sumary of organization of health care system in Cameroon.....89
Figure 5.1 Post-study theoretical framework.....222

List of Abbreviations.

GCE O/L: General Certificate of Education, Ordinary Level

GCE A/L: General Certificate of Education Advanced Level

SRN: State Registered Nurse

HND: Higher National Diploma

HPD: Higher Professional Diploma

ADN: Associate Degree in Nursing

BTS: Brêveté de Technicien Supérieur

BAC: Baccalauréat

Acknowledgements

It will require several pages to name the many individuals who have contributed their time and resources to enable the completion of this thesis. However, I owe immense gratitude to my supervisors Professor Christine Edwards for her encouragement, support and above all patience. Professor Paul Wainwright (RIP) for his ability to deliver constructive criticisms with a blend of sensitivity. To, Professor Ruth Harris, even though she joined the supervisory team at a later stage, her kindness and invaluable advice is much appreciated. I thank Professor Stavros Kalafatis for his continuous support and good sense of humour. I have benefited from advice and support from Dr Stephen Gourlay, Professor Thérèse Woodward Dr Miguel Imas, Dr Aloysius Ordu Uche, as well as guidance from Claire Gaskin and Jill Horgan.

To all the research participants, I say a huge thank you. I will be eternally humbled and grateful by your sacrifices in enabling me complete this thesis. Also special thanks to all my friends and colleagues in the PhD room especially Mark Farmer, Alia Weston, Chi Maher, Marvyn Boatswain, Lilith Arevshatian for their unreserved support. Many thanks to the following individuals for their care, support and prayers; my spiritual mentor Rev. Joseph Wirba, Rev. Arbo Lekule, Dr Lilian Atanga, Dr Sam Alladerun, Diana Azia, Gerald Tanda, Joanna and James Fells, Evelyn Mafeni, Honorine Akenji, Zena Wabila, Gladis Tanda, Benedicte Williams, Marie-Hélène and Alan Cook, Katia and Eduardo Viegas.

I am much indebted to my family, my parents Vincent and Georgina Ayamnde for being there for me. I thank my sisters Annabel & Nicoline Ayamnde for their prayers, encouragement and support. Special thanks to my partner Sache Godlove for his love, tolerance and support. To my beloved Peter Groves for his belief and trust in me. Peter's wisdom, generosity, kindness and incisive advice continue to guide me through life. I thank my beloved brother Ivo Aloysius Ayamnde for his kindness and love. He will forever, remain my source of inspiration and strength. Finally, I would like to say a big thank you to my son Edmund Vincent Timothy Groves for his love, patience, thoughtfulness and understanding.

ABSTRACT

Declining resources are a global phenomenon. One of the consequences has been the reorganization of health care provision in different countries. Doctor shortages and scarcity of resources particularly in developing countries like Cameroon have resulted in nurses providing frontline care to patients and taking on roles traditionally performed by doctors in developed economies, such as diagnosing and prescribing. However, little is known about the exact role of nurses, the process of providing care, how key stakeholders influence the nurse's role and the consequences of this role of nurses on the various parties concerned in the context of Cameroon. An empirical study was conducted with (n= 42) key stakeholders; (government representatives, doctors, nursing managers, nurses and patients). Semi-structured taped-recorded interviews were carried out on a one-to-one basis to explore the perceptions of multiple key stakeholders of the role of nurses in diagnosing and prescribing. Interviews were transcribed and data analysed using framework analysis.

Nurses are the first point of contact for patients in Cameroon in all health care settings and most have a far greater role in diagnosing and prescribing than their counterparts in developed economies. However their involvement was found to vary significantly depending on a number of factors, including: the organisational context, the type of facility (whether public / private or mission owned), individual nurse characteristics, doctors' attitudes and practices, resources and experience of nursing managers, level of income and characteristics of patients. Most patients (including women) prefer to consult with doctors and in their absence, male nurses rather than female nurses. Some nurses, patients and doctors felt that a preoccupation with diagnosing and prescribing left nurses with little time for compassion and caring. In addition, the key stakeholders felt that some nurses were overstepping their professional boundaries, or had inadequate knowledge and were acting in a manner detrimental to patient care.

Extended roles for nurses have the potential to enhance accessibility to care, to enhance the status and job satisfaction of nursing staff and maximise the use of scarce resources. Despite the benefits, there is growing concern that nurses do not have the advanced level of training and behaviour necessary to take on this expanded role and that some are neglecting the traditional caring side of their profession in pursuit of a more medical oriented disease-focused approach.

INTRODUCTION

The literature review suggests that diagnosing and prescribing by nurses is carried out both in the developing and developed economies (Meyer et al., 2001; Latter et al., 2004; Courtenay et al., 2007). In the context of the global economic crisis, sustained upward demographic trends, advances in medicine, leaps in information technology, epidemiological changes and increase in public expectations from the health care delivery system, nursing practices and patient outcome are important topics worth investigating in order to influence change and have a positive impact on health.

Declining resources are a global phenomenon. One of the consequences has been the reorganization of health care provision in different countries. Doctor shortages and scarcity of resources particularly in developing countries like Cameroon have resulted in nurses providing frontline care to patients and taking on roles traditionally performed by doctors in developed economies, such as diagnosing and prescribing. However, little is known about the exact role of nurses, the process of providing care, how key stakeholders influence the nurse's role and the consequences of this role of nurses on the various parties concerned in the context of Cameroon. An empirical study was conducted with (n= 42) key stakeholders; (government representatives, doctors, nursing managers, nurses and patients). Guided by a theoretical framework, semi-structured taped-recorded interviews were carried out on a one-to-one basis to explore the perceptions of multiple key stakeholders of the role of nurses in diagnosing and prescribing. Interviews were transcribed and data analysed using a framework analysis.

This study has made use of a number of data sources; documentary evidence, questionnaires to collect demographic data, but primarily semi-structured interviews to elicit perceptions of key stakeholders involved. Primary data was drawn from six organizations. The approach used in analyzing takes into account factors affecting diagnosing and prescribing. As nations struggle to improve quality of care whilst at the same time pursuing cost efficiency, it is hoped that these finding will make valuable contribution since lessons can be learned to inform prescribing practices which will maximise the role of nurses in diagnosing and prescribing.

The research questions have been addressed using a theoretical framework that takes into account the general political, socio-economic and cultural perspectives of the health care environment as well as perspectives/perceptions of key stakeholders. This is because the

literature suggests that diagnosing and prescribing by nurses is a complex phenomenon encompassing a multi- disciplinary approach.

An autobiographical account of my interest in the topic.

Having trained and practised as a registered general nurse in the UK, I have watched with growing interest and excitement the changes that are taking place in relation to the expansion and extension of the role of the registered nurse. While a student nurse and subsequently as a newly qualified nurse in the early nineties, nurses were not allowed to administer intravenous antibiotics in the hospital where I trained and worked. Such a role was performed by the medical doctors - junior house officers/house officer etc. In later years working as a community nurse, I recall having to wait on many occasions outside the GP surgery for him or her to sign prescriptions which had already been written by the District nurse but which had to be signed by the GP. At the time we had numerous discussions as to why nurses were not allowed to prescribe these items given that some of them could actually be bought over the counter. We concluded that it was a waste of time for all parties involved, the patient, the nurses and the doctors, time that could have been used more effectively.

McHale (2003) supports this view by stating that "In some cases community nurses were getting doctors to sign prescriptions for such items as dressings when the patient was seen in the community only by the nurse and it was the nurse who made the clinical assessment of the patient" (McHale, 2003, p107). Similar findings were also observed by Bradley who noted that "Nurses write prescriptions for doctors to sign" (Bradley et al. 2005, pp446).

My questioning of nurses' inability to diagnose and prescribe especially for common illnesses was strengthened by my personal experiences with registered state nurses in Cameroon. During my visits there, I have on some occasions consulted for medical assistance, accompanied relatives and friends to different health care settings when they have fallen ill. I consulted in private, public, mission health care facilities and marvelled at the fact that in all of these institutions, nurses carried out roles quite similar to those of the junior doctor. The nurses were involved in diagnosing and prescribing for patients far more than their counterparts in the UK. The fact that these nurses carried out such roles which are the preserve of doctors to a larger extent in the UK, whilst appearing confident, filled me with a mix of admiration and envy. It has therefore been a great pride for me to update the nurses in Cameroon about the changing role of nurses in the UK.

Rationale for the study

Health is a positive resource that everyone needs in order to be able to maximise their full potential in life. Governments around the world face pressures to provide health care effectively, efficiently and equitably. There is therefore a need to adopt strategies that will ensure health systems perform better. In an era of cost containment, effective utilization of nursing skills are a prerequisite for policy makers and nursing managers to improve outcomes and increase cost effectiveness in health care. Evaluating provision of health care services is a concern for governments, particularly those of developing economies.

Accurate diagnosing and prescribing is essential to the prevention and treatment of diseases, particularly so in Cameroon which has an under-resourced health care system. A careful diagnosis of an individual patient seeking health care is at the heart of effective treatment. Murphy et al. (2009) concur with this assertion by stating that the key to effective patient care lies in the identification of the disease. Misdiagnosis/ineffective diagnosis and treatment engender significant expenses for patients, their families and society as a whole. Diagnosing and prescribing is fraught with risks. Every drug prescribed has a side effect. The side effects increase with multi therapy which increases the risk of adverse drug interaction. Inappropriate use of drugs such as antibiotics and anti–malarials have been found to lead to antimicrobial resistance and increase the necessity to use more expensive antibiotics to treat life threatening infections (WHO, 2000). Similarly, Okeke et al. (1999) note that there is growing concern about misuse of antibiotics in Sub Sahara Africa, Cameroon included. Excessive use of antibiotics is at least partially responsible for the escalating rates of resistance especially in hospital settings, worldwide.

This study will focus on an aspect of health care service provided by nurses. The delegation of prescribing to nurses is one aspect of the issue that has received considerable interest and significant attention. It continues to increase in importance given the ever growing demand for health services and ever tighter budgets in developing and developed economies alike.

In recent years, there have been major changes and developments in nurses' scope of professional practice internationally. Nurse prescribing in low-resource settings has been driven mainly by shortages in medical staff required to cope with the curative and preventative needs of their populations. In the history of medicine and modern nursing, nursing developed after medical practice, often in conflict with it and right from the outset nurses were considered subordinate partners in the developed countries such as UK, other European countries, Australia, New Zealand, Canada, the USA. This model also prevails in

developing countries. Cameroon adopted this thinking about health care provision from their colonial past under, Britain, France and Germany. But the major difference is that while this model worked in practice in the developed countries due to availability of health care personnel, it could not work in practice in Cameroon owing to the shortage of medical practitioners of any kind, doctor or nurses. As a result nurses in Cameroon have been carrying out some of the roles traditionally performed by doctors such as assessing, diagnosing and prescribing of patient treatment.

Patients living in rural areas are disadvantaged in terms of health equity, access to care and infrastructure (Baltussen & Ye, 2005; Hongoro & McPake, 2004). Without nurses, patients in rural areas will not be able to access health care. As observed by Wooten and Crane (2003), nurses are the nucleus of the health care organization. Also, others add that it is well recognized that nursing represents the greatest group of health care personnel worldwide and are critical to the delivery of high quality patient care (Hall, 2003; Hudon, 2003; Campbell *in* Nolan and Bradley, 2008).

Globally, health care organisations are experiencing changes in the structure and processes of health care delivery (Sauerborn et al., 1999; Hall, 2003). Positive practice environments must be established within health care settings if organizational goals are to be met. This will improve the quality of health services provided by nurses. Bryant (2009) concludes that this can only be achieved in a workplace that enables and sustains a well prepared and motivated workforce. Bessie & Huston (2006) contend that in today's era of cost containment, outcome research is needed in order to determine whether managed care processes, restructuring and other clinical practices are providing the desired cost savings without compromising the quality of patient care.

Resource constraints, skills shortages and effects of changes in government policies instigated by national and international needs have all contributed to a rethink of government's approach to health care delivery. Increasingly, health service providers globally are having recourse to "greater efficiency" "getting more for less" as they rethink their health care delivery strategies with the overarching goal of satisfying growing needs at significantly lower costs.

The workforce is a major expenditure item of health care budgets (Kernick & Scott, 2002). Given this context, approximately 65 to 75% of any health care budget covers staff-related costs. At the centre of health care is diagnosing and prescribing, typically carried out by doctors who are members of highly paid staff in health sector, and almost exclusively so in advanced economies. However, this monopoly of diagnosing and prescribing has been called

into question as health care organizations seek to reduce labour cost. Consequently, nurses are taking on roles that were traditionally performed by doctors.

In developing countries however, nurses have always diagnosed and prescribed as part of their role. One such country is Cameroon. As a result of colonial past, Cameroon bases its' nurse training on the UK model to some extent but varies the role of nurses to cater for contextual differences. Cameroon is a good case to study diagnosing and prescribing by nurses particularly as there are great variations between the rural and urban areas where nurses practice diagnosing and prescribing. It would appear therefore that the Cameroon context represents an extreme case in which to explore diagnosing and prescribing by nurses. This study will contribute to the international literature on diagnosing and prescribing by nurses in a non-western/developed context.

There may therefore be some lessons to be learnt by governments and policy makers in economically advanced economies in the design and implementation of their health care delivery strategies. There will be lessons to be learnt by key stakeholders and private institutions that have a responsibility of providing care. It is envisaged that the findings will be useful to policy makers. It will have implications for nurse educationist responsible for designing a nursing curriculum which is fit for purpose. Planning and investing for an improved usage of human resources is a must in this current climate of cost-constrained health service. This would assist with adapting organisational strategies which aim to facilitate and optimise nurse diagnosing.

Diagnosing and prescribing by nurses is multifaceted and varies from country to country. While some countries allow nurses to prescribe from a limited range of drugs, they have access to a broader range of drugs in others. However, little or almost nothing has been written on diagnosing and prescribing by nurses in Cameroon. Cameroon is a developing country with an acute shortage of resources particularly medical doctors and other skilled personnel to cater for the health needs of the population. It is therefore imperative for stakeholders in Cameroon to pursue measures which seek to maximise the use of limited resources in a severely constrained economy. There are a few articles on non-medical prescribing in African countries such as Botswana, Uganda, South Africa, Zimbabwe: (Gray, 1999; Stark et al.,1999; Ngcongco & Stark,1986; Stein et al., 1984; Meyer et al., 2001; Miles et al. 2006 and Courtenay et al. 2007), but nothing specifically addressing diagnosing and prescribing by nurses in Cameroon.

Researchers studying the UK, USA, Sweden, Australia, Canada, South Africa, and Botswana have examined a number of areas concerning nurse prescribing such as drivers of nurse prescribing, legislation, patterns of prescribing, education and training, safety issues, patient satisfaction, barriers and facilitating factors of nurse prescribing. The different methods used in evaluating nurse prescribing vary. The literature review identified several unanswered questions. These include:

- Paucity of studies that examine how key stakeholders influence or are affected by diagnosing and prescribing by nurses.
- Limited research on diagnosing and prescribing by nurses in the hospital setting;
- Scarcity of studies addressing the topic in resource - constrained economies such as Cameroon:
- Lack of studies which use a theoretical framework to investigate the topic; as well as
- Limited studies addressing clinical governance issues such as education and training.

The expansion of the role of the nurse, particularly in resource - constrained economies is a growing trend. The literature suggests that the link between nursing knowledge and skills is clearly a factor which will influence nurses' ability to diagnose and prescribe, hence the importance of investigating how nurses are trained for this role.

Definitions of terms

The terms diagnosing and prescribing are well established and understood. The terms as used in this thesis are defined as follows:

Diagnosing

"The determination of a patient's illness or suffering by the combined use of physical examination, patient interview, laboratory tests, review of the patient's records, knowledge of the cause of the observed signs and symptoms, and differential elimination of similar possible causes"(Mosby's Medical Dictionary, 2009).

The definition suggests an encounter between a patient and a health care professional. Firstly, the patient has to feel a need to seek help from a health care professional whom they trust can solve their health condition. The health professional uses his/her expert knowledge and skills together with the use of appropriate diagnostic equipment to identify the cause of the patient's health problem. The definition emphasizes a combined use of different strategies to enable identification of a patient's health problem. Also, it includes some of the options such as taking a comprehensive medical history, requesting and interpreting relevant diagnostic tests,

and establishing a relationship based on trust and respect, ensuring effective communication with the patient as evident in the prescribing and competency framework as outlined by the National Prescribing Centre (2001).

Prescribing

Prescribing is the act of indicating what medication or treatment a patient should receive following on diagnosis. In can take a verbal or written form as in the case with most Western style medicine. "To prescribe can mean to write an order for a drug, treatment or procedure. To recommend or encourage a course of action" (Mosby's Medical dictionary, 2009).

"Prescribing is acknowledged as requiring an advanced set of skills; it involves assessment of presenting symptoms, clinical decision making and formulation of a working diagnosis in order to select and negotiate treatment that is right for a particular individual." (Campbell, cited in Nolan & Bradley, 2008, p37).

The above definition emphasizes the importance of having an advanced set of up-to-date skills including communication skills, knowledge of anatomy and physiology, pharmacology and pharmaco-dynamics amongst others in order to prescribe safe and effective treatment which is tailored to the health needs of an individual.

Nurses.

In this thesis, Nurses refer to Brêvéte nurses with two years of nurse training and State Registered Nurses is a term used to describe nurses who have successfully undergone three years of nurse training. They are called registered nurses meaning their level of expertise is certified by their professional body (Nursing and Midwifery Council, in the UK) or the State as in the case of Cameroon.

The key stakeholders referred to in this study include:

- The State
- Doctors
- Nursing managers
- Nurses
- Patients

Following the health care set up in Cameroon, these key stakeholders were identified to be those directly involved in the process of diagnosing and prescribing by nurses in Cameroon.

AIMS:

The aims of this study are to:

- explain the extent to which nurses are involved in diagnosing and prescribing and to explore the consequences from the perspective of key stakeholders;
- understand how different stakeholders influence nurses' role in diagnosing and prescribing;
- Create a theoretical framework to analyse the role of nurses in diagnosing and prescribing in a resource-constrained economy.

This thesis seeks to answer the following research questions:

RESEARCH QUESTIONS:

1) What is the formal role of nurses within healthcare delivery in Cameroon?
2) What is the role of nurses in relation to diagnosing and prescribing?
3) Why do nurses diagnose and prescribe treatment for patients?
4) How do different stakeholders influence the role of nurses in diagnosing and prescribing?
5) How are nurses trained to diagnose and prescribe?
6) How do nurses diagnose and prescribe?
7) How do political, socio-economic, cultural and professional factors affect the role of nurses in diagnosing and prescribing in Cameroon?
8) How do key stakeholders perceive the outcomes of diagnosing and prescribing by nurses?

Outline of chapters:

The introductory chapter provides an over view of the thesis. It documents a personal account of the author's interest in the topic and offers justification for the study. Also, it provides definitions of terms, aims of the study and research questions. Chapter one describes the context in Cameroon and sets the scene for the thesis. Issues addressed in this section include the political, socio-economic and cultural context as well as the health care system. Also discussed are government reforms and the organization of the health care system.

Chapter two commence with a description of the literature search strategy. It documents the context of the changing role of nurses. It provides a brief historical background of nursing and factors responsible for changes in nursing. The drivers of the changing role of nurses are identified and discussed. It examines how nurses are trained for their role in diagnosing and

prescribing. It discusses the changing role of nurses detailing international variations. Also, it examines the relevant literature on diagnosing and prescribing by nurses. Other issues examined include; prescribing patterns: international variations, nurse prescribing processes and the different prescribing frameworks, facilitating/barrier factors of diagnosing and prescribing by nurses and finally, the benefits and drawbacks of diagnosing and prescribing by nurses. The chapter concludes with a detailed presentation of the conceptual framework derived from the literature.

Chapter three details the research design and methodology. It starts with a discussion of the mixed methodology used in the study and the rationale. This is followed by a description of the research strategy - case study design and its rationale. Next is sampling: access to organizations and research participants, selection of study sites / description of cases, description of study participants and an explanation and justification of how the different concepts were measured. Other issues addressed include: consent and ethical considerations. Methods of data collection are documented – Primary data from self-completion questionnaire and semi-structured one-to-one interviews. Secondary information was obtained from documentary evidence. The interview procedure is described as well as methods of data analysis.

Chapter four presents the findings of the study. It starts with a detailed description of study cases and demographics of study participants. The findings are arranged under the following headings: the formal system and role of nurses within the health care delivery system: Legislation relating to the official role of nurses in Cameroon, legislation regarding diagnosing and prescribing by nurses as perceived by key stakeholders. Key stakeholders' perceptions of the role of nurses within the health care delivery system, typology of diagnosing and prescribing by nurses, factors explaining variations in diagnosing and prescribing by nurses, perceived outcomes of diagnosing and prescribing by nurses, evaluation of diagnosing and prescribing by nurses using the different qualities of care as suggested by Maxwell, (1982). The chapter concludes with a post-study conceptual framework, based on the literature review and the findings.

Chapter five provides a detailed analysis, interpretation and discussion of the findings from the study, comparing and contrasting the findings with the literature as well as summarises the arguments in the thesis. The concluding chapter provides an overview of the main findings of the thesis. It details where the study has contributed to knowledge. Also the limitations and strengths of the study as well as recommendations for future research stated.

CHAPTER ONE

In order to fully explore and understand the role of nurses in diagnosing and prescribing from the perspective of key stakeholders in Cameroon, some background information is necessary. In this chapter, the political, socio-cultural and economic context in which the study took place is described.

Context of the research.

The context of the study is Bamenda, a former British region in Cameroon. A detailed description of the political, socio - economic and cultural dimensions of Cameroon is presented in Appendix 1. Cameroon has a population of about 19.088 million. Approximately 57% of the population live in urban areas while the remaining 43% is sparsely distributed in rural areas.

1.1 *Historical overview of Cameroon.*

Following the defeat of Germany in the First World War, the colony Cameroon became a trusteeship of the League of Nations which shared it between Britain and France. British Cameroons was ruled from Nigeria. The two parts became mandated territories of the United Nations Organization (UNO) upon its creation in 1945. French Cameroon became independent in 1960. British Cameroon decided in a plebiscite in 1961 to join French Cameroon to form the Federal Republic of Cameroon, which became United Republic of Cameroon in 1972 as a result of a national referendum. The country became the Republic of Cameroon in 1984 by presidential decree. The Health care system to date is culturally influenced by colonial relationships. Cameroon is a bilingual country, with English and French as the two official languages. It is linguistically diverse with about 250 ethnic groups and local languages. Pidgin English is the common everyday language spoken by many Cameroonians particularly those from English speaking Cameroon.

1.2 Education/ gender roles.

Cameroonians value education particularly for boys. There is a saying in the author's local dialect that "A woman's education ends in the kitchen". In other words, why bother to educate the girl child when she will ultimately get married and become a housewife. However, society's attitude is slowly changing. Recent years have seen an increase in the number of girls attending higher education. The literacy rate is 68%. The gender divide in education is significant, with a higher level of illiteracy in the rural areas. Even though there

are no statistics on the number of male nurses in Cameroon, the number of male nurses is significantly high. The educational system in the different parts of Cameroon, represent their colonial past.

Patriarchy which grants men and male children more authority over women is dominant in Cameroon. Gender roles are embedded early on in a child's life. The division of labour by gender remains strong in Cameroon. Most of these early teachings take place in socialisation within the family. The boy child stays close to the father and learns the tricks of the trade, hunting, cattle herding, while the girl stays close to the mother and learns how to keep home. Although factors such as emigration, education of girls, effects of globalization have led to women occupying some higher positions in society, the majority of senior positions are still occupied by men. Gender is closely linked with power particularly so in the case of Cameroon which is predominantly a patriarchal society. This therefore lend male doctors an even higher status, firstly as a man and secondly because of the higher status of the medical profession.

On the face of it, the traditional value of patriarchy is slowly being eroded as more and more women are attaining higher education and taking more and more responsibility in the management of the household. However, female subordination is still present in many forms. The man is still the recognised head of the household. The women could use their improved knowledge and skills to communicate better in convincing the men about certain decisions, but ultimately, the man makes the final decision in most cases.

Families as understood by Cameroonians may include an entire village. Close family ties and a sense of community are valued. People are defined in terms of their family ties. There are no individuals but families. According to the Cameroonian society, richer members of the family take care of poorer ones and this is not restricted to immediate families but extended family members as well (Caiden & Caiden, 1977; Vigh, 2006; Abega, 2006). Similar conclusions were reached by (Gould and Mukendi, 1989).

The African extended family and defective cultural norms and behaviours places a significant pressure on the civil servant, forcing him to engage in corrupt and nepotic practices (Jabbra, 1976 cited in Mbaku,1996). There is a belief in the Bantu philosophy "Ubuntu" – a humanist philosophy focusing on allegiances and relations with each other.

1.3 Poverty

According to UNDP, in 2001, an estimated 42 % of the population of Cameroon are living below the national poverty threshold (IMF, 2003) and 98.3% of private health care costs are

paid out of pocket. Less than 2% have health care insurance (World Bank, 2004; WHO, 2008 cited in Labhardt et al., 2009; Chabal, 2009). Poverty is the single most important factor of morbidity and mortality and provides the conditions in which infectious diseases flourish (Greenwood, 1998).There is also a gender dimension of the state of poverty in Cameroon, with 52% of the poor being women (UNDP, 1998). These people are considered poor because they cannot meet the basic family needs of clean water, food, clothing, shelter, education, general sanitation, and health (Fonjong and Endeley, 2004).Whilst many countries in the world have made significant economic advancements and human development during the last 40 years, Africa on the other hand has remained essentially severely deprived and poor (UNDP, 1998, 1999; Sachs, 2005). Total expenditure on health as a percentage of GDP in Cameroon is 4.9 (WHO, 2010).

Extreme high levels of material deprivation and a deepening divide between the rich and the poor has been noted (Mbembe, 1992a cited in Devisch 1995). Devisch (1995) comment on how patients who are poor and cannot afford hospital bills are treated in Kinshasa. Crabbé et al. (1996), investigated why men with urethritis in Cameroon prefer to seek care in the informal health sector. Through the use of a survey method and structured interviews with1179 men, it was found that financial constraints may be an important factor in the decision not to consult in the formal sectors.

Urban areas have better facilities, paved roads, electricity and clean water supply. Rural areas on the other hand, have poor infrastructure. Unpaved roads, use kerosene lamps for lighting and fetched water from the stream or shallow wells dug besides the house. Although there are no statistics on the rate of unemployment, it is evident that unemployment is high with increasing number of graduates searching for jobs whilst adding that they will take on any jobs in order to sustain a livelihood. Only the educated get employed which gives them a steady income. The illiterate are in the informal sector with precarious incomes.

As a result of economic crisis and low salaries following implementation of structural adjustment programmes in the early 1990s, Cameroonians have increasingly resorted to corruption as a coping strategy in their struggle for survival. Currency devaluation and loss of regular income is made worse by continuing escalation of prices. Public services, including health have more or less disintegrated. Nominally free public hospitals have become waiting rooms where the state doctors cajole desperate patients to meet them instead in their private clinics in town. Cameroonian bureaucracy is greeted with scorn, ridicule, and sometimes ostracism. Prospective whistleblowers are intimidated and terrorized into silence with questions such as "You think you alone can change the system"? The "every-one-is-doing-it"

mentality is all pervasive (Fombad, 2004). The enforcement of state regulations in most African countries is arbitrary, poor, unpredictable and ineffective. As a result, individuals/groups, civil servants affected by the regulations succumb to opportunism, including the payment of bribes to civil servants. A society's laws and institutions have a significant impact on the level of corruption (Mbaku, 1996). In societies where civil service compensation is low, a significant part of the employee's total compensation is from engagement in outside activities, resulting in a significant increase in bureaucratic corruption (Mbaku, 1991a). A revisionist approach suggests that corruption is structural and that there are certain factors acting as enablers of corruption (Caiden & Caiden, 1977).

Individual's salaries are not based on the number of hours worked but upon one's needs. There is a Cameroonian proverb "goats feed where they are tethered" meaning people are expected to exploit their positions for whatever benefits can be obtained before they are replaced. Consequently, the term "debroullier" in Cameroon has been given a new meaning. It suggests cleverness, dodging, and the exploitation of whatever resources are at hand. It appears to be an instinctive response to circumstances. Survival of the fittest seems to be coping strategy where most people are trying to make ends meet.

People belief in the culture of what Galanti (2004, 2008) describes as present time orientation. Time orientation means people don't make future plans. In Cameroon, it is commonly referred to as "live for today". The crisis in Cameroon has become an organizing metaphor for daily living, a way of explaining the inexplicable and justifying the unjustifiable. Crisis becomes a frame of action (Mbembe & Roitman, 1995 cited in Jones 2008). Ferrinho & Lerberghe (2000) refer to such behaviour as " individual coping strategies". This is similar to the notion of "Kukiya-kiya", as it is known in Zimbabwe which, refers to multiple forms of "making do". Similarly, in Brazil it is known as "jeito or jeitinho" which implies "getting away with murder" or taking advantage of a situation at someone else's expense (Scheper-Hughes, 1992).

Summary of key points

Cameroon is a former British colony and the health care system is influenced by its colonial past. There is a gender divide in literacy rates with a preference for educating male than female children. The importance of family unit is highlighted. It is evident from the above section that poverty is an important factor in Cameroon and drives a lot of what the state and individuals think and behave. There is a strong link between poverty and corruption. Given

severe scarcity of resources it is therefore important to investigate and understand how resources can be managed efficiently in the promotion of health.

The following section will describe the health profile, human resources in health care as well as the health care system in Cameroon. As might be expected from the discussion so far, as a result of poverty, the health statistics reflects the situation of a developing country. For example, in Cameroon, the life expectancy, infant mortality, healthy life expectancy and adult mortality rates are really bad when compared with those of a developed country such as the UK.

1.4 Health Profile of Cameroon.

Given the high poverty level, life expectancy at birth, which reflects an estimate of number of years that a person is expected to live, is 53 for males and 53 for females. In comparison, the life expectancy at birth in the UK is 78 for male and 82 for female.

Table 1.4.1 Life expectancy at birth

Country	Male	Female
Cameroon	53	53
UK	78	82

In Cameroon, the infant mortality rate, the probability of dying under the age of 1 is 89 for male and 75 for female children (per 1000 live births) while the UK is 5 for male and 5 for female children.

Table1. 4.2 Infant mortality rate (below 1)

Country	Male	Female
Cameroon	89	75
UK	5	5

The probability of dying under 5 in Cameroon stands at 137 for male and 125 (female) against 6 (male) and 5 (female) in the UK.

Table1.4. 3 Infant mortality rate (below 5)

Country	Male	Female
Cameroon	137	125
UK	6	5

Healthy life expectancy is an estimate of the number of years that a person is expected to live in "good" health. It is 45 for males and female in Cameroon against 71 for males and 73 for females in the UK.

Table1.4. 4: Healthy life expectancy

Country	Male	Female
Cameroon	45	45
UK	71	73

The adult mortality rate is defined as the probability of dying between 15 and 59yrs. In Cameroon it is 405 for males and 403 for females compared to 96 for males and 59 for females in the UK.

Table1.4. 5: Adult mortality rate

Country	Male	Female
Cameroon	405	403
UK	96	59

Table 1.4.6 : Infant mortality for selected countries

Country	Infant mortality (under 5 mortality rate per 1000,000 live births)	
	Male	Female
Cameroon	155	141
Chad	214	204
Nigeria	193	184
Equatorial Guinea	155	145
Congo	131	120
Gabon	102	80

Source: World Health Organization (2010).

Table 1 shows a comparison of infant mortality in Cameroon and its neighbouring countries. Cameroon still suffers a higher rate of infant mortality when compared with Congo and Gabon. Mortality rates in Cameroon are poor but not the worst in Africa. The rates reflect poverty and inadequacy of the health care system and the pressure to do better.

The following section will describe the epidemiological profile of Cameroon.

Epidemiological changes.

Table 1.4.7, shows the top causes of morbidity and mortality in Cameroon.

Table 1.4.7 Types of diseases.

Thirteen top causes of morbidity	The top six causes of death
Malaria	HIV/AIDS
Respiratory infections	Hypertension
Hypertension	Malaria
Arthritis	Diabetes
HIV/AIDS	Pneumonia and
Peptic ulcer diseases	Hepatitis
Diabetes Mellitus	
Epilepsy	
Pneumonia	
Typhoid	
Filariasis	
Asthma	
Sickle Cell disease	
Tuberculosis.	
Wound care	
Gastroenteritis	
Intestinal worms	
Sexually transmissible diseases	
Perinatal conditions	

Source: World Health Organization (2006, 2010).

Every year about 1.1million people die from malaria worldwide. More than 70% of them are under fives living in sub-Saharan Africa, including Cameroon. Effective treatment of malaria is a fundamental pillar of the malaria control strategy. In addition each year over 10million children in low and middle-income countries die before their fifth birthday (Black et al. 2003). About half of these deaths are due to pneumonia, malaria, diarrhoea and Measles.

Demographic changes and epidemiological trends have made health service demands more severe. Health statistics show that malaria alone is responsible for 40 to 50 percent of medical consultations, 40 percent of deaths of children under five years and 23 percent of hospitalizations, and consumes about 40 percent of annual family health budgets in Cameroon (Achanyi-Fontem, 2007). This clearly demonstrate that Malaria is a major public health problem in Cameroon and prompt diagnosis and effective treatment of the disease can lead to reduced morbidity and mortality.

Also, diseases such as tuberculosis which were on the verge of extinction are now posing a major health threat with 22,000 new cases on average each year. This increase is thought to be as a result of the increase in the numbers of HIV/AIDS patients. The rate of increase in the disease is alarming, from 0.5% in 1987 to 2% in 1992 and 11.8% in 2002, placing Cameroon number 11 among the countries most affected by HIV/AIDS (WHO, 2006). The HIV/AIDS prevalence rate is estimated at 5.4% for those aged 15-49, (Wright and Clark, 2006). Although attitudes are changing, there is still a strong stigma attached to HIV/AIDS which keeps the number of reported cases artificially low.

The prevalence of non-communicable disease partly as a result of lifestyle changes in developing countries including Cameroon is rising and is predicted to be a major health challenge. Recent years have seen an increase in the number of non-communicable disease such as high blood pressure, diabetes, kidney diseases, asthma, epilepsy, cancer (Coleman et al.,1998; Cruickshank et al., 2001; Kengne et al., 2008; Lehmann et al.,2009). Cameroon like most countries in Sub-Saharan Africa is dominated by infectious and parasitic diseases. Given the health statistics there are not enough health care personnel to cater for the health needs of the population.

1.5 Human resources /health resources.

Human resources are crucial for the effective functioning of the health care system (Hongoro & McPake, 2004; Dussult & Dubois, 2004; Narashimhan et al., 2004). In countries like Cameroon there are serious shortages of well-qualified health personnel (Utzinger et al. 2004) to meet the surging demand for health care. Partly, this can be attributed to the "brain drain" of physicians from developing countries to developed countries (Dovlo, 2004; Awases et al., 2004; Wright et al., 2008). A number of pull/push factors account for doctor migration. The pull factors are better working conditions, better pay, and higher standards of living. Push factors include; obsolete diagnostic equipment, poor sanitation, low wages, and poor working conditions. Due to lack of statistical data, it is difficult to accurately state the number of doctors that have immigrated to other countries from Cameroon. However, a major consequence is that a shortage of doctors has to a some extent accounted for why some nurses are increasingly involved in diagnosing and prescribing, providing patient care in areas which were previously the domain of medical doctors.

In 2001, the human resource deficit in terms of training and recruiting of doctors, nurses, was estimated at 9000 persons. This is way short of WHO recommendations. According to WHO, (2010) the doctor-patient ratio in Cameroon is one of the lowest in the world. Also there is

uneven distribution of health personnel throughout the country. Gish (1971) cited in Wright et al. (2008) observed the issue of urban–rural divide. Physicians have always favoured urban and suburban practice locations over rural areas. Rural practice locations typically generate less income for doctors and have fewer technological resources than urban and suburban areas. As a result most doctors in Cameroon prefer to practise in urban areas where there are greater facilities, better roads, access to the internet, to electricity and social amenities, leaving the nurses and other informal health care providers to furnish health care in the rural areas.

The few public sector doctors available in Cameroon are overworked and poorly paid. These doctors therefore prefer to set up private practices where they can supplement their incomes. The realities of how to feed their families come first. The consequences include longer waiting times for patients wanting to consult with a doctor in the public health care sector because the doctor has to attend first to the higher paying patients at his/her private clinic.

Skills shortages.

Table1. 5.1. Nurses and physician ratios for selected countries:

Country	Nurses & Midwives (per 10,000 population)	Physicians (per 10,000 population)
Cameroon	16	2
Chad	3	<1
Nigeria	17	3
Equatorial Guinea	5	1
Congo	10	2
Gabon	50	3

Source: World Health Organization (2010).

The above table shows Cameroon in 3rd place behind Gabon and Nigeria when one compares the ratio of nurses and doctors per 10, 000 inhabitants. The total number of physicians in Cameroon was 3124. Number of physicians per (10.000) inhabitants in 2009 was 2.The country had 26,042 nurses in 2009 giving a density of 16 nurses per 10.000 inhabitants.

The following section details the aims, objectives and drivers of the current health care system in Cameroon.

1.6 Health system.

Given the global economic recession, governments in developing and developed countries alike are under pressure to contain their health care bill while at the same time improving effectiveness, efficiency and raising the quality of care in response to patients needs. In order to do this, health care has to be tailored to the prevailing socioeconomic, political, cultural realities and values systems. Health systems are often identified with health service delivery.

Those providing health care service share a common goal of reducing inequality in health, ensuring maximum population coverage, and promoting patient safety. The health care system to date is culturally influenced by colonial relationships. This is demonstrated in nurse training in the English speaking part of Cameroon which is modelled on the British system and culture with an emphasis on wearing of uniforms and use of titles such as "matron" "ward sister" (Fongwa, 2002) and "charge nurse".

As noted by Ndumbe et al. (2005), the Cameroon health service system has undergone four major periods; the colonial period, the post-independence or experimentation period, the post Alma-Ata or primary health care period and the period of reorientation of primary health care. These changes were precipitated by both regional and international conferences on health sponsored by UNICEF and the WHO. These conferences include; the Alma Ata conference of 1978, the Lusaka conference of 1985, the inter-regional conference, Harare, 1987, the Organization of African Union (OAU) Heads of State Summit on Health, 1987 and the Bamako initiative meeting,1987. Following the Alma Ata conference and its' recommendations, the Cameroon government implemented a health care system based on primary health care (PHC) with emphasis on preventative care, training and development of community health care workers and traditional birth attendants as a way of improving the health of its people, particularly those in remote locations.

Specific health care reforms in Cameroon following the Bamako and the Harare initiative led by the WHO articulated an internationally shared vision advocating a re- structuring of health systems in developing economies with a view to a more equitable access to quality and a more efficient use of resources. Cameroon and other African countries embarked on comprehensive health care programs, relying at least partially on revenues generated through user-fees to revitalize health care delivery systems (Litvack & Bodart, 1993). User-fees and improved quality of care are key concepts which drive debate in health care delivery.

In 1989, the government adopted a PHC implementation strategy which was officially adopted in 1992 as reorientation of PHC in Cameroon (*Réorientation des Soins de Santé Premaires*). It was said to be responding to:

- Worsening economic climate and other contextual problems and it aimed to make PHC a reality.
- The health system was reorganized in three levels (Ministerial, Provincial and District).

The health care reforms in Cameroon led to the creation of Integrated Health Care Centres (IHCCs). This was considered as a contract between the state and the community. The IHCCs are nurse-led, managed and partially funded by local communities. These have helped to improve access to affordable and sustainable primary health services. Also, these efforts have helped to improve the health of the population and in some way empowered individuals and families to take responsibility for their health and welfare. The current Health Care reform was initiated in 1998 and formally adopted and launched in September 2001 in a document entitled "The Health Sector Strategy" (Ndumbe et al.2005).

The goal of any health care system is to provide optimal care to its population. The goal is fourfold: increase greater patient satisfaction, improve clinical outcomes, increase job satisfaction and achieve greater cost efficiency. Health systems are defined as comprising all the organisations, institutions, and resources that are devoted to producing actions principally aimed at improving, maintaining or restoring health (WHO, 2005).

In many developing countries the use of traditional healers is extensive, particularly in the rural areas (Dean, 1981, 1986, 1989, cited in Tembon 1996; Ndeso-Atanga, 2003; Labhardt, 2010). Cultural beliefs influence health behaviour. Traditional health beliefs are deeply rooted in Cameroon. Causes of diseases are explained in both traditional and western ideologies. It has a pluralistic medical setting in that there are several sources where patients can obtain health care such as self care, traditional and faith healers. The attraction of traditional healers is partly explained by the fact that such traditional healers share cultural and economic attributes with their patients and so may perhaps tend to understand the patient more than modern health care workers. Because biomedicine cannot attend to the spiritual underpinnings of chronic conditions, people are unlikely to choose biomedicine in the first instance. These culturally driven practices are deemed to present a threat to self care and biomedicine (De Graft Aikins, 2005).

Improved health care standards depend on how medical care is organised. Historically, in the middle ages people relied on herbalists, witch doctors, traditional medicine, worshiping of gods and ancestors, offering of sacrifices for the treatment of diseases. According to Baly (1995) superstition was rife during this era. Primitive man attributed disease and epidemic to evil spirits, which he sought to drive out by means of magic. The prevailing belief at the time was that illness was punishment from God and therefore the gods must be appeased. This belief is still held by some people in Cameroon, more so in some areas than others. In the middle ages, most health care was provided through the agency of religion and private charities. But, with advances in medicine and a greater demand for health care, providing care is beyond the scope of private charities and religious institutions. As a result health care provision has increasingly become the concern of governments and other health care providers.

The next section will examine how the health care system is organized in Cameroon.

1.6.1 The organization of the health care system in Cameroon.

Cameroon operates a district health system. The operational unit is the health district and it has a pyramidal set up and consists of three levels: Central level, Intermediary level and the District level (Ntembe, 2008) as shown in Appendix 2.

The principal provider of modern health care in Cameroon is the public sector. The country has 178 health districts, with 162 district hospitals of which 154 are operational. It also has 2043 public medical structures mainly located in urban areas Ministry of public health (MoPH, 2010, cited in Amani, 2010). Cameroon does not have a modern welfare state such as the UK, where health care is free for all at the point of delivery. Health care is paid out of pocket.

There are mission health centres and hospitals owned and managed by religious bodies. There and private hospitals owned by individuals or organisations. These are privately owned for-profit hospitals. Also, health care is provided by medicine stores, licensed and unlicensed drug stores which sell medicines. Some are sold by trained personnel whilst others make do with whoever is available to sell. Health care is also provided in pharmacies and government owned health centres, sub divisional hospitals, district hospitals, provincial hospitals and referral hospitals. From the above discussion, Cameroon has a type of mixed economy of health care provision where both private and public co-exist. It has elements of a liberal system. Health care in Cameroon is provided in a variety of settings.

Government owned hospitals are funded through general taxation. It takes the form of state ownership of medical facilities such as clinics, health centres, hospitals which it builds, staffs and manages. The government plays a central role in legislating who can practise any of the medical or health related-professions. The state determines which drugs should be made available for safe treatment of diseases and at what cost. Also, the government lays down guidelines / protocols for treatments nurses can provide to patients and which drugs they can prescribe for those treatments. The government facilities provide different levels of services some which are nurse-led and others doctor-led.

Government owned health care settings fall under six categories in the following ascending order: Integrated Health Care Centres, Sub-divisional medical centres, district hospitals, regional hospitals, central hospitals and general hospitals. Integrated Health Centres (IHHCs) have been created partly in keeping with the objectives of primary health care which shares similarities with Maxwell (1984, 1992) six dimensions of care: effectiveness, acceptability, efficiency, accessibility, equity and relevance. The Cameroon government felt the need to create these health centres as part of its health reform and as a direct result of shortages of medical staff (doctors). Another reason for the creation of (IHCCs) in Cameroon is the low population density over large geographical areas. This makes travel times from rural areas to get medical services in town a barrier to accessing health services. Creation of these centres means patients have shorter journeys to make to get to health facilities. Most of these health centres are nurse-led. What this means is that it is nurses who are in charge of assessing, requesting and interpreting laboratory tests, diagnosing and prescribing of patients treatment, providing preventive care. By so doing nurses are expanding their professional role to areas which are traditionally outside their realm. Nurses are the gatekeepers of health care facilities both in acute settings and even more so in rural areas where there are no doctors. Nurses working in Integrated Health Care Centres (nurse-led clinics) are autonomous practitioners. They work independently and mostly deal with day cases even though with some admissions.

IHCCs are authorised by the government following a request from the local community. Each IHCC has a management body / committee formed by the locals. It is headed by a chairperson from the community. The government appoints a state registered nurse and the community is responsible for employing support workers such as the microscopist, the pharmacist, a health care assistant, the traditional birth attendant and night watch man. Finances are generated from consultation fees, and mainly donations. User fees for drugs and services were introduced from 1991/1992. Making drugs available to health care centres was one way of encouraging people to make use of the health care services. Drugs are supplied by a non-

governmental organisation. The drugs are highly subsidized and money collected from sale of drugs goes back to the NGO. There are mainly generic drugs sold at a quarter of the recommended retail price. Difficult cases from these health centres are referred to the district hospital. Most patients are treated as out-patients but in some cases patients are admitted to the ward. This improved set made the facilities more attractive, thus making health care more accessible to the poor.

A major advantage of Integrated Health Care Centres is that it sells pharmaceutical products. The prices are usually cheaper than those sold elsewhere. Prices are fixed and subsidized by the Cameroon government. Also drugs sold in such clinics are guaranteed not to have expired (Ryan, 1998) and to be real drugs and not fake copies.

Sub-divisional medical centres are mainly located in the rural areas where there are acute shortages of doctors and nurses. In some cases, the health care team will be led by a doctor but most of the time it is nurse-led as the doctor may not be available to receive patients.

In the district hospitals, nurses work alongside doctors. There are 136 of such hospitals. Nurses still maintain the same role as in the integrated health centres, whilst referring difficult cases to the doctors. The laboratory tests and clinical interventions in these hospitals are more intense.

There are ten regional hospitals, with one in each of the ten regions of Cameroon. They are located in the chief town of the region. They are highly staffed, have more equipment, with different departments and more specialized doctors. Difficult cases from district hospitals are referred to regional hospitals. The role of the nurse with regards to consulting, diagnosing and prescribing starts to diminish at the regional level. However, the triage system still allows nurses to consult, diagnose and prescribe. Also, nurses are mostly in charge during out-of-hours periods particularly in accident and emergency.

Cases that cannot be treated at the regional hospitals are generally referred to the central hospitals in Yaoundé (the capital) and Douala (the economic capital) of the country. Finally, there are three general hospitals including one university teaching hospital. Cases that cannot be treated at this level would be referred abroad when it is financially feasible. It can therefore be seen that there are variations in health services.

In addition to the above mentioned hospitals, other providers include: the private sector for-profit institutions, faith-based institutions, (the Catholics, the Presbyterians, the Baptists, Seventh day Adventist and Apostolics, to mention a few). In private hospitals it is the doctors

who generally consult, diagnose and prescribe. The nurses' role is mainly to assess, identify plan, implement and evaluate patient care. In mission hospitals (doctor-led) which until recently have always been nurse-led, nurses are still actively involved in consulting, diagnosing and prescription of patient care.

1.6.2 Infrastructure and equipment.

With regard to structure, infrastructure and equipment, much of the health system is out-dated and facilities are unevenly distributed among the provinces, as well as between urban and rural areas. Health services and facilities are often inadequate and in some areas, non-existent. Lack of maintenance is also an area of great concern (Awasum, 1992). Hospitals in rural areas cannot afford the modern technological equipment and personnel needed to treat the different types of old and emerging diseases. Working conditions are difficult and frustrating. Poor working conditions lead to poor productivity.

The structures in place to manage accounting systems for the health infrastructure and facilities are inadequate. Some rural areas in Cameroon are lacking the basic necessities that are taken for granted in the West such as, clean water supply, electricity. Poor transport infrastructure and the terrain (steep hills and serpentine rivers with few and distant bridges) magnify the effects of distance between the rural areas and urban areas. Long distances to travel make regular visits to clinics impossible causing delay amongst patients in seeking timely diagnosis and treatment (Prata et al. 2005). Documented evidence indicate that nurses are at the forefront of providing health care in Cameroon and other developing countries alike, particularly in the rural areas where the role of the nurse includes diagnosing and prescribing for patients. It is therefore necessary to evaluate how nurses are trained for their ever expanding role.

Summary of main points.

Cameroon is a former British colony. The geography of the country with its vast surface area and varied climate provide fertile conditions for certain diseases such as malaria. Political, socio-economic and cultural factors affect health care provision and health seeking behaviour. It is a developing country with extreme limited resources including scarcity of doctors. Demographic and epidemiological changes have made health service demand more severe.

National and international agenda drive the organization of health care in Cameroon. Changes in government reforms and reorganization of health care in Cameroon have resulted in a re-assessment of the role of nurses within the health care delivery system. The goal of health

care provision is to improve access, promote equity and ensure patient safety. Global economic recession has led to a rethink of how health care is provided by health care providers with the aim of maximizing the use of limited resources. The organization of the health care is different from that of the UK.

Health care in Cameroon is provided mainly by the state. Its structure takes the form of a pyramid. The entry point of the health care system is at the base, the district level. This is where the majority of health care is provided, mainly by nurses in integrated health care centres which are nurse-led. 98% of health care cost is paid out of pocket by individuals. In addition, health care is also provided by mission/faith, private for-profit institutions and traditional healers. Generally, the infrastructure is poor and health care facilities are poorly equipped, particularly those located in rural areas.

CHAPTER TWO

LITERATURE REVIEW.

The aim of this chapter is to review the current state of knowledge in relation to the changing role of nurses, the extent to which nurses diagnose and prescribe and factors affecting diagnosing and prescribing by nurses. A review of the literature was carried out in order to ascertain what is known about the topic, to identify any gaps in the literature, to provide a background and justification for the research project and ascertain the need for the current study as a way of making a contribution to knowledge (Hart, 2006; Collis & Hussey 2003; Easterby-Smith et al., 2008).

First, a description of the literature review strategy will be presented followed by an examination of the context of the changing role of nurses/ nurses' substitution for doctors.

2.1Literature search strategy.

A literature search was carried out to establish the organization of health care and the role of nurses and how they are trained in Cameroon. Also considered was literature on the political, socio-economic, cultural aspects of Cameroon and how they impact on the role of nurses in diagnosing and prescribing. Evidence was gathered from books and reputable internet sources. In addition, a literature review was conducted using the main search engine Google/Google scholar search and other internet searches which were conducted to identify relevant articles. Also, electronic data bases such as ProQuest, Emerald, EBSCO, Medline, CINAHL, The British Nursing Index, PubMed databases were consulted. Key words/terms relating to nurse prescribing were used in various combinations such as: Nurse prescribing in Africa/developing countries, non-medical prescribing, non-doctor prescribing, nurse prescribing United Kingdom / worldwide, Independent/supplementary nurse prescribing and doctor-nurse substitution.

Due to scarcity of literature on diagnosing and prescribing by nurses in Cameroon and other developing countries the literature search was extended to include international literature, developing countries, resource constrained economies, third world countries. No time restriction was imposed in the literature search due to scarcity of literature on the topic in developing countries. Not all the articles reviewed were useful for inclusion for the purpose of this study. Evidence that was anecdotal was not deemed suitable due to the uncertainty over the rigorousness of the research. Inclusion criteria were set to include any relevant research which will provide answers to the research questions, written in English given the fact that

Cameroon is a bilingual country. Although theoretical/discussion papers, editorials and book reviews are useful for background information, they were nonetheless excluded since they lack a systematic methodological approach hence, low in reliability. Secondary information was gathered from books, peer reviewed journals, hand searches, references from published articles relating to the subject, unpublished papers, government publications, conference papers.

Other sources of information include official documents from organizational sources - policy documents. Tertiary sources of information were collected from indexes, abstracts, dictionaries, bibliographies, citation indexes. Citation links were followed up. The journal section of the website "http://www.nurse-prescriber.co.uk, was searched for references.

2.1.1Search results.

International literature with key words "nurse prescribing world wide" generated 33 articles. The articles were selected after reading the abstracts to determine suitability and relevance in answering research questions. The literature search highlighted a lack of literature focusing on diagnosing and prescribing by nurses in Cameroon. There were only 6 articles on nurse prescribing in developing countries and 11 articles on non-medical prescribing in Africa but nothing specifically on Cameroon. Most literature on nurse prescribing is based on research in developed countries such as; the UK, USA, Canada, Australia, New Zealand, Sweden. These have been used to studying diagnosing and prescribing by nurses in Cameroon. The rationale being that, historically, Bamenda, the town and associated rural areas where the study is carried out is a former British region.

In reviewing the literature, it is evident that there is a great deal written in the UK, other developed countries and to a limited extent in some developing countries in terms of understanding the changing role of nurses and factors responsible for these changes.

Organization of the review.

The literature review is structured around the theoretical framework shown at the end of the literature review chapter. This is because it provides a systematic approach in investigating diagnosing and prescribing, thereby adding theoretical rigour (Masters, 2009; Guest, 1997). However, a limitation of this approach is an increase risk of disturbing the sequence of the narrative. As such, attempts have been made where necessary to mitigate this risk. The theoretical framework has been used as a tool to enable critical thinking in the course of the research. It helps with the development of the overall methodology and analysis of findings.

The framework embraces all aspects of organizational operations with regards to structure, processes, customer outcome. Human resource management processes such as education and training, monitoring, motivation, management processes and service delivery are also addressed.

The following section will examine factors responsible for changes in nursing, the training of nurses with focus on diagnosing and prescribing in Cameroon and other countries, doctor-nurse substitution, the changing role and functions of the nurse-international variations, and the drivers of diagnosing and prescribing in the UK. Also explored is the history of nurse prescribing – international comparisons and variations in the patterns of diagnosing and prescribing by nurses. The rationale being that this provides an overview of the historical role of nurses in order to enable understanding of the present and to inform future nursing roles.

2.2 The context of the changing role of nurses.

Traditionally, the role of nurses included providing comfort and ensuring a clean and healthy environment for patients. Historically, nurses were not directly involved in diagnosing and prescribing medication for patients. Clinical boundaries were clear. The doctor diagnosed and prescribed medication for the patient and the nurse administered it (O'Neil & Franklin, 2006). However, several factors account for why the roles of nurses have changed and continue to expand.

2.2.1 A comprehensive review: Factors responsible for changes in nursing

2.2.1.1 Gender / changing attitudes towards nurses and doctors' working relationships.

Nurses were seen as doing "women's work". Women took on caring as an identity rather than an aspect of the job. By so doing, women were synonymous with care (Reverby, 1990). Davies (1980) espouses that historically, a probationer was assumed to be a "Christian lady" displaying those womanly qualities which Sidney Holland (in Davies, 1980) describes as being "the handmaidens of the medical men". Nurses were accorded status traditionally, because of their "angel image" and bedside care. In the past, nursing was seen as a vocation and as such attracted a certain kind of students with the value of altruism. A good number of nurses were totally illiterate and signed for their wages with a cross. Sir John Paget (1914 cited in Abel-Smith, 1966) recalled that the nurses of 1830 were dull, unobservant, and untaught women. They could only be described as kindly, careful and attentive in doing what they were told to do. Prior to Florence Nightingale's era, nurses had a reputation for lacking discipline, displaying a casual attitude to patients (Hallet, 2010). Nurses, most of whom are

women, still form the bulk of the nursing profession (Mortimer and McGann, 2005). The feminine principles of caring, nurturance, receptivity, correspond to the historical roots of nursing. This coupled with the rank and file, apprenticeship nature of nurse training emphasized passivity and subservience. Nurses were thought to offer emotional support rather than clinical expertise. They were considered to be subservient to doctors, maternal, unassertive, submissive and domestic (Foskett and Hemsley-Brown, 1998; Zwerdling, 2004). Nursing had developed as a hierarchically organized, rule-bound occupation, playing a supportive and subordinate role to medicine (Porter, 1991). The view of relative passivity of nurses corresponds with feminists views of women as more caring, less aggressive than men, more cooperative and rationale and less mechanistic as well as the nursing stereotype that nurses are sexy, nurses are angels (Miers, 2000). These characteristics led nurses to believe in their inferiority to the medical profession.

2.2.1.2 Doctor-nurse professional relationships / medical power.

The doctor-nurse professional relationship is a major issue that has been well documented. Historically, the nursing profession was dominated by medicine (Stein et al., 1990; Davies et al.1999; Salvage & Smith, 2000; Davies, 2000). The nurse was to speak to the doctor only when spoken to. Strauss *in* Dingwall and McIntosh (1978) noted that this relationship as being deeply rooted in, among other things, society's status differentiation: women's position in society and the biomedical representation of care itself (Porter, 1991, 1992; Navarro, 1977 *in* Keddy et al. 1986). Davies (1995) espoused that medicine's professionalism is shaped through a culture dominated by masculine cultural code with hierarchical structures, centralized decision making and embodies a functional approach to care delivery. Traditionally, nursing care was provided by women doing women's work, caring and being subservient to the doctor. The doctors wielded power as a result of their extensive training and knowledge and exclusive ability to diagnose and prescribe treatment for patients.

Nurses work alongside doctors in providing health care to patients. The working relationship between nurses and doctors is crucial in providing good quality care to patients, (Salvage & Smith, 2000; Davies, 2000). Nolan & Bradley (2007) observe that since the medical registration of 1858, doctors have been vested with the power to diagnose, prescribe and take responsibility for the overall, management of patients. This is particularly true of developed countries. It is an act in which they express their superior knowledge and reaffirm their authority over patients and over colleagues in related professions (Johnson, 1972 cited in Porter, 1991).

2.2.2 The quest for professionalism/advances in nurse training

In the past, nurses were clear about their position in the ordered hierarchy of health care provision, but increasingly the roles of nurses are continuously changing. Changes in health care organization and financing have led health care services administrators and policy makers to re-examine the roles played by various health professionals including nurses (Jacobson et al. 1999).

Also, there have been advances in nurse training from apprenticeship-style training with greater emphasis on practical aspects of nursing and hospital based to nurse training with emphasis on both theory and practice. The theoretical component is mostly studied at higher educational institutions/universities. As a result of such training, nurses are therefore better equipped in performing non-traditional roles such as diagnosing and prescribing. Advances in nurse training together with developments in medicine resulted in the expanding role of the nurse.

As noted above, the provision of health care services to all people is the key to eliminating the gross inequality in health status existing in many countries. For many years, nurses in developing countries have led the way in delivering care to poor rural areas, including the diagnosis and treatment of illnesses, and prescribing and dispensing of medications. Nurses have a long history of delivering health care to under-deserved communities and among vulnerable populations (Stark et al. 1999; Hongoro & McPake, 2004). Nurses in Cameroon and elsewhere form a larger proportion of health personnel working in primary health care settings. It is therefore important to investigate how nurses are trained for their perspective roles.

Health care reforms have had a significant impact on nurses' role and training. Nurse training is provided by the state, religious bodies and privately-owned institutions. The training of nurses is modelled on the UK due to its colonial ties with some adaptations to cater for contextual and cultural differences.

The following section will examine how nurses are trained with particular emphasis for their role in diagnosing and prescribing.

2.2.2.1 Nurse training in Cameroon.

The British legacy is reflected in several aspects of Cameroonian society, including nursing. One of the areas where this is demonstrated is the training of nurses in the English speaking

regions of Cameroon, which is based mostly on the UK model although with some adaptation to cater for contextual and cultural differences.

Diagnosing and prescribing forms a fundamental aspect of medical education and training and therefore nurses need to be adequately trained for this aspect of their role. Effective prescribing is based on accurate diagnosis and sound knowledge of Anatomy and physiology, pharmacology, patho-physiology and other related knowledge and skills. Also, effective prescribing requires sound knowledge of doses, optimal routes, side effects, drug-drug and drug-food interaction, pharmaco-dynamics, pharmacokinetics and monitoring of effects. Application of this knowledge requires significant expertise (Anderson, 2002). It is therefore important to investigate how nurses are trained and whether they have the required knowledge and skills required for this aspect of their role.

Table 2.2.2.1: Nurse training in Cameroon

Level of nurse education programme	Entry requirements	Duration of training
Nursing Assistant(Brêveté Nurse)	GCE O/L, four papers in one sitting	Two years
Diplome (SRN), HND, HPD, AND, BTS Nursing	GCE A/L, two papers in one sitting, BAC OR Assistant Nurse with two years working experience	Three Years
Bachelors Degree in Nursing	GCE A/L, two papers in one sitting BAC	Four Years
Masters Degree in Nursing	Bachelors Degree with at least Second class upper Honours	Two Years
Doctorate Degree in Nursing	Masters Degree	Three Years

Source: British Council (2007).

As seen in table 1.10, nursing qualifications range from the Nursing Assistant to the Doctorate level. However, very few nurses in Cameroon go beyond three years of training. There is a standard curriculum for the three years training course for nurses. Most nurse training programs do not require any previous health care experience. However, it is advantageous for prospective candidates to have some prior health care knowledge and experience as care assistants.

Training of nurses takes the form of mainly classroom teaching (theory) with clinical placements in different health care settings. Doctors in Cameroon are involved in the designing and training of nurses for their role in diagnosing and prescribing. During

undergraduate training in Cameroon, nurses are taught consultation skills: how to assess a patient, make a diagnosis and prescribe medication. Nurses in the IHCC are able to order and interpret diagnostic test, establish medical and nursing diagnosis and recommend treatment with prescribing authority for a broad range of medications. Nurses are trained to practise both independently, and in collaboration with district medical officers. Although nurses are trained for their role in diagnosing and prescribing in Cameroon, they are however, restricted by law to treat only minor conditions whilst referring the more serious conditions to doctors as evident in Order No.29/A/MSP/DSP/SFPS of 17 October 1977 which was revised and it later became Bill No.532/PJL/AN 1990 (National Association of the Professions of Nurse, Midwife and Health Technician 2005).

The training curriculum of State Registered nurses is as follows:

Table 2.2.2.2 Training curriculum of state registered nurses

Basic Sciences Psychology Sociology Communication Biology Anatomy and Physiology Obstetrics Pharmacology Laboratory activities Professional ethics Initiation to research in nursing science Official languages	**Health care techniques:** Medicine Surgery Paediatrics Motherhood and Mother and Child Health Care. **Administration and legislation** Health Management Economics Accountancy
Pathologies Surgical Medical Pediatrics Psychiatry Obstetrics Specialties: ENT, Ophthalmology, Radiology, Stomatology.	**Public health** Health education Health preservation and hospital hygiene Entomology Primary Health Care and Community Health Family Health Vaccination Health Statistics and demography Medicine in Schools School medicine Industrial Medicine.

Sources : National Association of the professions of nurse, Midwife and Health technician (2005).

(See Appendix 3 for a breakdown of hours of studies undertaken by nurses).

It is the expectation of the government, the nursing profession and the people whom nurses assist that given the above training, the Cameroonian nurse will have the required knowledge and skills to provide an improved health service. Training for nurses is provided by the state, religious institutions and, recently by a growing number of privately owned nurse training schools. In Cameroon, all nursing schools are expected to work in collaboration with the Ministry of public health and the National Order of Nurses, Midwives and Health Technicians.

Nurse training in Cameron is influenced by its colonial past with the UK, albeit with adaptations to cater for contextual factors. A majority of nurses are State Registered with three years of nurse training. Also, there are Brêveté nurses with two years of training. Both types of nurses are taught consultation skills in the course of their training. The literature suggests that there are concerns over the variability of the quality of training and lack of standardization (British Council, 2007).

On successful completion of a two or three year nurse training programme, the nurse is expected to carry out roles including diagnosing and prescribing for patients both as an independent or dependent practitioner in primary and secondary health care settings as well in different institutional contexts. It is therefore an interesting case from which to examine the implications of the expanding role of the nurse.

Having reviewed the literature on how nurses are trained in Cameroon, the following section describes how the UK, a former colonial master of Cameroon approaches the training of nurses in preparation for their role in diagnosing and prescribing. The UK comparison is deliberate as Cameroon bases its nurse training on the UK model albeit with contextual adaptations. The section details the post qualification course seen as a form of CPD which nurses have to do in order to qualify as nurse prescribers in the UK. This is additional training expected to be undertaken by nurses who express interest and are selected based a given criteria to train as nurse prescribers. The course is therefore not covered by all nurses. It is a new development in response to the changing role of nurses precipitated by several factors as presented earlier.

2.2.2.3 Training of nurses for their role in diagnosing and prescribing in the UK and selected countries.

In contrast to the Cameroon training, training of nurses to prescribe in the UK consists of a minimum of 25 days theory in a recognised and Higher Educational Institutions (HEI) approved by the professional Nursing Body and 12 days practice and the level of study is first degree level (Banning, 2006; Campbell in Nolan and Bradley, 2008). Candidates must have the support and supervision of a designated medical practitioner while training who would mentor them for the 12 days of clinical tuition. Students are tested by written and practical exams on completion of the course, and successful candidates have a mark annotated against their name in the professional register (Maw, 2004). In keeping with Nursing and Midwifery Council, prospective applicants of nurse prescribing course should be qualified State Registered / Mental Health nurse with a minimum of three years clinical practice. In addition to that all applicants must have demonstrable skills in assessment prior to enrolling on a prescribing course (NMC, 2006). Also, there must be satisfaction that students will benefit in their current area of practice (Campbell, 2004). Clinical key competences of nurse prescribing course include; problem solving skills, evidence of autonomous practice decision making and effective communication, ability to independently carry out physical examinations on patients, therapeutic drug monitoring, recognition of adverse reactions of drugs, rationale prescribing (Banning, 2006).

An Open Learning Pack which is divided into the following areas of study is used: getting to grips with nurse prescribing, accountability, prescribing safely and effectively, ethical issues, prescribing in a team context, administrative arrangements, and evaluating effectiveness. These topics are further developed in the taught course using a variety of teaching methods, including the ENB Video to trigger a discussion and debate. In addition the taught course includes relevant pharmacology, and therapeutics based on the Nurse Prescribing Formulary (NPF), together with other legal financial, and practical aspects of nurse prescribing.

In Botswana, nurses have acted as the first contact with the health care system at primary care facilities since the mid 60s when the country became a republic. Due to the shortage of doctors nurses often made medical decisions including the prescribing of drugs. As a result, this practice historically has been accepted as a nursing function in Botswana. However, with the shift to providing care in primary health care settings in the 70s the Botswana government reorganized the training of nurses. In 1978, nursing educationalists initiated mechanisms to develop post-basic nurse training, drawing on the North American nurse practitioner model of training and care (Miles et al. 2006). In 1981, Botswana commenced a one year post-basic

family nurse practitioner (FNP) programme to prepare nurses to provide comprehensive primary care services. Course content included disease diagnosis and management, clinical pharmacology so as to increase students formally acquired competency in prescribing. Students were taught how to select a drug of choice for a particular condition, taking into account the availability of the drug, the cost and national treatment protocols (Ngcongco & Stark, 1986, 1990 cited in Miles, 2006). All of these initiative enabled nurses to provide effective treatment for common primary health care problems.

In 1969, the U.S.A was the first country to grant prescribing authority to nurse practitioners and currently independent nurse prescribing is permitted across all the states (Pulcini, 2002; Pearson, 2004). In the USA, to qualify as a nurse prescriber, a second advance practice nurse licence is required. Hutchinson et al. (2001) writes that due to a shortage of medical doctors military service men were allowed to work under the supervision of a physician. They were later trained as physician assistants, nurse practitioners and advanced practice nurses, most of who work in primary healthcare settings with some working in secondary health care settings. Nurse prescribing was developed alongside the role of the Advance Practice Registered Nurse (APRN). These are the only group of nurses with prescribing authority in the USA (Courtenay & Carey, 2007).

Summary of key points.

First, in Cameroon, nurses are prepared for training within the health system. The training of nurses is embedded within the nurse training of two or three years programme. This is in contrast with the UK where training of nurses for diagnosing and prescribing is done post-qualification. Second, in Cameroon, there are concerns over variability and lack of standardization since training is provided by multiple sources. Third, in Cameroon, doctors are heavily involved in the design and training of nurses for their role in diagnosing and prescribing much more than the case in a developed country such as UK.

As noted before, traditionally the role of nurses included providing emotional support and ensuring a clean and healthy environment for patients. However, increasingly, nurses' role expansion, have led to nurses performing tasks which were formerly carried out by doctors. The following section will discuss the literature on what others have said about nurses' substitution for doctors.

2.3 Doctor - nurse substitution

Nurses are substituting for doctors in order to improve availability, prevention and early detection of medical problems (McGrath, 1990; Bourgain, 2009; Dovlo, 2004; Lehmann et al., 2009; Walker and Jan, 2005). Health care provision is labour intensive. Globally, health care policy makers and health managers are seeking ways of achieving maximum outcome with the limited resources whilst taking into account local priorities (Buchan et al. 2002). The effectiveness of nurses substituting for doctors as policy makers attempt to achieve skill mix need to be evaluated in order to ensure that it is cost effective, accessible, affordable and that it enhances the quality of patient care (Richardson & Maynard, 1995) as the case may be in Cameroon.

Read et al. (1992) through a survey method in a UK study concluded that there was a low range and volume of nurse practitioners work in major general departments nationwide. However, this study needs to be put into context given that it was carried out in the early nineties when the role of nurse practitioners was not fully developed as well as other necessitating factors. In contrast, Hooker & McCaig (1996) identified that physician assistants and nurse practitioners provided significant services in emergency departments when compared with physician services. They concluded that physician assistants and nurse practitioners may be a cost-effective strategy for improved delivery of emergency services in the USA. It is important to note that the two studies were conducted in different countries with different health care systems and therefore comparisons cannot be easily made.

Dowling et al. (1995) explored the boundaries between doctor's work and nurse's work following nurses substituting for doctors. Using interviews with stakeholders a complex picture of benefits and problems to doctors, nurses, patients emerged. It was recommended that an appropriate education and professional recognition of nurses extended role be addressed at a national and regional level. However, there were fears that core nursing skills like caring and communication, encouraging active participation of patients and providing holistic care could be threatened.

Venning et al. (2000) conducted a randomized controlled trial on 1292 patients; 651 general practitioner consultations and 641 nurse practitioner consultations. The authors found similarities in relation to health service cost and clinical care between nurse practitioners and general practitioners. It was concluded that for nurse practitioners to more beneficial their consultation times have to be shortened. Similarly, Laurant et al. (2007) did not find any difference between doctors and nurses in terms of process of care, health outcome, costs and

resources utilization. In contrast, Anderson & Hampton (1999) studied physician assistants and nurse practitioners in rural-urban settings and found them to be cost effective. Their evidence was based on productivity measures, salaries and costs of medical education indicators. It is not quite clear whether productivity measures included just amount/numbers of consultations or whether it also covered patient satisfaction and treatment outcomes. However, previous studies by McGrath (1990) also concluded that nurse practitioners and other non-physician health care professionals is a cost effective means of providing health care.

Using secondary data from randomized controlled trials, Harris et al. (2007) concluded that nurse-led inpatient care for patients with post-acute health care needs may have positive outcomes of care confirming the effectiveness of nurses' substitution for doctors. However, cost effectiveness could not be confirmed as patients tended to stay longer in such units which could potentially be more costly.

Studies have found that measuring skill mix is a complex task. Many of the studies reported are carried out in North America, are dated and the findings may not be relevant to other countries with different health care systems. Some have methodological deficiencies such as small sample size which renders results difficult to generalize. Also, the small numbers of patients managed by nurse practitioners compared with greater numbers by junior doctors act as a barrier for randomization. Absence of properly controlled randomized controlled trials and well designed follow-up studies act as a hindrance to replication in different health care settings to establish generalization about safety and efficacy of nurses substituting for doctors (Spitzer, 1984 cited in Richardson et al. 1998; Read & George, 1994).

Most of the studies offer mainly descriptive accounts, rendering interpretation of accounts difficult. Even with recent studies, it is difficult to measure the exact outcome of nurses' intervention alongside doctors' interventions. There are inherent difficulties in measuring outcome, quality and cost. A lot of the patient satisfaction is used as process measure. However, a majority of studies have concluded that doctor-nurse substitution is not detrimental to health outcomes (Richardson & Maynard, 1995; Richardson et al. 1998).

Summary of key points.

From the above discussion, nursing is synonymous with women, caring/ nurturing. Historically, nursing played a supportive and subordinate role to medicine. Doctor's power and status is derived from their extensive training and knowledge. The working relationship between nurses and doctors is essential to providing good quality of care to patients. Factors

responsible for the changing role of nurses include changing attitudes towards nurses and doctor's working relationships, advances in medicine and information technology and higher expectations from patients. In addition, advances in nurse training from apprentice-style training to one which places emphasis on both theory and practice means, nurses are better equipped with knowledge and skills to provide good quality of patient care. These developments have resulted in the expansion of nurse's role. Also as a result of doctor shortages, nurses are increasingly substituting for doctors. However, there are inherent difficulties in measuring the outcome, quality and cost of health care provided by nurse's interventions alongside the doctors' interventions. Most studies on patient satisfaction use process measure with varied results. Some authors have concluded that doctor-nurse-substitution is beneficial to health outcomes.

The next section will review the literature on the functions of nurses, drivers of diagnosing and prescribing by nurses, international comparisons and variations in diagnosing and prescribing patterns. The aim of this section is to explore the role of the nurse so as to ascertain the extent to which nurses fulfil the expectations of key stakeholders as well as nurses' contribution in the provision of health care service. In addition, to establish the extent to which nurses are involved in diagnosing and prescribing for patients.

2.4 The changing role and functions of the nurse and international variations.

The role of the nurse varies from country to country as are expectations and appropriate behaviour. In the UK, nurses provide, physical care such as (bed baths, toileting, feeding, making patient's bed, walk the patients). Nurses perform technical care such as drug administration, changing of dressings. Nurses also function as patients' advocate and provide psycho-social care. This contrasts with the role of the nurse in Cameroon which to a greater extent is mainly technical (taking vital signs, diagnosing and prescribing, administering medication, dressing wounds).

The role of the nurse in the UK can be summarized as follows:

Table 2.4.1 Functions of the Registered General Nurse in the UK

Themes	**Main points**
Patient care	Assessing patient needs and making relevant referrals, - Care planning, spending time with patient/listening, - identifying anxieties, problem solving on patient's behalf , giving medication, infusions, dressings, -taking ECG / bloods (screening) / cannulation, - admissions, history taking, supporting medical team, reporting changes,
Co-ordinating care	Pulling all the different specialists and treatments together, forward / discharge planning.
Creating and maintaining a safe environment	Ensuring the patient has clean and dry environment, use of special equipment by trained staff for lifting etc, special mattresses as required, isolation/barrier nursing, infection control measures

Education	Working alongside nursing colleagues, mentoring others
Advocacy role	Providing support in challenging circumstances for patients and relatives, explaining treatment choices, ensuring patient's voice is heard, defending patient choice.
Role model	Practise in ways that inspire and give confidence,
Legal documents/report writing/paperwork	Write referral letters, complete all appropriate forms and documentation
Relatives	Keeping relatives informed, providing information, giving support
Working in a variety of different care settings	Nurse-led centres-decision making/autonomous practice, specialists roles, working with GPs in schools,
Leadership	In-charge of patients and their care
	Involved in professional issues.

(Adapted from Graham et al., 2004, p70-71).

The above table could be considered as an interpretation of the Roper, Logan & Tierney model (Holland et al. 2003) of nursing which is a popular nursing model used by many nurses in the UK to underpin their nursing practice.

Some of the roles practiced by nurses in this study have been identified by Roberts-Davies & Read (2001) identified competencies required primarily for the role of the nurse practitioner in the UK, e.g.

- Take a systematic patient history
- Carry out a systematic physical examination
- Diagnose and prescribe with decision based on interpretations of clinical and laboratory results.
- Prescribe treatment based on pharmacological/ nursing knowledge
- Carry out non-invasive and simple invasive diagnostic and therapeutic procedures.

The findings are consistent with those of Mason-Whitehead & Mason (2004) confirming that nurses have multifaceted constructs to their role.

In contrast, Dovlo (2004) observed that nurses in rural areas in Ghana perform procedures normally disallowed by the regulations such as; delivering breech presentations and

performing episiotomies without additional training and despite restrictions that these tasks be performed by doctors or under physician supervision. Akor et al. (1995) described the role of health care superintendents (medical assistants) in Ghana as simple in its operation, extensive in its scope, economic in its cost, efficient in its quality.

In Tanzania, Malawi and Mozambique surgical technicians are given more extensive scope of practice. Tasks include, patient consultations, writing prescriptions, providing basic treatment, draining skin abscesses, wound suturing and administering plaster of Paris for fractures. In Zambia, there was a need to increase the scope of practice of nurses (Mtonga & Ndhlovu, 2001 cited in Dovlo, 2004).

Nurses are of great importance to African health systems including Cameroon. They constitute the majority of health care professionals (Clemens & Pettersson, 2008). It is a well documented fact that nurses are crucial to the delivery of health services in resource constrained settings. Over 80% of the health workforce in developing countries including Cameroon are made up of nurses, particularly in the rural areas (Stark et al. 1999). In some Caribbean Countries, such as Guyana nurses are also the main providers of health care to people in remote areas, accounting for up to 80% of health care delivery (Jones et al. 2009). Edwards & Robinson (2004) reached similar conclusions noting that Nursing in the UK accounts for 56 per cent of the National Health Service (NHS) workforce and around a quarter of the annual NHS employment budget.

Patients' relatives take care of personal issues in some developing countries (Chabal, 2009). The health care system in Cameroon is both physician and nurse-centred. In some cases it is collaborative in nature. Generally, some doctors, depending on their working relationship with a nurse will entrust patient care to the nurse with the knowledge that appropriate patient treatment will be provided. This is in contrast with patient care in countries like Saudi Arabia where the health care system is physician-led and highly authoritative (Brown and Busman 2003), where the patient perceives the medical doctor as the primary care provider whilst nurses and other health care workers are doctors assistants.

The following section will discuss the drivers of policy changes in relation diagnosing and prescribing by nurses in the UK. This is necessary prior to data collection in order to reflect previous research and assists with the development of a conceptual framework.

2.5 Drivers of diagnosing and prescribing by nurses in the UK

In the UK, government policies such as the National Service Framework, Commissioning of patient-led NHS, Liberating the talents, and The NHS Plan, (DoH, 2005; DoH, 2002; DoH, 2000) all suggest smarter working practices to maximise the use of talents of the NHS workforce. The underlying theme of these policies is an attempt by the government to maximize the use of limited resources via efficient utilization of skills mix and also the need to involve patients in all aspects of their care.

Primarily, the aims of nurses prescribing are to maximize effective utilization of resources, cost cutting, to maximise the use of nursing talents and to provide improved access of care to patients hence positive health outcome. Nurse prescribing was therefore considered a tool that could contribute to this goal (Hughes & Lockyer, 2004).

Following debate by the RCN in the 80s and subsequently the Cumberlege Report and the Crown Report, in 1992, the government passed The Prescription of Nurses Act. The Act set out conditions under which certain nurses would be able to prescribe from a limited formulary (Luker et al., 1998; Baber, 2002; Rodden, 2001). As part of the modernisation of health care, the UK government passed a legislation in 2003 making nurses with at least three years' experience who have completed an approved training programme eligible to prescribe around 180 Prescription Only medicines (POMs), as well as General Sales List and pharmacy medicines for around 80 clinical conditions from the Nurse Prescribers' Extended Formulary (NPEF). Following the success of this initiative, in May 2005 a further 30 medical conditions and 58 POMs were added to the NPEF (Latter et al. 2007). Further legislation was to follow.

Since May 2006 qualified nurses in the UK with a minimum of three years' clinical experience and the required training have been able to prescribe any licensed medicine for any medical condition, including some controlled drugs (DoH, 2006). There has been a rapid expansion of nurse prescribing as part of the primary care nurses' role (Latter and Courtenay, 2004; Baber, 2002; Embrey and Lowndes, 2007).

It is thought that nurse prescribing is an important skill of the future nurse and is an important component in the nurses' tool kit, vital to providing comprehensive care (Mullally, 2003 cited in Robotham and Frost, 2005). Nurse prescribing has an important contribution to make in improving the service to patients and clients within the primary health care context. It is important to examine the issues around nurse prescribing as this would inform policy on the planning and delivery of future education of nurse prescribers in order to maximise the

benefits of prescribing to all parties and to optimize the effective and efficient use of nurses' skills, thereby making a significant contribution to the modernisation of the health service.

Government policies have as their agenda, cost efficient ways of providing health care. The goals of nurse prescribing are to: improve accessibility of health services to patients, to maximize nursing knowledge and skills and to get more for less. The literature suggests that diagnosing and prescribing is an international phenomenon. Table 2.6.1 shows a summary of the development of nurse prescribing and precipitating factors in different countries.

Table 2.5.1 Summary of the development of nurse prescribing in different countries.

Country	Prevalence of prescribing practice
Cameroon	Started post independence 60s. Continued as a result of economic crisis & implementation of primary health care in the 80s, Intensified. Current Health care system was initiated in 1998. Currently, nurses prescribe in all health care settings but with variations.
Botswana	The need for nurses to provide front line health care commenced around 1965 following the country's independence. With shortage of doctors, nurses made clinical decisions in diagnosing and prescribing treatment for patients (Ngcongco & Stark, 1986).
South Africa	Section 37A of the Nursing Act 1978 allowed nurse prescribing after the realization that there were not enough prescribers to deal with community health needs (Gray, 1999, Meyer et al.2001).
Malawi	Late 60's due to scarcity of doctors, nurses were the only prescribers and used unwritten protocols for administration of drugs (Jones,1999).
Uganda	Nurse prescribing is an essential practice as Drs are scarce in rural areas (Ministry of Health Uganda, 2003). Morphine use in palliative care.
Sierra Leone	Drs were found to be more rational in prescribing antibiotics than nurses/dispensers (Palmer & Lisk, 1997).
Thailand	1969, Auxiliary midwives were trained to prescribe oral contraceptives. Its success led to the recommendation that the health system could make better use of nurses and that Drs were not required for all clinical interventions (Rosenfield et al. 1971; Rosenfield & Limcharoen, 1972).

USA	Nurse prescribing started in the 60s due to its system of well developed educational system for nurses. Nurse prescribing came as a result of development of the role of ANP (nurses with advanced knowledge and skills) Advanced Practice Nurses (APNs) have been involved in diagnosing and prescribing for much longer than other developed economies (Plonczynski et al.2003; Pearson, 2009).
Australia	Population living in remote areas necessitated nurse prescribing as there were shortage of Drs in rural areas.
New Zealand	In New Zealand, any registered health professional can enter into "dependent" prescribing arrangements with authorized prescribers under "standing orders" or "protocols" (Shaw, 2002). Legislation allowing "independent" nurse prescribing was passed in 2005 (Moller & Begg, 2005).
Canada	Primarily started in rural areas where there were shortages of Drs.
Sweden	Sweden has been practicing nurse prescribing since 1994. Out of necessity due to shortage of Drs. The aim was to enable patients living in remote areas to access care easily and to reduce workload for Drs. (David and Brown, 1995).
United Kingdom	RCN started debate in the 80's, Cumberledge Report, Crown Report. Pilot study in 1992. Prescription by nurses Act. District Nurses & Health Visitors. Government passed a legislation making all Registered nurses eligible to prescribe following in 2003, 2005, and 2006.

Documentary evidence shows that different countries allow nurses to prescribe from a limited range or broad range of drugs. Wide variations across demonstration sites with regards to the number of items prescribed by nurses were identified by Luker et al. (1998).

The following section will examine the patterns of diagnosing and prescribing by nurses in developing and developed economies. It is necessary to understand what other countries are doing in comparison with the Cameroon context and most importantly how resources can be maximized given the severe scarcity of resources in Cameroon.

The constitution of the World Health Organization which was set up in 1946 declares that the WHO's objective is the attainment by all peoples of the highest possible level of health, "a level of health that would permit people to lead a socially and economically productive life" (WHO, 1977 cited Baly, 1995. p360). Cost savings and efficient use of resources are a

priority in achieving good health particularly in Cameroon with its limited resources and skills shortages.

2.6 International variations in patterns of diagnosing and prescribing by nurses.

In contrast with the UK, nurse prescribing varies between the 50 States, in the USA in relation to requirements, standards and practices (Buchan & Calman, 2004). Pulcini (2002) found that in the USA, although subtle differences in prescribing exist between nurses practicing in the rural area and those in the urban areas, there is some consistency in prescribing. The most common categories of medicines prescribed by nurses are analgesics and antibiotics.

In the UK, variations in prescribing patterns have been identified between community nurses, with district nurses prescribing more often than Health Visitors (Luker et al. 1998a). It was argued that this difference could be explained by the differences in the nature of jobs both professions do. Also the limited range of drugs available in the Nurse Prescribing Formulary favoured Community nurses more than Health Visitors.

Since 1994, all district nurses in Sweden have been able to prescribe for over 60 conditions from a list of over 200 medicines (Buchan & Calman, 2004). On the other hand, prescribing in New Zealand is part of advanced nursing practice. Nurses in New Zealand working in aged care and child/family care are currently able only to prescribe from a schedule of approved medicines (Manchester, 2002 cited in Courtenay et al. 2007).

In Canada, and some parts of Australia, nurse prescribing is primarily practiced in primary health care settings in the rural areas where there are shortages of doctors. Nurse practitioners working in such settings have limited prescribing rights (Courtenay et al. 2007). In rural areas of Australia nurses working as autonomous practitioners have the right to administer and supply certain medicines without the consent of a medical doctor. Still in some parts of Australia, nurse practitioners are able to prescribe from a limited formulary (McCann & Baker, 2002).

Researchers in the UK, USA, Sweden, Australia, Canada, South Africa, Botswana have examined a number of areas concerning nurse prescribing such as legislation, patterns of prescribing, education and training, safety issues, patient satisfaction, barriers and facilitating factors. Methods and samples of research participants in these studies evaluating nurse prescribing are varied. (Shum et al., 2000; While and Biggs, 2004; Latter and Courtenay, 2004; Bradley et al., 2005; Bradley and Nolan, 2007; Latter et al., 2007; Courtenay et al. 2007).

The empowerment of nurses to prescribe medicines has been a core prerequisite for improving clinical outcomes along with the patient / consumer experience (Miles et al. 2006). For this reasons, countries such as UK, Sweden, USA, New Zealand, Australia and Canada have developed regulatory and legislative frameworks allowing nurses to prescribe.

Shumbusho et al. (2009) noted that even though there is no current legislation permitting nurses to diagnose and treat HIV in Rwanda, Shumbusho et al. with the permission of the Rwandan government, conducted a pilot study and found that nurses in Rwanda, can effectively and safely prescribe Anti-Retrovirals (ART) with appropriate training, mentoring and support.

Broadly speaking, there are two main types of nurse prescribers: the dependent (supplementary) prescriber and the independent nurse prescriber. Supplementary prescribing is defined as a voluntary agreement between the doctor, nurse and client to implement an agreed patient-specific clinical management plan, patient group directives. The patient is initially assessed by the doctor, who remains the independent prescriber. The doctor, nurse and patient develop a Clinical Management Plan (CMP). The nurse is able to prescribe drugs within the parameters of the CMP. This may include altering the dosage of medication in response to the patient's clinical needs. Nurse supplementary prescribing is most suited for patients with long-term conditions (McHale, 2003; Gallagher et al., 2006; Courtenay and Carey, 2009). Nurses prescribe in partnership with a doctor. For instance in New Zealand and Australia, nurses prescribe under the directives of a physician (Griffith, 2006; Courtenay & Berry, 2007; Allen & Fabri, 2005; Gunn, (1998) cited in Davis and Drennan, 2007). In contrast, nurses in the UK have almost the same prescribing rights as doctors.

Independent nurse prescribing on the other hand is where the nurse carries out an initial assessment of the patient which would usually include a diagnosis. The nurses can assess, diagnose and prescribe independently any licensed drugs including some controlled drugs (CDs) provided that it is within their area of competence (Baird, 2001; Courtenay & Carey, 2009).

Nurse prescribing is a term that has been used to describe more than one type of practice in different countries (International Council of Nurses, 2004). The different types of prescribing follow the different types of needs of healthcare services which vary greatly between countries and are largely dependent on the disease burden, income status, and governing infrastructure of the individual countries. Expert opinion from Miles et al. (2006), although

not empirically tested, suggests that prescribing patterns varies between countries and clinical settings.

Bradley et al. (2005) carried out a quantitative study using a survey method with open and closed questions on a sample of 91 nurses who were enrolled on nurse prescribing course. The findings were reported as follows: 19% would prescribe independently. 45% would prescribe on a supplementary capacity. 36% planned to do both. 22% felt that they were already prescribing "by proxy" in their current role and that training will formalize their role. Two skills needed most; 87% stated interpersonal skills 43% cited specialist knowledge and 31% cited assessment skills. The study had one of the largest samples on supplementary and extended nurse prescribing. However, many of the nurses studied were employed by one local organization. This particular organisation has been very supportive of nurse prescribing and therefore the nurses experiences may not be generalized to other nurses in different organizations. Another limitation of this study was that nurses were asked to anticipate the reactions of their colleagues to their future prescribing roles. The responses were anticipatory and therefore not a true representation of how their colleagues behaved. Table 2.7.1 shows the different typologies of prescribing employed by nurses.

Table 2.6.1 Models for nurse involvement in drug-prescribing activities

Prescribing model	**Practice Description**
Initial, independent, autonomous, or substitute prescribing	The practitioner is accountable for assessing the client; making a differential diagnosis; determining the appropriate medication, treatment or appliance required to manage the client; and issuing the appropriate prescription.
Dependent, collaborative, semi-autonomous, complementary, or, supplementary prescribing.	The practitioner may prescribe as a dependent prescriber in collaboration with an independent prescriber, usually a medical practitioner, but without the need for direct supervision by the independent prescriber. The dependent prescriber is not usually responsible for the assessment and diagnosis of the client. This method is useful for issuing ongoing prescriptions after the initial prescription has been issued by the independent prescriber.
Group protocols or patient- group directives	The practitioner may supply and/or administer a named medicine in an identified clinical situation directly to groups of patients who may not be individually identified before presentation for treatment. It is not a form of prescribing.
Time and Dose prescribing	The practitioner works within patient-specific protocols. Nurses are allowed to alter the time and dosage of particular medicines.

	Again, this is not strictly defined as prescribing.

Source: International Council of Nurses (ICN) (2004).

Summary of key points

Diagnosing and prescribing is an international phenomenon. The range of diseases which nurses are allowed to diagnose and drugs allowed to be prescribed varies from one country to another and is depended on varying factors. There are two main types of prescribing by nurses, independent and dependent prescribing.

The following section refers to the literature related to how nurses diagnose and prescribe (Box 4 in the theoretical framework). This section is important as it adds to the rationale for including patients as key stakeholders and to understand outcomes of diagnosing and prescribing by nurses.

2.7 Nurse prescribing process.

Diagnosing and prescribing forms a core component of the doctor-patient and increasingly, nurse-patient encounter. It is fraught with risks and therefore there is an impetus for ongoing evaluation of how the process is carried out in order to ensure that standards and patient safety is met by all key stakeholders involved in the process.

Prescribing is a complex and challenging clinical task. Safe diagnosing and prescribing requires the clinician to have appropriate diagnostic skills, knowledge of pharmacology and therapeutics, medicines, communication skills, an understanding of risks/complications and most importantly, clinical experience.

Mwenesi et al. (1995) states that human behaviour determines the success of any health care delivery programme. Similarly, Andaleeb (2001) noted that patients feel discouraged to consult if they felt they had been treated unsympathetically during their previous consultation experience with a health care professional. Professional nursing roles are changing to meet the varied and increasing patient demands for care. Nurses, particularly those working in primary care have a pivotal role in shaping the care provided to patients given their knowledge and experience of patients' needs.

Gilson et al.'s (1994) study in Tanzania, concluded that satisfaction is an important element of quality of care often determining patient willingness to comply with treatment whilst influencing the effectiveness of care. According to Latter et al. (2007), nurses demonstrated an understanding of patient's expectations. Nurses listened to patient's health beliefs as well

as explain the patient's illness and rationale for treatment. The authors concluded that these practices by nurses form a fundamental component of concordance. Patient involvement has been found to promote concordance in nurse prescribing (Cushing & Metcalfe, 2007; Latter et al. 2007; Vermeire et al., 2001).

Rycroft-Malone et al. (2001) found that patients were compliant, complacent, trusting not wanting to ask questions. Ong et al. (1995) cited in Rycroft-Malone (2001) also reported similar issues. Although the study focused on doctor-patient interactions, there are some lessons which can be transferrable to the nurse-patient relationship.

Globally, nurses are the primary care givers, especially in relation to health promotion and disease prevention. Nurses in the periphery work with the most vulnerable patients especially those living in rural areas. The need for an effective process of diagnosing and prescribing by nurses cannot be over-emphasized if quality patient care is to be achieved.

In Cameroon, the WHO's *"Guide to Good Prescribing"* is used as a framework for the design of prescribing training for undergraduate medical students. The Guide describes six steps in rational pharmacotherapy. Also, the United Kingdom's National Prescribing Centre, (1999) produced a series of teaching and learning guides to aid the implementation of nurse prescribing termed "general principles of good prescribing". It outlines Seven Principles of Good Prescribing following a step by step approach. This is about the actual process of diagnosing and prescribing, practice issues. How diagnosing and prescribing should be conducted and regulated. This is very prescriptive and more of a criterion-based model used by nurses in the UK.

Similarly, Byrne and Long (1976 cited in Elwyn et al. 1999) identified six phases of the consultation process:

1) Establishing a relationship with the client;
2) Discovering a reason for the client's visit,
3) Conducting a verbal or physical examination or both,
4) Consideration of the condition,
5) Considering need for further treatment or further investigations,
6) Ending the consultation with a final stage, when the client reveals the real reason of the consultation.

Other nurse prescribing competency framework which were reviewed include: Standards of proficiency for nurse prescribers, Prescribing Competency framework for nurse prescribers, Shared decision-making: Competencies cited in Latter et al. (2008) (See Appendix 4, 5 & 6).

The NMC (2006) cited in Latter et al. (2008) states the standards of proficiency underpinning prescribing practices to include: taking patient history, conducting physical /clinical examination, deciding on appropriate cause of treatment, whether to prescribe or not and advising the patient on the effects of any medication prescribed. The importance of teaching and monitoring correct prescription techniques in resources constrained economies where multiple drug therapy is rampant cannot be over emphasized.

Isely (1980) conducted a time motion study in Cameroon to collect data about the head nurses' activities prior to a training programme in order to adjust the training in accordance with the amount of time nurses' already spend on health education-related activities in three health care centres. Three nurses were observed in the following categories, taking a history, examining the patient, prescribing treatment, explaining the illness to the patient and recording the visit. It was found that nurses spend very little time examining the patient or in explaining the cause, treatment of illness to the patient. These activities are central to diagnosing and prescribing. It offers an opportunity to integrate health promotion counselling to patients. Although the sample size was small to make any sweeping generalizations (3 nurses were observed over a period of 3days) the findings share similarities with those of others. Hadley & Roques (2006) in a study of nurses in Bangladesh concluded that nurses do not nurse. Also, it was found that disrespect of users of health service & corrupt practices leads to low use of public health facilities (Whitehead et al. 2001). As noted by Calnan, (1998) a nurse-patient consultation is a powerful time to discuss issues of changing behaviour. Labhardt et al. (2009) in a cross sectional survey in Cameroon examines the relationship between provider-patient interaction and several patient outcomes. They identified a need for health providers to improve patients' knowledge of their health condition and support them in beneficial health behaviour. An approach that marries an assessment of family, social, psychological, somatic factors and an agreement with the patient upon treatment strategy, (curative, preventative, health promotional care) has been found to be successful (Unger, J-P et al. 2003).

A study which explored health–provider-client relations within a gender-sensitive context reported poor provider-client relations as a component of quality of care. The effect of literacy on accessibility of health care user was noted in this study (Fonn et al. 2001). The nurses reported that if they perceived the client to be formally educated, it was likely that they would

give her the necessary information about her problem and vice versa. Health workers prefer those with some knowledge, reporting that such patients/carers understand things better. Nurses report annoyance when women come at a late point to consult with their illness, such patients are perceived as negligent and incapable of dealing with their problems and the nurse are scornful of them. Similarly, the importance of being literate has been noted as an important factor affecting health of the family and in determining child survival in Pakinstan (Agha, 2000).

Summary of key points

So far, the discussion has centred on how political, socio-economic factors influence diagnosing and prescribing by nurses. The organization of health care in Cameroon is such that the government is the main provider of health care and a majority of health care is paid out of pocket by individuals. As evident in the literature, nurses particularly those in developing countries are the main providers of health care mainly as a result of scarcity of doctors and extremely limited economic resources. Consequently, nurses are therefore substituting for doctors. The nurse training equips them for their role in diagnosing and prescribing. However, there are legal restrictions with regards to which health conditions and drugs nurses can diagnose and prescribe.

The different typologies of nurse prescribing have been found to include, independent, dependent, group protocols and time and dose prescribing. The prescribing process involves several steps requiring effective communication for establishing therapeutic relationships and for eliciting patient history, knowledge of pharmacology and drug interaction.

In this section, the facilitating and barrier factors of diagnosing and prescribing by nurses, professional conflict between nurses and doctors, benefits and disadvantages of diagnosing and prescribing by nurses will be discussed. This section is relevant as it examines how different stakeholders influence diagnosing and prescribing by nurses.

2.8 How stakeholders impact on nurses' role in diagnosing and prescribing.

2.8.1FACILITATING FACTORS.

This section addresses the literature link to Box 7 (Nurses) in the theoretical framework relating to nurses.

2.8.1.1 Training.

Irrational prescribing practices are prevalent in both developed and developing economies with far reaching emotional, physical and economic consequences (Hogerzeil, 1995, cited in Meyer et al. 2001; Greenwood, 1998). The problem of irrational prescribing can be counteracted by adequate training. In South Africa Meyer et al. (2001) carried out a randomized controlled trial which involved 457 nurse prescribers over a six month period. The aim of the study was to investigate the impact of training on prescribing practices on two clinical conditions. They found that prescribing practices for the two clinical conditions were significantly improved by the training. The study also found that prescribers were able to transfer their newly acquired knowledge and skills to other clinical conditions. Nurses who completed a prescribing workshop had significantly improved prescribing practices when controlled with nurses from controlled sites who did not have the same training.

However, Hogerzeil (1993) argue that actual behaviour is preferred as a measurement since adequate knowledge does not necessarily translate into rational prescribing behaviour, meaning that theoretical abstractions do not equate to reality or a lived experience. It is further argued that post test should be carried out on a continuous basis to monitor the sustainability of acquired knowledge and skills. It was found that prescribers in developing countries, notably in primary health care settings are often not formally trained in rational prescribing. Meyer's study could be criticized for using a limited sample from a particular region and therefore reducing the generalizability of the findings. Other facilitating factors include patient's confidence in the nurse, nurses' knowledge and continuing professional development (Brooks et al., 2001; Kinley et al., 2004; Otway, 2002; Latter & Courtenay 2004; Latter et al., 2005; Courtenay et al., 2007).

In-service training interventions to improve nurses' knowledge and skills so as to reduce inappropriate dispensing, injections and polypharmacy have proved popular among public and private health care providers. Perez-Cuevas et al. (1996) reported that an intervention in Mexico using interactional educational workshops for practitioners, including feedback on prescribing behaviour and the use of peer review committees, produced improvements in prescribing behaviour sustained over 18 months among 27% of the practitioners with no improvement in 40%. However, the practitioners were state or para-statal employees and the evaluation of impact was on their prescribing practices in their public rather than in their private work. In contrast, educational programmes in Egypt by Langsten & Hill (1995) failed to change negative practices in the prescription of anti-diarrhoeal agents although there was some improvement in participants' public sector prescribing.

It is a widely accepted view within the human resource management literature that training and development are major factors in decisions regarding peoples' careers. Bartlett, (2001) used a social exchange theory as a framework for investigating the relationship between employee attitudes towards training and feelings of organizational commitment among 337 registered nurses from five hospitals. The author found a positive relationship between nurses' perceived access to training, motivation to learn, social support for training and organizational commitment. Similarly, using data from German socio-economic panel from between 1984-2002, Georgellis and Lange (2007) studied full-time employed individuals with focus on 1989, 1993 and 2000 interview waves to assess the impact of further training and job satisfaction in the western regions of Germany. The authors found a positive relationship between training and job satisfaction.

Delaney and Huselid (1996) used data from the National Organizations Survey 590 for-profit and non-profit firms were surveyed. They found positive associations between human resource practices such as staff recruitment, training and perceptions of organizational performance. The findings compare with those of others (Huselid, 1995; Hayes et al. 2000; George & Jones, 2002).

The importance of aligning HR policies and organizational objectives to promote performance was reported by Becker and Gerhart, (1996). Tui & Wu (2005) add to the debate by stating that given increasing environmental factors such as globalization, the traditional loyalty and sense of job security between employer and employee is slowly being replaced with a contract-like economic exchange. The authors concluded that training and development should be targeted not only to improve skills to perform current job but to prepare employees for future jobs. This reciprocity between employer and employee has been shown to have a positive effect on job performance.

Bradley et al. (2005) note that CPD is a powerful motivator for nurses who enrolled on a nurse prescribing course. Sailes, (2009) states that Continuing Professional Development (CPD) is a method of constantly improving one's knowledge and ability in a chosen professional sphere and as such it is vital to both career progression and professional excellence. Continuing Professional development equips nurses with the necessary knowledge and skills to respond to the changing health care needs of patients.

Bradley et al. (2007) carried out interviews with nurses who had prescriptive authority. They found that education and experience improved nurses' competence in prescribing. Similarly, Latter et al. (2007) used a survey method to examine continuous professional and educational

needs of nurses. 84% of respondents identified a need to increase their knowledge on pharmacology, 22.5% reported a need for principles of prescribing and 23.5% highlighted polypharmacy as an area they would like to improve their knowledge on.

Similar findings in Cameroon were reported by Tembon, (1996). Writing about the Gemano-Cameroon Primary Health care programme, he postulates that health workers employed by this organization had better clinical knowledge than trained nurses in health centres. His explanation for such observation was that health workers in these primary health care posts had regular, annual in-service training. On the other hand, there were nurses in other parts of the Cameroon health care system who had worked for well over 10years without a single in-service training course.

Similarly, Leonard, & Masatu (2005) carried out a cross-sectional survey, direct observations and vignettes on 117 nurses and clinicians to evaluate service quality in rural and urban Tanzania between Dec, 2001 and May, 2002. They reported that clinicians with more training provide more inputs and are more likely to give a correct diagnosis than those with less training. However, the study did not show that clinicians who provided more inputs on the vignette were more likely to give the correct diagnosis in actual practice. It can be argued that quality from the perspective of the patient is measured in terms of what the clinician does and not what the clinician will do. Although vignettes serve as a useful research evaluation tool enabling the researcher to observe clinicians behaviour under carefully controlled circumstance, its limitation include the fact that it may not represent the actual conditions faced by the clinicians. From the above findings it can be argued that CPD is a facilitating factor for diagnosing and prescribing.

2.8.1.2 Peer support.

Using 12 focus groups and a convenient sample of 146 district and health visitor students on a nurse prescribing course Humphries and Green, (2000) identified facilitating factors of nurse prescribing as: peer support, management support, nurses keeping updated, use of protocols, clinical supervision amongst others. Although the study sample consisted of student nurses whose views might change with their prescribing experiences, Otway (2002) confirmed some of the facilitating factors highlighted in Humphries and Green's study. Otway (2002) interviewed 12 District Nurses and Health Visitors (DNs/ HVs) prescribers with approximately three years of prescribing experience and also used a questionnaire to survey 241 nurse prescribers. It was found that peer support and team work were valued and that they constitute a major source of support for nurses in their prescriptive role. They increase nurses'

confidence and often served as a form of informal clinical supervision. It is further suggested that peer support compensates for the lack of clinical supervision and mentorship. By contrast, working in isolation was found to negatively impact/influence the confidence of nurses. Similar conclusions were drawn by Nolan et al. (2001).

Mackay (2007) on the other hand found lack of support from other nurses in a study conducted in New Zealand. Mackay concluded that collaborative alliances between educational institutions will promote learning and that access to on–going education and postgraduate education is necessary.

2.8.1.3 Gender

As noted by Mortimer and McGann, (2005), nursing is a heavily feminized profession. This, coupled with the fact that Cameroon is a patriarchal society suggests that it is worth investigating what others have written about how the gender of a nurse affects care provision and how it is perceived by patients. Qualities attributed to femaleness such as caring, gentleness, nurturing, warmth are attributes which are valued by patients. Graffy (1990) conducted a study using a questionnaire survey on 639 patients to investigate the effect of patient choice on the pattern of illnesses presented in one practice. The response rate for women was slightly higher 72% as compared to 67% for men. It was found that female participants preferred to consult with a female doctor for conditions likely to require vaginal examinations, sex related problems or preventative conditions. However, it was also noted that 29% of the women who chose a female doctor stated that they had done so because of her sex. It is worth bearing in mind that in the study practice, there were two male GPs and one female GP, hence could partly account for the higher numbers of patients preference for a female doctor. Perhaps a practice with an equal number of men and female doctors would have an equal distribution of workload.

Similarly, Brooks & Philips (1996) employed both quantitative and qualitative methods in studying the views of women GPs and practice nurses within primary health care settings. The purpose was to understand the role played by women primary health care workers in the construction and provision of primary health care services for women. The findings compares with those of Graffy (1990) suggesting that for "specific health issues" the gender of the healthcare worker is an important factor. Additional factors include personal approach of the health care provider. Following on previous studies, Brooks (1998) found that women GP were in a contradictory position. They were expected by female patients to be sensitive and caring by virtue of their gender specific skills, whilst at the same time working in an

environment with dominant values bases on clinical objectivity and professional distance. These findings from the literature are significant particularly in the case of Cameroon where gender division of labour is encouraged at an early age.

2.8.2 Barriers to diagnosing and prescribing.

Nurses are increasingly seen as key agents in health care delivery therefore it is important to know why they may not be performing well, and why they may not be prescribing when they can. Courtenay et al. (2007) highlighted barriers to nurse prescribing. A total of 68% of nurses stated they had experienced problems which have hindered their ability to prescribe. 44% of respondents had used supplementary prescribing. The majority of nurses cited restrictions on local arrangements (budget, waiting for prescription pads), nurses inability to generate prescriptions using the computer, 15% reported problems with lack of clinical expertise, objections by medical staff or pharmacists. Limited choice of medicine, inter-professional relationships, restrictions of local arrangements are found to be other barriers to nurses prescribing.

Face and content validity of the questionnaire was achieved through the use of a piloted questionnaire on 20 nurse independent prescribers (NIPs) and nurse supplementary prescribers (NSPs). Courtenay and Berry (2007) found that reduced contact with doctors, threat to doctors role, blurring of professional boundaries and concerns about limited nurses' knowledge and skills acted as barriers of nurse prescribing.

2.8.2.1 Nurses lack of confidence

An evaluation of nurse prescribing in the UK shows that Health Visitors and District nurses prescribe infrequently (Williams, 2000; Luker & Mc,Hugh, 2002; Larsen, 2004; Baird, 2001; Stenner & Courtenay, 2007; Latter et al., 2005; Courtenay et al., 2007; Mackay, 2007). While and Biggs, (2004) surveyed 90 health visitors and district nurse prescribers across three health care settings and found that a majority of the respondents prescribed less than 3 times a week. Similarly, Hall et al. (2006) reported that many HVs/ DNs were prescribing less than once per week. They identified several factors as barriers to nurse prescribing. Respondents stated they had to wait several months post qualification to receive their prescription pads and therefore they could not prescribe within that time. Lack of patients' medical records was identified as another barrier as well as administrative arrangements in writing a prescription and issuing a repeat prescription. As a result, nurses resorted to referring patients to the GP for prescription writing.

Similarly, Davis and Drennan (2007) found that that some nurses are not exercising their prescribing authority. Some of the reasons were found to be that some nurses do not feel confident to prescribe and prefer to revert to the old method of asking the GP to sign prescriptions. Some cited lack of cooperation from doctors, lack of resources such as prescription sheets, fear of litigation in case something went wrong. Some nurses are put off by cumbersome administrative procedures which make nurse prescribing time consuming.

Some nurses still prefer to refer the patient to the GP for a prescription which the nurses are able to handle. Hall et al. (2003) cautions that that although the discomfort would diminish with the more experience that the nurses gains from prescribing, there was nonetheless the danger that infrequent prescribers will not have the opportunity to gain enough experience to overcome their discomfort and consequently will remain infrequent prescribers. In practice, prescribing medication requires experience and knowledge (Haidar, 2007). Pearce (2003) posits that a better use of experienced nurses with the right knowledge and skills is essential for the success of nurse prescribing. However, McManus et al. 1998:346 cited in Bradshaw, 2000) argued that evidence in their study of medical training showed that experience without training increased confidence but not competence.

2.8.2.2 Lack of role clarity.

Bradley et al. (2005) conclude that nurse prescribing can play an important part in patient-focused care. Misconceptions about the role should be addressed. Systems to support nurse prescribing particularly organizational support and clear strategy for CPD need to be put in place. There is a call for nurse prescribing skills to add to their therapeutic skills rather than replacing them. Lack of role clarity was also identified by Mackay (2007). With increasing expansion of the role of the nurse, it is sometimes unclear who does what amongst nurses, other professionals and patients (Williams, 2000; Collins et al., 2000).

In contrast, Doherty (2008) in a UK study found a clear division of labour which was dependent on seniority or grade of the nurse with regards to the nurses' role. Similarly, Berry et al. (2008) on the other hand, propound that nurse prescribing assists with clarification of professional roles thereby reducing the problem of role conflict. Also, it improves team work and professional relationships, make use of nursing skills, provide patients with continuity of care and faster access to medicines. By so doing, teamwork is promoted whilst acknowledging professional limitations. This leads to improvements in communication and teamwork between members and consequently ensuring a healthy working environment for all concerned.

2.8.2.3 Poor remuneration

Eriksen et al. (2007) studied the quality of malaria case management of children below the age of five at health facilities in rural Tanzania. A total of 117 consultations of sick children by 12 health workers in 8 health care facilities were carried out. Observations and exit interviews were performed with mothers/guardians of the children. Observation criteria included; history taking, counselling and prescription. Quality of care was measured using indicators adopted from the integrated management of childhood illnesses (IMCI) multi-country evaluation. Also, a questionnaire from a previous study Nsimba et al. (2002) was used when developing the study checklist, hence adding validity to the findings. The findings indicated inadequate clinical assessments. However, 89% of all febrile patients were prescribed anti-malarial treatment in agreement with the national malaria treatment policy and the IMCI. In addition, poor remuneration and introduction of new guidelines without follow up was reported by participants to possibly affect their performance.

A limitation of this study is that the use of three different observers in different health care settings might have resulted in observation bias, yielding inconsistent results. Small sample size may not be representative of the country. However, the fact that poor behaviour was evident in the presence of observers adds more credibility to the studies and therefore findings cannot be linked with having a Hawthorne effect. In addition, lack of resources resulting in poor motivation was noted (Van der Geest & Sarkodie, 1998; Hudon, 2003; Brinkerhoff, 2004).

Also, Israr et al. (2000) carried out a study in Cameroon and concluded that doctors and nurses discouraged patients from buying drugs in pharmacies whilst directly selling their own drugs to patients. The authors added that these drugs would be cheap, of low quality and from unreliable sources.

The motivational potential for pay has been documented. Rynes et al. (2004) reported empirical evidence which is consistent with other writers that money is an important motivator for most people. People are more productive when they feel they get a better pay for more work. Similarly, O'Reilly & Pfeiffer, (2000) cited in Tsui & Wu,(2005) noted that the philosophy / mission statement of Southwest Airlines promises that employees will be shown respect, concern and a caring attitude which is expected of them to provide to clients. This level of reciprocity is said to improve performance.

2.8.2.4 Grade/gender & staff attitude

Carr-Hill et al. (2006) analyzed the relationship between skill mix of a group of nurses and the quality of care provided. It was concluded that nurses with a higher grade provided a higher quality of nursing care than nurses with lower grades.

Also, Dudwick (1995) cited in Hentschel (1999) found that in some Armenian communities, some people incorrectly perceived a male drug-store keeper as having a higher level of diagnostic skill than a female clinic nurse. Also, Norton and Kessel 1996 cited in Hentschel (1999) reported that in 8 out of 11 African beneficiary assessments, hurried, unsympathetic and arrogant treatment by staff is significant determinant of choice of health care provider. Similarly, Gomart (1996) in Hentschel (1999) also noted, patients feeling powerless and not able to hold health staff accountable was also noted. The findings point to some concerns that need further investigating.

As evident in the literature review (See Appendix 1), the multiplicity of health care provider necessitates an exploration of factors affecting treatment seeking behaviour in order to optimize nurse prescribing. Mwenesi et al. (1995) used qualitative and quantitative methods on 883 mothers in Kenya to investigate factors influencing treatment-seeking behaviour by mothers for children between 0-9 yrs diagnosed with malaria. Findings from questionnaire and pre-and post consultation interviews showed that 55% of mothers who received anti-malaria drugs did not follow instructions on how to use the drugs. None of them asked for clarification for fear of potential aggressive response from health workers. This is evidence that the attitudes of health staff can have an impact on the effectiveness of treatment. A study by Gilson et al. (2001) in Tanzania stated perceived barriers to effective/good quality health care provision by nurses to include structural and interpersonal failings. Satisfaction is an important element of quality of care often determining patient willingness to comply with treatment, thus influencing the effectiveness of care. The professional approach to care provision is paramount to the clinical effectiveness outcome.

This section addresses the literature in relation to Box 5 (Nursing managers) in the theoretical framework.

2.8.2.5 Lack of resources / support from managers.

Organizational infrastructure and constraints, mounting administrative workload and ongoing lack of medical supervision were found to be important constraints to the effectiveness of nurse prescribing (Latter et al., 2004; Bradley & Nolan, 2007; Davis & Drennan, 2007). Baird

(2001) reported similar findings of doctor's concerns about nurses not having the necessary skills for diagnosing and prescribing. Poor equipment and scarcity of resources has been commented on (Awasum, 1992; Delancey & Delancey, 2000; Bowers et al., 2000; Max Martin, 2009).

These findings point to a lack of alignment of Human Resource (HR) policies and procedures hence, inefficient use of resources. This leaves nurses in a vulnerable position. Managerial and leadership support is essential in terms of identifying nurses' personal and professional development needs and provision of required solutions.

2.8.2.6 Lack of training/ lack of pharmacological knowledge.

Inadequate training of nurses for their role in diagnosing and prescribing has been identified by several authors (Stark et al., 1999; Miles et al., 2006; Kyriacos et al., 2005; Barrett et al., 2009). Sodha (2002) found that community nurses in west London displayed poor medication knowledge in dealing with case scenarios. This could have been because nurse prescribing was a relatively new concept back then meaning that the nurses lacked experience of prescribing. Also, it could have been that the training did not adequately prepare the nurses for their prescriptive role. Miles et al. (2006) comment on the need for training, rights and role clarification at all levels with regards to nurse prescribing.

Ives et al. (1996) using a questionnaire survey, examined self-rated pharmacology knowledge of (n=363) nurses. Participants were asked to rate their knowledge of pharmacology in five areas; overall knowledge of pharmacology, knowledge of drug administration, therapeutics and side effects, client education and legal responsibilities regarding drug administration. The average test score was 56% (range16-92). However, participants' reported fairly accurate knowledge of pharmacology. The authors found a correlation between test scores and number of years of clinical practice. Nurses with greater longevity in service achieved a higher test score and vice versa. The nurses overestimated their knowledge of drug administration and legal knowledge of medication use. Knowledge of adverse side effects of drugs was poor. A study by Courtenay (1991) employing a survey method of data collection, revealed that only one in every ten of the sample (n=87 and n-29, respectively) of both lecturers and students felt that their knowledge base of microbiology and pharmacology were adequate.

Latter et al. (2000) used a concept analysis framework and drew similar conclusions. The authors starting off with a literature review and focus groups to establish an evidence-base in the first phase of the concept analysis process. This was followed by a case study designed to examine in-depth, educational preparation in medication for a health education role by nurses.

Qualitative methods which involved key personnel were also used. This study used multiple methods of data collection and utilized multiple perspectives to capture different stakeholders' perspectives in evaluating educational preparation. As noted by (Easterby-Smith et al. 2002) the use of multiple methods of data collection in investigating a phenomenon is more effective than using a single method. The findings of Latter et al.'s study are consistent with those of Courtenay, 1991 and White, (1994) which highlight dissatisfaction with the perceived inadequate amount of taught pharmacological content in the pre-registration nursing curriculum. Also there was a lack of opportunity for integrating patient education and communication skills into the taught component of pharmacology. There were concerns that a recent emphasis on behavioural and social sciences was being pursued at the expense of biology and therefore a call to address the imbalance and ensure a more effective preparation of student nurses for their clinical roles.

Possible explanations of the limited knowledge of nurses and student nurse of pharmacology have been suggested to include insufficient amount of hours devoted to teaching the subject, the inherent difficulties of teaching pharmacology, divided staff opinion about who is best suited (pharmacists, nurses, biomedical scientists) to teach pharmacology to pre-registration nursing students, lack of clarity in the curriculum regarding integration of knowledge and skills (Latter et al. 2000; Bullock and Manias, 2002).

Grandell-Niemi et al. (2005) used a survey method to investigate student nurses and nursing skills in pharmacology. A pilot study of student nurses (n=59) and nurses (n=69) was carried out. Pharmacological deficiencies were found among nurses and nursing students. The pilot study ensured content validity. However, the test needed some refinements as evident in two areas where some respondents had problems understanding the questions. Other criticisms include the fact that the nurses completed the test without supervision and the response rate was low. Some nurses stated they were uncomfortable to reveal their lack of knowledge to themselves (denial/ need to promote a culture of learning, not self blame) as well as to others. Despite its' limitations, the test revealed findings similar to those by other researchers. Grandell-Niemi (2005) also found that nurses with 20 years experience had a higher test score of the MSC test echoing other researchers, Ives, (1996) Manias and Bullock (2002) but differs from Sodha et al. (2002) who suggested that the level of nurses' actual skills were higher for those nurses who had completed secondary and higher education.

Manias and Bullock (2002) conducted a survey study in Australia and reported knowledge deficits with relation to understanding medication family groups. All clinical nurses had some deficits in their knowledge of pharmacology. There were variations between numbers of

hours taught, the time and year in which it is taught across states. While it was accepted that it is better for students to study pharmacology prior to clinical placements, 61% of students agreed with the proposal and confirmed that it was the case in their universities. The study had a poor response rate 34%. 78 questionnaires were mailed to 13 university campuses and only 23 returned and 12 universities participated.

However, a recent 3-phase National study, using a survey, case studies and multi-stakeholder workshops by Latter el al. (2010), found that current educational preparation of nurses and pharmacist for their prescriptive role was satisfactory and fit-for-purpose. However, the need for on-going training on assessment and diagnostic skills were recommended.

2.8.2.7 Risks of diagnosing and prescribing.

Diagnosing and prescribing is essential to the prevention and treatment of disease (Petti et al., 2006; Goldman & Bennett, 2000). Petti et al. (2006) note that clinicians and the general public alike frequently fail to note that diagnosis is essential to the prevention and treatment of disease. Quality laboratory testing is crucial to confirm diagnoses, conduct accurate infectious disease surveillance, and direct public health care policy.

Iatrogenic illnesses caused by medications and inappropriate pharmacologic management of diseases have been associated with increase morbidity and mortality. Several authors have highlighted the risks of diagnosing and prescribing to patients. Howell-Jones et al. (2006), conclude that antibiotic resistance is a major world health problem. In contrast, Latter et al. (2010) found that a majority of trust have risk management and clinical governance strategies for non-medical prescribers.

The following section refers to the literature in relation to Box 5 (Doctors) in the theoretical framework

2.8.2.8 Professional conflict between doctors and nurses as a result of the changing role of the nurse/ lack of GP support.

Research suggests that interdisciplinary teamwork and collaboration are central to the role of nurses with prescriptive authority (Stenner & Courtenay, 2008). As key stakeholders doctors have a significant role in influencing nurse prescribing. Support from doctors has been noted by several authors (Jenkins-Clarke, 1998; Luker et al., 1998). However, other studies have found lack of GP Support (Humphries and Green, 2000; Baird 2001; McCartney et al., 1999). Bradley & Nolan, (2007) reported a fear of opposition from non-prescribing nurse colleagues and junior doctor's lack of support from other nurses. Avery et al. (2007) point to the

professional conflict between doctors and nurses as a result of nurses' changing roles. Lack of support from doctors has been identified as a barrier to the implementation of nurse prescribing. The British Medical Association protested against nurse prescribing on the grounds that it is not safe to prescribe without training in diagnosis, considering that nurses receive only 37 days of training as compared to the 5-6 yrs training for doctors (Avery and Pringle, 2005).

Historically, doctors have been unwilling to give up certain aspects of their role such as that of diagnosing and prescribing. Doctors are overly protective of their power and prestige (Horton, 2002). Nurses on the other hand are one of the most undervalued groups in the health service. Nurse prescribing means the professional boundaries are getting blurred and not all doctors are in support of these changes.

Mackay (2003), using a survey method on 50 GPs in New Zealand, concluded that although the overall perception of GPs with regards to the extended role of the nurse practitioner was acceptable, they however, had reservations concerning functions particularly, in undertaking physical examinations, ordering laboratory tests and prescribing. These roles were perceived as traditional roles performed by doctors. GP's felt more comfortable with nurses' role of health promotion/teaching/client counselling, taking patient's history, evaluating quality and effectiveness of care. A drawback of Mackay's study is the low response rate. Out of a sample of 108 GPs only 50 responded resulting in a response rate of 46%. This in itself could be a further indication of lack of GP support in the extended role of the nurse.

Stenner et al. (2009) reported that the acceptance of nurse prescribing depended on the selection of nurses with appropriate training and experience. A further explanation of some doctors' negative attitudes towards extended roles by nurses is provided by Tye & Ross (2000) from a case study approach. The authors cited a lack of understanding of the appropriateness of nurses' clinical skills. Although doctors were in support of nurse prescribing, they also were quick to point out that the clinical skills required for prescribing should not be underestimated. Although there has been increasing support of nurse prescribing by doctors, it is evident that some doctors still have significant concerns over nurses' ability to prescribe (Courtenay & Carey, 2009).

Doctors' resistance to nurse prescribing is not only limited in the UK. Wilhemsson and Foldevi (2003) carried out a focus group study in Sweden with a sample of 18 female DNs and five GPs exploring views on Swedish district nurse' prescribing. Although the studies could be criticized as not representative due to the small sample size, nonetheless it echoed

similar findings. In comparison with British GP's, Swedish GPs seem to have a more negative attitude to nurse prescribing. The GPs felt that their power base was threatened. Similar findings have been echoed by Hales, (2002) cited in Plonczynski et al. (2003) stating that nurse prescribing has not been well accepted by many physicians in the United States. Although this opinion is not a generalization of the attitudes of medical professionals, it highlights sentiments and illustrates the tension that arises as a result of behavioural changes which precede changes in attitude. What this means is that although nurses have won the battle to prescribe, they are still to win the support of all stakeholders including patients and doctors. The exclusion of doctors from the planning process of nurse prescribing has contributed to the resentment felt by the medical profession (Avery et al. 2007).

Professional conflict is not only restricted to developed economies. Ziegler et al. (1997) through the use of interviews and questionnaires sought to understand what public nurses do in the district of Uganda. The nurses stated that some doctors treat nurses as if the nurses knew nothing.

However, it is worth remembering that doctor resistance to nurse prescribing was mostly reported in studies which were carried out during the early phases of nurses prescribing.

The literature review found support from doctors with regards to how they feel about nurses' role in diagnosing and prescribing (Jenkins-Clarke, 1998; Luker et al., 1998; Humphries and Green, 2000; Mackay, 2003). However, other studies have noted opposition from some doctors with regards to the extended role of nurses especially diagnosing and treatment (Jones & Cawley, 1994; Grumback & Coffman, 1998; Wilhemson and Foldevi, 2003; Baird, 2001; McCartney et al., 1999; Tye and Ross, 2000; Mackay, 2003). Courtenay and Berry (2007) noted blurring professional boundaries, threat to doctor's role. Avery (2007) suggests professional conflict between doctors and nurses as a result of nurses changing roles. Stenner & Courtenay (2008) caution that inter disciplinary teamwork and collaboration are central to the role of nurses with prescriptive authority. Recent findings show that although there is still some resistance from doctors with regards to nurses' prescriptive role, increasing numbers of doctors are in support of nurse prescribing (Bradley and Nolan, 2007).

2.8.2.9 Health belief system / cost implications.

Health beliefs are a significant barrier. In Bukina Faso and northern Nigeria, communities have been known to refuse vaccinations fearing that it is a ploy by the government aimed at birth control (Agbeyegbe, 2007; Jegede, 2007). It is therefore important to understand the conceptualization of disease and medical beliefs by local populations and the level of trust

that communities have for health care providers. Health seeking behaviour has been well documented by some authors. Also, malaria is a major cause of morbidity and mortality in Cameroon. Therefore accurate and timely intervention can save lives. Nsimba et al. (2002) used observations and interviews with 652 mothers/guardians to study case management of malaria in under-fives at primary health care facilities in a Tanzanian district. The strength of this study lies in the fact that multiple methods of data collection were used. Recruitment through random selection of participants reduced the risk of bias in sample selection. Questions were translated into kiswahili (the national language) to capture the richness of data increasing reliability. The findings from this study showed that treatment of malaria starts at home with drugs bought from drug stores. Mothers would generally be late in seeking treatment as they stay home hoping the treatment will go away. Similarly, earlier studies by Mwenesi et al. (1995) found over-the-counter drugs (usage was high as patients reported a belief in the efficacy of such drugs). Other barrier factors were found to include; lack of money to cover transportation cost implying the difficulties of accessing health care. The lack of someone to look after other siblings as well as waiting for household decision maker (husband / senior females) for permission to take child to hospital was noted as a barrier to seeking health care. Patients bought inappropriate drugs and are given inappropriate doses. Carers had other important things to attend to. Hentschel (1999) noted that as a result of implementation of user fees, villagers first visit traditional healers who understands the villagers' health beliefs and would subsequently turn to modern health care facilities as a last resort.

These findings clearly suggest a need for a cultural debate and cost implications in understanding the realities of communities by nurse when diagnosing and prescribing for patients.

Variations with regards to quality of care were noted in different types of health care facilities. Gilson et al. (2004) through a qualitative interview study reported that church health care facilities were generally perceived to be better than government health care facilities. However, poor quality of care was also reported in some church health care. Morankar (1993) cited in Hentschel (1999) found 70% of participants chose private clinics due to the perceived approachability of staff which is higher than in government health services. This was despite the fact that government health facilities were "supposedly" free.

2.9 Patients acceptance of nurse prescribing.

Stark et al. (1999) note the fact that nurses are widely accepted by health care users and are crucial to the delivery of health care in low income countries. Reviews that examined patients' perspective of nurse prescribing include a study by Luker et al. (1997a, 1998). A total of 148 patients who had been pioneers in receiving nurse prescribing in the pilot sites were interviewed. Prior to implementation of nurse prescribing, a third of patients were interviewed. The findings from that study suggested that a majority of patients interviewed post nurses prescribing were in favour of nurse prescribing stating that in some cases the nurses knew more to prescribe from the Nurse Prescribing Formulary than the doctors. This is because the nurses knew the product well, such as; (wound care management) or they knew the patient well. Also, aspects of the nurse-patient relationship were identified, (accessibility, the length of relationship with the nurse and familiarity/regularity of contact with the nurse, the nurses' style of consultation and approachability, information giving and nurses' expertise in certain areas). Luker et al. (1998) concluded that patients were overwhelmingly in favour of nurse prescribing.

Brooks et al. (2001) interviewed 115 patients across 10 case study sites and a majority of respondents were in favour of nurse prescribing. Latter et al. (2005) reported similar findings. However, approximately half of the patients in the Latter et al. (2005) study stated that they would prefer to consult with the doctor rather than the nurse for certain conditions although they did not specify which conditions.

Latter et al. (2000a) conducted a two year study focusing on an in-depth examination of the nurse's wider role in medicine management and patient's perspectives on nurses prescribing across different health care settings, primary and secondary. The findings showed that although most patients were generally satisfied with medication interactions with nurses, some patients and carers also stated that the medication information from nurses did not meet their needs.

Despite the barriers to diagnosing and prescribing, numerous studies have identified several benefits of nurse prescribing.

2.10 Benefits of diagnosing and prescribing by nurses.

Several findings point to the fact that there are no significant differences in treatment outcome with care provided by Nurse Practitioners within their areas of competence when compared with care provided by doctors (Mundinger et al., 2000; Reveley, 1998; Venning et al., 2000;

Shum et al. 2000; Kinnersley et al., 2000). Nurse prescribing seeks to meet the specific needs of patients in the community.

Luker et al. (1997) interviewed 49 nurses and identified several benefits of nurses prescribing such as time saving (not having to wait for the GP to sign a prescription), increase in nurses' status and autonomy, and patients receiving better medication information than they do from doctors. Similarly, Nolan et al. (2001) studied 73 mental health nurses using a survey method. They found the benefits of nurse prescribing to include, improved concordance, patients' compliance with medication, cost effectiveness, better patient access to medication. Similarly, others suggest that an understanding of patient's health beliefs and expectations can lead to concordance and adherence to treatment (Stockwell & Schulz, 1993; Donovan et al., 1989; Vermeire et al., 2001).

Rodden (2001) used a questionnaire survey focusing on nurse prescribers' autonomy and independence. 90 prescribing nurses considered prescribing to be a positive development in the role of the nurse. 66.5% felt that they had become less dependent on their GP. 76% reported that their autonomy had increased as a result of their role in prescribing. However, 27% felt that there had been no changes in their level of dependence on the GP's for patients' prescriptions.

In some cases nurses were considered better than doctors to prescribe for patients given their unique knowledge of the patients and their expertise in certain areas of care such as wound management (Bradley & Nolan, 2007). Furthermore, Pontin & Jones (2007) found that nurses frequently advise junior (inexperienced) medical colleagues on prescribing issues. The literature review suggests that GP have little time for consultations. As a result they rush patients through and the patients feel they do not have enough time to discuss their problems (Wilson 1991). The perception that nurses are easier to talk to and that nurses have more time to listen to patients has been widely documented: patients are able to communicate effectively with nurse prescribers (Luker et al. 1998).

Stilwell (1991) found that nurses have the ability to be warm and friendly with patients. Traditionally nurses have the opportunity to engage with patients than doctors. This places them in a better position to carry out accurate assessment of patients needs. Also, nurses feel that they were more able to dedicate more time to listening to patients (Luker et al., 1998; Brooks et al., 2001; Bradley & Nolan, 2007).

Brooks et al. (2001) concentrated on nurse prescribing from the patient's perspective. The sample consisted of 50 patients who were selected by prescribing nurses in a primary health

care setting. Nurse –patient relationship was cited as a positive factor in nurse prescribing. The nurse prescriber was seen to be approachable, providing health education information, reassurance, and continuity of care. Other benefits included, accessibility, effective use of doctors' and nurses time, convenience, nurses' expertise in some areas and nurses awareness of their limitations.

Latter et al. (2004) highlighted the development of therapeutic nurse-patient relationships to be one of the most positive outcomes of nurse prescribing. According to Brooks and Philips, (1996) nurses' closeness to social status of their patients is highly valued by patients particularly by female patients. These findings suggest that nurses have been found to be more understanding of the patient's perspectives in some cases more than some doctors.

2.10.1Increased professional autonomy

Nurse prescribing is thought to provide a higher status of nurses' jobs and increased autonomy, (Avery et al., 2007; Bradley & Nolan, 2007) help to reduce the concept of the nurse as " a doctors' handmaiden". The nurse is rather seen as a professional capable of using his or her expertise in assessing, diagnosing and effectively treating a patient with little or no input from the GP.

Latter et al. (2004) conducted the first national evaluation of extended independent formulary nurses prescribing in England and found that: most nurses reported a positive impact on patient care, there was improved access to medicines, nurses were to make better use of their skills, nurses were able to be less dependent on doctors, moving away from the handmaiden image. Nurses had confidence in making independent decisions in providing holistic care. Patients felt that nurses prescribing increase their access to prompt medication and nurses provided more information on treatment. Doctors reported that it was a positive development but added that it did not reduce their workload.

The findings of this study were based on self reports by nurses. Also, the length of time that nurses had been prescribing was not taken into account. These factors may have affected the nurses' responses. However, similar findings were noted by Bradley & Nolan (2007) thereby adding credibility to the latter's findings.

Prescribing complements many aspects of nursing. This allows nurses to adopt a more holistic approach to nurse prescribing and patient care. Latter & Courtenay (2004) conclude that the impact and effectiveness of nurse prescribing has largely been a positive development.

However, they noted that this evaluation was mostly based on nurse prescribing by Health Visitors and District Nurses.

Horrocks et al. (2002) conducted a systematic review of the literature comparing doctors and nurse practitioners at first point of contact in primary health care settings. The findings suggest higher quality of care and that patients had a higher level of satisfaction with nurse practitioners than they did with doctors. Also, there was no difference in patient's health outcomes. It was also noted that nurse practitioners spent more time with patients during consultations than doctors. An economic analysis of the cost differential was difficult to carry out.

Avery et al. (2004) carried out telephone interviews with six GPs and six hospital doctors in one region in the UK. It was found that most doctors in the study reported having confidence in nurses' ability and knowledge to diagnose and prescribe for patients. It was reported that nurses gave detailed knowledge of medications to patients. Other benefits of nurse prescribing were noted to include reduced waiting time for patients, improved efficiency. Similar findings were reported by Courtenay and Berry, (2007). The authors carried out a survey on 31 nurse prescriber and 30 GPs to establish their views on perceived benefits and disadvantages of nurse prescribing. Continuity of care was also identified as a benefit in addition to those found by Avery et al. (2004). Also, Latter et al. (2005) used a survey approach and in-depth evaluations of 10 case study sites in different areas in England to evaluate independent extended nurse prescribing. Findings from that study state that the 12 doctors interviewed were in support of nurse prescribing at their surgery adding that these nurses had the required knowledge, skills and experience to prescribe for patients. These findings suggest that doctors' support for nurse prescribing is dependent on the doctor's personal knowledge of the individual nurse. However, some doctors in the study expressed concerns about the general role for other nurses whom they did not have personal knowledge of. The nurses on the other hand reported that doctors felt threatened by nurses' ability to prescribe.

Nurse prescribing enables patients to receive treatment without delays of waiting for the GP to sign the prescription. Patients therefore have the advantage or receiving fast and efficient treatment which can improve the recovery rate and reduce any discomfort that the patient might have suffered unnecessarily, hence improving patient care (Wilhemsson and Foldevi, 2003). It also saves nurses' time. The time that the nurse would have spent waiting outside the GP surgery for the prescription to be signed can be used in doing other clinical chores.

Nurses provide more information about medicines and side effects (Brooks et al. 2001; Latter et al., 2005). Raynor et al. (2004) in a study of asthma patients found that patients valued information about what the drug does, how to take it and potential side effects.

2.10.2 Nurses approachability, nurses knowledge of patients/accessibility

Positive views held by patients regarding nurse prescribers in terms of knowing their patients, knowledge of patients and their approachability were reported by Luker et al. (1998b), who conducted a study of 157 patients selected at random from case notes of district nurses, practice nurses and Health Visitors, using semi-structured interviews to gather data. The majority of patients were more in favour of nurse prescribing than GPs. Respondents explained that nurses know the patients well and are more familiar with the products prescribed. Nurse prescribing enables the nurses to initiate, titrate and modify treatment thereby, ensuring both speed of access and enhancement of quality of care. Shum (2000) reported that nurse assessment was popular because of the increased time the nurse spends with the patient as compared to the doctor. Some patients feel that the nurse shows genuine concern and care during consultations more than doctors who appear to distance themselves from patients (Haidar, 2007). Also nurses use "layman terms" instead of medical jargon thereby increasing patients understanding of their prescription. Patients feel more relaxed with nurses' consultations and therefore are more likely to open up and discuss their problems. Nurses generally follow a patient-centred holistic approach. As a result, compliance is achieved as patients are more willing to respect treatment regimes (Haidar, 2007), hence reducing wastage which is one of the problems faced by the NHS. It has been reported that as many as 50% of patients fail to take their medication correctly. The outcome of this is higher morbidity, premature mortality and a huge amount of wasted medicines (Stoat, 2000 cited in Cheesman, 2006).

Berry et al. (2008) conducted a study with a sample of 54 patients using a self-completed questionnaire to assess patients' attitudes towards, and information needs in relation to, nurse prescribing in rheumatology. Although limitations of their study include the fact that patient's responses were based on hypothetical questions and secondly, that the sample consisted only of patients with perhaps suffering from moderately severe diseases and therefore a biased sample, the findings none the less compare with those of others. Berry et al. (2008) found that whilst 55% of patients expressed a preference for the doctors' prescription, 45% stated they would have the same level of confidence in the nurses' prescription. However, 20% of the sample questioned the nurses' qualifications and experience level.

Bradley & Nolan (2007) adopted a grounded theory approach in studying 45 nurse practitioners. 35 of these had prescribed post nurse prescribing training but 10 had not yet prescribed. With the use of a semi-structured interview questionnaire and face-to-face interviews, five themes were identified the impact of becoming a nurse prescriber, impact on individuals, impact on the nursing role, impact on the team, impact on service-users and benefits derived from prescribing.

The authors found that nurse prescribing has encouraged nurses to pay more attention to medication and read more information about medication. Service users had more opportunity to discuss concerns about their medication. Nurses stated giving more opportunities for patients to raise issues. Communication and interaction was not felt to have been compromised by their ability to prescribe. Nurses still perceived nursing care as their primary role. However, one participant stated that their care had become more grounded in the medical model. There was also the fear of burn out as a consequence of wearing many hats and the resulting increase in workload. Nurses found that they were perceived as a resource and respected for their expert knowledge of medication in specific areas by some medical colleagues. Such support is vital for the success of nurse prescribing. This contrasts with reports of lack of doctor support by others.

A limitation of Bradley and Nolan's study is that some of the nurses who had not yet started prescribing were asked to reflect on the benefits they felt they had had from their prescribing course and to discuss the perceived barriers. It can be argued that these were perceived but not actual experiences and therefore reduce validity of their claims. However, the fact that their reports are corroborated by those of other studies lends some weight to their debate.

There is substantial evidence pointing to the perceived benefits of nurse prescribing in developed economies (Luker et al.1998a, 1998b; DoH, 2001). Most of the literature reviewed focuses mainly, although not exclusively on district nurses, health visitors and nurse practitioners. This can be considered appropriate as the majority of nurse prescribing in the UK takes place in primary health care settings. However, as a result of increase in the demand for health care, a growing number of nurses in secondary health care settings are involved in diagnosing and prescribing. There, however, is a scarcity of studies addressing diagnosing and prescribing in these health settings. The patient-centred approach promoted by the government and the nursing profession, together with values held by nurses and the nurses effective communication skills stand them in good stead to develop new roles.

Several of the studies evaluating the prescription of medicines by nurses are mainly questionnaire surveys using opportunistic or purposeful / convenience sampling. These surveys are mainly confined to Nurses practitioners, District Nurses and Health Visitors. This may be deemed appropriate as these groups of nurses all work in primary care settings where nurse prescribing is more likely to be practiced. A limitation of such an approach, however, is that the findings cannot be generalized. However, the findings all point to the perceived benefits to all stakeholders. These include time saving, increased sense of satisfaction, increased status, opportunities for continuing professional development. On the down side, nurse prescribing may lead to increased workload for nurses, inter-professional conflict between doctors and nurses, and reverting to a medicalized model of care. There are also reports of poor nurse prescribing practices. A review of nurse prescribing literature in developed economies highlight the fact that nurse prescribing has led to increased work load. Nurses spend a lot of time completing notes for each prescription. There are suggestions that the resulting time pressure can in turn be stressful and affect the quality of care that patients receive.

2.11 Disadvantages of diagnosing and prescribing by nurses in less developed economies.

There are suggestions in the literature that structural issues facilitate the process of non-medical prescribing in less developed economies but that, cultural factors, financial incentives, are also important factors affecting this aspect of the nurses' role. A number of studies have identified limitations of nurse prescribing. Boonstra et al. (2002) through the use of participatory observation using a questionnaire in 30 primary health care facilities in Botswana found that only 44% of nurse prescribers followed National prescribing Guidelines. Some studies suggest that doctors were found to be more rational in prescribing antibiotics than nurses/dispensers. Lubanga et al. (1997) cited in Nsimba et al. (2002) conducted a study in Sierra Leone and reported better clinical diagnosis with doctors. 67% of children diagnosed with malaria parasites post doctor consultation as compared with 38% in nurse consultation. It was found that doctors were more rational in prescribing antibiotics. They prescribed antibiotics in smaller percentages of encounter than dispensers who included nurses with three years of training in pharmacology and drug use.

Eriksen et al. (2007) in their observational study of malaria case management in Tanzania concluded that history taking and counselling of patients by non-medical prescriber was sub-optimal. Also, Gilson et al. (1993) noted good prescribing practices amongst nurses when compared with those of other countries. However, relatively high proportions of incorrect prescriptions were also noted.

Isely (1980) suggested a need for nurses to increase the amount of time they spend in explaining the causes, treatment and prevention of illnesses to patients and to users. Stein et al. (1984) found that in Harare, the use of antibiotics in primary care by nurses was deemed to be inappropriate in 12.3% of patients. This is in contrasts with Czechoslovakia where the prescribing of antibiotics inside and outside the hospital is controlled (Garrod et al. 1981 cited in Stein et al. 1984.). The study found 87.7% appropriate use of antibiotics which was considered acceptable. However, there was no comparative arm to compare nurse prescribing and the health outcomes of the 12.3% inappropriate antibiotic use was not measured.

Arifeen et al. (2005) assessed the quality of care provided by nurses in under-fives in Bangladesh. It was reported that non-medical health providers made little effort to explain the necessary treatments. Similarly, studies from Burkina-Faso, Tanzania, Bangladesh have shown poor health care personnel performance in terms of history taking, poor communication, ill equipped health care facilities, lack of supervision, low referral to doctors, poor or no physical examination and consultation time at primary health care facilities managed by nurses. Incorrect clinical assessment could cause incorrect diagnosis and inappropriate treatment of malaria episodes and other conditions. Nsimba et al. (2002) found that 39% of children were physically examined and the average consultation time was 3.8mins. 71% of children were presumptively diagnosed. Of the 461 children presumptively diagnosed with malaria, 449 were screened for malaria parasites and only 38% of these children had parasites in their blood, implying that the rest of the children were unnecessarily treated for malaria by nurses.

Although some studies stipulate that nurse prescribers should have at least 3yrs of nurse training, Nsimba et al. (2002) found that auxiliary nurses with less than 3years of nurse training were carrying out prescriptive activities. Eriksen et al. (2007) concurs that nurses with shorter training did not perform worse than others. Studies show that basing treatment on a diagnostic test such as a microscope results in reduction of unnecessary treatment (Bloland, 2001). However, Erikson et al. (2007) observed that generally, not all children presenting with a high temperature at the health facility which had a functioning microscope were examined for malaria parasites in their blood.

Being literate has been noted as an important factor affecting the health of the family and determining child survival in Pakinstan (Agha, 2000). Recent works in Tanzania suggests that patients are increasingly actively seeking out the best health care providers and are no longer passive recipients of care.

Hadley & Roques (2007) used a cross-sectional observational method of study to observe the activities nurses engage in during their working hours on a ward in Bangladesh. They concluded that "nurses do not nurse". Findings from a review of the literature point to the fact that the expansion of the role of nurses could have negative impacts on the care provided to patients, depriving patients of the very caring and nurturing aspects which are at the centre of nursing (Campbell et al. 2007).

2.12 Limitations of literature on nurse prescribing and rationale for current study.

The methods and samples of research participants in the literature evaluating nurse prescribing are varied, ranging from questionnaire surveys and survey (Otway, 2002), focus group discussions, individual face to face interviews, non participant observations and post observation interviews (Latter et al. 2000). Latter et al. (2010) employed a three phase study design, starting with a national questionnaire survey of nurse and pharmacist independent prescribers, telephone survey, focus group discussions with higher education institutions, secondary analysis of national dataset on safety incidents. Phase two involved case studies, analysis of clinical appropriateness using the Medication Appropriateness Index, case records analysis against national prescribing standards, patient surveys of experiences, and interviews with health care professionals. Phase three involved a multi-stakeholder workshop. The uniqueness of this study is that by using a multiple study design and stakeholders it seeks to increase the reliability and validity of the findings.

Others have used participant/non-participant observations, semi-structured interviews (Luker et al. 1998), case studies and face to face interviews (Courtenay & Carey, 2009), structured interviews, systematic literature reviews. Some studies employed mixed methods hence adding to the reliability and validity of findings (Shum et al. 2000; While and Biggs, 2004; Latter and Courtenay, 2004; Bradley et al., 2005; Bradley and Nolan, 2007; Latter et al. 2007; Courtenay and Carey, 2007), survey and participant observation (Boonstra et al., 2002; Boonstra et al., 2003), focus group interviews (Manias & Bullock, 2002; Humphries & Green, 2000).

Most of the studies use a positivistic paradigm, the use of self-complete questionnaire to elicit participants' responses (Stein et al.1984; Berry et al., 2008; Bradley et al. 2005; Grandell-Nieme et al., 2005; Courtenay & Carey, 2007; Latter et al., 2005). The disadvantages of such a method include reduced validity and the fact that the respondent might not understand the questions. This could lead to the return of incomplete questionnaires or inaccurate responses.

Most surveys set out to seek students and lecturers' opinions about pharmacology education. Casey (1996) warns that such methods de-contextualizes task-based activities and as such miss out on the complexities of the realities of clinical practice.

Other studies (Meyer et al. 2001; Shum et al., 2000) use randomized controlled trials and contextual differences may not have been considered.

While quantitative studies are good at assessing trends, describing and making comparisons, they nonetheless fail to specify the quality of the diagnosing process itself and the degree to which key stakeholders influence the role of the nurses as well as the consequences of the nurses' role on key stakeholders. Also, research outcomes of prescribing practices are often measured in terms of quantitative indicators with a lack of research on the actual process of diagnosing and prescribing and the experiences of patients.

Although the literature review provides useful insights, it also reveals several gaps/unanswered questions which need further research. These include:

- The paucity of studies that examine how key stakeholders influence diagnosing and prescribing by nurses and the consequences of this aspect of the nurse's role on different key stakeholders;
- diagnosing and prescribing by nurses in the hospital setting;
- the evaluation of diagnosing and prescribing by nurses in developing economies which so far is scant;
- using a theoretical framework to investigate the topic.

Furthermore, global recession means that health care providers are looking at ways of maximizing limited resources. This research therefore will be of relevance and beneficial to both developing and developed countries in understanding the extent to which nurses are involved in diagnosing and prescribing in Cameroon, how key stakeholders influence this aspect of the clinical role of the nurse and also, the consequences on key stakeholders.

2.13: Summary of key themes emerging from the literature review.

Context: Poverty / economic constraints.

Cameroon is a developing country with extremely limited resources and very high patient/ doctors ratios. Providing health care within these and other constraints is challenging and therefore an evaluative study of nurse prescribing is important to enable maximization of limited resources. The part of Cameroon in this study is a former British colony and models

its health care and nurse training to some extent on its colonial past. It is therefore an interesting case to study given the contextual differences hence, RQ7: How do political, socio-economic, cultural factors affect diagnosing and prescribing by nurses?

Nurses' role expansion.

Nurse prescribing is an example of nurses' role expansion. Nurses in Africa have a more extended role than their counterparts in the developed economies. The review shows that there is substantial literature on nurses' role expansion in developed countries. In contrast, literature on nurses' role expansion in developing countries is scant and has some limitations. A number of these publications are not based on empirical evidence. It is important therefore to carry out a systematic study to establish how it compares with anecdotal information/expert opinion. Whilst there are a few studies on nurse prescribing in Africa, the literature search did not find any focusing on diagnosing and prescribing by nurses and the extent to which they do so in Cameroon. This is surprising, given that nurses in Cameroon have been practising diagnosing and prescribing for much longer than their counterparts in developed economies. This current study will therefore seek to answer RQ 1: What is the formal role of nurses within healthcare delivery in Cameroon? RQ 2: What is the role of nurses in relation to diagnosing and prescribing?

Drivers of nurse prescribing.

The literature states that nurses' role expansion is a global phenomenon with cost effectiveness as a main driver. Also, political, socio-economic, and epidemiological changes have all led to a restructuring of health care services. Is this the case in Cameroon? Whilst there is literature suggesting reasons for nurses role expansion in developed countries, there is scarcity of literature explaining why this is the case in developing countries leading to RQ 3: Why do nurses diagnose and prescribe for patients?

Patterns of nurse prescribing.

The literature points to international variations in the settings and patterns/ autonomy of diagnosing and prescribing by nurses and the legislation that permits it. In the UK, a majority of nurse prescribing happens in primary care but there is evidence to suggest that increasingly nurse prescribing is happening in secondary settings. However, it is not clear from the literature why these variations in diagnosing and prescribing by nurses exist and how nurses diagnose and prescribe hence RQ6: How do nurses diagnose and prescribe?

Key Stakeholders involved in diagnosing and prescribing by nurses.

A number of key stakeholders in diagnosing and prescribing by nurses were identified to include the state, doctors, nursing managers, nurses, and patients. Governments are responsible for the regulation and many cases, the provision of health care. The state legislates and is involved in the training of nurses in most countries and is therefore a key stakeholder in diagnosing and prescribing. The literature review shows that in developed countries, there are clinical governance / safety measures in place and currently nurse prescribing has been shown to be safe. Thus, there is a need to explore how the training of nurses and regulatory function of the state in Cameroon affect diagnosing and prescribing by nurses.

In terms of doctors, there does not seem to be any consensus within the literature about how doctors view diagnosing and prescribing by nurses. Some authors point to doctors' lack of support of nurse prescribing as a barrier factor whilst others cite support from doctors as a facilitating factor of diagnosing and prescribing by nurses. This study investigates how doctors affect and perceive diagnosing and prescribing by nurses in Cameroon.

There is evidence to suggest that support and supervision provided by nursing managers to nurse improves effective nurse prescribing hence the need for further investigation.

With regards to nurses, their individual characteristics have been found to affect their role in diagnosing and prescribing. The first is training and continuing professional development as a facilitating factor of effective diagnosing and prescribing which has been well documented, (Latter & Courtenay, 2004; Latter et al., 2005; Meyer et al., 2001). Insufficient training was found to negatively affect nurses' confidence in diagnosing and prescribing. However, current training programmes for nurses in their prescriptive role in the UK, is to a large extent satisfactory and fit for purpose (Latter et al. 2010). In contrast, nothing is known about nurse training in relation to diagnosing and prescribing in Cameroon. This current study will seek to answer RQ 5: How are nurses trained to diagnose and prescribe?

Patient's acceptance of nurse prescribing is a facilitating factor of nurse prescribing and patient satisfaction has been found to improve concordance. Nurse prescribing has been studied in relation to different stakeholder views but hardly any studies investigating the topic from the perspective of all key stakeholders simultaneously. This account for RQ4: How do Key stakeholders influence diagnosing and prescribing by nurses?

Facilitating and barrier factors.

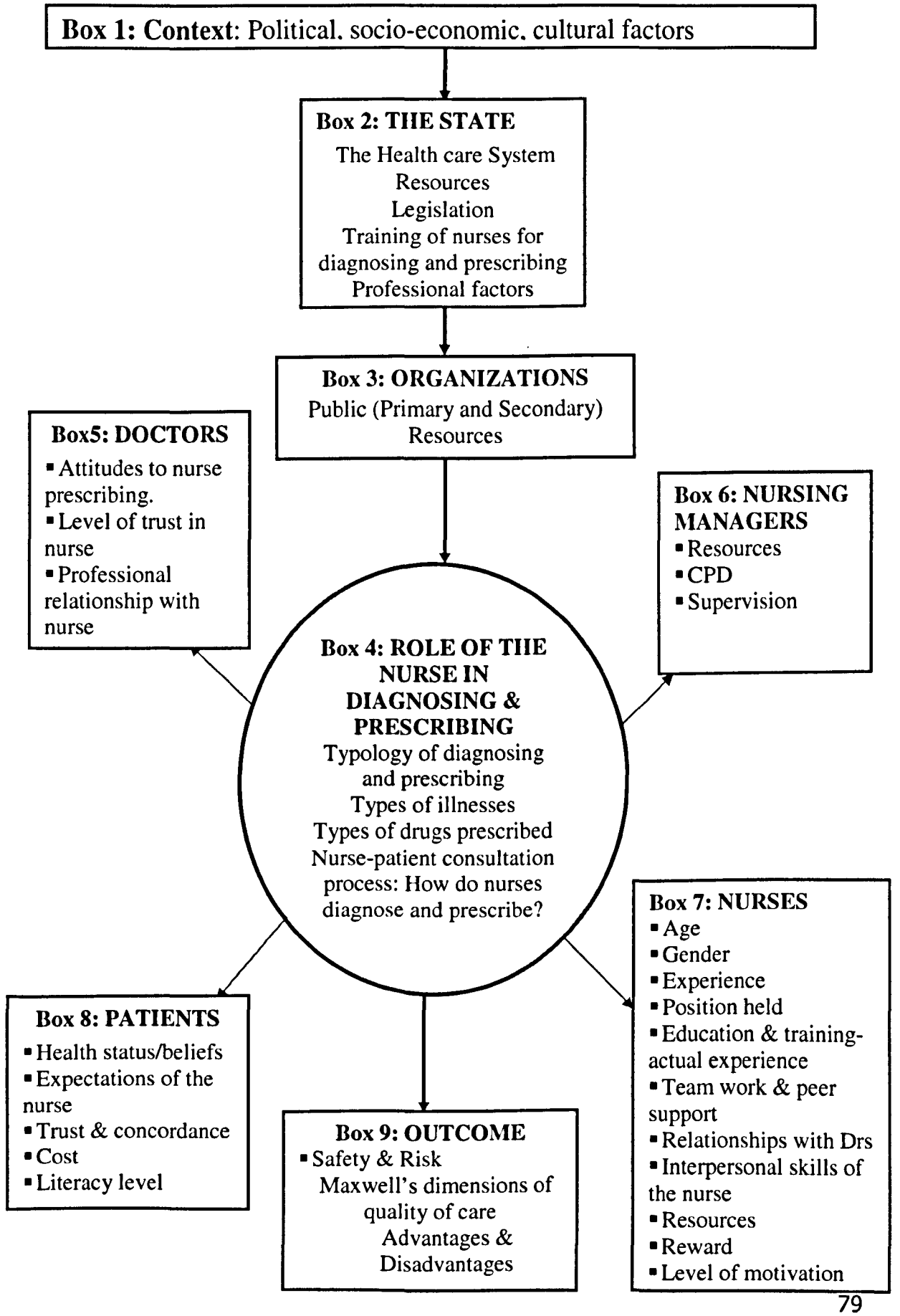
Several factors were identified as facilitating and barrier factors of diagnosing and prescribing by nurses. Facilitating factors included, training, peer support, managerial support. The review also pointed to structural and interpersonal barriers such as lack of resources, administrative workload and poor communication to be a barrier factor of nurse prescribing.

Outcomes of diagnosing and prescribing by nurses.

Benefits of diagnosing and prescribing have been found to include; accessibility, greater ease of patient-nurse communication, time savings for all involved. The Cameroon study will seek to shed more light on this issue. The Cameroon government operates a primary health care system with associated concepts of availability, efficiency, effectiveness, equity, accessibility. These concepts will be used in this current study to explore key stakeholder perceptions of diagnosing and prescribing by nurses and answer RQ 8: How do key stakeholders perceive the outcomes of diagnosing and prescribing by nurses?

Theoretical Framework for Understanding the Role of Nurses in Diagnosing and Prescribing

Fig 2.1:



2.14. Rationale for using a conceptual framework

Studies which utilise an explicit theoretical framework in investigating diagnosing and prescribing by nurses are hard to come by. The above theoretical framework is derived from the literature review. It identifies the different key stakeholders involved in diagnosing and prescribing by nurses, how they affect the role of nurses' and finally, the outcome of diagnosing and prescribing by nurses on different stakeholders. A framework for examining diagnosing and prescribing by nurses which includes key stakeholder characteristic, including the political, socio-cultural and economic factors is more effective in capturing the complexity of diagnosing and prescribing. Examining the socio-cultural context within which nurse prescribing takes place gives us a better insight. It was thought that a more sophisticated understanding of the context specific factors: cultural, social, professional and organizational is essential for improving quality of care given that all of these factors influence provider and patient behaviour (Brugha & Zwi, 1998).

The key stakeholders are identified as: the state, the organizations, the doctors, nursing managers, nurses and patients. All of which influence the role and processes of diagnosing and prescribing by nurses. Finally, the outcome of diagnosing and prescribing as perceived by the different stakeholders are examined and discussed.

The framework has nine inter-relating boxes. Box 1 describes the context within which health care takes place (Political, socio-economic, demographic, cultural, and professional, considerations, as well as human resources and epidemiology. (A detailed description of these factors for Cameroon can be found in Appendix1). Precipitating factors of diagnosing and prescribing include: Poverty, shortages of medical doctors, the drive to keep up with demographic, socio-economic epidemiological changes amongst other factors. Consequently, health care providers are looking for ways to maximize nursing skills, to promote cost effectiveness and to increase accessibility of care for patients.

Box 2, identifies the state as the main provider of health care and a key stakeholder in the role of nurses in diagnosing and prescribing. As noted by Calman (1998), the state plays a fundamental role in public health issues. The health care set up impacts on nurses' role in diagnosing and prescribing. The evidence shows that nurses diagnose and prescribe in different health care settings. It describes the health care system, legislation pertaining to nurses' role as well as the official training of nurses in Cameroon. Traditionally, nurse training in Cameroon was mainly provided by state and to a lesser extent by faith/mission establishments. However, increasingly, private organizations are training nurses. There are

concerns about the quality of training in such institutions and the lack of standardization of the nursing curriculum. Training of nurses for their role in diagnosing and prescribing is embedded in their pre-registration curriculum in contrast to the UK where training of nurses for this aspect of their clinical role takes the form of post-qualification training. Another difference is that doctors in Cameroon are more involved in the design and training of nurses for their role in diagnosing and prescribing, than doctors in the UK. The state also legislates who can diagnose and prescribe for patients, types of drugs to prescribe and types of illnesses that nurses can prescribe. Also, the state plays a significant role in the training of nurses.

Box 3 describes the different organizations where nurses diagnose and prescribe, in primary health care settings (community) and secondary health care settings (hospitals). The organization of health care in Cameroon is structured around the concept of primary health care. The entry point of the health care are integrated Health Care centres, mainly located in rural areas and are nurse-led. Health care is also provided by faith/mission and private-for-profit organizations. A majority of health care is paid out of pocket by individuals.

Box 4 is titled the role of nurses in diagnosing and prescribing: It addresses nurses' role within the health care system, examining how nurses diagnose and prescribe as well as factors impacting on this aspect of the their role. The literature highlight several models (See Appendices 4, 5 & 6) used in the process of diagnosing and prescribing. The generic role of nurses, show that nurses provide a wide range of tasks and their role continues to expand. Nurse prescribing is an example of the extended role of nurses. International comparisons of diagnosing and prescribing by nurses including patterns indicate variation across countries and different health care settings. The diagnosing and prescribing process has elements of universality.

The outer boxes of the theoretical framework take into account the fact that nurses do not work in isolation. They work with other health care professionals with whom they share a common goal, restoring and promoting patients' health.

Box 5 refers to the doctors. Nurses work alongside doctors and other members of the multidisciplinary team. Doctors' attitudes to diagnosing and prescribing by nurses and professional relationship with nurses have been found to impact on nurses' role in diagnosing and prescribing. Doctors were generally supportive of nurses' role in diagnosing and prescribing. Doctor's acceptance of nurses' role depended mostly on the doctor's personal knowledge of the nurses, including knowledge of their clinical skills. However, there are concerns amongst some doctors about nurses lack of adequate training in diagnosing and

prescribing. Baird (2001) identified a possible erosion of GP's role and a threat to their authority power and status as a barrier of nurses prescribing.

Box 6. The literature suggests that availability of resources, training and supervision serve as facilitating factors of diagnosing and prescribing by nurses. Nursing managers are therefore better placed in ensuring that these measures are in place. The literature highlights scarcity of economic and human resources particularly in developing economies. In some cases, there is lack of basic diagnostic equipment in health care facilities especially, those located in rural areas. Continuing education and training and availability of resources were highlighted as enabling factors.

Box 7. Several themes were identified in the literature such as personal characteristics of the nurses as impacting on nurses' ability to diagnose and prescribe. Such factors include; age, gender, grade/position held, experience, education and training, resources, reward and level of motivation. Barriers to diagnosing and prescribing include; nurses insufficient knowledge of pharmacology, lack of equipment, lack of confidence and anxiety by some nurses of "getting things wrong" as well as lack of GP support. Awasum (1992) reported a lack of adequate infrastructure to support nursing practice. The importance of training and continuing professional development was noted by Meyer et al. (2001) and concluded that there is a need for training, The need for role clarification has been reported by Mackay (2007) .

Nurses' perceptions and experiences of their role in diagnosing and prescribing showed that a greater majority of nurses are in favour of that aspect of their role and are confident in practicing it. However, lack of confidence by some nurses has been noted. Nurses identified facilitating factors as support from colleagues, management, adequate education and training for the role (Humphries and Green, 2000).

Box 8. Patient's health status/beliefs influence where health care is accessed. Issues of safety, trust, concordance, cost, literacy level and expectations were found to impact on nurses' role in diagnosing and prescribing. Overall, patients were in favour of diagnosing and prescribing by nurses (Luker et al. 1998) Patients cited nurses' ability to communicate at the same level as the patient, and nurses' approachability as enabling factors (Brooks et al. 2001). Also, patients reported that nurses are more knowledgeable than doctors in treating certain conditions such as wound management. However, in Latter et al. (2001) some patients felt that the medication information and treatment prescribed by nurses did not meet their needs.

Finally, Box 9, at the base of the model is the outcome/ advantages and disadvantages, the consequences of diagnosing and prescribing by nurses.

Benefits of diagnosing and prescribing by nurses were identified to include increased satisfaction, opportunities for continuous professional development, increased accessibility of care to patients, improved concordance (Nolan et al. 2001). It also assists with clarification of professional roles and improves team work and professional relationships, makes use of nursing skills, provide patients with continuity of care and faster access to medicines (Berry et al. 2008). Nurse prescribing results in time savings for all key stakeholders involved, particularly for patients as they have quicker access to health care which leads to more effective treatment.

The theoretical framework derived from the literature review identifies a variety of factors influencing diagnosing and prescribing by nurses. The conceptual framework is not exhaustive and is influenced by research based on studies of health systems in the developed world owing to a dearth of literature on diagnosing and prescribing by nurses in developing countries. The framework takes into account the different tiers of the health care system from ministerial level of involvement to front line delivery service by nurses. It also covers the different actors involved in health care delivery as well as the various settings where care is provided. In this study, some of the concepts of quality dimensions of care by Maxwell, (1992) such as such as effectiveness, efficiency, acceptability, equity and access will be used to evaluate diagnosing and prescribing by nurses. This is because the current health care system in Cameroon is based on primary health care model designed to provide accessible, equitable and cost effective health care to the communities (Ndumbe et al. 2005).

The above framework goes beyond existing frameworks in examining diagnosing and prescribing by nurses as it seeks to capture the complexity of a nursing activity. It focuses on micro and macro dimensions of health care provision by nurses, aiming at contextual, organizational, professional, individual factors from the perspectives of individual stakeholders.

The strength of this study lies in the fact that it studies diagnosing and prescribing from the perspective of multiple stakeholders thereby, adding to the validity of the findings. This framework is useful for this study because the study seeks to explore the perceptions of key stakeholders on the role of nurses in diagnosing and prescribing.

The use of a framework as an organizing principle is appropriate given the context of the study. It is also built around a holistic approach of structure-process-outcome (Donebedian, 1980, 1996). It captures the situations in its natural setting. In addition, the conceptual framework is important because it synthesizes existing literature pulling together literature

which is disjointed and takes the form of piecemeal approaches. This provides a coherent, overarching perspective with interventions from different levels within the organization.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

Introduction.

The aims of this chapter are:

i) to discuss the methodological underpinnings of the current study including rationale and limitations.

ii) to describe the research process from accessing research participants, obtaining ethical approval, conducting a literature review, carrying out questionnaire surveys, conducting and transcribing interviews to analyzing and interpreting data.

3. Case study research and its scientific basis.

The aim of the study ultimately drives the project design/methodology and sample size (Charmaz 2006 cited in Mason, 2010). The objective of this research is to explore and explain factors affecting diagnosing and prescribing by nurses from the perspectives of multiple stakeholders. The study encompasses both quantitative and qualitative data (Yin, 1999; Yin, 1992) depending on the research questions and how best to answer them (Lee et al. 2010).

3.1 Research Design.

A case study strategy was adopted for this study. A case study is:

"An empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when...the boundaries between phenomenon and context are not clearly evident and in which ..multiple sources of evidence are used" (Yin, 2009, p.18).

In this study, different health care settings have been used as cases to explore and explain diagnosing and prescribing by nurses in Cameroon. The rationale is to gain greater insights from a variety of cases, (different health care and geographical settings) and perspectives (different key stakeholders) on a particular aspect of the role of nurses within a health care service delivery system studied in its natural setting (Yin, 2003; Fisher & Ziviani, 2004; Maltby et al., 2010; Swanborn, 2010).

A case study was a useful strategy as it increases our knowledge of the overall context, individuals, organization. The holistic nature of the study implies that an assumption is made

that behaviour of people and social phenomena in general, are determined by a complex set of causes. As a consequence, simple causal models, such as those in survey analysis and experimental strategies are not adequate.

This study adopts a mixed method approach. A theoretical grounding in the form of a conceptual framework was used in guiding data collection and analysis. By so doing, some themes were identified a priori from a review of the literature. The theoretical framework was derived from international literature covering developing and developed economies. It provided a structured and systematic approach to data collection and analysis (Thorne, 2000; Fisher & Ziviani, 2004). This method was appropriate because it was important to review the current state of knowledge on diagnosing and prescribing by nurses. It identified factors suggested in the literature as affecting diagnosing and prescribing by nurses.

However, the study mainly adopts a qualitative/inductive approach. It was particularly useful, because of the scarcity of studies addressing diagnosing and prescribing by nurses in the context of Cameroon. Semi-structured interviews served as a main source of primary data collection. This approach facilitated an understanding of the world from the perspective of multiple stakeholders through one-to-one semi-structured interviews. It explored the meanings participants attach to their experiences of diagnosing and prescribing by nurses. It enhanced an understanding of this aspect of the nurses' role, explaining processes, how and why they operate in the way they do (Pratt, 2009). A questionnaire was used to provide factual information. The use of both quantitative and qualitative methods is beneficial as the methods supplement each other as opposed to using a single method (Bryman and Bell, 2003; Swarnborn, 2010).

It was envisaged that findings from documentary evidence supplemented by semi-structured interviews would facilitate an understanding of the contextual factors and how they influence diagnosing and prescribing by nurses.

3.2 Rationale for use of case studies in the study.

A case study is evidence-based, empirical approach focusing on intense investigation of a phenomenon in its real life context (Yin, 1992). The purpose is to investigate a topic intensely and provide in-depth description, exploration or explanation of a single phenomenon: diagnosing and prescribing by nurses in different health care settings. A case study method was considered to be most suitable. It is a systematic way of examining what is happening, collecting data, analysing it and reporting results. The outcome is a heightened understanding of why something happened the way it did and what might be important to look at in the

future. It is about the learning about a complex phenomenon using extensive descriptions and contextual analysis (Davey, 1991; Yin, 1994). The case study interpretative approach adopts a philosophical position where meanings are attached to experiences and socially constructed realities in order to make sense of the world around us (Saunders et al. 2003).

Diagnosing and prescribing is a contemporary phenomenon. It is on-going and will be studied in the context of Cameroon. The research questions include "What's" but mostly "Why" and "How's" and they pertain to a clinical phenomenon carried out by nurses. Traditional experimental methods are found to be unsuitable for these purposes. The case study method allowed for the exploration of phenomenon to be studied in its real life context whilst adopting a holistic approach. Given that this takes place in a different cultural setting, it was important to identify the important and significant cultural factors affecting diagnosing and prescribing by nurses. An advantage that case studies have over other research designs is that it takes a multi-perspective approach, meaning it can consider the views of individuals, and groups as well as their interaction.

3.3 Units of analysis.

A case study design is further defined by the unit of analysis (Lindgreen, 2001). A clear definition of what comprises a unit of analysis in the literature on case studies remains elusive (Lee at al. 2010). Typically in social science research units of analysis include: individuals, groups, social organizations and nation (Sjoberg et al.1991 cited in Tellis, 1997; Lindgreen, 2001; Guest et al. 2006). In this research the units of analysis are the perceptions of individual key stakeholders (members of government, nurses, nursing managers, doctors, patients). The perceptions of key stakeholders on a phenomenon of interest, diagnosing and prescribing by nurses is investigated and analysed.

3.4 Ethical considerations/ consent

In Cameroon, consent was sought through institutional (hospital) directors and managers and in some cases through "gatekeepers" (third party) (Silverman, 2005), such as the assistant delegate of public health, since the delegate was on a mission abroad. The researcher obtained email addresses and telephone numbers of the different health care organizations through organizational documents and networking. The researcher contacted all participants individually.

The procedure commenced with an email to the acting delegate of public health, the second most senior public health care representative in the region (government representative). This

was followed by a telephone conversation and consequently a meeting between the researcher and the government representative. After summarizing what the research was all about and presenting the assistant delegate of public health with a written description of the project, I then asked for his permission to carry out the research, which was granted.

Following this meeting a consent letter was found to be sufficient with no further need to obtain ethical approval. This is an acceptable practice for conducting research in Cameroon unlike in the UK for instance, where ethical approval is sought through a committee prior to conducting health care research in the NHS.

After initial consultation with prospective research participants, each participant (government representatives, doctors, nursing managers, nurses, and literate patients) was provided with a consent letter stipulating the aim of the research and requesting their consent to participate in the study. Research participants were contacted in person with an explanation / an overview of the research. A covering letter was provided making the study authentic and official.

All participants were reassured that confidentiality would be preserved and that they had the right to stop at any stage of the interview if they felt they did not want to continue their involvement in the study.

An information sheet (See Appendix 7) explaining the research was handed out with opportunities given to prospective candidates to ask questions. For those research participants who were illiterate the cover sheet was translated orally to them in pidgin English or the local dialect by the researcher. In the course of this study, it was found that written informed consent appears to be a culture and context-bound concept. Although, the formal procedures were respected in all study areas, the concept of written informed consent was not given the same importance in rural areas where the literacy rate is low as in urban areas. Overall, verbal consent and trust in an individual is paramount and needs to be respected and reciprocal.

The following section details how sites (health care establishments) and different stakeholders (government representatives, doctors, nursing managers, nurses and patients) were selected to participate in this study. Each of these will be discussed in turn.

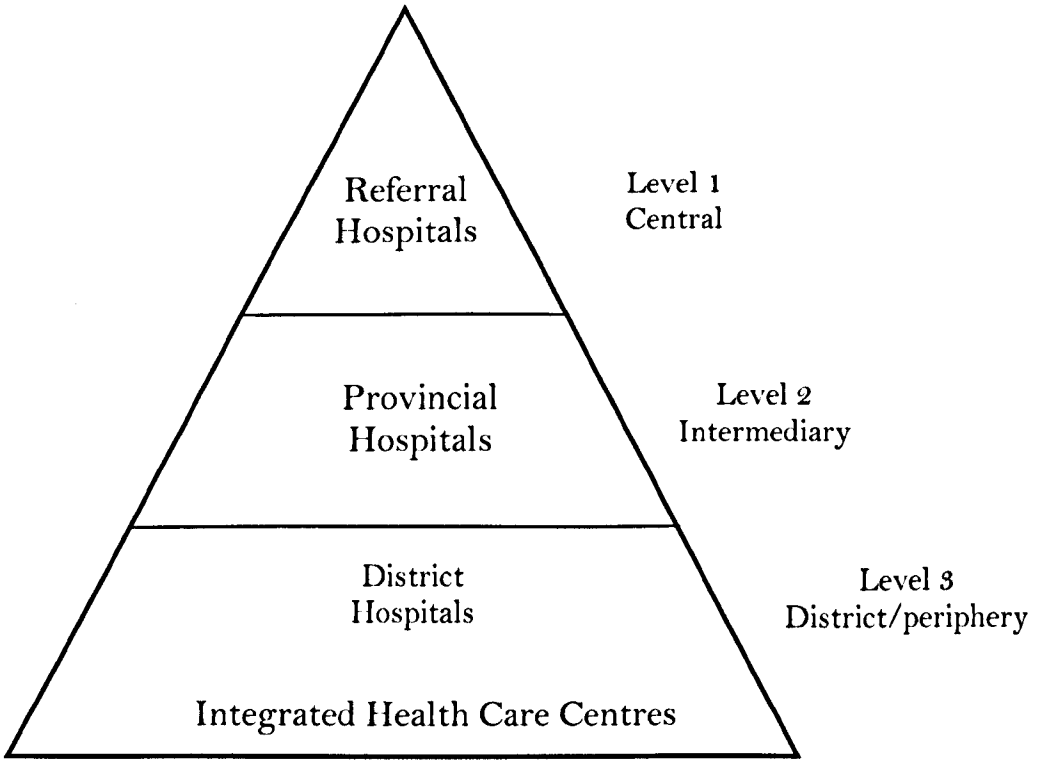
3.5 Sampling and sample selection.

3.5.1(a) Selection of health care establishments / study sites

Documentary evidence indicates that health care in Cameroon is organized in the form of a pyramid with three levels as shown on Fig 3.5.1. below. The health care organizations that

make up the system are based in different geographical locations (urban, semi-urban, rural and extreme rural areas). Integrated health care centres are the backbone of health care infrastructure in developing countries (Isley, 1980) including Cameroon.

Fig. **3.5.1 (b) Summary of health care set up in Cameroon**



A majority of care is provided at level three, the district level, also known as the periphery level at the base of the pyramid. It is the entry point to accessing health care. Conditions that cannot be handled at this level are referred to the provincial/intermediary level, which has more equipped and better staffed facilities. At the top of the pyramid, the referral hospitals receive all cases that the provincial hospitals across the country cannot treat. Referral hospitals are located in Yaounde and Douala, the political and economic capitals respectively. Due to time and resource constraints it was not possible to include health care organizations from level three/ referral hospitals. Consequently, the cases include study sites located at level two/intermediary and level three/periphery only. In addition to state provision of care, there are also, mission/faith as well as private health care providers.

Selection of establishments/sites was criterion-based (Patton, 1990 cited in Sandelowski, 2000).

3.5.2 Selection criteria

The researcher had to adopt a very realistic approach given the tight budget constraints of a self-funding PhD student. The study therefore focuses on a small number of organisations and attempts to investigate them intensively and maximise what can be learned in the period of time available for the study (Yin, 1994; Stake, 1995), pursuing depth rather than breadth as cases are limited to six in total.

Due to practical concerns, lack of time, money, geographical barriers, a convenient sample of six health care facilities was selected for the study, the aim being to choose cases that fitted the needs of the research and to ensure variability by including public, mission and private health care providers. This range of study sites was deemed appropriate to provide breadth of experiences in the different health care settings by different providers. This would effectively capture a wider view of experiences of diagnosing and prescribing by nurses and factors that might affect it.

The different organizations as identified in the literature fall across a range of type/ownership, size, geographical location, resources and the population it serves.

Type/ownership was an important selection criterion because it would be important to determine, in the course of the research if this affected the way nurses diagnosed and prescribed, as well as the perception of the main stakeholders.

Geographical location was an important consideration, the aim being to select cases that represent similarities and differences between the different health care facilities in both rural and urban areas. Lifestyles and incomes vary extensively in Cameroon between rural and urban areas. Documentary evidence suggests that almost half of the population in Cameroon live in rural areas where a majority of health care is provided in the district and periphery levels. The mainstay of the economy in the semi-urban and urban areas is agriculture. Unemployment is high and the people are less literate and poor as compared to those with more stable incomes in the urban areas. It was therefore considered important to try to see how these socio-economic and cultural differences are reflected in the different health care settings where nurses diagnose and prescribe.

The level of resources available to the health facility mattered in the selection because the literature review suggests that the different health care centres vary in terms of resources. In addition, lack of resources has been shown to be a barrier to effective health care provision. In terms of human resources, district hospitals in semi-rural areas generally have fewer doctors,

limited resources and integrated health care centres do not have doctors. They are nurse-led. On the contrary, the larger hospitals are based in the urban areas with generally more doctors and more resources. Same applies to private and mission hospitals. It was therefore important to investigate how variability in resources affects diagnosing and prescribing by nurses in the different organisations.

The overarching aim was to select at least one health care organization from each of the different levels of the health care pyramid. However, due to several factors as mentioned earlier, this study has concentrated on those health care facilities where most health care is delivered. The organizations selected would exemplify the different types of health care facilities (Sandelowski, 2000; Cresswell, 1998; Mason, 2010; Mwenesi, 1985; Krause et al.,1999) in Cameroon covering the different geographical areas (with emphasis on level three where the majority of health care is provided).

The six different Organisations studied were:

- "A" Integrated Health Care Centre (extremely rural) Peripheral Level 3
- "M" Integrated Health Care Centre (rural) Peripheral Level 3
- "S.T.C Medical Centre (rural /semi urban) Peripheral level 3
- "M" District Hospital (rural area) Peripheral level 3
- Provincial General Hospital (urban area) Intermediary Level 2. A large modern metropolitan hospital.
- "X" Clinic Private (urban area) Intermediary Level 2

Access to organizations was straightforward. After the sample of cases was determined and ethical approval gained, the researcher telephoned the hospital directors and nursing managers of the different health care facilities and provided a brief introduction to the research project. This was followed by a visit to the health care facility where the director/ manager were given a covering letter and more in-depth information about the study discussed.

3.6 Selection of individuals /study participants

It was also important to include the views of the different stakeholders so as to have a diversified first-hand and better insights of the phenomenon in their own words. The key element is to understand the subject matter from the individual respondent's point of view.

The population of interest were all those involved in the process of diagnosing and prescribing by nurses. The key stakeholders in this study included government representatives, doctors, nursing managers, nurses and patients covering rural and urban areas. These key stakeholders were selected because the literature identifies them as having a significant impact on the role of nurses in diagnosing and prescribing. Participants were selected according to the needs of the study (Glaser, 1978 cited in Coyne 1997; Miles and Huberman, 1994). The different individuals were selected in order to capture their different perspectives regarding diagnosing and prescribing by nurses.

Selecting research samples involves a consideration of who is better placed to provide the most relevant, rich and comprehensive information which would answer the research questions. The decision is also informed by existing literature (Ritchie and Lewis, 2003) and research questions.

The researcher was introduced to the potential research participants, which greatly facilitated the selection process. Subsequently, doctors/government representatives, nurses/nursing managers and patients were contacted in person. A non probabilistic purposeful sampling (Bryman and Bell, 2003) was carried out through a series of questions based on the predetermined selection criteria (age, grades, different levels of qualification, longevity in service, gender, social class, residency) to establish whether the prospective research participants were appropriate. Purposeful sampling and the investigation of multiple stakeholder perspectives would ensure participant triangulation and increase the credibility of the research (Bowling, 1997; Lincoln & Guba, 1985 cited in Tobin & Begley, 2004; Denscombe, 2003; Patton, 1999; Shenton, 2004; Gray, 2009). However, given the limited numbers of doctors and government representatives, a convenient sample was chosen on the basis of availability and accessibility. The intention was to speak with key stakeholders who were available and had direct knowledge and experience (Guest et al. 2006) of diagnosing and prescribing by nurses. The numbers of key stakeholders selected varied according to the size and location of the selected health care facilities as well as socio-demographic factors.

The principal aim therefore was to select participants who have knowledge of and are actively involved in the process of diagnosing and prescribing, working in either primary or secondary health care settings. Participants were selected using predetermined criteria: age, grades, different levels of qualification, longevity in service, gender, social class, residency. The selected participants were:

- government representatives, since the state legislates what nurses can and cannot do;

- doctors, since nurses work alongside doctors in performing their nursing role;
- nursing managers as they are in charge of organizing resources and therefore ensuring that they are used efficiently and effectively;
- nurses with experience in diagnosing and prescribing in order to be able to provide the necessary in-depth insight. To include many nurses in each study site to optimize data collection opportunities;
- patients from various backgrounds (rural, urban areas, varying age group, gender and social classes). It was important to ensure that patients had significant experience with consulting with a nurse. This is because a single encounter with a nurse prescriber does not cover the experience and depth required for this study. Patients had to have consulted with a nurse for the nurse to diagnose and prescribe for their condition within the last four- six months. This was to ensure memory recall. Ross & Vaughan (1986) and Ryan (1998) citing McKinlay (1972) suggests that patients are better at remembering events that occur recently rather than from the more distant past. It was thought that anything over a year may pose a problem with remembering details on the part of the participants.

Access to government representatives/doctors

Having obtained permission from the assistant delegate of public health (who is a medical doctor as well as a government representative) to conduct the study, the researcher obtained informed consent from the former (having established his suitability using the pre-determined selection criteria indicated above) to participate in the study which he accepted. A meeting was arranged for a follow up visit to arrange a suitable time for an interview. The assistant delegate recommended another doctor, also a government representative. The researcher telephoned the doctor/government representative and briefly discussed the research project. A follow up visit was arranged for a more convenient time where further details of the research were discussed.

The provincial hospital is the largest hospital in the town where the study was conducted. Its' director is a medical doctor who is also a government representative. The researcher approached him directly. The researcher visited the director/doctor of the private health care facility and followed a similar procedure.

The nursing manager/ hospital director authorized access to the doctor in the mission hospital. During each visit, the researcher introduced herself and explained the nature of the research. At these meetings sample interview questions were utilized to ascertain that the doctors were suitable for the study. In addition, this served as a form of piloting the research questions. Afterwards, the researcher then requested the doctor's permission to take part in the study. A total of five doctors were approached and they all consented and took part in the study.

Two doctors/ government representatives working in the largest hospital, general hospital were contacted and they both consented to participate in the study. Staff numbers and composition were not available at the time of the study. 'M' district hospital had two doctors, one also served as government administrator. The latter was approached based on availability and consented to participate in the study. The only doctor in the 'X' clinic (private) was approached directly by the researcher. He consented and participated in the study. S.T.C Medical centre had one doctor who was approached by the researcher and consented to participate. 'A' Integrated Health Care Centre and 'M' integrated Health Care centres are both nurse-led. It was important to investigate doctor's perceptions of diagnosing and prescribing by nurses since nurses, work alongside doctors in performing their clinical roles. Ideally, a larger sample of doctors would have further enhanced the strength of the findings. However, due to scarcity of doctors, only those that were available within the time frame were approached for the study.

Access to nursing managers

Access to the nursing managers was negotiated through the hospital directors of both the public and private hospitals. Access to nurse/nursing managers in IHCCs was achieved by the researcher first, through telephone conversations followed by a visit to the different health centres. At these meetings, the researcher briefly introduced the research project and explained the nature of the study and asked some questions based on the study criteria to ascertain the suitability of the research participants. The researcher again used the opportunity to test the interview questions. This was very helpful in clarifying some concepts prior to conducting interviews for the study. The researcher generally concluded by requesting the nursing manager's permission to conduct the study and to gain their informed consent to participate in the study.

All seven nursing managers consented and took part in the study. Two nursing managers were contacted in the provincial general hospital. Both consented and took part in the study. The rest of the study sites had one nursing manager each. They were all approached by the researcher and they all agreed to participate in the study. It was important to explore the perceptions of nursing managers as the literature review suggest that support and supervision of nurses facilitates nurses' role.

Access to nurses

The hospital manager in the biggest public hospital selected the nurses who participated in this study from that setting. The rationale was that these were the only nurses allowed to

diagnose and prescribe in the accident and emergency ward of that hospital. Similarly, access to nurses was negotiated through the nursing manager (after discussing the study criteria as stated above) of both the private and mission health care establishments. The researcher was given the opportunity to discuss the study with nurses present on individual basis to explain the study and ensure their suitability to participate in the study. All the nurses who were approached met the pre-determined criteria and consented to take part in the study.

'A' Integrated Health Care Centre has a total staff of five, led by the nursing manager/nurse who is the only trained nurse in the centre. The researcher visited the former directly and she consented to participate in the study. Same applies to 'M' Integrated Health Care Centre. It was particularly important to explore the perceptions of these nurses since these centres do not have doctors. In addition, a majority of health care is provided by these centres as they tend to be the first point of contact for patients in rural/extreme rural areas. S.T. C medical centre had a staff composition of 11 nurses. 4 of whom were contacted through the nursing manager and all 4 consented to take part in the study. 'M' district hospital had a staff composition of 16. The nursing manager/nurse recommended another nurse and they both consented to take part in the study. At the time of the study, there was lack of information on staff composition in the general hospital. Five nurses were contacted through the nursing manager. All consented to the study except one due to time constraints on his part. 'X' clinic had 14 staff (8) nurses. Four nurses were approached, facilitated by the nursing manager and all consented to participate in the study. It was important to explore the views of nurses in a variety of settings to establish how differences affect nurses' role in diagnosing and prescribing.

Access to patients

Patients were contacted to determine their suitability for the research using a variety of rural and urban networks as well as community groups. The researcher visited people's homes requesting for patients who frequently consult with nurses and doctors. In some cases the researcher followed up information received from other members of the community about certain household that frequently went to consult in IHCCs or hospitals. A justification for such a method lies in the prevailing communal spirit, the culture of that community. It is context dependent. It is a sharing community where most people know about each other's personal lives including health matters. A total of 21 patients were personally contacted by the researcher from different locations covering extreme rural, rural, semi-urban and urban areas (Details of patient demographics can be found in the findings chapter). All patients consented and participated in the study. It was important to include patients with varying

characteristics such as age, gender, geographical location, social situation, literacy levels. It was thought that these factors could provide a greater insight into the phenomenon of interest, diagnosing and prescribing by nurses.

3.7 Definition and measurement of concepts.

Definition of concepts and how they were operationalized.

The complexity and diversity of diagnosing and prescribing as noted in the literature review requires a multi-factorial approach of concepts to be addressed. The concepts to be studied include the setting, the process, key stakeholders and outcome of the process. Setting refers to where diagnosing and prescribing by nurses take place. The study will seek to answer the following questions: RQ7: How do political, socio-economic, cultural factors affect diagnosing and prescribing by nurses? and RQ3-Why do nurses diagnose and prescribe for patients?

Nurses' role expansion will be investigated to enable the researcher to understand the perceptions of key stakeholders on nurses' role with particular emphasis on diagnosing and prescribing, thereby answering research question RQ1: What is the formal role of nurses within health care service delivery? And RQ2: What is the role of nurses in relation to diagnosing and prescribing treatment for patients?

Process refers to how nurses diagnose and prescribe. The researcher will seek to examine and to understand, the realities of the process of diagnosing and prescribing RQ6: How do nurses diagnose and prescribe? This will be gleaned from the stakeholders' interpretations of events and their observations and interactions with nurses.

Key stakeholders are those who have been identified from existing literature as directly affecting diagnosing and prescribing by nurses. An attempt will be made to understand how different stakeholders affect the role of nurses in diagnosing and prescribing RQ4: How do Key stakeholders influence diagnosing and prescribing by nurses? RQ 5: How are nurses trained to diagnose and prescribe for patients?

Outcomes refer to how key stakeholders perceive diagnosing and prescribing by nurses. The perceptions and accounts of various stakeholders will provide answers to RQ8: How do key stakeholders perceive the outcome of diagnosing and prescribing by nurses. It will discuss the consequences of this aspect of the role of the nurse from stakeholders' accounts of the meanings and how this component of the role of the nurse impacts on them. The research

questions were based on identified gaps in the existing literature on diagnosing and prescribing by nurses in Cameroon.

Data collection took the form of organizational documents, questionnaire survey for basic and factual information and a semi-structure interview as the main source of data collection. Data triangulation was used to increase rigour. Data should be collected from multiple sources to facilitate understanding of in-depth picture of the case (Yin, 1994; Stake, 1995). The assumption was made that no single method can provide sufficient information for testing rival explanations and also to capture the scope of the problem (Yin, 1999). Creswell (1998) also emphasised the importance of defining the context and setting of the case which is needed to understand the holistic nature of each case. Semi-structured interviews allowed for flexibility given the contextual difference in the settings. The interview protocol was not strictly followed to allow for emergent themes and further exploration.

Providing a study protocol, the objectives of the study, field procedures credentials for access to data sources, questions that need to be asked during data collection, the outline/format of the report add to the reliability of all research (Yin, 1994). The researcher focuses on the main task by following the discipline imposed by the principles of empirical studies such as case studies.

Factual information on political, socio-economic, cultural and professional factors was investigated mainly through data triangulation (Easterby-Smith, 2004) the use of documentary evidence, a self-completion questionnaire supplemented by semi-structured interviews with different key stakeholders.

The same methods were used to measure the concepts of health care system, legislation and training of nurses. Information about organizations and how they influence the role of nurses in diagnosing and prescribing was investigated through individuals working within the organizations. The role of nurses/process, how key stakeholders influence the role of nurses in diagnosing and prescribing as well as the outcome of the former was measured through the use of semi-structured interviews.

Table 3.7.1 Measurement of Concepts.

Factors/ stakeholders	Rationale	Data required (What?)	Data sources (Where?)	Collection methods (How?)
Context: Political, socio-economic, cultural factors	To describe contextual factors and understand how they influence the role of nurses in diagnosing and prescribing.	Information on political, socio-economic and cultural factors. Documentary evidence and Key stakeholders' perceptions of contextual factors influencing nurses' role in diagnosing and prescribing.	Secondary sources-Books, journals. Internet. Semi-structured interviews.	Documentary evidence. Archival records, Library, Internet searches, use of various search engines e.g Google scholar, Online indexes;ProQuest Emerald. EBSCO. Medline, CINAHL, The British Nursing Index, PubMed databases.
The State: Health care system Legislation Types of illness that nurses are allowed to diagnose and - prescribe for. Training of nurses. Professional factors.	To describe the role of the state as legislator, the framework and how it is implemented. To describe the historical development of the nursing profession and precipitating factors. To identify the types of illness that nurses are allowed to	Description of legal documents. The perceptions of key stakeholders on the role of the state and its' influence on nurses' role in diagnosing and prescribing. To explore key stakeholder perceptions of what nurses should and should not do.	Documentary evidence. Government representatives, doctors, nursing managers, nurses,	Documentary evidence. Semi-structured interviews with named key stakeholders.

	diagnose and types of drugs allowed to prescribe. To explain the role of the state in relation to the organization of health care, the role of the state in training of nurses and issues of legislation.	To describe the conditions that nurses are permitted to diagnose and drugs that nurses are allowed to prescribe.		
Organizations: Types/size location Resources	To investigate the different types of organizations where nurses diagnose and prescribe and how resources affect their role.	Information on characteristic of health care organizations. Information on types of organizations and how resources influence nurses' role.	Semi-structured interviews with Government representatives, doctors, nursing managers, nurses, patients.	Documentary evidence. Semi-structured one-to-one interviews.
Role of nurses in relation to diagnosing and prescribing/ **processes** Patterns	To understand the role of nurses within health care service delivery. To ascertain the extent to which nurses diagnose and prescribe. Also, how nurses are trained to diagnose and prescribe.	Nurses' function. Use of Nurse prescribing competency frameworks to determine how nurses diagnose and prescribe.	Documentary evidence; organizational documents, job descriptions. Semi-structured interviews with Government representatives, doctors, nursing managers, nurses, patients.	Self-completion Questionnaire for nurses and nursing managers. Semi-structured interviews with named stakeholders.

Doctors: Attitudes to nurse prescribing. Professional relationship with nurses.	To understand how doctors influence the role of nurses in diagnosing and prescribing	Stakeholders' Perceptions of how doctors influence nurses' role in diagnosing and prescribing.	Doctors, Government Representatives nursing managers Nurses, Patients.	Semi-structured interviews with named stakeholders.
Nursing managers: Resources Training Supervision	To understand how nursing managers influence the role of nurses in diagnosing and prescribing	Stakeholders' perceptions of how nursing managers influence the role of nurses in diagnosing and prescribing.	Nursing managers, nurses	Semi-structured interviews with nursing managers and nurses.
Nurses: Age, gender, position held, Experience, Education and training, resources, reward, level of motivation.	To understand how demographic factors together with individual characteristics of a nurse influence his/her role in diagnosing and prescribing.	Key stakeholders' views on how nurses' demographic and individual factors affect their role in diagnosing and prescribing.	Nurses, Nursing managers Patients, doctors, Government representatives.	Semi-structured interviews with named stakeholders.
Patients: Health status Safety Trust and concordance Financial status Level of education.	To explore factors influencing patients' perceptions and how their views influence the role of nurses in diagnosing and prescribing.	Stakeholders' views on factors affecting the patient-nurse consultation process.	Patients, nursing managers, Nurses. Doctors Government representatives.	Semi-structured interviews with named stakeholders.
Outcome: Advantages &	To understand the consequences of	Key stakeholders' perceptions of the	Semi-structured interviews with	The use of Maxwell's

Disadvantages.	the role of nurses in diagnosing and prescribing on key stakeholders	impact of diagnosing and prescribing by nurses on them.	Government representatives, doctors, nursing managers, nurses, patients	dimensions of quality of care; effectiveness, Accessibility, Acceptability, Efficiency & Equity.

Development of clearly conceptualised constructs, use of multiple indicators was one way of securing dependability.

3.8 Data collection methods.

Data collection

Multiple sources of evidence in case studies research is necessary and are more convincing (Yin, 1994). It allows for data triangulation, hence increasing credibility of the study. The use of objective and subjective sources of data is essential. Although the use of subjective data are prone to bias and selection effect they none the less provide rich, in-depth experiences of participants which is core feature of case study (Yin, 1992).

In this study, there are two main sources of primary data. Questionnaires were used in collecting biographical and factual information and semi–structured, one-to-one in-depth interviews. Other information was gathered from documentary evidence.

3.8.1 Self administered questionnaire.

All nurses/nursing managers were asked to complete a pre-interview questionnaire (See appendix 8). This was because these groups of key stakeholders were found to be better suited at providing answers to the questions. The researcher constructed the questionnaire. The questions were generated from the literature review and structured around the theoretical framework used in this study. This information was collected in an attempt to answer some of the research questions.

3.8.2 Concepts addressed in the questionnaire.

A questionnaire was appropriate and helpful in understanding factors influencing diagnosing and prescribing by nurses. The questionnaire included biographical data such as gender, age, job title, longevity in service, educational background, length of period in which the nurse has been prescribing, qualifications, including post qualification. The literature review suggests that these variables have an impact on the nurses' clinical practice. It gave an over view of the current situation, types of illnesses treated, types of drugs allowed to prescribe.

The questionnaire was used to ascertain current government policy on diagnosing and prescribing by nurses. It asked participants whether they were aware of any legislation on diagnosing and prescribing by nurses. Other issues addressed in the questionnaire included questions to find out whether nurse prescribing was part of the pre-registration nursing curriculum, the role of supervisors, issues of legislation, whether there are protocols and procedures for patient referral to doctors.

Although, a self-completion questionnaire is not the best way to collect information on these concepts it nonetheless served as a prelude for the concepts to be further explored during one-to-one interviews as a natural progression. A questionnaire was a useful means of gathering data, to obtain answers to fairly simple questions. There was a mixture of closed and open-ended questions. Open-ended questions were kept to a minimum, and were best suited as interview questions. It is acknowledged that open-ended questions need more thought and can be taxing for respondents. Inclusion of the open–ended questions in the questionnaire served to reduce the number of questions asked during one-to-one interviews as participants can get tired by so many questions which will in turn affect the quality of information they provide. The questionnaire was coded to ensure confidentiality.

3.8.3 Piloting of questionnaire.

Yin (1999) suggested the use of pilot study on a case to identify potential errors/faults in the design or data collection techniques. Prior to distributing questionnaires, a trial run of a self-completion questionnaire was carried out on 2 nurses and 2 nursing managers. The pilot study gave the researcher the opportunity to discuss the questionnaire with other more learned and experienced colleagues, to ensure that it addressed the research questions and had face validity, correct editorial errors and ensure that the layout was user-friendly. On completion, respondents were asked to comment on the ease of completion and whether they encountered any problems with understanding what was required of them. Feedback from the pilot study led to some changes in terminology (for example, substituting "legislation" with "law") so as

to use language which is culturally more acceptable, and easily understood. Ideally, a second pilot study is recommended following amendments of a questionnaire, but resources precluded this suggestion (Pope & Mays, 2006; Sim, & Wright, 2000). However, given that only a few amendments were made a second pilot was not deemed utterly necessary suggesting that the initial format and content of the questionnaire were appropriate.

Questionnaires can be very informative as a method of data collection but there are inherent disadvantages. They are time consuming and there is a risk of questions being misinterpreted. However, piloting helped with examining the questionnaire in the light of cultural equivalence. Responses from the questionnaires were useful in further developing interview questions. For example questions such as " How long have you been in your current post?" were followed up during face-to-face interviews with " How long have you been practicing as a nurse?". This way, longevity in service was established. This information is useful in making comparisons when analysing data.

Following informal and formal discussions with the different stakeholders in different health care settings, data collection commenced in 2007 and ended in 2009. Time spent in the field ranged between 4 and 8 weeks during each visit.

3.8.4 Procedure for distribution and completion of questionnaire

Following pilot testing and amendments, a self-administered questionnaire was used to collect primary data (see appendix 8). A4 envelops were provided for return of questionnaires to the researcher. The questionnaire was accompanied by a covering letter/letter of consent (See Appendix 7). The cover letter explained the purpose of the study, its voluntary nature and issues of confidentiality and how the findings will be used.

Participants were informed that they could withdraw at any stage of the research if they so wished. Concurrently, the researcher obtained permission from the participants for the interviews to be taped-recorded. Other issues in the covering letter included instructions on how to contact the researcher, the researcher's supervisors and the university in which the researcher is currently studying.

Simple instructions on how to complete the questionnaire were provided on the first page of the questionnaire. Respondents were asked to look through the questions to make sure they understood the questions in the presence of the researcher. There were 23 questions in total. The researcher hand delivered self-completion questionnaires, together with a letter of consent /confidentiality to prospective participants. Prospective participants were informed of

when they will next be contacted by the researcher to arrange interviews. A timeframe of one week was allowed for completion of questionnaires.

A pen was placed in each envelope together with the questionnaire. This was thought to have acted as an incentive to ensure a higher response rate. Incentives are a fairly common practice in the USA for research purposes. The practice in the UK and Europe is quite different. Such incentives are seen as a form of bribery and therefore considered unethical (Bowling, 1997). Instead the good will and mutual trust between researchers and participants are highly valued. Having said that, it must be pointed out that over the years, this position has begun to shift and increasingly, gifts, such as (pens, key holders, note pads) are being provided by some researchers to accompany self completion questionnaires in UK research. The culture of Cameroon allows the use of incentives. There is very much a culture of "what's in it for me". Sharing is a theme embedded in social interactions in Cameroon. And therefore the pens were welcomed and appreciated. This method is thought to have been effective as there was a hundred percent, response rate. The researcher collected the completed questionnaires in sealed envelopes. The 100% response rate strongly enhances credibility of the findings.

3.9 Semi-structured face-to-face in-depth interviews

Semi-structured, face-to-face interviews were conducted on a one-to-one basis and taped recorded. Interviews were tape recorded in order to ensure reliability and were later transcribed for analysis purposes. Contextual validity is achieved by tape recording the interviews for later transcription. The use of interview transcripts increases reliability and dependability (Lee et al. 2010).

Face–to-face interviews were conducted with the following research participants.

- 16 Nurses, 7 of whom are also nursing managers
- 5 medical doctors of whom 3 represent the state as they are also administrators.
- 21 patients

Semi-structured interviews were carried out with a view to collecting accounts of stakeholders about their perceptions and experiences of diagnosing and prescribing by nurses. In semi-structured interviews, participants share their feelings, thoughts, emotions, experiences and add another dimension to our understanding of a phenomenon more than questionnaire data does (Eriksson & Kovalainen, 2008; Lichtman, 2006).

The aim of this study was to explain the extent to which nurses are involved in diagnosing and prescribing and to explore the consequences from the perspectives of key stakeholders.

Also to understand how different stakeholders influence nurses' role in diagnosing and prescribing. Interviews were a preferred method of data collection because it is a conversation with a purpose. The data that each research participant provide is rich in detail, revealing subjective meanings, feelings, experiences and thoughts about diagnosing and prescribing by nurses which can lead to theory generation (Hoskins & Mariano, 2004; Lichtman, 2006; Pope and Mays, 2006).

Although the interviewer used a pre-planned script, quite often, supplementary questions and analytical themes were generated through the interview session where participants, divulged information that had not been included in initial interview guides. During the interviews, the researcher took a more receptive role in listening and exploring for more details.

Interviews have a capacity for producing elaborate and detailed accounts of individual's experiences. They are a useful way of finding out what people think and why they think as they do. The methodology entailed using semi-structured interviews in ways which enabled participants to recount in detail their experiences of diagnosing and prescribing by nurses. Interview questions (See Appendix 9) were designed by the researcher. The interview questions were written following a review of the literature and identification of issues/themes around nurse prescribing. The interview guide was useful in the sense that participants were guided and prompted to discuss similar themes thereby minimising the chance of researcher bias.

A similar set of questions were asked to key stakeholders with variations based on research questions and who was deemed to be most suitable in providing answers.

3.9.1 Concepts addressed in semi-structured interviews.

An eclectic mix of nurse prescribing frameworks (See Appendices 4,5 & 6) were employed in this study to inform the interview questions in relation to the nurse-patient consultation process and to measure the quality and safety of nurse prescribing (Latter et al. 2007). Some of the interview questions were structured around nurse prescribing competencies as advocated by the National Prescribing Centre, (1999, 2001). Nonetheless, caution was exercised in using a western-nurse prescribing competency framework in a non-western context. It was thought that given contextual differences, an all encompassing method: semi-structured interviews, whereby the patients and nurses narrate their consultation experiences would be better suited than adopting a non-participant observation approach.

Interview questions for patients centred on the study's conceptual framework as well as Maxwell's dimensions of quality assessment. Topics covered included: types of conditions

that patients consult for; where they consult,; how patients make the decision to consult with a nurse, the patient's expectations of nurse; nurses' confidence in diagnosing and prescribing; acceptability of the role of nurses, communication / interpersonal skills of nurses, issues of cost, benefits and limitations of nurse prescribing, The questions were constructed in an attempt to seek answers to the research questions. In order to minimize researcher bias in relation to how questions were asked and how they were interpreted, the researcher worked together with more senior colleagues in framing interview questions.

The interview questions were designed to give maximum opportunity for participants to be reflective about these experiences, at the same time revealing their values, interpretations and judgments of same. These resulted in constructs about how individuals build their world.

A pilot study was carried out between December and January 2007. The aim of the pilot study was to explore the concepts derived from the literature review. One-to-one informal interviews were conducted with a sample of 4 nurses: one nurse from an IHCC and three nurses from a provincial, mission and private hospital covering the different health care settings and geographical location. In addition, informal discussions were conducted with one doctor/government representative and five patients located in both rural and urban areas who had consulted with a nurse within the past 4 months. The pilot study enabled the researcher to assess the study instruments, interview questions; to determine accessibility of research participants as well as the feasibility of the data collection process (Reid & Boore, 1987). Preliminary interviews highlighted some significant categories which were not included in the interview guides/questions. These were used to inform subsequent interviews.

3.10 Field study procedure.

Prior to travelling to Cameroon for the field study, I phoned the prospective research participants whom I had met during the pilot phase and informed them of my impending visit for the purpose of primary data collection. Being a Cameroonian and a nurse seem to work in my favour as I have some inside knowledge of the country and nursing practices. Also, the fact that I explained that the research will be used solely for academic purposes was a motivator for most people. People were genuinely interested in sharing their experiences with someone who might someday come back home with her knowledge from abroad and help teach the nurses how to improve standards of patient care as they put it. In a way, research participants felt less threatened and more trusting as compared to if the researcher was an outsider. This is deemed to have promoted participation, cooperation and commitment to the research process. Trust is an important factor contributing towards the effectiveness of social

interaction between researcher and the research participants in qualitative research methods, especially with in-depth individual face-to-face interviews.

3.11 Interview Procedure

Before each interview the researcher provided a brief introduction as to the purpose of the interview, reassuring participants that information is for academic use only. Issues of confidentiality were discussed as well as estimation of duration of interview. Prior to commencing the interviews participants were given an opportunity to ask any questions and were reminded that they could stop the interview at any time.

All interviews were pre-arranged between interviewer and interviewees. The face- to- face interviews were conducted in different convenient locations chosen by the interviewee. Participants chose when and where they liked to be interviewed. Some interviews took place in participants' homes, in hospitals and some in the health centres out of working hours. Some were during working hours especially those with hospital managers. All interviews took place in a quiet room to avoid interruptions.

In keeping with good practice as advocated by (Seidman, 1998) each interview began with an informal conversation (for example talking about non-research things) to develop a rapport with the research participant as a way of seeking cooperation, and fostering trust so that they could open up during the interview. All participants gave their oral permission for interviews to be audio-taped and transcribed.

From the onset of the research, the intention was to conduct all interviews in English in order to facilitate transcribing verbatim. However, as the interview progressed, it was noted that there was no difficulty in interviewing doctors and nurses in English. On the contrary, the majority of patients preferred to be interviewed in pidgin English or in their local dialect, with only a few patients preferring to be interviewed in English.

The interviewer checked that all questions had been asked by ticking each question after it was asked. The closing questions gave participants the opportunity to add any information which they thought was relevant to the study in other words questions which I had not addressed. The interviews took the form of a conversation with the sole intention of eliciting information to assist in answering research questions (Kvale, 1996). Interviews lasted between 20 and 90 minutes. At the end of each interview, the participants were asked if they had anything that they wanted to add that had not already been discussed. The researcher

ended the interviews by thanking the participants and offering them small gifts of food/snacks in keeping with the social culture in Cameroon.

An advantage of face-to-face interviews in this study was that they provided an opportunity for the interviewer to identify verbal clues and interviewee body language such as facial expression and inflection of voice. These clues were used to further develop secondary questions, hence gaining more meaningful data than initially intended. To minimise error / misunderstanding and increase credibility to the research findings, the interviewer used exploratory and silent probes to clarify interviewees' responses and mirroring, reflecting and expressing in the interviewee's words, what the respondents had just said.

There are concerns in the literature about interview bias where comments, tone, or non-verbal behaviour of the interviewer could create bias in the way the interviewee responds to the questions being asked. The fact that the researcher comes from the same region where the study took place was found to be a major advantage in terms of observing and interpreting participant's body language. For example, observations included; "sucking of teeth" when narrating experiences of consulting with a nurse. In this society, this gesture can be interpreted in a number of ways. It can be used to display rudeness/defiance or to denote helplessness. During interviews, such a gesture was probed for elaboration/clarification of meaning by the participant, rather than assume that knowledge even though the researcher is a native speaker of the language. Other gestures included, "shaking of head" which can mean "No/disapproval" as well as "despair". Other hand gestures included "thumps up" to show approval. Also, comments like, " Dat (That) nurse is bad" depending on the inflection of the voice, could actually mean that the nurse is very good. All of these cultural nuances needed clarification with the research participant. Face-to-face interviews were therefore a suitable method of data collection as the researcher used her overall contextual knowledge in analyzing and understanding participant's stories. This method allowed for rich cultural nuances to be captured in their entirety.

Conducting interviews was found to be expensive and time consuming. On some occasions, appointments had to be re-scheduled to fit in with the demands of research participants which resulted in several journeys being made to same institutions.

The intense listening skills that interviews demand, required the researcher to employ various senses in collecting data, such as speaking, listening, observing participants' body language, attempting to make sense by interpreting what the participant was saying while at the same time focusing on asking the correct questions. Participants were given ample opportunity to

tell their stories. Interview appointments were spaced out to allow enough time for writing up notes and transcribing soon after the interview was conducted to maximise memory recall.

A disadvantage of using a tape recorder include, reluctance on the part of the interviewee to disclose what they feel is sensitive information. For example during one interview, the interviewee asked for the tape recorder to be switched off. This was done. Off tape, the participant said that some nurses bring their own drugs to hospital in their bags, prescribe and sell them to patients. The participant did not want it on tape in case the hospital director found out about it. In keeping with research ethics, the participant's request was respected. In this case, the participant was happy to divulge such information as long as it was not on record. This is an example of interviewee bias where the interviewee deliberately withholds sensitive information for fear of further probing (Easterby-Smith et al. 2002).

All interviews were transcribed with the exception of one nurse participant whose interview had to be terminated 10 minutes into the interviewing time due to the fact that I could not get past a "Yes Madam" or "No Madam" for almost all answers from the participant irrespective of how hard I tried. The nurse in question has been in service for quite a long period of time. It was thought that she would make significant contribution due to her expertise in the field but for some reason she could not elaborate on her responses. On reflection, I suspected it was a language problem. I recalled only ever speaking to her before the interview in Bafut, the language of the village we both come from, or in Pidgin English. Conducting the interview solely in "grammar", good English may have acted as a deterrent. Following that incident, I made sure that prior to each interview, I asked the participant which language they would feel most comfortable speaking. I did secure a second interview with the same nurse using the local language. Interviews conducted in local dialect were translated into English. Rigour in translation was promoted through confirmation of translated data for transcription accuracy by a colleague who is a holder of a PhD in linguistics. No differences were found. All interviews were conducted and analyzed by the author adding to the credibility of the findings

3.12 Data analysis methods.

The present study employs both qualitative and quantitative methods of data analysis. Data from the questionnaire and initial interviews were analysed and notes made throughout the data collection process simultaneously (Lichtman et al. 2006).

Although using Computer Assisted Qualitative Data Analysis Software (CAQDAS) renders the analysis process easier, it does not give more believable or reliable results. The fact

remains that, the onus of sorting, coding, organizing and synthesizing the data rests with the researcher. Because of small sample size in this study, there was no need to use any software for statistical analysis.

3.12.1 Framework analysis

All interviews were subjected to the framework analysis method espoused by Richie and Spencer (1994), comprising of 5 stages: Familiarization, identification of categories, indexing, charting, and mapping. Familiarization was carried out (Brawn and Clark, 2006) through an overview of the interview transcripts, listening to tapes, reading field notes, noting key issues and recurrent themes. This was followed by identification of thematic framework. Data were examined in order to identify key issues, concepts and themes by which the data can be understood. Issues were derived from the aims of the study, research questions and theoretical framework.

Indexing involved the process of labelling the data into manageable units for subsequent retrieval and exploration. Quantitative and qualitative data were collected. The data were displayed through text/charts. The volume of the data was condensed by highlighting chunks of texts. Also, transcripts were annotated with codes from the index and categories recorded on the margins of the transcripts using different colours of ink.

This was followed by charting, the process of abstraction and synthesis where each passage of transcribed data which had been annotated with a particular theme and a summary of participants' responses / experiences was entered onto a chart. The data were then rearranged according to the appropriate section of the thematic framework.

Mapping and interpretation involved comparing and contrasting participants' comments and searching for patterns, connections and explanations and contrasting views of the data set as a whole. The analysis process continued till theoretical saturation (Glaser, 1978) or when participant accounts tended to yield no new data.

Data saturation and how it was operationalized.

Morse (1995) observes that the key to excellent qualitative work rests in data saturation, although it can be an elastic concept. In this study, data saturation was affected by several factors. First, this study utilizes a heterogeneous sample (different stakeholders) as opposed to a homogeneous group (Guest et al. 2006). Second the unequal numbers of stakeholders groups. Consequently, data saturation varied between stakeholders. Finally, it was found that

the more similar the participants' characteristics (socio-economic, cultural, literacy, location, background), the sooner data saturation was reached.

In this thesis, it can be argued that data saturation was achieved only to a certain extent: It was achieved in relation to nurses/nursing managers and patients but not doctors and government representatives due to limited numbers. It is difficult to achieve data saturation with a small sample (Sandelowski, 1995).

In the case of nurses/nursing managers, as the interviews progressed to the 16th interview, the researcher could identify similarities in participant responses. Nurses and nursing managers reported a range of views which were similar in account. No new major themes emerged relating to the research questions in the later interviews, giving me the confidence that I had captured the main issues in this stakeholder group. Similar experiences were noted with patient interviews. It was therefore decided that further interviews with nurses, nursing managers and patients would not yield additional knowledge. The assumption is made that the more similar the participants in their experience of diagnosing and prescribing, the sooner the researcher would be expected to reach saturation. Glaser and Strauss (1967) cited in Guest et al. (2006) defined theoretical saturation also known as data saturation as "the point at which no additional data are being found whereby the researcher can develop properties of the category" (Guest et al. 2006 p 64). Saturation should be the guiding principle for qualitative data collection, at the very least (Mason, 2010). The guiding principle in determining the sample size was therefore data saturation.

Framework analysis facilitated systematic analysis of data, allowing for comparisons to be made within and between the different cases. Analysis of data was conducted in two phases, within case analysis and cross-case analysis. Cross-case analysis was done by listing similarities and differences between sets of cases. By so doing, aiding the analysis process in that similarities and differences could be used to explain findings. Commonalities of themes were identified through multiple evidence (Yin, 1994).

The framework approach was developed by the National Centre for Social Research in the United Kingdom. It takes the form of a deductive approach. It is developed from the matrix-based approach of analysis by Miles and Huberman (1984). One of the premises is that the data is collected on the basis of a pre-determined theory in the form of a conceptual framework to guide the study. In this method, some themes are set a priori as seen in the theoretical framework. However, given that the study also seeks to fill in gaps that have not been previously addressed in the literature on diagnosing and prescribing by nurses in

developing countries, the framework was fluid. It allowed for further exploration of the topic in the light of contextual factors.

The process involved moving from a broadly deductive to an inductive approach. However, framework analysis contains some elements of thematic and content analysis. Both require careful reading of texts and attempting to generate patterns. The topic guide used to collect data is more structured from the outset. The data were condensed into categories, client characteristics etc. Riessman (1993) Riessman & Quinney (2005) and Czarniawska-Joerges, (1997), argue that this step by step analytical approach aligns with the principles of quantitative paradigm which operates from a reductionist perspective.

Content analysis involved moving from one story to the next, checking for main features, confirming previous accounts, identifying common elements and developing a collective story. Measurement in qualitative studies usually takes the form of classification, taxonomy. Attempts were made to examine connections between themes. The researcher compared each section of the data with every other one throughout the study to identify similarities, differences and relationships. Emerging concepts were identified within subgroups of key stakeholders and across key stakeholders.

According to Pope & May (2006) some researchers move from induction to deduction in the same analysis. It is further stated that in some cases, different techniques of analyzing data are combined to increase understanding of the phenomenon under investigation.

The findings were subjected to participant validation as suggested by Ashworth (1993), and Smith (1999). Authenticity indicates research participants' endorsement of research evidence as an authentic representation of their perspectives (Holloway, 2005). In this study, drawing and verifying conclusions was achieved through participant verification in that after initial analysis, the researcher returned to the different study sites and had informal discussions with four nurses representing the different cases studied and six patients covering rural and urban areas with the analyzed data for cross comparison. This was to determine whether interpretations matched what they said during interviews (participant corroboration) to achieve internal consistency (Mulhall, 2003). French et al. (2001) noted that some researchers carry out this practice of "member checking". A majority of participants agreed with the findings stating that "That was just what I said, only you have put it better" meaning the researcher has interpreted their responses correctly. However, critics argue that by seeking participants' approval of results, qualitative research is reduced to some kind of description of social perspectives that people recognise as theirs.

Ashworth (1993) cautions that the effectiveness of participants' validation has been questioned, citing the inherent power imbalance between the researcher and research participants. Given this concern, it could be argued that some research participants may feel compelled to agree with the findings just to please the researcher. The fact that the researcher is based in the UK as well as the local custom of not challenging authority (which comes with age, wealth and knowledge) could have influenced participants' agreement with research findings. The researcher was aware of these values and therefore instituted different measures to counter these limitations such as, dressing down for interviews, dressing like locals to blend in, speaking the dialect when necessary, walking to some interviews and travelled by taxi to far-off locations. Also, constantly reminding the participants that they are the important ones in the relationship and stating how privileged I am to have them sharing their knowledge and experiences with me.

Another concern for the author was that as a member of the community where the research was conducted, there could potentially be a risk of identifying too readily with the data or the research participants. This lack of a certain distance could result in the researcher taking things for granted, missing out on key issues whilst perceiving them to be insignificant or familiar to offer any meaningful data for analysis. However the author was aware of this fact from the onset and attempts were made to minimise the inherent bias of arriving premature conclusions as a result of using this method by having an open mind and reading between the lines into participant's accounts. Also, the fact that the context of this study is different adds to the originality of the findings.

In addition, the benefits of the researcher coming from the same cultural background outweigh the risks. The researcher speaks the language and is familiar with the idiosyncrasies and therefore can offer inside knowledge thereby adding authenticity to the findings. Also, the use of semi-structured interviews, the local dialect as well as returning to clients to confirm findings adds authenticity to the study. The benefit of using the qualitative method is that is that it gives a holistic picture. It is a new area hence an exploratory approach paving the way for a more quantitative study. An exploration and understanding of the cultural context enables understanding of the topic. The use of multiple key stakeholders enables an understanding of diagnosing and prescribing from a variety of perspectives.

A key strength of this study is that it encompasses political, socio-economic and cultural aspects of key stakeholders. It was particularly useful in this thesis to allow for a context driven methodology. Semi-structured interviews enabled the research participants the opportunity to tell their story in their own words. It was necessary to allow for local ideas,

customs, social and economic life to direct the flow of events rather than rely solely on western textbook methodologies. The accounts of the daily existence and experiences of Africans must be seen in the light of socio-economic life and it's connectivity with contextual reality (Inyang, 2008; Edoho, 2001). The review of the literature and data collection process was therefore driven by the context.

Summary of chapter three.

In this chapter the methodological perspectives of this researched have been discussed. The study contains elements of deductive and inductive approaches/mixed methods approach. The research strategy adopted for this study is exploratory case study. It explores different cases and explains how different stakeholders influence the role of nurses in diagnosing and prescribing. The findings can then be used to develop theories which can be tested subsequently.

The research design has been explained to include both qualitative and quantitative methodologies in order to capture the complexities of the topic. Qualitative/inductive approach took the form of semi-structured one-to-one in-depth interviews. Semi-structured interviews were used to capture the complexities and richness of the perceptions of stakeholders.

Other sources of information were gleaned from documentary evidence. Self-completion questionnaires were used to collect demographic/factual information. The questionnaire was used to complement other methods of data collection. Also, it served as a prelude to semi-structured interviews. Also, this section discusses the rationale, strength and weaknesses of the different methods of data collection.

Purposeful sampling was used. Authenticity and dependability was sought by including participants from different health care organizations and from different sectors to mirror the different health care providers in rural and urban Cameroon. The chapter discusses procedural and ethical considerations of the research.

Framework analysis was used in this study. However, framework analysis contains elements of thematic and content analysis. This research adopts a generic approach. Some of the codes were determined a priori using the conceptual framework. Some new codes emerged from the data. The credibility of this study was further enhanced through participant corroboration where a sub sample of research participants were contacted after the analysis process for confirmation of key aspects of research findings.

CHAPTER FOUR

FINDINGS & ANALYSIS

Introduction:

Having described the political, socio-economic, cultural and professional context within which this study takes place in chapter one and the formal role of nurses and how they are trained in chapter two, this chapter examines in more detail the findings of the case studies.

Tellis (1997) note that due to the uniqueness of case study methodology there is no fixed reporting format as the case may be with experimental research. Reporting of findings has been intentional in its approach because of the similarities of the cases. It was thought that case by case reporting would be repetitive. However, attempts have been made to pull out similarities and differences between and within cases. First, a detailed description of studied cases and demographics of study participants will be presented. Next is the pre-study theoretical framework which has been used as a guiding tool for this research. This will be followed by an examination of the state as the main provider of health care in particular with regards to legislation defining the nurses' roles, what they can and cannot do. The perceptions of key stakeholders of the actual role of nurses within health care service delivery, the extent to which nurses diagnose and prescribe is compared and contrasted with the formal role as sanctioned by the state. In addition, factors affecting nurses' role in diagnosing and prescribing, the process of diagnosing and prescribing and the consequences of this aspect of the nurse's role on key stakeholders will be examined and discussed.

4.1 Sample characteristics of organizations.

The different Organisations studied include;

- "A" Integrated Health Care Centre (extremely rural) Peripheral Level
- "M" Integrated Health Care Centre (rural) Peripheral Level
- "S.T.C Medical Centre (rural /semi urban) Peripheral level
- "M" District Hospital (rural area) Peripheral level
- Provincial **General Hospital** (urban area) **Intermediary Level.** A large modern metropolitan hospital.
- "X" Clinic **Private** (urban area) **Intermediary Level**

The different organizations fall across a range of type/ownership, location, resources and the population it serves.

Description of study sites provides a fuller picture and overall understanding of contextual factors and how they affect the role of nurses.

Table 4.1 Characteristics of Organizations

Number of cases	Organisation	Ownership	Location	Resources	Population
1	"A"Integrated **Health Care Centre**	State Nurse-led	Extremely rural 35km from town	5 staff 4 beds	6,000
2	"M" Integrated **Health Care Centre**	State Nurse-led	Rural 5km from town	6 staff 6 beds	9,000
3	S T. C. **Medical Centre**	Mission/faith Doctor-led	Semi-Urban 12km from town	32 staff 80 beds	87,960
4	"M" **District Hospital**	State Doctor-led	Semi urban 20km from town	16 staff 38 beds	87,960
5	Provincial **General Hospital**	State Doctor-led	Urban Town	lack of information on staff composition. 400beds	250-300.000
6	X Clinic **(Private)**	Private-for-profit. Doctor-led	Urban Town	14 staff 30 beds	250-300.000

1)"A" Integrated **Health Care Centre** (extremely rural) **Peripheral level.**

This case was chosen because it represents a good example of a government health care facility one would find in the most rural area in Cameroon. This health centre falls under the peripheral level of health care provision in Cameroon. It is approximately 35 Kilometres from Bamenda town, (capital of the north west region). The undulating topography of this area hinders accessibility. Getting there is a major obstacle and the indigenous population are generally farmers and very poor. Un-surfaced roads make it difficult for people to transport their food crops from the farm to the market. Basic amenities such as portable drinking water and electricity are nonexistent in this area. It is geographically isolated, difficult to get to and situated a long way from the district hospital.

The health centre is nurse-led with a total staff of five. The nurse is employed by the state and recruited by appointment. She is also a midwife and holds the position of chief of centre (administrative position). She manages the staff which includes the pharmacist, the laboratory technician, an assistant nurse and a cleaner. It has a bed capacity of 4. This is the entry point of health care. It caters for all patients. The nurse treats those cases which she can handle and refers the more serious cases to the district hospital which is the next level of care provision. Drugs are sold at a cheaper rate at this centre since generic drugs are supplied by the North West Provincial Fund (NWPF). The health centre caters for a population of approximately six thousands plus (6000+).

2) "M" Integrated **Health Care Centre** (rural) **Peripheral level.**

This health centre falls under the peripheral level of health care provision in Cameroon. It is approximately 15 Kilometres from Bamenda. It is difficult to get to due to bad roads. It is closer to the district hospital as compared to case one. The area lacks basic amenities, such as clean drinking water and electricity supply. The health centre is nurse-led with a total staff of six. The nurse who is employed by the state and recruited by appointment is also a midwife and holds the position of chief of centre. She manages the staff, which includes the pharmacist, the laboratory technician, an assistant nurse, a cleaner and a night watchman. It has a bed capacity of six. This is the entry point of health care. It caters for all patients. The nurse treats those cases which she thinks she can handle and refers the more serious cases to the district hospital which is the next level of care provision. The health centre caters for a population of approximately nine thousands plus (9000+).

3) S T. C. **Medical Centre** (rural /semi urban) **Peripheral level.** According to Organizational documents and data from an interview with the nursing manager, it was created in 1961 by

the Tertiary Sisters of St Francis of the Catholic Mission. It began as a small maternity and since then has been developed by the sisters to cover a wide range of primary and secondary activities including; general consultation, radiology, surgery, ultrasonography, HIV/AIDS management, and vaccinations. It also has a maternity, modern diagnostic laboratory, pharmacy as well as a mother and child welfare unit. The hospital carries out health promotion activities, runs mother and child clinics, vaccination programs, and provides curative and rehabilitative care. Recently it started offering cancer screening programs at reduced rate for all women aged 20 and above. It employs about 33 staff led by a matron who is also the health centre manager. She is the head of the hospital, the sister in charge and has overall responsibility for all the staff and patients. At the time of research staff composition was as follows;

- 1 General practitioner
- 1 State Registered Nurse/Midwife/Anaesthetist
- 1 Nurse Anaesthetist
- 2 State Registered Nurses
- 2 Staff Nurse/Midwife
- 4 Staff Nurses
- 1 Staff Midwife
- 2 Laboratory technicians
- 6 Certified Nursing Aids
- 1 Auxiliary X-ray technician
- 4 Auxiliary Nurses
- 2 Caterers
- 4 Cleaners and 1 driver.

The doctor carries out consultations for major health problems whilst the nurses consult minor cases. However, in the absence of the doctor, the nurses carry out all consultations, admit those patients they cannot send home and wait for the doctor to review the cases on his return to the hospital. In some rare cases, the patient is referred to the provincial hospital. The hospital has a bed capacity of 80, with a 60-70% occupancy rate. It is situated about 12km from the main town, Bamenda. The section of the road between the centre and the main highway is un-tarred and very difficult to travel on most of the year. The lush vegetation

makes the zone a fertile breeding ground for mosquitoes which transmit malaria, particularly in the rainy season.

4) "M" District Hospital (Semi-rural area) **Peripheral level**

This is a government hospital, situated about 20kms from Bamenda town. The road from the town to the hospital is tarred. It has access to pipe borne water and electricity. The population consists of are a mixture of farmers, Secondary/high school teachers and businessmen/women. The district medical officer has a joint role of running the hospital and carrying out consultations with patients. The health personnel is headed by a district medical officer who has overall responsibility for staff and patients. Staff composition is about 16 nurses, 12 of whom are employed by the government and 4 by the local community. There are 2 medical doctors, one of whom acts as a co-ordinator (administrative). The hospital has 38 beds. Bed occupancy varies between 60%-100% and above depending on the season. Patients are referred from integrated health care centres to this hospital. Nurses work alongside the district medical officer and assist in consulting minor cases. But in the absence of the doctor, the nurses carry out all consultations and refer serious cases to the provincial hospital. The hospital serves a population of approximately, 87,960. Patients pay consultation and laboratory tests fees, and can buy their drugs from the hospital pharmacy if the drugs are available, or from any pharmacy in town.

5) Provincial **General Hospital (Urban area) Intermediary level.**

This hospital is located in the capital of the region and is the largest government hospital in the region. The hospital is headed by a hospital director who has a dual function of government administrator as well as medical practitioner. The nursing manager and doctors, report directly to the hospital director. Bed capacity is approximately 400 with bed occupancy of at least 65% at any given time. The bed facilities are shared among the surgical, maternity, children and medical wards. Out-patient services are also available. The hospital has other departments/units: physiotherapy, eye unit, laboratory, dental clinic, pharmacy and X-ray. Staff numbers and composition were not available at the time of the study. Due to an increase in the number of kidney infections throughout Cameroon, several months ago, the state opened a dialysis unit in the hospital. The unit is fully functional presently making it the second hospital offering dialysis in the province. It was not uncommon for people to queue for the service, with some unfortunate patients dying whilst waiting to use the facilities/equipment. The hospital serves a population of between 250,000 and 300-000, as well as patients from other parts of the country who come there following recommendation or

those who are visiting in the province and fall ill. Patients pay consultation, laboratory tests and bed fees and can buy their drugs from the hospital pharmacy if the drugs are available, or from any pharmacy in town.

6) X Clinic (**Private-for-profit**) (Urban area) **Intermediary level.** It is a privately owned for-profit organisation located in Bamenda town. The owner has a dual function of hospital director and medical doctor. In the past it had more than one medical doctor but at the time that this research was carried out it had just one. It employs about 14 staff. It has a laboratory, a theatre, a pharmacy and a radiology department. The hospital is linked to a nursing school owned by the hospital director in collaboration with some international benefactors. Prior to carrying out the research, the clinic had a bed capacity of 46, but at the time of research it had reduced to 30, with a bed occupancy rate of about 30%. In the absence of the full time doctor, the nurses carry out consultations during which they diagnose and prescribe for patients. Patients are required to pay for the full cost of their treatment (consultation, bed, laboratory, pharmacy and operation fees). However, for those patients who are too poor, their fees are subsidized using hospital reserves from voluntary donors.

4.2 Demographics of study participants.

In this study, 17 nurses were initially recruited, one refused to participate in the study. The composition of study participants was as follows:

The outcome of the sampling procedure is shown below.

The sample represented different key stakeholders. The study participants were made up of:

- 16 Nurses, 7 of whom are also nursing managers
- 5 medical doctors of whom 3 represent the state as they are also administrators.
- 21 patients

Table 4.2.1 (Nurses / nursing managers) Total= 16.

Nurse Identification	Age Range	Gender	Job title	Qualifications	Nos. of yrs of experience
Nurse D	46-50yrs	male	Consulting and screening nurse	State Registered Nurse	20yrs
Nurse J	41-	Male	Consulting &	State Registered	22yrs

	45yrs		Screening nurse	nurse	
Nurse F	26-30yrs	male	Emergency nurse	State Registered Nurse, Bachelors degree in nursing science	2yrs
Nurse M	36-40	female	Staff Nurse	Brêveté (diploma in nursing)	13yrs
Nurse E	31-35	male	Nurse Anaesthetist	Brêveté (diploma in nursing)	6yrs as health assistant
Nurse C	26-30	male	Consulting Nurse	State Registered Nurse	33months
Nurse W	36-40	female	Staff Nurse	State Registered Nurse	11years
Nurse J	36-40	Female	Staff Nurse	Registered Nurse	9yrs
Nurse D	41-45	Female	Assistant staff nurse	Nursing Aid	14 years
Nurse F	41-45	Female	Chief of Centre (Nursing manager)	Assistant Midwife	20yrs
Nurse M	41-45	Male	Chief of Bureau (Nursing manager)	State Registered Nurse	16yrs
Nurse R	41-45	Male	Nurse in-charge (Nursing manager)	State Registered Nurse	14yrs
Nurse V	50+	Female	Chief of centre (Nursing manager)	State Registered Nurse	20yrs+
Nurse Sis F	50+	Female	Hospital manger (Nursing manager)	State Registered Nurse	24yrs
Nurse R	50+	Female	General supervisor (Nursing manager)	State Registered Nurse	23yrs
Nurse Mr A	50+	Male	Nurse practitioner /lecturer (Nursing manager)	State Registered Nurse	30yrs+

The age composition of nurses and Nursing managers was as follows:

20-30=2 (12.5%)

31-35=1 (6.25%)

36-40=3 (18.75%)

41-45=5 (31.25%)

46-50=1 (6.25%)

50+=4 (25%)

From the above figures it can be seen that the majority of nurses are aged 41 and above. This is no coincidence because the nurses working in the integrated health care centres were mainly older nurses. Also, the nursing managers who also practise as nurses are older.

Of the 16 nurses studied, 8 were female and 8 male. Although there is lack of authoritative data on gender distribution of nurses in Cameroon, it is generally accepted that a majority of nurses in Cameroon are female, confirming what others have noted in western literature.

Some of the nurses are employed by the State (8), some by the private sector (4) and some by the Mission (4).

A total of 16 nurses participated in the study. All participants contacted for the study took part except one nurse whose interview was arranged through the hospital matron/ manager.

Table 4.2.2 Doctors Total = 5

Doctor	Age	Experience	Gender	Place of training	Position held	Health setting
Dr F	45-50	18yrs	Male	Cameroon	Medic /In-charge of planning services and health statistics (Government Representative)	Public sector
Dr W	55-60	29yrs	Male	Cameroon/ Canada	Physician, Internist, Rheumatologist,	Public sector

					Hospital director (Government Representative)	
Dr NN	50-55	24yrs	Male	Cameroon/ Kenya/ UK	Physician urologist, Hospital Director	Private
Dr V M	30-35	4yrs	Male	Cameroon/ Nigeria	Chief Medical officer	Mission
Dr T Ch	45-50	16years	Male	Cameroon	Chief Medical officer(Governme nt Representative)	Public Sector

Doctors were recruited to represent the different health care settings; private, mission/faith and public health care providers and also to cater for geographical variation, urban and rural areas. Government representatives also practice as medical doctors. The gender biased selection of doctors was not deliberate. There are more male medical doctors than female doctors in Cameroon. Given the logistical constraints and the fact that the study was conducted in one town, it was difficult to recruit a female doctor due to their scarcity in the area of study.

4.2.3 Patients Total=21

Patient	**Age group**	**Gender**	**Geographical location**	**Social class/situation**	**Literacy level.**
Pt T	35-40yrs	Female	rural	Proprietor of primary school	High
Pt sis L	41-45yrs	Female	rural	School principal	High
Pt ES	41yrs	Male	rural	Taxi driver/cattle farmer	Medium
Pt T's W	30yrs	Female	semi-urban	Farmer/trader	medium
Pt youngest	23yrs	Female	semi-urban	Student	high
Pt G	60yrs	Male	semi-urban	Farmer/trader	medium
Pt L	38yrs	Female	urban	University lecturer	high
Pt Ng	45yrs	Female	urban	Trader	medium

Pt J	35yrs	Female	urban	Trader	medium
Pt G	41yrs	Female	semi-urban	Secondary school teacher	high
Pt J	44yrs	Female	extreme rural	Farmer	low
Pt LA	55yrs	Female	extreme rural	Farmer	low
Pt B	27yrs	Male	extreme rural	Farmer	low
Pt A	20yrs	Male	extreme rural	Farmer	low
Pt D	41yrs	Female	extreme rural	Farmer	medium
Pt G col	42yrs	Male	semi-urban	Secondary school teacher	high
Pt C	62yrs	Female	rural	Farmer	low
Pt Cat	60yrs	Female	rural	Farmer	low
Pt Chr	38yrs	Female	urban	High school teacher	high
Pt Pa	68yrs	Male	semi urban	Retired police	medium
Pt Z	46yrs	Female	urban	Secondary school teacher	high

Of the 21 patients interviewed, 15 were female and 6 male. This is representative of the general population where there are more women than men. Also, women in Cameroon bear the major responsibility for the wellbeing of the family, taking sick members of the family to hospital, providing care and in most cases shouldering the financial burden.

The following areas were identified through analysing data from each stakeholder followed by inter (within similar groups) and intra (across groups) stakeholder analysis. This was to identify similarities and differences between key stakeholders.

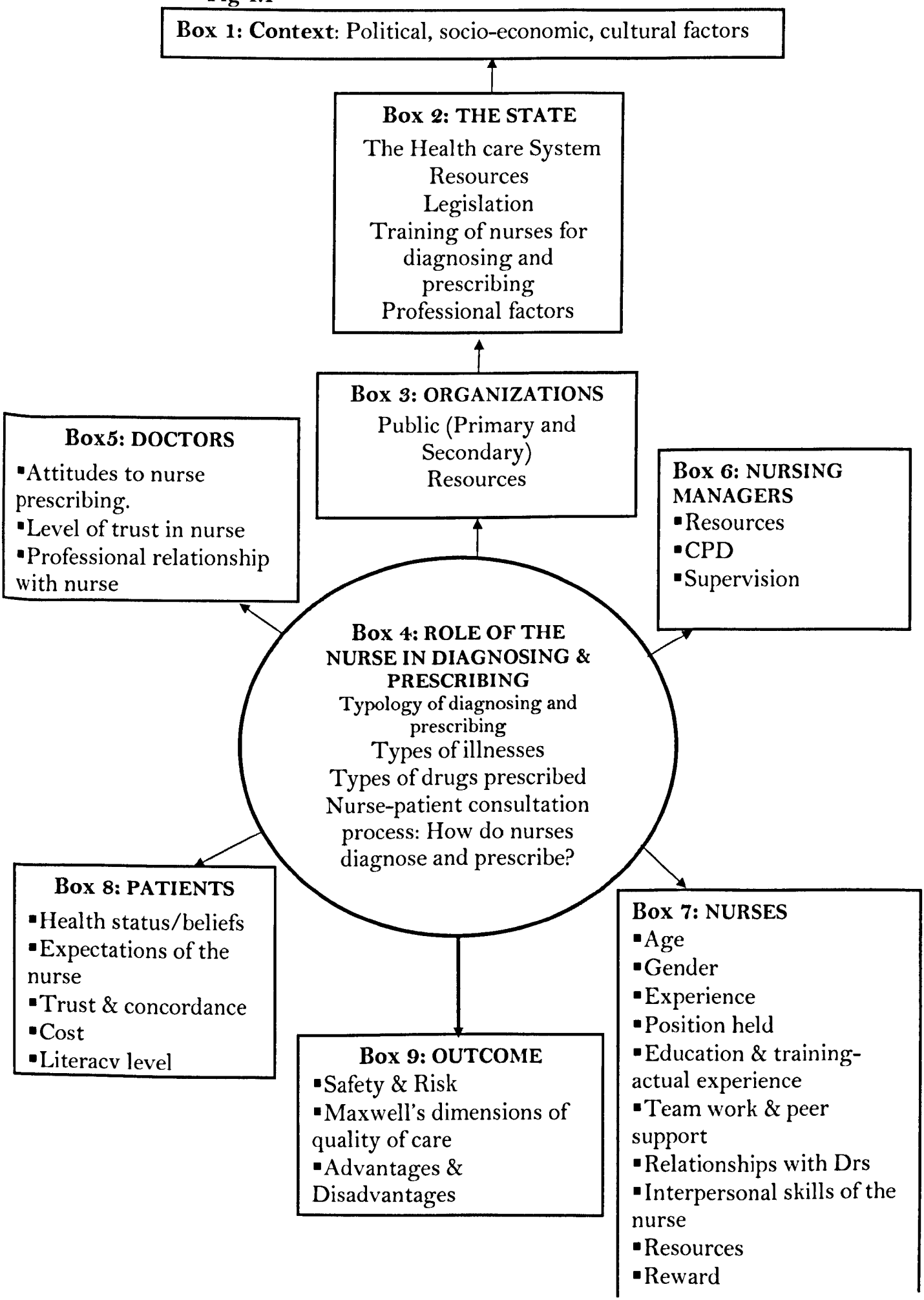
The organization of the findings, have to a certain extent been dictated by the theoretical framework. However, also included are other topics which were not discussed in the literature review but which have emerged from the analysis of the data.

The findings have been organized under the following headings:

- legislation / official role of nurses; Legislation regarding diagnosing and prescribing as perceived by key stakeholders;
- key stakeholders' perceptions of the role of nurses within health care service delivery typology, the extent to which nurses diagnose and prescribe;
- factors explaining variations in diagnosing and prescribing by nurses:
- the nurse-patient consultation process
- the consequences of diagnosing and prescribing on different stakeholders

Theoretical Framework for Understanding the Role of Nurses in Diagnosing and Prescribing

Fig 4.1



The following section will examine the study findings utilizing each aspect of the theoretical framework.

4.3 The formal system and role of nurses in relation to diagnosing and prescribing within the health care delivery system in Cameroon.

4.3.1 Legislation relating to the official role of nurses in Cameroon.

In order to understand how key stakeholders perceive diagnosing and prescribing by nurses, it is important to explore what the role of nurses is within the health care delivery system. This section describes the legal constraints to what a nurse can and cannot do. The term 'nurse' in Cameroon is used to refer to Nurses' Aides, Registered Nurses (RNs) and State Registered Nurses (SRNs) and in some cases trained nurses who hold midwifery qualifications and practice both as a nurse and as a midwife. These nurses work in rural and urban health clinics, hospitals as primary care Nurse Practitioners (NPs). The Nurses Aides and Registered Nurses are more involved in performing screenings, diagnosing and prescribing. Also, they provide health education for patients. These groups of nurses form a majority of nursing personnel working in rural health centres and urban hospitals. The State Registered Nurse as defined by Cameroon law No 84009 of 5 December 1984, provide nursing care for a case load of patients by identifying and managing medical problems in collaboration and under the supervision of a physician. Nurses in Cameroon are registered and regulated by the state in conjunction with the Order of Nurses, Midwives and Health technicians. This is a national body which is in charge of regulating nursing activities.

The State Registered Nurses' higher educational attainment means they have the advanced skills required to manage multiple health problems which are endemic particularly in urban areas (Ndiwane, 1999). These roles correlate with those of Nurse Practitioners in the UK. As there is scarcity of doctors in rural areas, nurses are the main providers of health care services in these parts of the country, only referring patients to the district or regional hospitals depending on the severity of the illness.

The expansion of nurses' role requires clear legislation and regulation to protect professional standards and high quality of care and public/patient safety. Evidence from documents as illustrated below indicates that the role of the nurse in Cameroon is fixed by a number of instruments set by government.

Table 4.3.1.1 Legislation relating to the role of the nurse

Law No. 84/9 of 5 December 1984	Decree No.87/529 of 21 April 1987	General Assembly of the Order 2nd Ordinary Session Yaoundé, 2-April 1996
A nurse shall be holder of a State nursing diploma or any equivalent certificate recognized by the state. Such individual must be registered on the roll of the Order of Nurses, Midwives and Health technicians. Nurses serving in the administration may not practice on a private basis. **The following shall be considered Illegal practices of nursing:** Any nurse providing services in commercial premises selling the appliances he/she prescribes or uses. Violations of this law shall be punished by a prison term of from six days to six months and a fine of from 10.000-500,000 francs CFA.	Consultations are carried out by: GPs, dental surgeons, assistant university lecturers, research attachés Qualified Medical specialist, lecturers, researcher, Senior lecturers, senior researchers, research directors and professors. A consultation generally consists in questioning the patient, carrying out a clinical examination and where applicable, giving a therapeutic prescription.	The nurse must lend assistance to actions by public authorities in the area of public health protection. The nurse must inform public health services of any case of communicable diseases, as well as furnish statistical information necessary for public health. A nurse must maintain relations of confraternity. In relation with other health care professional, a nurse must respect their independence. They must avoid any unwarranted acts that may be detrimental to their clients, and must be courteous to them. **Prohibitions relating to the general duties of the nurse:** It is forbidden for a nurse to carry out any activity incompatible with the dignity of the profession. The provision of ambulatory/itinerant treatment shall be forbidden Any act aimed at receiving undue or illicit payment from a patient, Tricks and charlatan practices shall be forbidden.

		Violations of this Code shall fall within the ambit of the Council of Order sitting as a disciplinary chamber in accordance with the law.

Source: Ministère de la Santé publique du Cameroun (1999).

In addition to the above roles Catholic Nurses are required to:

- Practice the nursing profession according to Christian principles.
- Remember at all times that they are destined to be at the service of mankind
- Be at all times inspired by Christian doctrine
- Respect individual rights to conscience, liberty and religious worship and be ready to provide spiritual assistance to patients if required.
- Cultivate the helping attitude, spiced with prudence and discretion towards all patients in danger and help prepare them for a good death (Nche & Fon, 1999).

Order No.29/A/MSP/DSP/SFPS of 17 October 1977 was revised and it later became Bill No.532/PJL/AN 1990.

According to Order No.29/A/MSP/DSP/SFPS OF 17 October 1977, the official roles of nurses were as follows:

Table 4.3.1.2 Official role of the nurse

- Draw up a care plan for an individual, a family or a community
- Carry out under his or her responsibility the nursing and health care activities delegated to him/her.
- Diagnose common infections.
- Decide on action to take on the basis of the diagnosis
- Treat uncomplicated common infections
- Make arrangements to transfer complicated cases
- Follow up a pregnant woman from beginning of pregnancy to delivery
- Identify risk pregnancies and refer them to more competent persons
- Carry out normal delivery
- Take care to preserve the health of the mother in case of dystocia during labour and

refer complicated cases.

- Monitor the health of the mother and that of the new-born
- Manage a health service, a hospital ward, a health centre, and a mother and child health care centre.
- Draw up health statistics for his/her area of activities
- Oversee the activities of all those placed under his/her authority(assistant nurses, assistant midwives, nursing aids, and probationers)
- Draw up report of his/her activities
- Help the family or community to solve some of their health problems through their own involvement and that of the community health workers
- Educate individuals, families and communities on their health problems
- Participate in nursing research
- Law No. 84/09 of the 5 December 1984 regulates of the practice of the professions of nurse, midwife and health technicians.
- Law No. 84/10 of 5 December 1984 organizes the Association of Nurses, Midwives and Health technicians.

Source : National Association of the Professions of Nurse, Midwife and Health Technician (2005).

The official document adopted at the end of the Second Ordinary Session of the General Assembly of the Order of Nurses, Midwives and Health Technicians held in Yaoundé, on 2nd April 1996 states a nurse is responsible for organizing a consultation requested by the patient or his entourage. The nurse shall propose a consultation which is most suitable, but must take into account the desires of the patient. However, it does not mention specifically anywhere that nurses should diagnose and prescribe treatment for patients. Even though, diagnosing and prescribing by nurses is not specifically mentioned in the various instruments, it is integrated in the nurse training curriculum as seen in chapter 2. This may point to some vagueness or ambiguity in the legislation.

However, Order No.29/A/MSP/DSP/SFPS of 17 October 1977 signed by the Minister of Public Health and revised in 1990 states that, on successful completion of 3 years of nurse training, a nurse can: diagnose common infections, decide on action to take on the basis of the diagnosis and treat uncomplicated common infections. Again this document appears to be vague in that the definition of uncomplicated common infections is not explicit. Therefore,

there appears to be ambiguity in the way the state guides and supports diagnosing and prescribing. Presently, the system appears to be a "bottom-up" approach as opposed to a "top-down" approach as illustrated in the quotes below. This could potentially influence variations in practice.

4.3.2 Legislation regarding diagnosing and prescribing as perceived by key stakeholders.

When asked whether there was legislation regarding diagnosing and prescribing by nurses, key stakeholder responses were diverse and conflicting. It is evident from the responses that the legislation has little or no impact on this aspect of the role of the nurse. All the doctors and /Government Representatives who took part in the study stated that there is no law that permits nurses to diagnose and prescribe.

> "To the best of my knowledge there is no legislation that authorizes nurses to prescribe. According to the deontology defining the nursing profession, nurses are not supposed to prescribe. They can receive casualty, examine patients but then refer them to a doctor" (Doctor/ government Representative F).

The above quotation from the doctor/government representative is at odds with the statutory document which states that nurses can diagnose and prescribe for minor conditions. It then leads one to question why the doctor/government representative was not aware of this very important document.

> "There is no legislation permitting nurses to diagnose and prescribe as far as I know...You do have nurses that run clandestine dispensaries. They open some treatment areas and they start doing, receiving patients, making diagnosis, prescriptions. It is not that it is authorized. There are a lot of illicit, illegally operating health units which are run by nurses" (Doctor/government Representative W).

Again, another doctor/government representative seems not to be aware of the statutory document which allows nurses to diagnose and prescribe for minor conditions. If nurses are behaving illegally, why is something not done about it? Could it be because there are no alternatives and therefore government officials turn a blind eye to such mal-practice? The implication could be that patients are given sub-standard care which could impact negatively on their health.

> "There's a breakdown in the health delivery system. There is no limit because no one sets the rules. And so the only limiting factor is when the nurse says to him or herself that I am not doing it. But no one puts their foot down to say don't cross this. It does not exist.....there is no government legislation stating that

> nurses can diagnose and prescribe for patients. There is none..... but... nurses are diagnosing and prescribing in different health settings. Every nurse in every clinic is a `doctor' and so you don't know what is what." (Doctor NN).

One can infer from the above quotations that doctors think nurses are behaving wrongly. The above quotation suggests weak governance.

On the contrary, most nurses stated that there is a law allowing nurses to diagnose and prescribe.

> "Yes. there is a law. If there was no law then the state and other nurse training schools will not be teaching nurses how to diagnose and prescribe for patients, teaching you about drug of choice etc." (Nurse W).

> "according to the Cameroon constitution, there's a law that states that a nurse, those working in the health centres as from the level of a state registered nurse they can prescribe and treat patients, because at the level of the integrated health centres, most of the time there is only one doctor who can't be there 24/7. So most often than not, the chief of post is often a nurse." (Nurse F).

It should be noted here that the law according to this nurse only permits State Registered Nurses working in health centres to diagnose and prescribe.

It is evident from the above quotations that there are disagreements/controversies as to whether nurses are legally permitted to diagnose and prescribe. Although the doctors stated that there was no law permitting nurses to diagnose and prescribe, nonetheless, they also added that due to shortages of doctors, nurses are allowed to diagnose and prescribe for minor conditions only, whilst referring the serious cases to doctors.

The findings from this study suggest that different key stakeholders have different interpretations of the existing statutory documents stating what nurses can and cannot do. By implication, the absence of a generally acceptable and enforceable legal framework leaves the door wide open for all types of interpretations.

Having considered the Legal framework surrounding diagnosing and prescribing by nurses the following section will seek to examine key stakeholders' perceptions of the role of nurses within health care service delivery and the extent to which nurses diagnose and prescribe in practice.

4.4 Key stakeholders' perceptions of the role of nurses within the health care service delivery.

Henderson (1964) asserts that nursing as a profession which affects human life must define its function. The purpose of nursing is to promote human health and well-being. Nursing is defined in terms of helping individuals in performing those daily activities which they would normally do in the absence of disease. Nurses alleviate patients' symptoms and suffering from disease, restoring patients back to good health. Nursing caters for actual and potential problems, and thus lays emphasis on helping patients with existing problems, promoting health and preventing diseases.

Description of role of nurses in cases studied.

Integrated Health Care centres are located in larger villages which in turn serve smaller villages. The official responsibility of the nurses working in such centres include: prenatal, delivery and post natal care, infant/child immunization, sanitation and nutrition. Also, they provide curative care for minor illness, diagnosing and prescribing, and limited inpatient care. The more serious cases are referred to the nearest district or provincial hospital depending on the severity of the illness.

The State Registered Nurse in the **IHCCs (rural areas)** are also trained midwives/acoucheurs. They hold the position of chief of centre, an administrative position which entails running the centre and managing its staff. IHCCs staff would generally comprise: an assistant nurse (an equivalent of Enrolled Nurse in the UK with two years of nurse training) who also diagnoses and prescribes for patients or in some cases a first aider (untrained nurses without formal nursing qualifications) a drug dispenser (often with minimal formal training as a pharmacist), a laboratory technician, a cleaner and a night watchman. The assistant nurse generally manages the centre in the absence of the registered nurse, albeit unofficially. In such cases, the assistant nurses diagnose and prescribe for patients whilst asking patients to return the next day for further consultation with the chief of centre.

The State Registered Nurse in the **mission hospital (semi-rural area)** is the matron and the hospital manager. She is the sister in charge and has overall responsibility for all the nurses and patients. Together with other Registered nurses and Assistant nurses they carry out health promotional activities, run mother and child clinics, vaccination programs, provide curative and rehabilitative care. The doctor carries out consultations for major health problems whilst the nurses consult minor cases. However, in the absence of the doctor, the nurses carry out all

consultations, admit those patients they cannot send home and wait for the doctor to review the cases on his/her return to the hospital.

Officially, in the **district hospital (semi-urbanized area)** the nurses work alongside the district medical officer (medical doctors) and assist in consulting minor cases. But in the absence of the doctor, the nurses carry out all consultations and refer serious cases to the provincial hospital/regional hospital.

Nurses in the **Provincial Hospital (Urban area)** work alongside medical doctors. Their formal role includes diagnosing and prescribing for minor conditions whilst referring the more serious cases to the doctors.

In the **private hospital (Urban area)** the doctor is in charge of consulting all patients. But depending on the workload, the nurses consult for minor conditions. However, it was found that unofficially, in the absence of the doctor, the nurses fulfil a consultation function whereby they diagnose and prescribe for all patients and refer those cases that they cannot manage to the Provincial Hospital.

Documentary evidence as described earlier, points to the fact that the official role of nurses in Cameroon falls under three broad categories: *preventive care/rehabilitation*; *administrative care and curative care.* Curative care involves, consulting diagnosing and prescribing of medication/treatment.

Table 4.4.1 shows results of analysis of the role of nurses as perceived by key stakeholders. It looks at elements of the role and differences across the cases from the perspectives of Government representatives (GR), Doctors (Dr), Nursing managers (NM), Nurses (N) and Patients (P).

Data from semi-structured interviews were used to identify functions carried out by nurses in their various health care facilities. Column one is an aggregate of the responses listing the nurses' functions and shows the extent to which these functions are carried out in different health care facilities. The table also indicates whether a stakeholder mentioned the function in that particular health unit.

Table 4.4.1 **Role of nurses as perceived by different stakeholders.**

Role of nurses	**Integrated Health care centres (Rural area)**	**Mission Hospital (Semi rural area)**	**District Hospital (Semi-Urbanized area)**	**Provincial Hospital (Urban Area)**	**Private Hospital (Urban area)**
Diagnosing and Prescribing					
Taking History	NM, P	NM, Dr, N, P	NM,P	D/GR, NM, N,P	Dr, NM, N. P
Performing physical examination.	NM, P	NM, N,P	NM,P	NM, N, P	NM, N,P
Ordering and interpreting laboratory tests	NM, P	NM, N,P	NM,P	NM, N,P	NM, N,P
Making clinical diagnosis	NM, P	Dr, NM, N,P	NM,P	D/GR,NM, Dr, N, P	Dr, NM, N,P
Prescribing treatment	Dr/GR,NM, P	Dr, NM, P	NM,P	D/GR, NM, Dr, N, P	Dr, NM, N,P
Explaining the illness to the patient	NM, P	NM, N, P	NM, P	NM, N, P	NM, N, P
Recording the visit	NM, P	NM, N, P	NM,P	NM, N, P	NM, N, P
Administering medication	NM, P	Dr, NM, N, P	NM, P	D/GR, NM, Dr, N, P	Dr, NM, N, P
Dressing wounds	NM, P	Dr, NM, N, P	NM, P	NM, N, P	Dr, NM, N,
Performing minor operations	NM,	NM, N,	NM,	NM, N	NM, N
Suturing	NM	NM, N	NM	NM, N	NM, N
Applying casts(Plaster of Paris)	-	-	-	NM, N	-

Providing Health education advice	Dr/ GR,NM,	NM, N, P	NM	NM, N, P	NM, N
Performing caesarean section	-	-	NM, Dr/GR	-	-
Assisting in surgery	-	NM, N	NM	NM, N	NM
Provide pre & post-natal care.	NM	NM, N	NM	-	-
Manage mother & Infant welfare clinics	Dr/ GR,NM	NM, N	NM	-	-
Management/Administration					
Supporting staff, planning and implementing training and supervision	Dr/GR, NM	NM	NM	NM, N	NM
Acting as supervisors	NM	NM	NM	NM,	NM, N
Writing activity reports	Dr/GR,NM	-	NM	-	NM
Managing budget, Ordering equipment etc.	Dr/GR,NM	NM	NM	NM	NM
Planning staff rotas,	NM	NM	-	NM	NM
Arranging meetings	NM	NM	NM	NM	NM
Documentation of care plan	NM	N,	NM	Dr/ GR, NM,N	NM, N
Collecting	Dr/GR,NM		DR/GR,	-	-

information on: Disease patterns Number of patients consulted Number of birth and deaths. Time spent with government and local authorities			NM		
Role of Nurses	**Integrated Health Care Centres (Rural Area)**	**Mission Hospital (Semi-Urban Area)**	**District Hospital (Semi-Urbanized area)**	**Provincial Hospital (Urban area)**	**Private Hospital (Urban Area)**
Communicator					
Referring patients to doctors	Dr/GR, NM, P	Dr, NM, N, P	NM	Dr/GR, NM, N, P	Dr, NM, N, P
Accompany Drs during ward rounds/liaise with other members of the health care team.	-	Dr, NM, N	Dr, NM, N	Dr, NM, N	Dr, NM, N
Co-ordinating work with vaccination team.	Dr/ GR, NM	N	NM	-	-
Writing Referral letters and Reports	Dr/GR, NM	N	NM	-	-
Studying reports	NM	N	NM		
Teacher					
Provision of health information to patients	Dr/GR, NM, P	NM, N, P	Dr/GR, NM	Dr/GR, N, P	NM, N, P
Supervision of other workers, acting as mentors to junior	Dr/GR, NM	N, NM	Dr/GR, NM	Dr/ GR, NM, N	NM, N

colleagues and students					
Care giver					
Assisting patients with bathing, feeding, walking, maintaining personal hygiene	Dr/GR	Dr, NM,N	Dr/GR, Dr	Dr/GR, Dr, NM,N	Dr, NM, N, P
Provide comfort, psychologically/cult urally and spiritual care whilst preserving the patient's dignity.	Dr/GR, Dr, NM, P	Dr NM, N, P	Dr/GR, Dr NM, P	Dr/GR,N, P	NM, N, P
Caring for the family of the patient in terms of support, answering queries from relatives, relieving their anxieties and offering reassurance where necessary.	N Dr/GR, Dr, M, P	Dr, NM, N, P	Dr/GR, Dr, NM, P	Dr/GR, Dr, N, P	Dr, NM, N, P
Role of Nurses	**Integrated Health Care Centres (Rural Area)**	**Mission Hospital (Semi-Urban Area)**	**District Hospital (Semi-Urbanized rural area)**	**Provincial Hospital (Urban area)**	**Private Hospital (Urban Area)**
Medicine Administration					
Administering medication to patients, orally, per rectum, intravenously, intramuscularly, topically. Observing for side effects and educating the patients about their	Dr/GR, NM, P	Dr, NM, N, P	Dr/GR, NM, P	Dr/GR, Dr, NM, N, P	Dr, NM, N, P

medication.					
Offering advice on how to take medication, what the side effects are and what to do and what not to do.	NM, P	NM,N, P	NM, P	NM, N, P	NM, N, P
Nursing care of inpatients.					
Provides a safe environment for the patients. Ensures patients are admitted to the right ward and that physical environment is secure. Providing wheel chairs for non-ambulatory patients.	-	NM, N	Dr/ GR, NM	Dr/ GR, Dr, N	NM, N
Provide care by walking the patient to the bathroom, toilet as required, feed those who cannot feed themselves, Regulating the room temperature as requires. Ensuring patient confidentiality. Sitting and talking with patients, answering their queries, providing psychological care, Providing spiritual care by arranging for priests, pastors,	- NM	NM, N	-	N,P	N,P

imams to visit patients (pastoral care)					
Role of Nurses	**Integrated Health Care Centres (Rural Area)**	**Mission Hospital (Semi-Urban Area)**	**District Hospital (Semi-Urbanized rural area)**	**Provincial Hospital (Urban area)**	**Private Hospital (Urban Area)**
Preparing patients for theatre.	-	N	-	N	NM, N
Providing counselling for patients pre and post diagnosis.	NM	NM, N	NM	N	NM, N
Other Roles					
Teaching Patients income generating strategies. Providing practical and financial help to patients.	NM, P	N, P	NM, P	N,P	NM, N

Key: Doctor/ Government Representative (Dr/GR); Doctor (Dr); Nursing Manager (NM); Nurses (N) Patients (P).

Source: Data from semi structured interviews with doctors, government representatives, nursing managers, nurses and patients.

As seen in Table 4.4.1, nurses provide a wide range of duties which varies across health facilities. The findings indicate that the nurses' role is multifaceted ranging from providing patients, with bedside care to diagnosing and prescribing for them. The main duties of a nurse in Cameroon were found to include: assessing, screening of patients and prescribing treatment in the absence of the doctor. All nurses, nursing managers, doctors, patients and government representatives as illustrated above agreed that diagnosing and prescribing forms a significant aspect of the role of nurses working in all health care settings which were studied, particularly for nurses working in IHCC where there are no doctors.

> "I can say that three quarters of my daily work is diagnosing and prescribing treatment for patients" (Nursing Manager V).

> I consult, I order lab tests, I dispense drugs, I give injections and other nursing duties... (Nurse F).

In a majority of cases, nurses are the first point of contact for most patients in Cameroon.

> "I meet the nurse first. The nurse then decides whether to send me to the doctor or not. If she thinks that my condition is serious, then the nurse will send me to the doctor. If not, the nurse consults me and prescribe me medicine" (Patient J).

Although all stakeholders agreed that diagnosing and prescribing forms the bulk of what nurses do, the extent to which there was agreement varied. All government representatives, doctors, nursing mangers and to a lesser extent patients stressed the fact that nurses are only allowed to diagnose and prescribe for minor, uncomplicated conditions and that the nurses main duty is to assist the doctor by providing care as instructed by the doctors alongside other nursing functions, caring for the patient.

Concerning the formal role of nurses as stated earlier, Order No.29/A/MSP/DSP/SFPS of 17 October 1977 as revised stipulates that, on successful completion of 3 years of nurse training, a nurse can diagnoses and prescribe for minor uncomplicated infections. However, stakeholder accounts show that nurses with two years of nurse training also diagnose and prescribe for patients. There has been difficulty in ascertaining whether there is any legal framework on diagnosing and prescribing for nurses with two years of training other than the existing one for nurses with three years of training. But, interview data indicates that diagnosing and prescribing formed part of the curriculum of the two years of nurse training. The implication therefore is that such nurses have the training which equips them with the required knowledge and skills to diagnose and prescribe for patients.

Some nursing managers also double as nurses in all health care settings in this study and therefore provide frontline care to patients when necessary. Similarly, some doctors are both administrators as well as clinicians and therefore share similar views with doctors who do not hold an administrative position. However, those who practice solely as medical doctors reported closer working relationships with nurses as they work alongside nurses. In some instances government representatives and patients who do not work closely with nurses on a regular basis, were not always aware of the different roles that nurses have. On the other hand, it could be because nurses are not expected to perform such clinical task.

In a majority of instances nurses and patients reported similar perceptions. However, in a minority of case, there were variations between nurses' reports of what they do and patient's accounts of the care they receive from nurses. All stakeholders agreed that nurses take

patient's history and in some cases perform physical examination, make clinical diagnosis and record the visit. However, doctors and government representatives did not comment on nurses performing physical examinations, ordering and interpreting laboratory tests and explaining the illness to the patient. This could be because these stakeholders are not present when nurses carry out these activities in the clinical environment.

All stakeholders agreed that nurses prescribe and administer medication. However, there were disagreements regarding the types of drugs which nurses were allowed to prescribe.

4.5 Types of drugs nurses are allowed to prescribe.

Nurses and nursing managers reported that they are allowed to prescribe only essential drugs as listed in diagnosis and prescribing protocols. They reported prescribing from the following

Table 4.5.1

• antimicrobials, • analgesics, antacids, anti malarial, • glucose, • normal saline, • cough syrup, • dexamethasone, • antiseptics, anti-pyretics,	• anti-emetics • steroids with caution, • NSAIDS, • vitamins and Minerals, • anti-anaemia drugs, • anti-inflammatory drugs and • topical/dermatologicals.

Nurses have a protocol for certain diseases such as malaria. Nurses are not allowed to prescribe cardiac drugs and anaesthetic drugs except for local anaesthesia. However, the more senior nurses were quick to point out that the protocol is only a guideline since each patient is unique, meaning that two patients suffering from the same disease may present with different symptoms. It was evident that nurses follow the protocol in some cases but not in others.

Interview data suggest wide variations in stakeholders' responses to the question of what nurses can or cannot prescribe. A majority of nurses, nursing managers and government representatives held the view that there is a list of drugs which nurses are allowed to prescribe from: The following quotes demonstrate this point.

> "In all three German Agency for Technical Co-operation (GTZ) provinces (Northwest, South west and Littoral provinces) they have what they call diagnosis and treatment guides prepared by

> doctors for nurses to follow in prescription." (Doctor/ Government representative F).

There appears to be a contradiction in some doctor's perceptions of legislation and actual practices of nurses. This is because an earlier quote by this research participant clearly stated that there was no legal document allowing nurses to diagnose and prescribe yet this is followed by another quote stating the fact that there are prescribing guidelines.

> "We have explicit permission as to what we can and cannot prescribe. The hospital has a list of all essential drugs. It is often posted in all departments. So we have the right to prescribe all essential drugs we call the Special Fund. We have other special drugs which I don't think will be the place of the nurse to prescribe them." (Nurse F).

However, a small number of nurses stated that there are no restrictions to what the nurse can or cannot prescribe and that nurses are limited only by their individual discretions:

> " Really, there is no laid down documentary work stating what we can and cannot prescribe, but you as the professional nurse you know which drugs you are supposed to prescribe and those that you cannot prescribe, like drugs for cardiac problems " (Nurse C).

A significant number of nurses and nursing managers stated that although there are restrictions to what drugs nurses can prescribe, in exceptional cases, nurses go ahead and prescribe restricted drugs if they think it is in the best interest of the patient. The more experienced and more qualified nurses reported to be willing to push the boundaries in terms of diagnosing and prescribing outside the recommended protocol as illustrated in the following example.

> "Even though there are certain drugs that we are not supposed to prescribe, in some cases we do in order to save the life of the patient. For example, if a woman is in labour and the labour is not progressing well or if there is a complication and there are drugs that I am not supposed to prescribe.....if I see that to refer that patient to the hospital they will use the same drug, then I will use the same drug but with a lot of precaution and observation to avoid any risk that will lead me to answer why I used it" (Nursing Manager F).

A majority of nurses in the study stated that they diagnose and prescribe within defined parameters and for certain conditions only, although with variation in some cases as negotiated with the nurse manager or doctor. However, all the doctors in the study, a majority of patients as well as some nursing managers disagree with the nurses views, arguing that in some instances, the line between a doctor and nurses is blurred and that some nurses are

becoming 'mini doctors' without the necessary training which they deem raises serious issues of patient safety.

Overall, there seemed to be some amount of confusion about the exact role of the nurse in diagnosing and prescribing. This results in a situation where there is a great deal of negotiating going on and the nurse's role is essentially defined by the needs of the patient in a given context. The findings suggest that job boundaries are not as formally set as they appear to be. They vary depending first on the availability of a doctor or a more senior nurse and secondly on a nurse's discretion, irrespective of his/her clinical experience. This is illustrated in the following excerpt of an interview with a nurse with only two years post training experience.

> "I'm allowed to perform most of those things (clinical roles) because I spoke to my supervisor that there were cases which generally came and I felt they were for doctors and maybe people superior to me but she told me if those guys are not around I'm allowed to extend my boundaries so I don't think there is any formal job description" (Nurse F).

Stakeholder interview data suggest wide variation in the types of conditions and drugs that nurses are allowed to prescribe. The accounts highlighted to a great extent contextual negotiations. Although not stated in writing, there is an implicit understanding that nurses should do what they perceive as good for the patient.

Nursing managers, nurses and patients reported that patients consult the nurse for varying reasons as shown below.

4.6 Types of diseases.

Respiratory tract infections, pneumonia, "light fever" (temperature), cough, catarrh (common cold) fever, asthma crisis, bronchitis, tonsillitis, accidents, pregnancy, typhoid, diabetes, malaria, hypertension crisis, road traffic accidents and other accidents, wound management, cases of poisoning, epilepsy crisis, kidney problems, skin diseases, HIV/AIDS, stomach upsets, gastroenteritis, eye infections, ear infections, diarrhoea, helminthiasis, tooth ache, urinary tract infections/ sexually transmissible diseases, pelvic inflammatory diseases, sickle cell crisis, filariasis, rheumatism.

Officially, nurses are allowed to diagnose and prescribe for minor uncomplicated infections. But the above list of conditions that patients consult with, according to nurses, nursing managers and patients alike, comprises more than minor uncomplicated infections, to say the

least. However, the fact that nurses have a protocol for some diseases as well as diagnosing and treatment guidelines helps with guiding the nurses in their prescriptive duty and in ensuring patient safety.

The private and mission hospitals pointed out that they have a job description which spells out what a nurse is supposed to do, but added that there are circumstances in which nurses may deviate, particularly if the patient's life is at risk. They may have to phone the doctor for advice. They will follow the verbal order/advice and then document what had been done and why. That way, they are covered. In order to effectively perform their role, nurses need a proper job description which clearly spells out what they can do. Although the public health setting has a formal job description, it was rarely followed due to skills shortages.

> "The issue of job description has been done in this hospital before, but it is impossible to implement. We came up with what a degree holder had to do, what a state Registered nurse had to do....what a nursing assistant had to do but we saw that we could not move with that because there were no staff nurses....."(Nursing Manager, R).

The official role of a nurse in Cameroon states that a nurse can follow a pregnant woman from the beginning of pregnancy to delivery, carry out normal delivery, identify risk pregnancies and refer them to more competent persons. However, a nurse explained that due to factors such as; extreme scarcity of doctors particularly in rural areas, coupled with poverty, poor infrastructure/transportation difficulties, the nurse made a conscious decision to perform a caesarean section claiming that the alternative would have been to endanger the lives of the mother and her unborn baby.

Although a majority of stakeholders stated that nurses perform wound dressing and perform minor surgery as seen in Table 4.4.1 a nursing manager stated that on one occasion whilst he was working in a remote rural health care centre he carried out a caesarean section.

> Although there are limitations as to the type of cases we can diagnose and prescribe in some cases we just have to do what is good for the patient. For instance, a woman had a complicated labour and I saw that if I referred the woman to the nearest hospital, I might risk losing both mother and unborn child and so I carried out an emergency C (Caesarean) section. And I'm glad to say that both mother and child were fine. The child must be about 3years old now" (Nursing Manager M).

With the exception of the above example, nursing managers working in integrated Health care centres did not assist in major surgery as such facilities did not exist in the IHCCs.

Another difference in the roles is that whilst nurses working in the IHCCs, district and Mission hospital provide pre/post natal care as well as manage mother and infant welfare clinics, nurses working in urban areas such as the private and provincial/regional hospital did not report carrying out such activities. A possible explanation could be partly that all the nurses interviewed in the provincial hospital worked in the Accident and emergency department. Another finding which is different is that of nurses' role in applying plaster of Paris. This was reported by nurses in accident and emergency which is in the provincial hospital.

Nursing managers and more experienced nurses in all health care centres reported acting as mentors to junior colleagues, student nurses and other health care personnel. The nursing managers who are also nurses in charge of IHCCs and the district hospital (in the absence of the medical officer) are more involved in writing referral letters to doctors, reports and collation of information on health statistics on behalf of the delegation of public health for the Ministry of Public Health. This is partly because of the absence of doctors in IHCCs in the rural areas whose role includes collection of health statistics. Nursing managers in all health care settings are involved in managing a budget. A majority of nursing managers were involved in planning staff rota. This was not mentioned by the nursing manager in the district hospital. However, the nursing manager did say he was in charge of other staff and resources. Implicitly, therefore planning staff rota could be part of his role.

Co-ordinating work with vaccination team, writing referral letters and studying reports was mostly reported by nurses working in IHCCs, mission hospital and the district hospital. It could be that these health facilities are located in rural and semi-urban and semi-urbanized areas and therefore tend to provide a wider range of care services.

All key stakeholders agreed on the role of the nurse as care giver in bathing, feeding, walking the patients. The doctors and government representatives gave mostly accounts of what they perceive to be the role of nurses and to a limited extent their observations of what nurses do in the clinical environment. Patients reported the role of nurses in relation to care provision mainly in terms of the nurse providing reassurance, relieving their anxiety, providing words of comfort and answering their health related questions. Nursing managers and nurses in private and mission hospital reported this aspect of care more than nurses in the provincial hospital. Also, they reported practicing in keeping with their religious beliefs. For instance when asked to give an example of a typical working day nurses in both the mission and the private hospital stated that after handover by say the shift the nurses starting the day with morning prayers.

"When she (nurse) hands over, we do the ward round to see all the patients, then we do morning devotion" (Nurse J).

Nurses in IHCCs, district hospitals and to a larger extent in the provincial/regional hospital are less involved in providing personal care to patients since the culture in Cameroon allows family and relatives to cater for the patient's personal needs. However, nurses working in mission hospital perform such roles to a limited extent if necessary while nurses in the private hospital where the patient is paying more and there is a higher chance of consulting with a doctor, provide more personal care. This suggests that the nursing role is flexible depending on the context and resources.

There was a high degree of agreement between all stakeholders in relation to the role of nurses in administering medication to patients. Nursing of inpatients was mostly commented on by nursing managers, nurses, doctors and government representatives and a small proportion of patients also supported their claim. Mostly literate patients in the urban areas with either private or provincial hospital inpatient experiences reported positive nursing care. Although the nursing managers in IHCCs did comment on the fact that they sometimes admit patients at the health centre and provide the necessary care, it is evident that a majority of their patients are outpatients. Also, preparing patients for theatre was reported by nurses and nursing managers in the mission, provincial and private hospitals and not in the IHCCs and in the District hospital. Given that patients in IHCCs are referred to the district hospital where there is a medical doctor and where surgery is performed, this may have been an oversight for the nursing manager not to have commented on this aspect of the nurses' role. Preparing patients for counselling was commented on by nursing managers and nurse in all cases studied, particularly in relation to the screening for HIV/AIDS.

Finally, nurses, nursing managers and patients particularly those in the rural areas agreed that nurses provide other functions such as teaching patients income generating strategies and even go farther to provide practical and financial support to patients where necessary.

" I teach them (patients/women) how to prepare a balanced diet for their families, teach them how to make soap (detergent) something that they can even earn a living with since they are in the rural areas" (Nurse Manager V).

For example, a nurse reported taking the opportunity of their health promotional sessions where she teaches women how to prepare a balanced meal, hygiene and sanitation together with other income generating activities such as teaching the women how to make detergent

using local materials. The latter activity is not in the nurse's job description. This is an activity which is outside her professional line of duty. Nonetheless, the nurse demonstrates an understanding of the relationship between income and health in this case.

In comparison to what the official role of the nurse is, interview data suggests that on balance, nurses perform normal (official), unofficial and extra roles which are not included in their job description.

4.7 Typology of diagnosing and prescribing by nurses.

The literature suggests international variations in diagnosing and prescribing by nurses. Interview data from nurses, nursing managers, patients and doctors identify five different types of diagnosing and prescribing:

- independent diagnosing and prescribing;
- counter-referral /dependent prescribing;
- adjusting/refining of doctor's prescriptions;
- diagnosing without prescribing,
- diagnosing and prescribing in a team.

4.7.1 Independent diagnosing and prescribing:

Nurses, particularly those working in IHCCs reported that they diagnose and prescribe independently of the doctor. This is done for those patients with minor conditions and common illnesses such as: malaria, typhoid, diarrhoea, common colds, minor cuts and burns but also in some serious cases such as, high risk pregnancies or cerebral malaria. The nurse assesses the patient to reach a medical diagnosis. Information is collected by asking the patient, by observation; physical examination of the patient, monitoring temperature, blood pressure, pulse, respiratory rate, urinalysis. Identification of the patient's needs is followed by planning, implementation, evaluation and further assessment till the patient is discharged home. The process can be summed up as follows: the nurse independently assesses the patient, identifies the patient's needs, decide whether the patient needs screening or laboratory tests. If the nurse decides that the patient does not need a laboratory test, then the nurse will decide on a course of action. The nurse may either:

- Advise (verbally) the patients on what to do to alleviate their symptoms.
- Make an inferential diagnosis based on patients' symptoms and prescribe medication for the patient and send the patient home.

- Provide first aid treatment and ask the patient to wait for doctors' review later or ask the patient to come back the next day to see the doctor if the nurse thinks that is the best course of action: or

- If the nurse feels that the patient's case warrants admission, then the nurse would admit the patient on the ward whilst waiting for the doctor to review the patient at the nearest available opportunity.

Most nurses in the interview made strong claims that they diagnose and prescribe independently of the doctor. They stated that because of extreme scarcity of doctors and growing demand for health care, they had to make do with whatever knowledge and skills they have for the benefit of the patients.

> "I can diagnose some cases independently without consulting anyone for help"(Nurse J).

The view that nurses diagnose beyond their level of expertise because of acute scarcity of doctors was not shared by all key stakeholders. A majority of doctors felt that nurses are practising beyond their professional competence and that they are simply reluctant to refer patients to doctors in some cases. Doctors explain this action by the fact that some nurses are abusing the opportunities given to them for financial gain.

> "Some nurses do abuse the opportunity that is given to them and they go beyond what they are supposed to do and some may not even want to refer the patient to the Doctor. Then there are tendencies of malpractice, sales of drugs, private practice by nurses" (Doctor/Government representative W).

> "But again when nurses start fighting to fill their pockets...most of the time, the doctor will only get to see the patient when the patient is already dying" (Doctor N.N)

Surprisingly this assertion was confirmed by some nurses, patients and nursing managers. The above assertion suggests role conflict between doctors and nurses. If nurses are diagnosing and prescribing beyond their level of competence whilst engaging in illicit sale of drugs to patients, it suggests conflict of interest as the nurses' task of providing patient-centred care is clouded by the quest for money. This could potentially be putting patients' health at risk.

A nursing manager responded to a question as to whether there are professional conflicts between nurses and doctors as a result of nurses' ability to diagnose and prescribe.

> " Yes. It could pose a conflict in some situations where the doctors with poor confidence may soon find that nurses are more competent, where performance is very high on the part of the nurse there is bound to be conflict"(Nurse Manager A).

Some nurses stated that they only practised independent diagnosing and prescribing in minor case that are within their professional level of competence. The nurses further acknowledged that there are clearly some serious cases for which the patient really ought to be treated by a doctor. However, because the doctor might be several miles away from where the patient is, because the doctor is "not on sit" (not available) when they should be or because the patient states that they do not have money to go to the hospital to see a doctor, the nurse is bound to treat the patient the best she/he can.

Some of the nurses reported a high level of professional competence in diagnosing and prescribing, although a significant number of key stakeholders reported that some nurses hold an exaggerated view of their own competence.

> "It is only in rare cases where a conscientious nurse who knows his or her limitations would refer a patient to a doctor. But in most part the nurse normally diagnoses and prescribes the patient's treatment". (Patient Z)

4.7.2 Counter referral /dependent prescribing:

All nurses reported that all cases which they deemed to be beyond their level of competence, were referred to the doctor, where there is a doctor present. Following initial diagnosing and prescribing by the doctor, the doctor then sends the patient back to the nurse for continuation of treatment for example repeat prescriptions or wound dressings.

> " In those cases that I have difficulties with, I have to refer the patient to see the doctor" (Nurse W)

> If it is within our range to consult, we consult and send them to the ward and if it's not within our range we just do the review of symptoms and signs and send to the doctor for consultation. (Nurse J)

4.7.3 Adjusting/ refining of doctors' prescriptions:

There was evidence that after consulting with the doctor some patients will seek the nurses' advice on which medicine to buy, essentially because they lacked the money to buy the full prescription. Some nurses reported that out of sympathy and in an attempt to help the patient get better, they would indicate those drugs that deserve priority and ask the patient to buy them first. However, the nurses also added that they always encourage the patients to buy the rest of the drugs as soon as they can afford them. The problem here is that when the patient starts taking the drugs and feels better, there is little incentive to purchase the rest of the prescription. The consequences are that the disease is not treated properly. The patient falls ill

again and the cycle begins all over. This point is best illustrated with the following quote from a nurse.

> " There is this aspect of multi-therapy. Because there are some prescriptions that a doctor will prescribe giving five, six, seven different types of drugs, especially those inexperienced doctors. They prescribe all these medicines when they are unsure as to which one is the most effective. If I'm not really sure of what you (the doctor) have written, I go straight to the point and treat the patient. We feel for the patients" (Nurse J).

According to this nurse, the prescriptions issued by some junior/inexperienced doctors are not appropriate for the patients.

4.7.4 Diagnosing without prescribing:

All doctors, nurses, nursing mangers and government representatives stated that nurses can diagnose HIV/AIDS but are not allowed to prescribe anti-retroviral drugs without the input of a doctor. After diagnosing the patient, the nurse must therefore refer the patient to the doctor for a prescription.

> "For some conditions, I cannot even prescribe such as Anti Retroviral Drugs. Only the doctors can do that." (Nurses M).

> "I do screening for HIV/AIDS...When I diagnose a patient with HIV I have to send them to the district medical officer for treatment" (Nursing Manager V).

> "There are restrictions on the types of drugs that we can prescribe independently For example Anti- Retroviral drugs. This is because the doctor does it. He is trained for it and I am not." (Nurse C).

4.7.5 Diagnosing and prescribing in a team:

A majority of nurses explained that if there is a clinical case which they cannot handle, they consult with other colleagues. This practice was reported mostly in the private and mission hospitals.

> "In some cases where the doctor is not there, if it is a case that I know my colleagues will help me then, I will ask for their help and together we will reach a decision on what to look for in a lab test or if you don't have to send the patient to the lab from the signs and symptoms you can decide and prescribe treatment. It is really a teamwork approach....many heads are better than one."(Nurse W)

The nurse describes consultation by collaborating in a team. This happens in situations where the nurse cannot single-handedly diagnose and prescribe for the patient. The issue of team prescribing could be a reflection of the fact that in some cases nurses may not be adequately prepared for the role. But on the other hand, it could also be argued that in some cases, even doctors consult each other in diagnosing and prescribing for patients.

In this section, it was found that different key stakeholders have different interpretations of the existing legal instruments on diagnosing and prescribing by nurses. The nurses' functions have been identified as multifaceted. The role of the nurse evolves in response to the need. A typology of diagnosing and prescribing by nurses was identified as follows: Independent diagnosing and prescribing; counter-referral/dependent prescribing; adjusting/ refining of doctor's prescription; diagnosing without prescribing and finally diagnosing and prescribing in a team.

It has long been recognised that nurses have undertaken roles and accepted responsibilities that have traditionally been the preserve of medical doctors (WHO, 1994a). In confirmation of the aforementioned, data from this study indicate that nurses in Cameroon have always been involved in assessing, diagnosing patients' health conditions and prescribing treatment to a far greater extent than has traditionally been the norm in western Europe and other developed countries. Documentary evidence identifying several factors affecting the extent to which nurses diagnose and prescribe was described in chapter 2. However, interview data, suggest additional precipitators of diagnosing and prescribing by nurses.

Having examined key stakeholders' perceptions of the role of nurses within the health care service delivery system as well as the role of nurses in relation to diagnosing and prescribing, the following section will examine in more detail precipitating factors of diagnosing and prescribing by nurses together with factors explaining variations in their role.

4.8 Factors explaining variations in diagnosing and prescribing by nurses.

4.8.1 How does the state influence the role of nurses in diagnosing and prescribing?

The purpose of this section is to examine how the state influences diagnosing and prescribing by nurses given that the state is the main provider of nurse training and the largest employer of nurses in Cameroon.

The theoretical framework for understanding the role of nurses in diagnosing and prescribing will be used in explaining variations in diagnosing and prescribing by nurses.

Resources:

4.8.1.1 Extreme Shortages of medical doctors /geographical location

As seen in chapter one, Cameroon is a developing economy experiencing rising demographic and epidemiological changes. Also, the country suffers from severe economic constraints and limited resources. The single most important driver of diagnosing and prescribing by nurses was identified by a majority of stake holders as illustrated below as shortage of medical doctors required to cope with the increasing demand for curative and preventative health care in Cameroon. In response to the question 'How did the decision for nurses to diagnose and prescribe come about?' Stakeholders stated:

> "We have very few Doctors. That is why nurses are diagnosing and prescribing. Even the ones (doctors) that are here, because of poor pay and opportunities for further studies and to better their lives they go abroad making the burden heavier for those left behind". (Nurse M).
>
> " If you go to the health centres where there are no doctors, nurses need to prescribe" (Dr W, Dr/ Government Representative).
>
> " Here in Cameroon as it is in any other developing country there is a problem of shortage of medical doctors, because of that, the training that is given to nurses is that which enables them to be able to treat some minor problems. Here we are only two doctors and in a day we can consult as many as 60 patients, and at the same time we do ward rounds and attend to other emergency operations as well as planned operations. So when we are not available the nurses have to diagnose and prescribe for patients." (Dr V).

The nurse in the above quotation goes even further to identify some reasons for medical skill shortages, highlighting doctor migration as a significant problem which needs to be addressed.

The shortage of nurses and doctors' is partly due to pull/push factors (poor pay, poor working conditions, lack of equipment and other resources, poor sanitation/ infrastructure) which as stated earlier, encourage health personnel to emigrate abroad for better working conditions and an improved quality of life. Consequently, nurses who form the majority of health care providers in their effort to help the patients, take on more extended roles where they step in for the doctors.

The following quotation supports the findings by some nurses and other key stakeholders of doctor shortages and its' implications.

> "...When we look at the medical coverage of the country, we still need more medical doctors. And the medical doctors cannot treat all the patients. Take an enclave like Benak, which is a district. Putting three or four medical doctors there will not solve the problem because there are villages which are far off where the doctor cannot be on a daily basis therefore the District medical officer delegates his functions to nurses.." (Doctor F/ Government Representative).

In addition, the issue of rural-urban divide was noted as contributing to the scarcity of doctors. The geographical distribution of the population with villages far from each other makes it difficult for doctors alone to successfully cover their health care needs. As a result, nurses and informal health care providers cater for the health needs of the population in the rural areas. The few public sector doctors available in Cameroon are overworked and poorly paid. These doctors therefore prefer to set up private practices where they can supplement their incomes. The consequences include longer waiting times for patients wanting to consult with a doctor in the public health care sector because the doctor has to attend first to the higher paying patients at his/her private clinic. There was lack of information on legislation regarding doctor's working hours. However, the findings indicate disapproval from other stakeholders as they stated that doctors were sometimes not available when they ought to be.

The above quotations by different stakeholders in this study confirm that a nurse in the rural area where there are fewer doctors would be expected to have more autonomy in their practice than nurses working in urban areas. The findings suggest that nurses are the gatekeeper of health care particularly in rural areas.

4.8.1.2 Poor working conditions / staff shortages

A majority of nurses and nursing managers identified poor working conditions as a barrier to diagnosing and prescribing. The nurses particularly those in rural areas described their working conditions as extremely poor. As a result, the nurses have to be creative, courageous and display boldness in providing health care to patients.

> "The current situation is that there are few nurses and many patients. As a result the nurse is unable to take time to really screen a patient, take a complete medical history etc. This, impacts on the quality of the care provided to patients and also increases the likelihood of the nurse making a mistake which would have negative outcomes for the patient." (Nurse J)

Most nurses stated that because of nurse shortages in some health facilities, Nursing Aids (Nursing Assistants) in all health care settings are carrying out roles that should normally be performed by State Registered Nurses. This is an example of role substitution with junior nurses performing roles that are meant for more senior and experienced nurses. Although some of these nurses were reported to be competent in their diagnostic and prescriptive roles, there were general concerns about potential consequences on patient care.

> "Most of the time here you fine that Nursing Aids would do what a state Registered Nurse is suppose to do and it is all because of lack of staff" (Nursing manager, R/General supervisor).

The nurses pointed to the negative effects of staff shortages on patient care which include hurried consultations. A patients' problem cannot be fully understood if the nurse does not allow enough time for the patient to explain what their health problem is. Also, overworked nurses may have increased stress levels which may then translate into poor and inaccurate diagnosing and prescribing. The mission and private hospitals reported better staff to patient ratios and higher resource levels than public healthcare settings.

4.8.1.3 Poor pay

Apathy and attrition among nurses are evident in this study. Some nurses feel that they are being exploited, and that they are doing more work for less pay. `We are not getting paid for what we do' was a statement made repeatedly by over half of the nurses interviewed. Some nurses described their role within the health care service as `a service to God', stressing the fact that their pay was not commensurate with the work they do. It is widely agreed that nurses' salaries in Cameroon are unjustifiably low as shown in table below

Table 4.8.1.3a Cuts in salaries* among government health personnel.

Categories of Health personnel	*1992 (before cut)*	*January 1993 (after first cut)*	*November 1993 (after second cut)*	*Decrease relative to 1992 level*
Doctors	234.000	204.000	101.000	-57%
Senior nurse	123.000	110.000	62.000	-50%

*In CFA francs. 1000 CFA franc=1GBP Source: Ministry of Health, Yaounde, Cameroon cited *in* Israr et al. (2000).

Table 4.8.1.3b Cuts in salaries* among mission health personnel.

Categories of Health personnel	1992 (before cut)	January 1993 (after cut)	Decrease relative To 1992 level
Doctors	304.000	259.000	-15%
Senior nurse	116.000	107.000	-8%

* In CFA francs. Unpublished data from a mission hospital in a study area. Adapted from Israr et al. (2000).

Given this context, lack of commitment, de-motivation, low productivity is not surprising. To compensate for low salaries, it was also noted that some nurses are having recourse to coping strategies like the illegal sale of drugs to patients and other practices to supplement their pay as demonstrated by the quote from patient Z on page 221.

4.8.1.4 Outdated prescribing protocols.

There is a general protocol for diagnosing and prescribing aimed at doctors but which nurses also use as earlier discussed under the nurse prescribing process. This is particularly relevant to this study as the research also seeks to understand the process of diagnosing and prescribing and its impact on key stakeholders. It was reported that diagnosing and prescribing by nurses is made more difficult because the protocols are outdated.

In response to a question on what was perceived as facilitating or barrier factors to effective diagnosing and prescribing, one government representative identified a lack of commitment to ongoing review of diagnosing and prescribing protocols by the state, as a barrier factor. Similar concerns were raised by some nursing managers.

> "An example is the diagnosing and treatment guide. The last edition was done in 1993. The subsequent edition was planned for three years after that. But up to now (2009) it has not been updated. But many things have changed in the medical prescription. Then there is a second thing, the drug formulary, mission hospitals have updated their treatment guide and their drug formulary. But in the public sector we are still far from that. We did the drug formulary in 1993. The update was scheduled for two years after. It needed a lot of sacrifice from some of us and one VSO (Voluntary Service for Overseas) who came from the UK and we worked together. I am not a pharmacist but I was supposed to work on. We worked together in 2006, that is 13yrs

after the first edition. Nurses are effective when we transmit the right information to them"(Doctor/Government representative F).

This claim is confirmed by a nurse who thinks the malaria treatment protocol is outdated.

> "I have always been quarrelling with what is happening with our Ministry of Public Health because each time they say these drugs are authentic, when you give them to the patient and ask them to come back for follow up appointment after one week, when they come back after taking the drugs you see malaria is still there. I mean it is so disheartening to have your patients still with that condition" (Nurse R).

The treatment protocol is clearly ineffective. There are several implications to this finding. It is evident that those in charge of updating the protocol are not doing their job. There are also problems of supervision and lack of accountability. All of these pose a significant risk to care provision with negative consequences on patient's health. A public health official summed up the situation when describing clarity of legislation regarding diagnosing and prescribing in terms of reaping what is sown:

> "You can only give what you have received, rubbish in rubbish out" (Dr F/Government representative).

4.8.1.5 Poor communication infrastructure/lack of equipment

The nursing managers reported that when faced with a difficult medical case, the nurses in rural areas will try to seek advice by phone from the chief of centre or the district medical officer. Such communication is hampered by factors such as lack of electricity supply in some areas and poor phone network. The nurses rely on the benevolence of a local generator owner to charge their phones. If it happens that this person is not around the nurse would be cut off from any telephone communication. A majority of nurses and nursing managers in the government managed health care facilities reported lack of equipment as a hindering factor to their role in diagnosing and prescribing.

> "The equipment is not enough. Here, you see that we don't have lights (electricity). We use gas to run the Expanded Program for Childhood Immunization fridge. This drains our economy. Had it been there were lights it would be better for us. As for equipments used in the centre, we don't have enough forceps, trays. We don't even have a trolley that you can push your drugs from one end of the room to another. We really don't have equipment" (Nurse Manger V).

The nurses need equipment to facilitate physical examination of patients in order to arrive at an accurate diagnosis. Also, they need to be able to provide patients with the correct

treatment/medication which has been stored at the right temperature in order to effectively treat a patient's condition, without which diagnosing and prescribing will not have been effective.

These above reports clearly portray the state as a serious barrier to efficient diagnosing and prescribing by nurses.

4.8.1.6 Training & development of nurses.

Nurses' preparedness for their role in diagnosing and prescribing.

Since nurses are increasingly involved in diagnosing and prescribing, it is important to discuss their training and development. Effective prescribing depends on appropriate diagnosing. Although there are substantial benefits of nurse prescribing, there are also significant risks. In order to minimise these risks education and training of nurses with prescriptive authority is a necessity. Training is important because poor nurse prescribing practices lead to a lowered standard of patient care.

The literature suggest that nurse training should include theoretical and practical issues, drug administration, actions of common drugs, drug interactions, adverse side effects, patient education and clinical decision making. The goal of medication knowledge is to improve the health outcome of patients. Also, educational preparation of nurses that integrates theoretical concepts with lived experiences in clinical environments is fundamental to the success of their ability to diagnose and prescribe for patients (Campbell, 2004). Given that pharmacology is necessary for the safe and effective prescription and management of medicines, a stronger pharmacological base will equip nurses with the knowledge and skills to wield their prescriptive authority.

As seen in chapter 2, there is a standard nursing curriculum for pre-registration training which incorporates diagnosing and prescribing by nurses in Cameroon. The nurses' training curriculum in relation to diagnosing and prescribing of State Registered nurses is also offered to Brêveté nurses (nurse with two years training who work in a variety of health care facilities) who are involved in diagnosing and prescribing for patients. In addition to government schools, nurse training is also provided by mission facilities and recently, by an ever-growing number of private nurse training schools (British Council 2007). Interview data from government officials indicate that all nursing schools work in collaboration with the Ministry of Public Health. However, there is no system in place of checking the degree to

which this formal curriculum is delivered. Therefore the extent of standardization in the formal training of nurses is uncertain.

However a majority of doctors reported concerns about the adequacy of the nurses training curriculum with regards to diagnosing and prescribing as illustrated by this assertion;

> "Nurses are sufficiently trained, that's something that we need to handle with a pinch of salt because the training is so diverse and varied that you cannot say yes or no. But in that training, there are some that are good and some that are very bad"(Doctor NN/Hospital Director).

In addition, a majority of other key stakeholders shared concerns about the diversified nature of nurse training given the recent increase in the numbers of privately owned nursing schools. A majority of stakeholders are worried that the training might not be as good as that offered by mission and public nurse training schools.

During undergraduate training in Cameroon, nurses are taught consultation skills: how to assess a patient, make a diagnosis and prescribe medication. Nurses in IHCC are able to order and interpret diagnostic test, establish medical and nursing diagnosis and recommend treatment with prescribing authority for a broad range of medications. Nurses are trained to practise both independently, and in collaboration with district medical officers.

4.8.1.7 Organizational factors.

It was found that nurses attend to all patients in all health care settings which were studied. There is a general consensus amongst all study participants that nurses diagnose and prescribe in all health care settings (public, private, mission) that were studied. In most cases, the nurse makes a decision whether to diagnose and prescribe for the patient or whether to refer the patient to the doctor. However, it was found that the size and type of hospital and availability of resources determined the extent to which nurses diagnosed and prescribed.

In the urban area where the nurses work alongside doctors in the private and public hospitals, it is easier for the nurses to refer the more serious cases to the doctors. This is also true of the health care settings in the semi-urban areas, the mission and district hospital. But in the rural IHCCs, where the nurse is working alone or with junior colleagues, options are limited. The nurse will treat all cases, providing first line treatment for the more serious cases and then referring them to the nearest bigger/district hospital.

> "We don't have enough doctors, so therefore we need these nurses to be able to diagnose and prescribe for patients.... I really

can't blame the nurses. You see, there are health centres where doctors are not accessible. You see a doctor maybe once in a blue moon. That's not good enough"(Patient L).

4.8.1.8 Organizational culture.

It was found that the nurse's behaviour during consultations with patients reflected the organizational culture of the setting in which it was taking place. The findings suggest that two nurses trained in the same school will behave differently when providing care in two different health care settings. Some nurses working in the public institutions were reported by patients as;

> "laid back, lax as compared with nurses who work in private institutions who have a better follow up system, who tend to take responsibility for their patients in everything they do. In private institutions a nurse will not stand up and prescribe her own medication to patients but in the government institutions behind the doctors' back,....the nurses prescribe what they have to sell to the patients" (Patients L).

4.8.2 How do doctors affect the role of nurses in diagnosing and prescribing?

This section will examine the extent to which doctors influence the role of nurses in diagnosing and prescribing.

4.8.2.1 Doctors promote continuing professional development opportunities for nurses.

It was found that doctors in Cameroon are involved in the design and teaching of the nursing curriculum.

> "Yes. Drs are involved in teaching under graduate students during our nurse training. They teach anatomy, physiology, pharmacology and other pathology" (Nursing manager R).

> " During our nursing training, Drs teach us. The Drs teach according to their speciality. A surgeon will teach surgery, a gynaecologist will teach obstetrics, a medical doctor/general practitioner will teach disease pathology etc. (Nurse J).

This finding therefore suggests that nursing to a greater extent, remains a traditional, medical-led profession in Cameroon. Doctors also provide some kind of formal training through in-house seminars as seen earlier.

There are examples of continuous professional development in some hospitals.

> "Before I came here, this health centre was managed by nurses most of the time. Occasionally, they had a visiting doctor. There was only one doctor and the majority of patients were being consulted by nurses. So when I came, I decided that I will be teaching the nurses formally from time to time so that we can uplift them to a certain status.....There have been a lot of improvements from the weekly lessons that we give them, demonstrations etc. Their knowledge has been upgraded. So they are now better in their role of diagnosing and prescribing treatment, which is out of the operations of what they are supposed to do."(Doctor VM).

This confirms the assertion that skills and knowledge are valuable assets as nurses carry out their professional role within the organization, as individuals and for the benefit of the patients.

The study identifies evidence of a culture of learning. Nurses, nursing managers and doctors cited different teaching methods adopted by doctors.

> "My rounds are teaching rounds.....I explain to the nurses the patients and other doctors why we are doing what we are doing, why we ask for this test, why we give what we give, why we are prescribing this drug. I have had situations where nurses have come up to me and say thank you doctor. We passed our exams because of your ward rounds." (Doctor/ government representative W).

> "Sometimes the doctor will call me and say this is typical of this kind of condition. When a patient manifests with this condition, this is how you can manage them. I mean I have gained a lot during my working here and I think that one still has to be learning. Learning is a continuous process." (Nurse Manager R).

These are examples where a doctor enables learning and personal development of nurses. In some cases, recognition of learning has been shown by the nurses passing their exams. Recognition is a powerful motivator and incentive for further training and development. The doctors clearly understand the need for support and ongoing learning for nurses, particularly learning which will enhance their knowledge and skills in diagnosing and prescribing. Doctor support was reported in all health care settings.

4.8.2.2 Absence of doctors from the workplace

A significant number of stake holders stated that most of the time doctors in public hospitals are busy practicing in their private clinics leaving the nurses to stand in for them whilst they are away.

"What I've noticed practising in this hospital is, the reason some nurses are given the chance to prescribe is because there are some doctor who are not responsible. For example the protocol states a doctor is suppose to be on call at 2.30. But you find most often than not, some of them will be coming to the hospital at 6pm. And there are patients waiting from 2.30pm to 6pm who want to consult. From 2.30pm to 6pm you cannot just tell the patient to sit there and wait for the doctor. You have to consult the patient. If it is at your level to prescribe and send them home then you do so. But if you see that it is a critical case you give the patient first aid drug then you send to the ward and write in the book, "for review by the MO." (Nurse F).

"Even when nurses have referred the patient to the doctor, the doctor is not available and so the nurses tend to manage the condition the way they can. That leads us to the question, are they trained enough to manage these cases. The answer is a definite NO! But what do they do? Are they not going to treat the patient and allow the patient to die because they don't have sufficient training to treat the patient? So they do what they can."(Patient G).

It was found that a private hospital will likely not have a doctor in attendance at certain times such as during the night or weekends, or in some cases the doctor might be out of town for some reason. In either of these situations and depending on the nurse's ability and the nature of the patient's complaint, the nurse would either diagnose and prescribe for the patient, phone the doctor for advice, send for the doctor or refer the patient to another hospital for cases that are beyond his/her area of competence or that are life threatening.

The time of the day also matters as to whether a nurse will diagnose and prescribe for you. Late nights and Sundays in all health care settings are periods of nurse-led consultations.

"I had a recent night consultation with a nurse. My child's condition was serious. He had a high temperature which did not go down with medicines that I had bought from the pharmacy, so I took the child to consult with a nurse at her home. She's a nurse with 25yrs of experience who runs a clinic from her home" (patient L).

The patient describes the health condition to be serious. Self medication did not improve the situation. The mother took the patient to consult in the nurses' house. Further exploration identified the nurse as a highly skilled, very experienced, well mannered nurse who is widely respected and trusted by the community.

4.8.2.3 Doctors attitudes, professional relationship and level of trust in nurses' abilities to diagnose and prescribe.

The health care system in Cameroon is both physician and nurse-centred. In some cases it is collaborative in nature. Generally, some doctors, depending on their working relationship with a nurse will entrust patient care to the nurse with the knowledge that appropriate treatment will be provided. Experience of the doctor and where they were trained also determines the role of nurses in diagnosing and prescribing. A majority of the doctors in the study were experienced and were trained in Cameroon. Some of them pursued further studies and also practiced abroad. Only one doctor who was the youngest and least experienced doctor with 6 years of clinical practice received his medical training abroad. It could therefore be said that the doctors were familiar with the notion of diagnosing and prescribing by nurses.

The Doctor-Nurse relationship was based on confidence and trust. Trust was dependent on the doctors' personal knowledge of the nurse as well as the latter's individual characteristics such as the educational background, clinical experience and attitude to care. Doctors cited nurses' knowledge and skills, experience and `ability to think on their feet'.

> "In my view, I will think that the female nurses are given more responsibility than male nurses, maybe because there are more female in nursing, but I also think that a lot of female are more honest, maintaining their integrity, they have the vocation and I will tend to feel more comfortable giving the job of diagnosing and prescribing to a female than to a male nurse" (Dr W/ Government Representative).

> "Doctors can sometimes ask the nurse to change a prescription and it is fine because you are prescribing under his cover... I know a nurse with 20 years experience as a theatre nurse. This nurse could easily handle difficult deliveries and carry out Caesarean sections without any problems...." (Dr F, /Government Representative)

> "Nurses in mission hospitals....Some of the nurses are not very senior nurses, but they are responsible. They are being trained to cry out diagnosis, to treat and even to carry out minor surgery" (Dr. W, /Government Representative).

> "I think that the way I personally relate to the doctors, they are happy. It is very much dependent on the nurse. If the nurse knows their limit and not trespass on the doctor's terrain (duties).The doctors know if there is anything I will always call for them. The doctors trust that I try not to do things that are above my capability (Nurse F).

4.8.2.4 Poor attitudes of some doctors.

Furthermore, a significant number of stake holders cited poor attitudes of doctors as partly responsible for why nurses are increasingly involved in diagnosing and prescribing of patients' treatment.

> "....but doctors too have some attitudes which keep patients away from them. Most doctors tend to be haughty- know-it-all- and don't understand the sociological background of patients. Also given the fact that some doctors are becoming too money-minded and the nurse undercuts the doctor by asking for less money. So in a way this is a war"(Doctor NN).

Costs.

A patient concurs with the doctor above.

> "Sometimes it is a matter of giving him money and you are taken care of" (Patient L).

> "Some doctors prescribe to you following who you are. If he sees that you are able, your drug is special and he directs you where to buy the drugs..... If you are not able, he prescribes a cheaper drug. He once gave me advice on how to stop my hiccups by saying go and take "bitter cola" (Garcinia kola) and asked me to give him 1000frs (£1) for his consultation. I gave it and he took it. And then I started questioning if that is how a medical personnel should behave" (Patient YT).

The key message here is that it is expensive to consult with a doctor. Many doctors are from a higher socio economic class and therefore do not share an understanding of the realities of patients, most of whom are from a lower socio-economic class. Financial considerations deter patients from going to consult with a doctor in preference to other cheaper healthcare providers such as nurses and traditional healers.

The following section is an examination of how nursing managers influence the role of nurses in diagnosing and prescribing.

4.8.3 How do nursing managers affect nurses' role in diagnosing and prescribing?

4.8.3.1 Nursing managers.

The nursing managers were also found to influence the extent to which nurses can diagnose and prescribe. This essentially hinges on the nursing manager's assessment of the nurses' ability to diagnose and prescribe and the level of trust in the nurse. This view was shared by

the doctors in the study who all indicated that their personal and professional knowledge of the nurse will determine the extent to which they will feel comfortable with letting the nurses diagnose and prescribe. Nursing managers and doctors described those nurses who enjoy high levels of trust as reflective, creative and imaginative in the course of providing care to patients. Stakeholders valued nurses who used all their senses during consultations with patients. The following statement illustrates this point by a nursing manager:

> "I don't allow all nurses to give full prescription without the consent of the doctor.... there is only one nurse here who is capable of doing so. If the doctor is not here he is allowed to diagnose and prescribe for the patient" (Nurse Manger I).

Nursing managers when interviewed described the impact of diagnosing and prescribing mostly in terms of facilitating and barrier factors.

4.8.3.2 Inadequate post training opportunities.

A majority of stakeholders cited lack of additional educational training of nurses post qualification with the aim to improving their knowledge and skills. Everyone interviewed agreed that post registration training for nurses was necessary given changing epidemiology and new forms of treatment. One doctor notes the importance of additional training and promotion of a learning culture within health care organizations as a prerequisite for effective diagnosing and prescribing;

> "Well I think that nurses need to be trained....Training is important. For instance, in private institutions such as the Cameroon Baptist Convention Hospital, I know they do have a programme on training screeners. As there are few doctors mission hospitals are aware of this and they train their people so well. But we, the public hospitals don't seem to put in place such training. Some grow into it and sometimes sporadic training may come up but it is not planned in a way that we see the private sector doing" (Doctor W).

This clearly demonstrates the importance of training as a determinant and facilitating factor of diagnosing and prescribing. Mission hospitals were identified as having a more systematic and structured approach to training of nurses post registration than public hospitals. The finding suggesting a lack of commitment to additional training by public hospitals clearly has implications for provision of health care by nurses.

The nurses reported that on some occasions, the nurses in the public hospital will be sent on a training programme which includes among other things, screening, what to do when a patient comes to consult, what to look for, when to refer the patient to a doctor etc. But there is a

problem in that the selection criteria for attending these programmes are neither consistent nor transparent. It was further stated that in some cases the list comes from above (higher authorities) in which case the nurse manager is powerless in deciding which nurse should attend a training session as illustrated below:

> "There are dotted seminars here and there, we don't know who is responsible but sometimes you find some types of people being selected for the seminars and others can go for years without ever being recycled in anything"(Nursing Manager A).

All key stakeholders agreed that more training on the job will enhance nurses' effectiveness in diagnosing and prescribing. Stakeholders recognised the importance of on-going training and the positive impact it has on nurses' performance and ultimately on patient outcome. Nurses and other stakeholders recognise the correlation between lack of training and poor quality of care.

> "I cannot say that we are adequately trained because where I am, I'm supposed to have gone for more training. But I have not had the opportunity to do so.... especially now that the government is no more training (nurses), if I have to go back to school it means I have to pay for my training and for parents like us we don't have the money to pay for our training" (Nursing Manager M).

Cost of further training was found to be an important issue. There are cost implications in relation to on-going training for nurses. Following the suspension of nurse training by the government as part of the measures under the structural adjustment programme recommended by the International Monetary Fund and the World Bank, together with salary cuts and currency devaluation in the early nineties, nurses are unable to afford post graduate education courses. Such lack of additional training was found to be a barrier factor to diagnosing and prescribing. Ongoing training is required in order for nurses to provide evidence-based practice or practice informed by research for the benefit of patients.

4.8.3.3 Lack of mentors

Previous studies have shown that supervision/mentoring can improve performance, at least in the short term. It has also been found to improve professional development, increase job satisfaction and motivation. Mentoring and appraisal/evaluation provide opportunities for feedback on what the nurse is doing right and identify gaps in nurses' knowledge whilst providing opportunities for learning.

A majority of nurses, nursing managers and doctors in the study sample cited lack of mentoring as a barrier to diagnosing and prescribing by nurses. Frequent mentoring helps the nurse to reflect on practice.

An example of mentoring was reported by the following nurse.

> "My supervisor supervises me every three months. They come with a questionnaire... They look through my register, my filing system, things that I'm supposed to be doing, whether I'm meeting up with my coverage, my targets for vaccination. They go into my financial records. Where we are lacking he gives advice where we are doing well he gives encouragement to go ahead" (Nursing Manager F).

However, the above description of supervision could be described as a "tick box" procedure rather than a learning tool.

A chief of service (nursing manger) responsible for evaluating care delivery by nurses in nurse-led health centres in the rural areas pointed to the difficulties of travelling to remote clinics (difficult terrain, bad roads at all times of the year and scarcity of resources). As a result, supervisory visits are infrequent. Although clinical supervision is recommended, it is extremely irregular. This deprives the nurses in those remote areas of learning opportunities to improve their knowledge of diagnosing and prescribing.

4.8.3.4 Lack of resources / lack of equipment.

A majority of nurses and nursing managers cited lack of resources as a barrier factor to diagnosing and prescribing.

> First of all, right now we don't have enough consultation rooms. We also need equipment because most of the time nurses don't even have what they should use, say Blood Pressure machines, Gluco-sticks, etc, to test the level of glucose on a patient. At times you have certain hospitals where laboratories are attached to the emergency service which facilitates and hastens the process of diagnosing and prescribing but here it's not the case.....there are times we can go for three days or a week without an x-ray machine because it had broken down. We had to wait for the ministry to send their technicians" (Nursing Manager R).

The nurse managers demonstrate an understanding of the need for a comfortable and private environment where patient nurse consultation can take place. Good prescribing practice suggests the use of laboratory equipment where necessary to confirm patients' diagnosis in order to ensure appropriate prescribing and hence effective treatment outcome. Without appropriate diagnostic equipment nurses are limited to symptomatic/inferential diagnosis

4.8.4 How do patients influence the role of nurses in diagnosing and prescribing?

4.8.4.1 Socio-cultural factors.

Healthcare seeking behaviour affects nurses' ability to diagnose and prescribe. Health care seeking behaviour commences with signs and symptoms by which an illness is recognized. This is followed by presumed cause of illness and prognosis. These are in turn interpreted by individuals and others, labelling the problem. The patient then proceeds to seek treatment. It involves a decision-making process which is governed by an inter-play of social, economic and cultural factors. These factors need to be understood in order to provide an acceptable, relevant care which is culturally and contextually sensitive to patient's needs.

When someone is ill, they are labelled "a patient". The patient is diagnosed and prescribed treatment. The patient manages his/her illness in different ways. Some patients in Cameroon, self medicate with herbs, local remedies passed down from generation to generation or follow a treatment recommended by friends and relatives. Some seek the help of traditional doctors, witch-doctors, herbalists. Some patients seek help from modern medicine, self-prescribing and buying drugs from a local drugstore or drug hawkers on the streets. Others attend a health centre (particularly those in the rural areas) or a general hospital subsidized by the government, a private hospital, a private clinic. In the majority of these hospitals, it is almost certain that the patient will first of all meet the nurse prior to seeing the doctor. The nurse will only refer the patient to the doctor if he/she feels insufficiently competent to treat the patient.

The patient seeks help from whom they believe are "qualified to assist". Nurses are just one group of people who are deemed qualified to assist patients in their illness. The expectation of both the nurse and the patient is that the nurse as a professional, will "know more" than the patient.

4.8.4.2 Patient's health beliefs / health status.

Interview data showed that patients' reports on causes and treatments of diseases varied.

> "There are some diseases that hospitals can treat and there are some that hospitals cannot treat and so the patient has to go to a native doctor... those diseases that hospitals cannot treat will include poisoning by one's enemy, witchcraft, a curse from the gods"(Patient Pa).

> "Most of them (patients) prefer injections, especially the very old and the Muslims they always prefer injections they belief that injections work more than the tablets" (Nurse J).

These statements suggest that physical illness is not divorced from socio-cultural factors. Health beliefs are a significant factor and influence health care behaviour. It is therefore important to understand the conceptualization of disease and the health beliefs of the community in order to promote patient-centred care. Diagnosing and prescribing needs to address cultural issues and must therefore be viewed from a broader perspective than a narrow biomedical understanding. As a result, for the diagnosing process to really help in prescribing effective treatment with successful clinical outcome, it must go beyond taking illness and medication history.

Most patients stated that they go to consult with the nurses when they can no longer tolerate the pain, when they lose appetite or when they are unable to go to the farm.

> "I could easily qualify as a native doctor because I have been ill for such a long time. I have consulted with so many doctors in my desperation. Even friends and family would suggest that boil this herb and that one which I do. With some I feel better but others make my illness worse. Also I buy tablets from over the counter. After doing all that and not getting better I am forced to go to hospital" (Patient Pa).

A majority of patients self-medicate prior to seeking health care from the health centre or hospital. The time spent self-medicating with drugs bought over the counter and or with traditional medicine ranges from three days to one week. A patient described a case where after self medicating to no avail, he consulted with a nurse who prescribed a local alternative way of treating his sore throat. The treatment didn't work and it was only when the patient consulted with a doctor, that the doctor diagnosed tonsillitis. The patient had to then rely on his brother who lives abroad for money for his treatment.

Several issues are evident here. Patients have several treatment choices when they are ill. In the above example, the nurse prescribed alternative medicine, a local practice of treating sore throat, although this form of alternative treatment is not included in the treatment guideline. Also, as a result of poverty, the patient relies on a remittance from his brother who is abroad to pay for his treatment.

4.8.4.3 Patient's expectations of the nurse.

Patients seek medical care expecting curative treatment in the form of drugs, relief from pain/suffering, advice on health services, reassurance, prevention of future occurrence and all

of these to be given in a respectful way. Given that nurses seek to treat the patient as a bio-psycho-social being, all aspects of care (cognitive, emotional care) need to be considered. A conscientious nurse is expected to be aware of how much a patient understands given his/her health condition, how much a patient or patient's relative should be told at any given time. If a patient distrusts a nurse, then it is unlikely that he/she will comply with the treatment regime which could lead to suffering and pain. Also, there is organizational trust. Patients choose to consult in clinics where they trust that their condition will be treated effectively.

Patients judge the quality of care by comparing their expectations with the actual service they receive. Expectations serve as a normative frame of reference. The technical quality is what the patient receives and the functional quality is the actual interaction between the nurse and the patient. The functional quality is very subjective and is based on how the patient perceives the health care delivered to them.

> " I expect and feel happy when the nurse greets me with words like, 'Mammy, welcome, take a sit. What is the problem? Ashia, (sorry you are not well) Let's see what we can do, you will be fine'. And if there is a knock at the door, the nurse will normally say 'please wait outside'.... not allow her friend to come in and they start chatting and laughing while I am in pain, Good treatment from the nurse starts to make me feel better even before I take my medication"(Patient J).

All patients reported that they expect the nurse to be courteous, respectful and sympathetic. Patients in the urban areas expect the nurse to refer them to the doctor depending on the nature of their illness. If it is not too serious, then they don't mind the nurse diagnosing and prescribing for them, but if it is serious (too much discomfort) they expect the nurse to refer them to the doctor.

4.8.4.4 Socio – cultural expectations.

The culture of accepting and seeking treatment from nurses by patients has always been widespread in Cameroon. In fact, because of the literacy level, few people, particularly in rural areas know the difference between the doctor and the nurse. Anyone in a white coat in a health facility is referred to as a 'doctor', as described by the following patient:

> "Nurses in my village are well respected by patients. They are just like doctors. Most patients even call them 'Doctors' especially the patients that are not literate" (Patient D).

> "Many at times the nurses are always available in the hospital. The doctors are hardly there. And so the nurses now take the duty of the doctor" (Patent G)

" In my area "rural" we only have health centres. When you go there you meet the nurse. We need a doctor but there are very few doctors in Cameroon" (Patient D).

4.8.4.5 Educational level of patient.

Some key stakeholders reported that a patient's level of education can influence the extent to which nurses diagnose and prescribe.

> "With illiteracy, people don't know their rights. They don't know that they can request to see a doctor rather than a nurse, as long as they are willing to queue outside the doctor's office to consult. They nurses take advantage of such lack of knowledge on the part of the patients. Some patients don't even know the difference between the doctor and the nurse as all of them wear a white coat."(Patient L).

It was further stated that some nurses take advantage of such lack of knowledge by patients and diagnose and prescribe for them at a level which is beyond their professional expertise perhaps for monetary gains. It could be said that by wearing the white coat which is normal wear for doctors instead of the nurse's uniform, some nurses are in effect demonstrating through such a symbol their increased status and power, reinforcing the point that they are doing the same job as the doctor.

4.8.4.6 Patient's ability to pay

The socio-economic status of patients also determines their preference for whom to consult when they are ill. Patients who are rich are more likely to go to private hospitals where they will consult with a doctor depending on the severity of their illness and the time of consultation. Rich patients also preferred public hospitals since these facilities have specialist doctors. Poor patients especially those living in rural areas, do not have a choice as to whether they consult with a nurse or a doctor.

> "The economic constraints make it impossible for most patients to be able to access specialized health care from well equipped health care centres" (Nursing manager A).

> " Some of the time when you prescribe for a patient they turn round and tell you that they don't have money to buy the drugs and when you can't help them you feel bad.... one of the reasons why some patients don't turn up for follow-up appointments following consultation with a nurse is due to lack of finances. (Nurse Manager V).

> "Personally, given who I am, I insist on seeing a doctor. I don't even wait to be referred to a doctor by a nurse. I can be referred by a doctor to a specialist not by a nurse to a doctor... Yes I have

a choice because of my status and personal connections, but an average person does not have that choice"(Patient L).

There was a general consensus that poverty is the single most important factor impacting morbidity and mortality.

A majority of all stakeholders reported poverty as a barrier to accessing quality care. Sometimes the patients cannot afford a lab test and so the nurse would be forced to prescribe treatment based on symptoms rather than laboratory tests. Some patients stated that in some cases the drugs are too expensive so they only buy those that they can afford and not the rest.

> "There are times when you refer the patient to the hospital. They will sit here crying that she does not have the money to go to hospital" (Nursing Manager F).

> "It is cheaper to consult with a nurse than it is with a doctor" (Patient Pa).

The findings demonstrate that net wealth influence access to health services.

The following section will examine the individual nurses' characteristics and how they affect nurses' role in diagnosing and prescribing from the perspective of key stakeholders.

4.8.5 How do nurses' individual differences influence their role in diagnosing and prescribing?

This section will examine individual differences of nurses in training and education, gender, age, experience, position held within the organization, level of motivation, perceptions of reward, personal values and how they may explain variations in diagnosing and prescribing by nurses.

4.8.5.1 Adequacy of training and confidence in nurses' abilities to diagnose and prescribe.

Data from semi-structured interviews show that a majority of the younger nurses felt their pre-registration training adequately prepared them for their diagnosing and prescribing role.

> "During the nurse training, we were taught presumptive signs and symptoms. They will also teach the drug of choice and nursing care. Diagnosing and prescribing was a subject on its' own. It was under pathology. We did pathology 1 up to 5 and we studied many diseases, more than a hundred diseases" (Nurse J).

> We were taught patho-physiology and pharmacology of 3hrs a week. Each semester last 20 week" (Nurse F).

These nurses were confident about their technical knowledge of diagnosing and prescribing. They cited improved knowledge of anatomy and physiology, appropriate identification of patient's conditions, appropriate use of drugs. However, older nurses pointed to the fact that previous nurse training in Cameroon had not equipped nurses for an independent nurse prescriber's role. Nurses were trained to provide nursing care and to practise under the directions of medical doctors.

The findings indicate a difference between the behaviours of older/experienced nurses and younger nurses. The younger nurses expressed increased confidence levels in their ability to diagnose and prescribe, citing adequacy of their nurse training. Older nurses were also confident but added their confidence is mainly as a result of their many years of clinical experience and not so much their formal training in diagnosing and prescribing.

On a positive note, it was found that an increasing number of students now go into nurse training schools with GCE"A" levels (Cameroon still does the GCE) and in some cases with first degree qualifications. They may therefore be in a better position to learn and understand a higher level of conceptualization than the older nurses who went in with lower qualifications.

This has its benefits and limitations. On the one hand, it could be argued that such nurses are better prepared to avoid taking unnecessary risks. But on the other hand, it could also be argued that some nurses are more likely to take unnecessary risks in diagnosing and prescribing for patients as a result of their advanced level of education, in the absence of effective implementation of practice standards.

4.8.5.2 Nurses' clinical experience and longevity in service/workplace experiential learning.

A majority of key stakeholders concluded that the nurses' experience and longevity in service was as a facilitating factor in diagnosing and prescribing.

> "Most of my learning and experiences I have gathered as I have been working in the field, with some in-service seminars like malaria prevention, screening and treatment, prevention of mother to child HIV/AIDS. So it is through these seminars that we gather more knowledge (Nurse V).

The nurses reported that learning on the job is much more valuable. The nurses felt that sometimes the theory is in abstraction and only makes sense when it is put into practice. Most of the nurses summarized the process as, the more times one does it, the better it becomes.

Theories learned during nurse training are mostly from books and other published material. Patients value nurses with experience to diagnose and prescribe for them. They trust that the nurse will diagnose their condition and prescribe the appropriate treatment. All patients were in favour of an experienced nurse diagnosing and prescribing for them. Patient's descriptions of an experienced nurse appeared to correlate with the latter's age and attitude towards care.

> "Nurses who have just come out of school and have little or no experience of diagnosing and prescribing don't know how to do their job. But those who have been working on the field are better at diagnosing and prescribing treatment" (Patient T)

> "..In my unit, two of us are allowed to prescribe, my chief (supervisor/unit manager) and myself because he is the chief and because of my qualification" (Nurse F)

Though the newly qualified nurse may be competent, he/she still lacks the experience and flexibility of an expert nurse which is gained directly from practice. Two nurses also added that, even though experience is important, nursing qualification counts as the diagnosing and prescribing skills of a very experienced nurse aider/assistant cannot be compared to those of a nurse with a degree in nursing.

In Cameroon, there are different levels of nurse training as outlined in Chapter two. It could therefore be argued that all things being equal, someone with a BSc in nursing will be better in prescribing than a nursing assistant with limited clinical experience. However, some stakeholders cited examples of nursing assistants with considerable clinical experience whose practice of diagnosing and prescribing were as good as those nurses with higher educational qualifications. This therefore suggests that clinical experience is an important factor influencing diagnosing and prescribing by nurses. Also, the nurses' personal characteristics foster trust between the patient and the nurse, hence facilitating the process of diagnosing and prescribing.

The importance of experience is linked with reflective practice as demonstrated in the following example. A nurse reported a case of a lady whose inability to conceive meant repeated visits to the clinic. The experienced nurse had run out of ideas and was also baffled by the patient's reluctance to go to the doctor. The nurse figured there must be a psychological reason for the patient's visit. Her persistence in asking about family life paid off when the patient revealed that if she is constantly seen to be ill, she gets more sympathy and the pressure on her to have a baby is temporarily eased. The nurses' knowledge of what to do has been referred to as situated and intuitive wisdom (Freshwater, 2004 cited *in* Holloway and Freshwater, 2007). This example illustrates the point that a reductionist

approach in nursing practice and the use of protocols alone is limited if nurses are to provide patients better health care which meets their complex needs. The nurses' communication skills also helped in uncovering cultural beliefs which affect the health seeking behaviour. Therefore, the ability to be flexible, open-minded to communicate effectively and promote better nurse/patient relationships is vital particularly during patient consultation.

Unfamiliar clinical cases motivate the nurse to practice reflective thinking in order to improve their knowledge and by so doing the nurse is complying with one of the requirements of the nursing profession which is to be up-to-date through personal and professional development. Nurses reported thinking creatively as well as using their imagination when providing care to patients. There was evidence of reflective practice and a critical approach to solving patients' problems. Also, knowledge and understanding of patients' economic, socio-cultural values and expectations were noted. Nurses reported that in some cases they relied on their intuition.

4.8.5.3 Availability of continuing professional development opportunities.

All stakeholders stressed the need for nurses to continue updating their knowledge in order to be able to offer safe and high quality patient care.

> ..."Nursing is a continuous process. You cannot leave school and fold your arms and sit and think that you know everything. Every day you read. Learning on the job is very interesting. At least what you learnt in school and what you learn in the field complement each other. The school learning helps you to make sense of some of the things you see on the ward.....at times you use your own creativity to do things for the wellbeing of the patient" (Nurse J).

Nurses reported that nursing is developmental hence the growing need to keep abreast of the changes that are taking place within the profession. A nurse manager underscored the importance of training, development and evidence-based practice. Most of the nurses stated that the practical component of their work, clinical practice complements what they learned in school. Nurses and nursing managers explained that post registration training broadens their minds. They were aware of epidemiological changes and new developments in disease control and management.

A majority of the various stakeholders stated that diagnosing and prescribing promotes continuous professional development.

> "Every day, I come across something new and that encourages me to come back home and read in order to be skilled enough to help the patient" (Nurse E)

The nurse recognises and takes individual responsibility of her nursing practice to ensure that it is based on up-to-date nursing research. This is in keeping with the nurses' professional code of conduct which lays emphasis on the importance of nurses keeping up to date with practice and calls on the nursing profession to move away from the traditional `this is the way we've always done this' to a more reflective individualized care which is evidence-based, safe and effective for the patient.

4.9.5.4 Teamwork/peer support.

Peer support also comes in the form of consulting with colleagues on the best course of action to take when diagnosing and prescribing for patients.

> "There are times that I encounter certain clinical cases and I'm not too sure of how to go about it... say a patient is presenting with so many confusing symptoms. When I find myself in such a case I always make sure I ask my colleagues because here we work as a team and together we will be able to arrive at a diagnosis and prescribe treatment for the patient" (Nurse W).

Teamwork/peer support was most notable in the mission and private hospitals but was less prominent in the public hospitals. A possible explanation is that the private and mission hospitals are much smaller than the public hospitals, thereby facilitating closer working relationships and the ability to cooperate. It could also be as a result of greater staff cohesion and discipline.

4.8.5.5 Learning from role models.

A majority of nurses and nursing managers noted the importance of role modelling in the course of diagnosing and prescribing. This aspect is closely related with the organizational culture. If the way nurses, think, act and behave is accepted within a particular organisation, that practice will be emulated by junior staff and new members of the team. For instance, if a nurse follows a strict code of prescribing practice, welcomes the patient, takes a thorough medical history using good interpersonal skills and decides on an appropriate course of action, then it is more than likely that this practice will be copied by junior nurses. But if the correct procedure is not followed and that culture is allowed to flourish within the organisation, others are bound to do same.

One senior nurse regrets the fact that as a result of skills shortages, she would normally leave her assistant, a nursing assistant to consult patients. She added that if the health centre had sufficient staff, she would take this nursing assistant along during her field/health promotional tours so that the assistant can learn and participate in these activities.

> "When I go out to outreach communities, the younger nurse stays behind and diagnoses and prescribe in my absence,.....the nurse misses out on the teaching that I could be passing over to her"(Nursing Manager).

One way that nurses learn is from watching and observing. As noted by a doctor.

> "There are more doctors now than before and therefore nurses have the opportunity to increase their knowledge of diagnosing and prescribing from the doctors". (Doctor NN)

In addition, it was noted that the culture of respect for elders in Cameroon as discussed in chapter two has implications for learning in clinical practice. The younger nurses did not feel comfortable challenging older nurses even when they thought the older person was clearly wrong.

> "Sometimes you do more or less as you are told by an older person. Failure to do so by younger nurses might lead to intimidation from older nurses" (Nurse F).

Several factors have been identified as enablers of diagnosing and prescribing by nurses namely: Nurses' preparedness/confidence in their knowledge and skills of diagnosing and prescribing; nurses' clinical experience and longevity in service/workplace experiential learning; Availability of opportunities for continuing professional development; teamwork, peer support and support from doctors; learning from role models;

Having discussed enabling factors of diagnosing and prescribing by nurses, the following section will examine barrier factors as reported by different stakeholders.

4.8.5.6 Nurses' attitudes towards learning.

One nurse also pointed to the fact that some nurses discourage employers/managers from organising learning workshops. The nurse added that some nurses are reluctant to attend training workshops where they will not be paid a per diem or some allowance. In other words they need financial motivation to go to these learning sessions. Such expectations are a barrier to learning and can negatively affect nurses' abilities to diagnose and prescribe safely and effectively. The situation suggests a quest for immediate rather than delayed gratification.

4.8.5.7 *Economic incentives.*

Economic incentive was found to be a driver of diagnosing and prescribing by nurses. A majority of stakeholders reported that some nurses;

- use their ability to diagnose and prescribe for patients as an opportunity to supplement their income;
- are involved in collecting and pocketing consultation fees from patients instead of paying the money into the hospital coffers;
- buy cheap and unreliable drugs from local stores and resell them to patients, even in public places;
- move around with drugs in their pockets in public places;
- diagnose beyond their level of competence because they want to collect consultation fees and sell their drugs to patients, and
- oblige patients to buy drugs from them, failing which they may not receive the required care.

There were also reports of other forms of malpractice, para-sales of drugs, private practice and illicit operation of private clinics.

> "It is a common practice by nurses to sell their own drugs, but the permission is not given by the Cameroon government. These nurses are doing it in a hidden way (in a covert manner). They buy drugs from the pharmacies around and they come and sell them to patients after prescribing them for the patients. The nurses sometimes say that they want to save the patients from having to go far to buy their drugs" (Patient Z).

> Because of poverty, people think nursing is an area where they can make money. Some of those money minded-nurses/colleagues who have been trained in some of the schools around town, they go across professional boundaries. They diagnose and prescribe for patients conditions which are not within their capabilities.... This affects patient care negatively because some of them end up with bad side effects of drugs. Some of them end up being traumatized and some of them die and so on and so forth" (Nurse R).

The implication is that such nurses might tend to bias their nursing activities in favour of those which yield more revenue, and well–funded programmes. It leads nurses to make practice decisions based on opportunity cost as they divert attention away from holistic, bio-psycho-social treatment- or patient-centred care in favour of lucrative care which will benefit them financially.

However, there was also evidence of good practice in that management is aware of such practices and is taking steps to curb them. For instance, in one public hospital, there were public notices posted in strategic locations warning patients not to buy drugs from nurses.

Also, a hospital manager stated that various methods such as inter-departmental transfers were being used to sanction nurses involved in such malpractice.

Interview data from nurses and nursing managers also reported various methods which good behaviour by nurses are rewarded as demonstrated in the following quotes;

> " What we do normally is to say just a thank you showing appreciation that what you did was good. For something you did which was exceptional an appreciation letter is given to you. At the end of the year we do the best star, 1st, 2nd, 3rd and use this opportunity to compensate them. There is also, stipends called quote-part which was signed by the government given to nurses every two to three months (Nurse Manager G).

> "My boss evaluates me because we have what we call quote-part, hospital benefits that is shared bi-monthly, so it is shared with respect with what mark your supervisor gives you" (Nurse F).

> " There was a little boy who came with a laceration and I did the stitches on the face. When he (manager) reviewed the case, he called for me and said that was a wonderful job...I felt great. I felt happy that he gave me praises for a job that I did and love doing" (Nurse J)

> "Sometimes we also move nurses on disciplinary measures to ensure that they are in some wards where they are not tempted to engage in mal-practices so we move them to another ward where they can have closer supervision" (Dr W/ Government representative).

The nurse manager uses different leadership styles to deal with problems. The manager uses an authoritative leadership style by transferring the nurse to another department where he/she will not have the opportunity to repeat any malpractice. Also, the manager is sending a message to other nurses that they will be disciplined for any practice that is found to be detrimental to patients and that may tarnish the reputation of nurses.

Similarly, in a village health care centre, the nursing manger, posted notices advising patients to buy their medicines from the pharmacy and not from any other sources. It was further advised that the patient should insist on the pharmacist issuing a receipt for any drug they buy.

4.8.5.8 Level of motivation

This study found that nurses were motivated by financial and non-financial incentives (praise and gratitude of patients). Most nurses especially those working in the mission hospital said they went into the nursing profession as a vocation.

> "It is not so much the pay but the mere fact that you are taking care of a human being" (Nurse, J).

This is evidence of intrinsic motivation which is known to be much harder to promote than extrinsic motivation.

The above section has discussed factors explaining variations of diagnosing and prescribing. The findings suggest that the nurses' role and the extent to which nurses diagnose and prescribe is shaped by several factors: the impact of the state/scarcity of doctors and other resources, the organizational culture, the type of organization (public/private/mission); the size and location of the health care facility and its level of resources; doctors' attitudes towards diagnosing and prescribing by nurses; nursing managers-attitudes and experiences; patients' ability to pay, economic and socio cultural factors, attitudes, expectations and the individual nurse's characteristics.

The following section will discuss outcomes/consequences of diagnosing and prescribing by nurses as perceived by key stakeholders.

4.9 Perceived outcomes of diagnosing and prescribing by nurses on different stakeholders (How does diagnosing and prescribing by nurses impact on different stakeholders?)

4.9.1 Doctor vs nurse professional relationship

A prerequisite for effective health care delivery is inter-professional collaboration between health care professionals especially doctors and nurses who form the closest relationships with patients. All the doctors interviewed in the study stated having a positive working relationship with nurses. The doctors acknowledged nurses' as key players in health service delivery in Cameroon. The doctors stated that nurses had the power to `make or break' the health system. This is because nurses provide frontline care to patients and determine which patients should be referred to doctors, whilst being responsible for treating the minor conditions. However, all the doctors were concerned about blurring professional boundaries between doctors and nurses as some of the latter are increasingly performing roles that were traditionally the preserve of the former. The doctors added that some nurses are diagnosing and prescribing treatment for patients without adequate training.

> "The word `Doctor' is being misused. Some nurses are referred to as `doctors', then there are `quacks' traditional healers, faith healers, herbalists, fortune-tellers who call themselves "doctors". This has led to a breakdown of traditional structures where there

was a strong hierarchical arrangement and all health care professionals knew where their various positions were in the said structure" (Doctor NN).

"Nurses in my village are well respected by patients. They are just like doctors. Most of the patients even call them "doctors" especially the ones (patients) that are not literate"(Patient D).

"Sometimes you find the community commonly addressing the nurse "doctor" rather than nurse because they know you are the one providing all the services for them whenever they need you" (Nursing Manager V).

There was consensus amongst all stakeholders that some nurses have been called "doctor" for such a long time that they tend to behave like doctors, overstepping their professional boundaries and neglecting their caring role as nurses. A doctor stated that nurses have been called doctors for such a long time and they have become used to the appellation which comes with status and prestige. This implies that some nurses will practice beyond their area of competence in an attempt to keep up with patient expectation. The following example is by a nurse in a public sector hospital.

"There are some colleagues of mine who push it a little more because a doctor cannot be on sit at 2.30pm and it is clear that he is available to attend to patients, but when the patient comes, you consult the patient prescribe the medication and send the patient home without the doctor seeing the patient. There are some doctors who are not happy about this" (Nurse F).

A majority of doctors and other stakeholders complained about loss of structure and concept of vertical referral by nurses to doctors. It was found that professional rivalry between nurses and doctors exists through lack of patient referral to doctors. This was said to cause inter-professional conflict. It was observed that most nurses wear a white coat which is commonly worn by doctors. The white coat is a symbol of authority. It can therefore be said that by wearing the white coat, nurses consciously or unconsciously assume the authority of the doctor. This can affect the way nurses behave during patient consultations, adopting a biomedical approach at the expense of a traditional nursing approach which is synonymous with caring. It would appear that the traditional role of nursing is neglected in favour of a medical model of care provision, aiming at biological homeostasis. Such an approach can adversely impact on patient care. Also, the patient plays a passive role within this framework.

The next section will examine the nurse-patient consultation process as perceived by nurses, nursing managers and patients.

4.9.2 The nurse-patient consultation process, perception of stakeholders

Nurses are expected to carry out their functions in a safe, competent, reliable and cost-effective manner. The literature review suggests that whilst structural dimensions provide an important measure of effectiveness of health care provision, process measures are equally useful and are a better way of evaluating subjective measures of care provision particularly where the research questions seek to understand why and how a particular phenomenon operates.

In this thesis, it is argued that procedures are central to the nurses' role and have an impact on clinical outcome. This is crucial given increasing demand for patient involvement in care as part of the drive to achieving cost effective and high quality of care. Ongoing assessment of the process of diagnosing and prescribing is particularly important in Cameroon for several reasons: it is a resource constrained economy with enormous socio-cultural diversity. Also there are multiple providers of health care. In a vast majority of cases health care is paid out of pocket. As such, patients as consumers have the freedom to choose where to access health care. Rycroft-Malone et al (2001), makes the point that in order to promote compliance with treatment, patients should be able to make informed decisions based on information provided by health care professionals. This therefore necessitates an evaluation of the nurse-patient consultation process.

The majority of nurses from the interview data reported practising steps similar to those advocated in the UK by the Nurse Prescribing Council and also, the International Council of Nurses. The nurses state that they make the patient comfortable by starting with general questions on how the rest of the family are, and work. General pleasantries depended on the observed severity of patients' condition. If the patient is not displaying signs of distress then "small talk" is practised but if the patient is in distress then the nurse would go straight to step two after the initial greeting. Step two is taking of the patients' past medical history, the next is monitoring of patients' baseline observations, temperature, blood pressure, pulse, weight, observations of trauma if necessary. Following this, the nurse then makes the decision whether to refer the patient to the laboratory for further tests or not. With the former, the nurse will ask the patient to bring back the results of the lab test. Based on the lab results, and availability of drugs depending on the health setting, the nurse will prescribe medication which the patient will buy from the pharmacy. An outpatient appointment is generally booked for two weeks. On some occasions, the nurse will make and inferential diagnosis, decide on what treatment and prescribe. The patient is sent home and asked to come back for a follow-

up appointment in one to two weeks. The cases which are beyond the nurses' are referred to the doctors. Some nurses further stated that because of poverty, some patients cannot afford lab fees in which case the nurses will have to make a presumptive diagnosis.

> "When the patient comes into the consultation room. I tell them to relax and tell me their problems. They should know that what they tell me ends in this room except they will be the one telling it back to the community as I am here for their interest. So when you relax the patient at the beginning of the consultation they normally feel free to tell you all the problems they suffer from" (Nursing Manger F).

Another nurse stated:

> "When the patient arrives you welcome them, ask the patient what brings them to hospital. The nurse at reception would have recorded patient's personal details, name, age, sex, weight. I record their baseline observations: temperature, pulse blood pressure and total examination from head to toe. This is because sometimes patients hide or don't tell all their symptoms, and through consultation and examination of the patient you discover so many things that are going wrong with the patient and the patient did not mention it to you..." (Nursing Manager V).

> "...When I went to consult, I did not see the nurse immediately, I saw the health attendant who took my book, recorded my blood pressure, my temperature and sent me to the nurse. I went and saw the nurse in the consultation room who consulted me by asking me questions as to what was troubling me. After that the nurse sent me to the lab. When I collected my results from the lab, I took them back to the nurse and she prescribed my medicines which I bought from the health centre" (Patient EM).

The hospital setting can be intimidating and even more so for the majority of people in the rural areas because of their lower level of education. It is a barrier to communication. For female patients or patients' relatives the problem is further compounded by patriarchal values where women are less able to articulate their needs than men. A welcoming nurse will therefore facilitate communication. As seen in chapter one, patients' relatives are very much involved in patient care. Nurses stated that sometimes they rely on patient's relatives for the history of patients' illness. This may not be accurate but with the patient too ill to speak the nurse will have to draw information from multiple sources to inform an appropriate course of action. In some cases, the nurse stated that they would resort to trial –and –error measures or rely on instinct to diagnose and prescribe. It is evident that diagnosing is not just a linear interaction between the patient and the nurses.

However, some difficulties pertaining to the consultation process outlined above were identified. Record keeping is a problem in some health care settings. In the public health settings the patients keep their hospital consultation records, which contain their demographic details as well as past medical history. In the private and mission hospital the patients also retain their medical records but in addition, the hospital stores the patients' hospital card which contains patient' details and medical history, making it easy for retrieval during subsequent visits. This is important because on some occasions, the patients or relatives forget or misplace the hospital books and are thus unable to remember the patient's past medical or drug history. It is particularly problematic for those who are less literate. Failure to recall the medical history has often resulted in difficult situations where, for example, a diabetic patient is administered glucose, with the resulting increase in health complications, morbidity and mortality.

4.9.3 Interpersonal skills of the nurse

There were variations in nurses and patients' perceptions of nurse-patient consultation process. The interview data reveals that a majority of patients commented on the interpersonal skills of the nurse rather than his/her technical abilities. Patients talked about nurses being welcoming, kind, comforting and providing reassurance. Patients valued the human treatment from nurses as illustrated in the following quote.

> I'm always very happy especially when they ask about my family and things like that. It really comforts me that they care about me...the nurse gives me comfort just by talking to me telling me I will get better, and being kind to me I even feel relieved when I've not even taken treatment." (Patient C).

Some patients cited compassion from nurses as a benefit of diagnosing and prescribing by nurses as the following examples show.

> "Ashia, (equivalent of I'm sorry you are ill) don't mind (do not worry), you will get better soon" Just by saying this, it makes you feel better even before starting your treatment" (patient J).

> "Just the way the nurse welcomes me and talks to me in a comforting manner, makes me feel better even without me taking any medication (patient TW).

However, a significant number of patients were dissatisfied with nurses' interpersonal skills during consultations. Some said that some nurses do not take the time to listen to a patient's complaint.

" There are some of them (nurses) who frown at you.....What is the point? When you are ill and you go to the hospital you want the nurse to comfort you not to be frowning and making you feel like you are disturbing them..sometimes the nurse treats you like you are nothing. Some of the younger ones who have not been in the field for long are the worse" (Patient TW).

" Some of the nurses are very arrogant especially the female" (Patient G).

"If you are being told off and shouted at, you feel discouraged even to suggest anything to the nurse" (Patient D).

"Some nurses will listen to you even if they think your suggestion is rubbish whilst others will not even respond to your suggestion and so it varies on the nurse that you are dealing with" (Patient G)

"Some of the nurses are rude that you could die just listening to their insults.... They give you a look like you are filth, they shout and insult you" (Patient J)

"In some cases, nurses are not caring...It happens especially in the general hospitals and in some case even in the mission hospitals but not as much as the general hospital" (Patient TW).

Some of the nurses.., their approach is not good. The young ones especially, even if they diagnose any condition and prescribe my drugs as I am returning home I am not satisfied in my mind.. If the nurse gives you instructions and you don't understand and ask him/her to repeat they get really angry and say you were not listening, and they will say "how many times do I have to tell you?" (Patient Pa)

Other reports were that some nurses do not do a proper physical examination prior to prescribing medication to the patient. A majority of patients also stated that some nurses do not send patients to the laboratory.

"Sometimes the nurse will just look at you and diagnose that you are sick of fever and maybe it is not fever which you are sick of but when you meet a doctor, he sends you to the lab and then prescribes you the right medication" (Patient P).

In effect, the patients are pointing to dissatisfaction with nurse-patients consultation as a result of the nurses' behaviour. There are some suggestions of incompetence and negligence on the part of some nurses during consultations with patients. There is substantial literature which suggests a correlation between concordance and patient satisfaction. The findings from this study offer implicit and explicit evidence that if the patients do not trust the nurses' abilities to diagnose and prescribe their treatment, then they may not adhere to the treatment regime and ultimately this will lead to ineffectiveness of treatment.

Some nurses were reported to be rude and harsh to patients. Patients added that such behaviour makes it difficult for them to explain their health problems. Some nurses were shown to demonstrate a lack of the humanistic value of caring, benevolence and compassion as illustrated below:

> "The behaviour of nurses during consultations varies. Some nurses are harsh and don't behave professionally, they discourage you from going to consult in hospitals. Such nurses are not welcoming. Patients even prefer to go and consult with native doctors because they are cheaper and they treat you better as compared to the nurses who don't seem to care about your illness and treat you like you are dirt"(Patient J).

As noted in the introductory chapter, patients in Cameroon demonstrate a range of health care seeking behaviour. Patients' expectations and use of health centres and hospitals are in part influenced by their past experiences. The nurses' poor attitude and high cost of care in modern medical facilities have been identified as barriers to the utilization of health care facilities. Also, patients reported generally positive interpersonal skills with traditional doctors.

Traditional doctors were noted to command respect and patients reported that the traditional doctors also treat patients with respect. Traditional doctors have an understanding of the patients' socio-cultural backgrounds and they provide treatment that covers various aspects of the patient's complaints. Also, traditional doctors are known to provide psychological treatment. Some forms of treatment provided by traditional doctors includes: rubbing medication, cutting the skin open prior to rubbing ointment or a paste on the affected area. The fact that some aspects of the traditional doctors' care involve massage of the affected area could mean that the patient's need for therapeutic touch is fulfilled. Holistic care, care of the body and mind therefore appears to be important to patients.

Patients are also influenced by past experience with other health care professionals during diagnosing and prescribing.

> "There are some patients who will come here and after assessing them you tell them that you will send them to the doctor. They will refuse and say that only you will write my medicine. Maybe the patient must have been going to the doctor and then one day they came to you and you prescribed a drug that solved their problem and from then on the patient will trust you more than the doctor. I have had so many of those experiences. In that cases I will convince the patient and say this case I cannot treat go and see the doctor and after the doctor has prescribed then you can stop by and see me then we take it from there"(Nurse J)

A nurse conceded:

> "The patients have trust in me. Psychologically, by consulting with a trusted nurse, the patient already feels that they have achieved 50% of their treatment" (Nursing Manager F).

Trustworthiness of the nurse was a recurrent theme in the nurse-patient relationship. A trusted nurse could be relied upon to deliver safe, competent, reliable and cost-effective care.

4.9.4 Lack of patient involvement and participation in their care.

Patients expressed the wish to participate more during consultations with nurses. Some patients stated that nurses do not like the patient participating in their care except by taking the medication as prescribed.

> "From my experience, when you suggest something, the nurse would say, you knew the medicine, why didn't you go and buy it and drink it or you knew that, why did you come here to waste my time? Do you want to teach me how to do my work? Don't tell me how to do my work." (Patient YT).

Patients reported that doctors are more willing to listen to suggestions and encourage the patient to speak while, nurses get easily irritated. It is evident from the interview data that patients are getting more knowledgeable in health matters and are demanding more involvement in managing their health.

The nurse-patient relationship is crucial to the success of care provision by nurses. Patients have significant powers and their role is an important component of the success of health care delivery. They choose where to seek health treatment, decide whether to comply or not with treatment, they seek a second opinion from other sources. Patients are knowledgeable about their health conditions particularly chronic conditions. Accessing this knowledge and encouraging active participation in their care is a better way of ensuring effective health care service. Given the socio-cultural context in which care is provided in Cameroon with patient's relatives assuming the role of informal carers, nurses provide less personal care to patients. Patients expect nurses to respect them, listen to them, empathise with them and generally be more caring.

The above section highlights the argument that the nurse-patient relationship is interactive in nature and therefore it is important to understand the expectations of patients and nurses in order to provide health care which is acceptable, safe, competent and cost effective given extremely limited resources available.

4.9.5 Nurses' increasing practice of medicine and not nursing

It was noted that a significant number of nurses are moving away from their nursing duties of care and instead concentrating on `practicing medicine'.

> "That is why you might get into a ward and you see there are nurses there but the patient is there crying in bed and the nurse is not bothered. Meanwhile if they were properly motivated they will carry out proper nursing function which is to care for the patient, to relieve the patient of suffering and pain." (Nurse J).

4.10 Benefits to the state/health care establishment, the community and the patients

All nurses and doctors said diagnosing and prescribing by nurses is beneficial to the state. First of all, it is not possible for the state to provide doctors in every health care setting due to the small numbers of doctors in Cameroon. Secondly, the training of nurses is cheaper than that of the doctors. Thirdly, it takes a shorter period to train nurses, three years as opposed to 7 to 8yrs for a doctor. Fourthly, the wages of nurses are far lower than those of doctors. Nurses in the private, mission and public hospitals emphasized the point that good diagnostic and prescription patterns would serve as a good word of mouth advertisement for the hospital, thus encouraging more patients to come and consult there.

> " When you treat the patient and they get well, they will always come back to you and they will tell others about your treatment..." (Nurse W).

This will generate more income for the facility. There was consensus amongst all the managers that diagnosing and prescribing by nurses is a cost effective way of providing accessible health care to patients particularly to rural communities where there is an acute scarcity of doctors.

4.10.1 Benefits to doctors.

Saves the doctor's time.

Diagnosing and prescribing by nurses saves doctors' time. Firstly, the nurses, deal with the minor cases whilst referring the more serious cases to doctors. Secondly, some of the doctors working in public health care settings are also engaged in private practice elsewhere. As a result, when they are busy with their private patients the nurses diagnose and prescribe for patients in their absence.

"We have very few doctors and even the ones who are there spend most of their time in their private clinics leaving patients in these general hospitals to be consulted by nurses" Patient Z).

It was unanimously agreed by nurses, nursing mangers, doctors, patients and government representatives that nurses fill the gap created by the lack of doctors in some areas. There are more nurses than doctors and therefore nurses help in providing health coverage of the population especially in the rural areas.

"There are very few doctors so the nurses have to fill in the shoes of the doctor. You can imagine we have health centres which are four hours drive on bad roads, then you trek another three hours to arrive the health centre. The physician as far as I know have never been there, so it is the nurses taking care of these communities. If it was left to these physicians, no physician will stay in a place like that,(rural area)"(Nurse Manager E).

" It's important for nurses to diagnose and prescribe. You can't have a doctor in every place. When the doctor is not readily available, the nurses can make prescriptions and handle minor issues, but if they are issues that need the attention of the doctor then they don't hesitate to send the patients to the doctor"(Doctor W/ Hospital Director)

"The ratio of doctor to patient is less than the ratio of nurses to patients" (Nurse F).

4.10.2 Benefits to nurses and nursing managers.

Diagnosing and prescribing was found to increase job satisfaction amongst nurses and provided opportunities for continuing professional development. Nurses believed that their ability to diagnose and prescribe is an indication of the development of nursing as a profession. It enables the nurse to be seen as an independent, autonomous practitioner who is not just `a doctor's assistant'.

" I feel happy when I diagnose a patients' condition and treat them and they get better. When the patient improves, you as the nurse are satisfied psychologically"(Nurse M).

The above example of intrinsic motivation is a benefit of diagnosing and prescribing by nurses. A positive treatment outcome is clearly a goal for these nurses. This benefit is more important for the nurse than money. Also, there's increased prestige and status in society.

4.11 Disadvantages of diagnosing and prescribing by nurses.

4.11.1 Poor communication and interpersonal skills of nurses during patient consultations.

Most patients stated that doctors listen more to them during consultations than nurses.

> " Some of the nurses will not even dig deep into your complaint and they immediately write your drugs without even sending you to the lab. They are in a hurry, those ones I know have not been trained properly or they are just too lazy to do their work. You know with some of the nurses, doing nursing is just a last resort for them. It is not their calling. And such nurses you know from the way they treat you and don't respect you" (Patient Pa).

Other stakeholders agreed with the above quotation pointing to a lack of sense of vocation by some nurses in performing their nursing roles. This therefore suggests that individual nurses' attitudes impact on their ability to diagnose and prescribe effectively. The Latin root of communicate is "communicare" meaning "to share". If nurses are not taking the time to listen and share information with patients then the patients will not feel encouraged to share their problems and consequently the nurse will not be able to accurately diagnose the patient's problem. However, as noted in previous pages, staff shortages sometimes leave nurses with no choice but to rush care provision.

Some of the nurses identified low staff morale as well as patient dissatisfaction as consequences of rushing patient care. Patients stated that they tend to forget when giving the nurse their illness history if they feel that the nurse is rushing them or being rude and unwelcoming. Effective consultation practice is at the heart of providing high quality care for patients.

4.11.2 Risks

Participants reported disadvantages of diagnosing and prescribing by nurses in terms of risks. A majority of nurses reported anxiety, fear, the risk of making a false diagnosis and prescribing wrong treatment. They added that this would have negative consequences to the patients and burden the nurse psychologically. Other stakeholders were equally concerned about diagnosing and prescribing by nurses in general.

> " Of course, some people do abuse the opportunities that are being given to them and they go beyond what they are suppose to do. And some may not even want to refer the patient. I must tell you sometimes I have looked at prescriptions and diagnosis coming from some nurses. For instance somebody with high blood pressure. They keep on giving prescriptions without

> investigations. Diagnosis is not just the disease. You have to know how far the disease has extended, are there any complications?" (Doctor W).

The Doctor identifies nurses' professional misconduct and incompetence in diagnosing and prescribing.

> "The risks are huge because I have seen a lot of people die who could have been helped if they had contacted the right doctor at the right time...in as much as you are trying to help if you don't have a full understanding of what you are doing, it becomes more of a problem. So yes, nurses are good, but they should know when to start, when to stop and when to refer the patient to the doctor" (Doctor N.N).

Inappropriate diagnosing and prescribing can have significant negative implications not only for the patient but for secondary stake holders such as the patient's relatives. This is particularly significant in the Cameroon society which is family-centred/ reliant. The demise of a patient who is a breadwinner in the family can have far reaching consequences. An illness or death of a family member can have a multiplier effect that could culminate in a child dropping out of school due to lack of school fees. It could also potentially lead to an increase in morbidity and mortality of other family members as they struggle to meet health care costs.

4.12 Evaluation of diagnosing and prescribing by nurses using different qualities of care as suggested by the Maxwell, 1982.

The Cameroon government's health care strategy emphasises primary health care as a way of improving the health of its citizens, particularly those in remote areas. Some of the major pillars of primary health care include accessibility, availability, affordability, effectiveness, equity and efficiency. Therefore, Maxwell's dimensions of quality of care was found to be appropriate in evaluating diagnosing and prescribing by nursing to ascertain how far these goals are being achieved.

4.12.1(1) Effectiveness

Participants were asked about the effectiveness of nurses' role in diagnosing and prescribing and also whether in their view the nurse gives the best prescription available. In addition, they were asked whether patients are given the expected clinical care and interpersonal care, the extent to which care delivers its intended outcome.

Most stakeholders stated that nurses are supposed to diagnose and prescribe for minor conditions only. They further added that the nurse was not the best person to diagnose and

prescribe treatment for patients with medium to severe diseases due to their limited training, but because there are few doctors and many nurses, nurses have no choice but to diagnose and prescribe. Also, stakeholders feel that on the one hand, it is a positive step for nurses and beneficial for patients given the fact that students are entering the nursing profession with higher qualifications now than before. On the other hand, there is a general concern that such nurses are more likely to take greater risks when diagnosing and prescribing for patients.

Half of the patients stated that their disease was treated successfully by the nurse. Another half indicated that their disease was not treated successfully the first time they consulted with a nurse. Some patients had to consult with the nurse several times and on some occasions it was only after consultation with the doctor that they were finally treated. Some nurse-patient consultation experiences were positive whilst others were negative. Some patients pointed to the academic knowledge of doctors which equips them with expert knowledge and skills. However, they also cautioned that without the equivalent clinical experience, most experienced nurses are better at diagnosing and prescribing for minor and common diseases than doctors. This is mainly as a result of their frequent exposure to these conditions. The above findings suggest variations in patient's assessment of the effectiveness of diagnosing and prescribing.

Reduction of morbidity & Mortality Rates.

A government representative gave an example of where diagnosing and prescribing by a nurse has been most effective: some years ago, a nurse with 20 years experience as a theatre nurse was employed in a nurse-led clinic in a rural area. The statistics before and after the arrival of the nurse showed that there was a drastic drop in morbidity and mortality rates. Critics may question the reliability of such an observation given that there was no randomized control trial to determine the correlation between the process and outcome (i.e. a study to determine the effect of the nurses' actions on the mortality and morbidity rates). However, other stakeholders' also provide accounts with strong evidence to suggest that nurses' intervention lead to positive health outcomes in some cases. A possible explanation could be that effective diagnosing and prescribing by nurses can achieve these goals.

4.12.2 (2) Accessibility

Nurses are more accessible and more available than doctors. It was noted that nurses save lives by giving first aid treatment after consulting patients to stabilise their condition before the doctor continues with the treatment subsequently. The patients in this study benefit from nurse diagnosing and prescribing in terms of the shorter distances they have to cover to get

treatment and the affordability of such treatment since the drugs that are made available are highly subsidized. This way, one of the objectives of primary health care (providing accessible and cost effective health care) is being met.

Costs savings

There were variations in participants' responses to the cost of nurse consulting as compared to that of doctors. Nurses/nursing managers and patients felt that it was cheaper to consult with a nurse than it is with a doctor. It cost 200frs CFA (40p) to consult with a nurse as compared with 600frs (£1) for a doctor. Affordability is a key component of access to care in Cameroon due to increasing levels of poverty-financial barriers.

It was stated that because nurses can relate to the ordinary patient, they tend to prescribe cheaper drugs. Also, the more experienced nurses knew exactly which drug to prescribe for the patient's condition. However, some participants held that it may not be cheaper after all, since the patient may consult several times before being successfully treated.

> "The nurse may be cheaper. The treatment can look cheaper yet at the end of the day it costs more because it is not effective (patient YT).

All the doctors in the study agreed that the nurse may be cheaper if minor cases are taken to them. More severe cases taken to nurses may ultimately entail more costs, both financially also in terms of prolonged distress. Nurses stated that junior doctors were more likely to prescribe a range of drugs on a trial and error basis which will not only be costly for the patients but may also have undesirable side effects.

Time savings for patients

The majority of stakeholders agreed that diagnosing and prescribing by nurses is time saving for the patient.

> "The waiting to consult with a nurse is quicker, shorter than that of a doctor. Also, some of the nurses are faster than the doctors, they don't spend too much time with the patient which means you can go back to your home and rest and it saves you the inconvenience of spending the whole day to consult with a doctor" (Patient C).

An additional benefit of diagnosing and prescribing by nurses is that it offers opportunities for the nurse to carry out health promotion at the same time. For instance in treating dehydration, a nurse can advise the patient or carer on how to prevent dehydration in the first place. The nurse can also give advice on drug interaction and possible side effects to watch out for, and how to manage them.

Stakeholders were asked about the extent to which all individuals in society access care based on their needs. All key stakeholders reported that it is easier to see a nurse than it is to see a doctor, because doctors are few. It is not uncommon for patients to spend the whole day in hospital to consult with a doctor. As a result, depending on the severity of their condition, patients may prefer to consult with a nurse. The rural health facilities are not fully equipped meaning that even if there were enough doctors to assign to every village, the doctors would be under-utilized and of little value added to the villagers. Lack of road infrastructure is a major problem as discussed earlier. As a result, nurses are more accessible because of their proximity to the patient.

Improved Communication.

Nurses, nursing managers and patients said the ease of communication with a nurse is a facilitator of diagnosing and prescribing by nurses as evident in the following quotation.

> I know generally that here people would prefer see the doctor., but personally, I prefer a nurse. My experience has shown that I sometimes get more satisfied when I consult with a nurse rather than a doctor. Sometimes the communication between the doctor and I does not flow as smoothly as would flow with a nurse. Because I look at the doctor to be someone who is very distant from me always acting like a very busy person maybe with many people waiting t see him. But I look at the nurse to be more at the disposal of the patient (Patient L).

Given that doctors occupy a higher social class and are better educated than nurses, they command more respect from patients. Most patients reported feeling intimidated by doctors especially patients with a lower level of education. In Cameroon, doctors command respect as a professional group. Male doctors enjoy additional respect simply by virtue of being a man in a patriarchal society.

Better listening skills of nurses.

Approximately, 20% of patients said nurses listen better than doctors while some did not think there was any difference between the doctors' listening skills and that of the nurse. Some patients reported that doctors were too busy and tended to spend less time with patients during consultations. Most patients expressed the need to be listened to. Some patients valued good listening skills, comforting words, compassion and words of encouragement from nurses as shown in the following examples.

4.12.3 (3) Acceptability

In this study, patients' preferences are mixed with some preferring to consult with nurses and others with doctors. Preferences are partly related to the nature of the problem. Nurses are favoured when the patient perceives the presenting problem as minor, routine or if the illness is to do with 'female issues'. A doctor is favoured when the problem is considered serious. It was found that overall, patients accept nurses' role in diagnosing and prescribing. However, a majority of patients were concerned that some nurses are crossing their professional boundaries by diagnosing and prescribing for diseases which are beyond their scope of practice with adverse consequences on patients. The findings show that nearly all the patients interviewed said if they had a choice they would consult with a doctor rather than with a nurse.

> "I expect and prefer to see a doctor because I feel the doctor is more qualified to treat my condition"(patient LA).
>
> "When a medical doctor makes a diagnosis, he gets to the root cause of things and tries as much as possible to hit the nail on the head. But nurses tend to do more of symptomatic treatment. They treat the symptoms and therefore they are not efficient / effective. Therapeutics is very difficult to understand. Even I find some doctors' prescriptions wanting let alone nurses" (Doctor W).

Most nurses, particularly those in the rural areas said the patients do not have a choice because they are all they have. Three patients said in the village health centre they are happy to consult with their nurse because she was 'caring and knew how to do her job'. Trust was a reoccurring theme with some nurses stating that once the patient trusts the nurse, then psychologically, the patients' illness is reduced by up to half.

Gender Preference

Most patients prefer to consult with a doctor. However, in the absence of the doctor, some patients, a majority of who are women, prefer to consult with a male nurse rather than a female nurse. Half of the male patients preferred a female nurse and the other half did not have a gender preference and instead valued the competence of the nurse. A minority of female patients stated they prefer a female nurse. Some patients especially the fulanis' (a nomadic Muslim tribe) prefer to consult with female nurses particularly for conditions that would require intimate body examination. The nurses were aware of gender and cultural preferences in care provision.

Patients who preferred to consult with male nurses explained as follows:

> "Because the male nurses are more caring, patient, take time to listen to your complaint and examine you well, and they are more gentle, they would say things like 'ASHIA' Male nurses are more likely to sympathise with you, more comforting and don't shout at you"(patient C).

The minority of female patients with a preference for female nurses reported that they are most comfortable consulting with female nurses for conditions relating to female issues.

> "I feel more comfortable with a female nurse. In my experiences, it is the female nurses who are more sympathetic and take greater time and care for me than the male nurses. The male nurses behave like they are doctors. They do their job well but they don't show that concern and patience that they care for you"(Patient Pa).

> "I prefer a female nurse. I feel more at ease... She will be my kind (same gender) and I think I can open up more freely with her than with a male nurse. Some of my experiences, the female nurse might have experienced them but for the male nurse, I may need to break through several barriers before I open up." (Patient L).

Qualities attributed to femaleness such as caring, gentleness, nurturing, warmth are valued by patients. Another finding in this study is that most patients feel that male nurses are better at diagnosing and prescribing treatment than female nurses. Patients described male nurses as faster/quicker understanding and kind during consultations. They reported that male nurses were more caring, treated patients well, had more patience than female nurses, that they were not "harsh" (rude). They were polite and good at consoling and providing reassurance.

Several factors may explain female patients' preferences for male nurses. It could be that female patients are more expressive and as a result have a higher expectation of nurses to meet their emotional, psychological as well as physical needs than male patients.

Also, the gender preference finding could be explained by the fact that Cameroon is a patriarchal society. Women naturally have more respect for men than women. As a result they are more likely to prefer to consult with a male nurse in the absence of a doctor. A further explanation may be the fact that most doctors in Cameroon are male. The male nurse may thus be perceived by the female patient as the second best to doctors.

The male gender preference findings are significant given that nursing is a predominantly female profession. However, it is worth noting that although there are more female than male nurses in Cameroon, the ratio of male nurses is comparatively higher than that of the UK. Attempts to collect the actual figures were unsuccessful as the culture of documentation and

record keeping is at an embryonic stage (Kamadjeu et al. 2005) and in some case non - existent.

The assumption that women's role and nursing is synonymous implies that women are expected to have a natural ability to manage emotional needs than men. When this does not happen then there is conflict. Overall, it was found that what mattered most was the individual nurses' approach and not gender as such. If the patients perceive the nurse to be caring, then they trust that their illness will be treated efficiently. Words which were used to describe a good nurse were caring, sympathetic, gentle, takes time to listen.

4.12.4 (4) Efficiency

Although principally a concern of managers (benefit and cost) it can also be relevant to the patient. In the nurse consultation context, it is the extent to which the objectives of care delivery are achieved with available resources. It was generally agreed by different stakeholders that diagnosing and prescribing is an efficient way of maximizing the use of limited resources. First of all they argued that it was cheaper to train, employ and pay a nurse than it is a doctor. Also, it takes a shorter time to train a nurse than a doctor.

Nurses were reported to be more likely to give health advice for certain diseases than doctors. Some nurses especially, the more experienced ones were better at diagnosing and prescribing for some patients than some junior doctors.

> "Even though the doctors will have academic knowledge of that condition, they lack the clinical experience which most of these nurses have. This is because the nurses are available to treat these conditions. Their experiences are more than those of the doctors and they the nurses tend to perform better than doctors" (Patient L).

Only one doctor agreed with the view that some experienced nurses are more capable of dealing with some conditions than newly qualified doctors. All the other doctors disagreed, holding that some nurses have an exaggerated belief in their capabilities and as a result some nurses practise beyond their level of professional competence to the detriment of the patient.

4.12.5 (5) *Equity*

This indicates a comparison of different individuals within a given population. It denotes consideration of fairness. Some nurses reported prescribing more expensive drugs for patients with higher socio-economic status. There were several reasons for this variance in

prescribing. Firstly, the patients will not feel satisfied with the nurses prescribing a familiar drug as noted in this quotation

> "You see, some people are satisfied with you prescribing expensive drugs to them so most often, the routine is you prescribe expensive drugs to the rich and cheaper drugs to those we consider to be a little bit poor..... Amoxicillin is a very good antibiotic and Ibuprofen is a good anti- inflammatory. But since these are normal over the counter drugs that they can get from the quarters (neighbourhood) when you prescribe these drugs to them, the patient will ask you whether you think they came all the way from their house to the hospital only for you to prescribe a common drug which they could have bought without bothering to consult with a nurse?" (Nurse F).

In a way, the nurse is providing psychological care to the patient. Another way of looking at this is that the more expensive the drug the more legitimate is the disease and the more justification and sympathy the patient will receive from loved ones.

Some nurses reported not wanting to consult their own family members as their social ties may preclude or somehow affect their professional ability to diagnose and prescribe for them. In such cases, they would refer their family members to a colleague. Other nurses and patients mentioned queue jumping to treat friends and relatives during consultations. There could be a possible explanation for this behaviour, the African philosophy 'UBUNTU' meaning 'I am here because of you'. Some people have interpreted this to mean one is expected to provide preferential treatment to one's own kind. This is similar to a social exchange concept and reciprocity.

> " You can be first, and somebody is coming maybe an hour or so after, but because of the nurses' relationship with the patient, they will call the patient first and obviously attend to them in a special way" (Patient YT).

> "Some of them (nurses) are very polite and some are very rude and I think they really go out of their professional ethics. Some don't care and sometimes I have realised that when you come, there is this preferential treatment they give. If they don't know you they don't care about attending to you as you come to consult."(Patient D)

Social injustice is evident in some clinical situations. Equity appears not to be given a high premium in Cameroon. It is almost a given that personal knowledge of a nurse guarantees one preferential treatment. It is interesting to note that patients from a higher social class reported being given the option of consulting with either a nurse or a doctor, unlike patients from a lower social class. Also, it was noted that patients from higher socio-economic groups had a

better health care experience with nurses during consultations. Such patients pointed to the fact that nurses were polite and caring. Patients of a certain socio economic status are more likely to demand to see a doctor in which case the nurses would comply and refer the patient to the doctor. On the other hand, about half of the patients mainly those from lower social classes, complained that nurses were rude and nonchalant during consultations. Variation in patient's responses with reference to equity, suggest that some patients are satisfied with this aspect of care from the nurses while others are not. The findings and other literature suggests that gender and level of wealth/income influence the quality of care quality of care.

Summary of Chapter four.

This chapter has described the findings of this research. In keeping with the qualitative research approach extensive quotations of participant's own words have been used to accurately represent the varying perceptions of key stakeholders. The findings have shown that several factors (epidemiological issues, shortage of medical personnel, government policy, extreme scarcity of resources) led to the reorganization of the health care service in Cameroon (RQ1 & 3). The state is the main provider of health care in Cameroon. The new government reforms had implications for nurses; their role (RQ1) in health service delivery and the way they are trained for their extended roles (RQ4). Nurses' role is multifaceted (RQ2). The culture in Cameroon expects relatives to cater for patient's basic needs, thereby enabling nurses to concentrate on providing more technical care. Due to acute shortages of medical doctors diagnosing and prescribing forms the bulk of the nurses' role. It was concluded that due to extreme skill shortages, the function of the nurse takes a negotiated approach. The role of the nurse evolves in response to the need and is not governed by strict guidelines and job descriptions.

Nurses are substituting for doctors in Cameroon. The role of nurses in Cameroon compares with the generic role of nurses in the UK, but with additional functions which are similar to the role of the Nurse Practitioners in developed countries such as the UK.

Nurses act as the first point of contact and diagnose and prescribe in all health care settings. However, evidence suggests that diagnosing and prescribing is dependent on several factors; location, size, type of the organization, resources, Individual characteristics of the nurse, doctors, nursing managers, nurses and patients ability to pay amongst other factors.

The typology of diagnosing and prescribing in Cameroon (RQ2) includes, independent diagnosing and prescribing, counter referral between nurses and doctors, adjusting/refining of

doctor's prescriptions, diagnosing without prescribing and diagnosing and prescribing in a team.

The training of nurses in diagnosing and prescribing (RQ4) is incorporated in the pre-registration training as opposed to additional post registration training which is favoured by developed countries. Doctors in Cameroon are involved in the design and implementation of the nurse training curriculum as opposed to doctors in the UK who have little or no direct input into nurse training. There are growing concerns over the quality of training in some private nurse training institutions. The problem of lack of standardization is reported by stakeholders. Younger nurses in Cameroon perceive their pre-registration training as adequate preparation for their diagnosing and prescribing role. However, older nurses felt that their previous nurse training- an apprentice-based approach- did not prepare them sufficiently for their role in diagnosing and prescribing. All the nurses in the study expressed the need for continuing professional development to enable them provide high quality care to patients.

Overall, the findings suggest that nurses in Cameroon diagnose and prescribe for patient to a far greater extent than their counterparts in developed economies. Nurses act as the first point of contact in all health care settings. Nurses diagnose and prescribe in all health care settings but the extent of their involvement is dependent on several factors; geographical location: the setting, size and type of health care facility; the individual characteristics of the nurse, Other factors impacting on diagnosing and prescribing (RQ6) include; the nurse-doctor professional relationship, attitudes of nursing managers, socio-cultural factors: patient's health beliefs and health status, patient's expectations of the nurse, literacy level, poverty, organizational culture. Organizational issues were identified as role ambiguity both at national and local level.

Doctor support of nurses' role in diagnosing and prescribing depended on the personal knowledge of the nurse, the type of health care organization and age of the doctor. Older doctors were more supportive of nurses' role than the younger doctor.

Patients' health beliefs, income level of education were found to be important determinants of diagnosing and prescribing. Poverty was identified as a determining factor directing where patients go to consult for health care needs.

Economic incentive was found to be a driver of diagnosing and prescribing by nurses. A majority of stakeholders reported that some nurses used their ability to diagnose and prescribe as an opportunity to supplement their income.

Teamwork and experiential learning were found to be facilitating factors of diagnosing and prescribing by nurses.

Most key stakeholders reported a lack of clinical governance issues such as continuing professional development, structures for risk management/evaluation of care and limited patient choice, scarcity of resources as barrier factors of diagnosing and prescribing by nurses. Availability of clinical governance was evident in the mission and private hospitals but less so in public health care facilities. On the other hand, some nurses were reported to be unwilling to attend seminars unless they received payment for it, despite the fact that CPD is a necessary component of diagnosing and prescribing.

At the same time, this chapter has shown that there are variations in stakeholders' experiences of the process of diagnosing and prescribing (RQ5). The findings suggest that the nurses reported using methods which are similar to the general principles of good prescribing as stated by the (United Kingdom's National Prescribing Centre, 1999, 2001; Byrne and Long, 1987, cited in Elwyn et al. 1999) and other prescribing competency frameworks. Whilst some patients agree with this assertion by nurses, others are clearly dissatisfied with nurse –patient consultation. The argument is made that an effective nurse-patient relationship together with an understanding of patient's and nurses' expectations are necessary in order for nurses to provide an acceptable, safe, competent and cost effective health care service to patients.

The chapter reported findings in relation to the consequences of diagnosing and prescribing by nurses, (RQ7)on the different stakeholders. The findings suggest that all stakeholders are in favour of diagnosing and prescribing by nurses as long as they practice within their area of competence. However, a majority of stakeholders reported that some nurses diagnose and prescribe beyond their level of competence thereby promoting conflict within the doctor-nurse relationship.

Diagnosing and prescribing by nurses is beneficial to the state. Nurses take on some of the doctors functions due to extreme scarcity of doctors, particularly in rural areas. It is cheaper and takes a shorter time to train a nurse than it is to train a doctor. It is also cheaper to recruit and remunerate nurses than it is doctors.

Finally, Maxwell's (1984, 1992) dimensions of quality of care were used to further explore the consequences of diagnosing and prescribing by nurses as experienced by patients. Benefits of diagnosing and prescribing include: accessibility of treatment, affordability, availability, lower consultation cost, increase in job satisfaction amongst nurses and provided opportunities for continuing professional development.

The findings show that most patients prefer to consult with a doctor rather than a nurse. However, in the absence of a doctor, a majority of patients including female patients prefer to consult with a male nurse. Male nurses were reported to be more caring, gentle, comforting as compared to some female nurses. Disadvantages of diagnosing and prescribing by nurses were found to include; poor communication and interpersonal skills of nurses, potential and actual risks to patients.

CHAPTER FIVE

DISCUSSION.

The aims of this study were:

- To explain the extent to which nurses are involved in diagnosing and prescribing.
- To explore how different stakeholders influence diagnosing and prescribing and to understand the consequences from the perspective of key stakeholders and
- To create a theoretical framework to analyse the role of nurses in diagnosing and prescribing in a resource-constrained economy.

The structure of this chapter is based on above aims. Each aim will be discussed in turn.

5.1 The extent to which nurses are involved in diagnosing and prescribing.

This section is organized as follows. It will start by discussing, the role of the nurse in Cameroon in general, followed by the role of nurses in relation to diagnosing and prescribing. This will be followed by the extent to which nurses diagnose and prescribe.

When compared with the generic role of the nurse in the UK, it is evident that there are great similarities between the roles of the nurse in Cameroon and their counterparts in the UK. The nurses in Cameroon performed most of the roles identified by Graham et al. (2004). However, there were also major differences with Cameroon nurses and nurses in other developed economies.

First, as evident in the findings chapter, nurses in Cameroon do not generally perform roles such as providing personal care which might be expected as part of their job even though they are trained to do so. Patient's relatives are responsible for providing personal/basic care. It might be a wider cultural expectation or perhaps once nurses begin substituting for traditional medical roles, providing personal care maybe considered a menial task. The implication is that nurses therefore may have more time, more than their counterparts in developed economies to dedicate to areas such as diagnosing and prescribing. This finding is an example of how different cultures affect diagnosing and prescribing by nurses

It could be argued that by teaching nurses how to provide personal care, pre-registration training does not fit what nurses actually do when compared to what they are expected to do with regards to providing personal care. But this argument will not be wholly accurate. As shown in the findings section, some nurses in mission and private hospitals provided personal

and basic care to patients. This means that providing personal care by nurses is dependent on other factors such as the type of health care facility.

Second, diagnosing and prescribing forms a greater share of the role of the nurse in Cameroon in most health care settings when compared to other roles that they perform due to extreme scarcity of doctors, demographic changes and epidemiological trends. Officially, nurses, particularly those in rural areas where there is a shortage of skilled medical personnel, are expected to diagnose, treat, manage, monitor and evaluate patients' health/illnesses within their competence. Reallocation of clinical roles means doctors no longer have a monopoly of diagnosing and prescribing for patients as it used to be the case traditionally.

The Cameroon study found that a majority of nurses, irrespective of grade carried out some of the tasks only performed by specialist nurses / nurse practitioner in advanced economies such as:

- Take a systematic patient history
- Carry out a systematic physical examination
- Diagnose and prescribe based on interpretations of clinical and laboratory results.
- Prescribe treatment based on pharmacological/nursing knowledge
- Carry out non-invasive and simple invasive diagnostic and therapeutic procedures.

(Roberts-Davies & Read, 2001; Bradley et al., 2005; Bradley and Nolan, 2007; Latter et al., 2007; Pulcini, 2002).

Whilst it is a requirement for nurse practitioners in the developed countries to undergo further training post registration to equip them with the appropriate knowledge and skills for their role post–registration, the same cannot be said of older nurses in Cameroon whose pre-registration was apprenticeship-based. Such nurses did not receive additional formal training for their role in diagnosing and prescribing as will be discussed further below.

Interview data and documentary evidence in the findings chapter show that nurses diagnose and prescribe for a wide range of diseases and drugs. In one example a nursing manager in a remote health care centre reported carrying out a caesarean section. This is an example of a nurse acting beyond their area of professional competence which could potentially put a patients' health at risk. It also demonstrates ineffectual legislation. It is evident that the role of the nurse is dependent on the immediate needs of the patients and not on official legislation. Given that the level of litigation is much lower in Cameroon than in developed societies, the implication is that, mal-practices can go unchecked. This is a big dilemma for nurses. Nurses seem to be torn between acting beyond their training to meet immediate patient needs or risk

the possibility that a patient's condition will significantly worsen. It is a catch 22 situation. So, nurses meet patient's needs without training. Does this then enable the government to "get away" without providing adequate training since the nurses appear to be "coping"?

In contrast, there is legislation in addition to nurses' code of conduct in the UK as shown in chapter two, laying down regulations to safeguard nurses and patients alike in the process of diagnosing and prescribing by nurses. As such, nurses are aware of the consequences of their behaviour and this helps to promote effective diagnosing and prescribing. Since legislation is enforced, nurses do not act outside this and consequently the government has to provide necessary training to enable patients needs to be met.

By way of summary, the role of nurses in Cameroon is similar to that of nurses in other developing countries as seen in the literature review chapter. This confirms what previous researchers have observed that in many sub Saharan countries and increasingly in the developed economies, nurses are the first point of contact for patients in primary health care settings (Boonstra et al., 2002; Miles et al., 2006). By implication, as nurses diagnose and prescribe for patients especially in rural areas with no doctors, it helps the state to some extent in making progress towards achieving some elements of primary health care such as, availability and equitability of health care. The nurses assume a more autonomous role. However, this varies significantly. Factors associated with variation include:

- The organizational context in terms of geographical location, size;
- The type of organization; (private/public/mission);
- Resources;
- Individual nurse's characteristic;
- Doctor's attitudes and practice;
- Attitudes of nurse managers; and
- Attitudes and resources of patients.

Having established that diagnosing and prescribing forms a significant aspect of the role of the nurse in Cameroon, the following section will discuss the extent to which nurses diagnose and prescribe. This section is a comparative analysis of Cameroon evidence with reports of diagnosing and prescribing internationally. The findings suggest five different types of diagnosing and prescribing carried out by nurses in Cameroon:

Nurses adjust doctor's prescriptions: An interesting finding in this study is that in some cases, nurses in Cameroon overrule the doctor's prescription. Although other studies have found that nurses frequently advise junior (inexperienced) medical colleagues on prescribing issues (Pontin & Jones, 2007), the Cameroon nurses went further, indicating that in some cases, doctors (especially newly qualified) over prescribe for patients. When destitute patients are given a lengthy and costly prescription by a doctor, they generally would go to the nurse and ask for a more affordable one. By implication, the patient has to pay twice, a doctor and a nurse. This further adds to the financial burden of patients who are already poor.
In a bid to assist the patient, the nurse who is probably more in touch with the socio-economic situation of the patients would review and prioritize the drugs prescribed. This may raise issues of professional authority to do so. Most nurses said it was better for the patients to start taking the main drugs first than to have no treatment at all. This is often a dilemma for nurses who, though aware that taking only part of the treatment could result in ineffective treatment, complications and drug resistance (Howell & Jones, 2006), still have to "do something" when a patient comes to them explaining that they cannot afford all their medication.

Team diagnosing and prescribing: Nurses reported diagnosing and prescribing as a team effort between nursing colleagues. Teamwork in diagnosing and prescribing compares with collaborative prescribing according to the International Council of Nurses (2004). Team prescribing was noted by Otway (2002) suggesting that a complementary approach and cohesive teams are facilitating factors of nurse prescribing. This is different with team diagnosing between nurses and doctors in the UK where nurses require a doctor's signature on their clinical management plan before they are able to prescribe. Team prescribing enhances relationships between health care professionals (Hall et al. 2003; Wilhemson & Foldevi, 2003). Research suggests that interdisciplinary teamwork and collaboration are central to the role of nurses with prescriptive authority (Stenner & Courtenay, 2008).

Whilst on the one hand it can be argued that a team approach to diagnosing and prescribing by nurses implies lack of confidence in a nurses' ability to perform a role that he/she has been assigned to, it could also be argued that given the extended roles nurses have in Cameroon, a team approach to prescribing may mitigate some of the risks and enhance the outcomes of diagnosing and prescribing by nurses.

Diagnosing without prescribing: It was also noted that nurses in some cases diagnose the disease and then refer the patient to the doctor for a prescription, such as in a case where a patient is diagnosed with HIV/AIDS. This is partly explained by the complicated management

regime of HIV/AIDS which requires special knowledge and skills. This finding is in contrast with those of Shumbusho et al. (2009) who found that nurses in Rwanda, can effectively and safely prescribe Anti-Retrovirals (ART) with appropriate training, mentoring and support. The implication therefore is that training can extend the role of nurses to facilitate diagnosing and prescribing.

Independent diagnosing and prescribing: This finding compares with the current state of nurse prescribing in the UK. This is similar to findings by Baird (2001) that practice nurses in the UK reported diagnosing and prescribing on a day-to-day basis. Some nurses in the Cameroon study reported feeling confident in their role of diagnosing and prescribing. Similarly, Bradley & Nolan (2007) and Latter et al. (2007) stated that a large majority of independent nurse prescribers reported feeling confident in diagnosing and taking responsibility in generating prescriptions. However, it was felt that some nurses clearly practice beyond their area of competence as explained below.

Counter-referral: This type is similar to dependent/supplementary prescribing in the UK where the doctor initially diagnose and prescribe for the patient and then the nurse continues with treatment of the patient but can refer the patient back to the doctor if need be.
In comparison with the nurse prescribing typology advocated by the International Council of Nurses (2004), it can be concluded that nurses in Cameroon lean heavily towards independent diagnosing and prescribing. The nurses are responsible for assessing the client, making an inferential and differential diagnosis, determining the appropriate medication/treatment required to manage the client's condition, issuing a prescription and requesting a follow up appointment to determine outcome of the treatment. This is in contrast with nurses prescribing in New Zealand and Australia where nurses prescribe under the directives of a physician (Griffith, 2006; Courtenay & Berry, 2007; Allen & Fabri, 2005 & Gunn, 1998 cited *in* Davis & Drennan, 2007). In Brazil where there are more doctors than nurses, the law prohibits nurses and other health care personnel other than doctors from diagnosing and prescribing (Hongoro & McPake, 2004).

The findings indicate increasing professional autonomy by nurses. It is interesting to note that despite the low status accorded women in the Cameroon society, a majority of nurses who are women have far more extended roles which grants them greater autonomy and in some cases are performing roles which traditionally are the functions of medical doctors in developed countries. The main reason accounting for nurses' extended role is scarcity of resources.

The overarching reason for nurse's extended role is the shortfall in medical doctors across the country as compared to cost cutting in developed economies (Hughes & Lockyer, 2004; Ngcongco & Stark, 1986; Gray,1999; Meyer et al. 2001; Pulcini,2002; Ploncynski et al., 2003; Pearson, 2009; Department of Health, 1999, 2002). The issue then is, how prepared are the nurses in Cameroon for this expanding role?

The findings suggest variations in nurses' responses as to whether their nurse training equipped them with the knowledge and skills they needed to diagnose and prescribe. The younger nurses reported sufficient knowledge and skills as a result of their pre-registration training. The reports from younger nurses on adequate training are an encouraging finding. It shows that health educationalists are implementing measures with the aim of adequately preparing nurses for their expanding clinical roles. The Cameroon findings compares with that of Courtenay et al. (2006), in the UK. In their study, participants reported that they were generally satisfied with their clinical and pharmacological knowledge, assessment and diagnostic skills and treatment options. Latter et al. (2007, 2010) also noted that over all, nurses reported that their nurse prescribing training largely met their learning needs. However, the younger nurses also acknowledge the importance of up-to-date knowledge to deal with increasing patient's health needs and changing epidemiology.

On the other hand, evidence from interview data in this study show that older nurses whose pre-registration training did not adequately prepare them for their role in diagnosing and prescribing (a majority of whom work in integrated Health Care Centres), carried out advanced nursing role without additional post qualification training. Similar findings were reported by Tembon, (1996) as shown in chapter two. These nurses reported inadequacies in their pharmacological knowledge. The implication suggests lack of support by the state in equipping older nurses (nursing managers) with the right skills to perform their role of diagnosing and prescribing. Such nurses could be practising beyond their knowledge and competence and therefore could potentially be putting patients' lives at risk. Tembon (1996) suggested in-service training as a way of improving nurses' attitudes towards patients, which were reported by respondents and members of the public to be poor.

The findings suggest that there are nurses with 12-30 years experience with limited opportunities for formal education and post-registration training which is specifically oriented towards diagnosing and prescribing. The lack of formal opportunities (CPD) for updating their knowledge in a planned and structured way implies that training is not systematic. It is a "hit or miss" system.

This finding does not meet the standards advocated in the UK by The Nursing and Midwifery council (2006) in "Standards of proficiency for nurse prescribers" as shown in Appendix 4. This document stresses the importance of understanding the philosophy and psychology of prescribing, possession of up-to-date clinical and pharmacological knowledge, an understanding of drugs, their side effects and interactions and promotion of effective communication, consent and concordance. A lack of opportunities for CPD could mean that quality of care is being compromised. The importance of CPD is further noted by Wilhemsson & Foldevi (2003) who found that training course in pharmacology strengthened the professional role of the district nurse in Sweden and created an experience of increased trustworthiness. Similar conclusions were drawn by Brooks et al. (2001) and, Otway, (2002).

Conversely, nurses in Botswana have good access to continuing professional development, work within a strong framework of clinical governance and remain the country's largest group of health care providers (Miles et al. 2007). Continuing professional development is the way forward to ensuring that nurses are equipped with the necessary knowledge and skills to diagnose and prescribe safely and effectively for patients. It is vital to support nurses' prescribing role (Campbell cited in Nolan & Bradley, 2008; Bradley et al., 2005; Latter & Courtenay, 2004).

Nonetheless, opportunities for formal systematic learning targeted towards increasing nurses knowledge in diagnosing and prescribing was evident in private and mission hospitals in the study sample. Although present in public hospitals it is not done in a systematic way as evident in stakeholder accounts. This could be because such health facilities have more resources and are better structured than the public health facilities as evident in the findings.

Interview data from both nurses and doctors identify informal learning as a useful form of learning. The nurses, nursing managers and other stakeholders in this study underscored the importance of learning on the job. Clinical experience and longevity in service were found to be a facilitating factor of diagnosing and prescribing. Boonstra et al. (2002) reached similar conclusions stating that nurses with 4-11years of clinical experience showed a higher degree of adherence to national treatment guidelines.

It was found that nurses especially those with many years of clinical experience were perceived to be more versed and knowledgeable about diseases such as malaria, diarrhoea and dysentery than junior doctors. This could be explained by the fact that many nurses have greater contact with patients suffering from these diseases than doctors, given that nurses are the first point of contact for patients in the Cameroon health care system. They treat many of

them and send them home without the doctor getting to meet them. As a result the nurses are deemed to be better at diagnosing and treating these conditions.

The findings identify peer support and teamwork as a form of informal learning amongst nurses (Humphries & Green, 2000; Otway, 2002). Nurses in the mission and private hospital reported greater teamwork/peer support than nurses in the public health settings. The smaller number of nurses in the private and mission hospital may explain this situation, since communication can be easier and more fluid in smaller groups. A policy implication is that nurses working in isolated rural areas, in integrated health care centres (nurse-led clinics with generally one trained nurse and support staff) do not have the opportunity to work with other qualified and experienced nurses nor doctors and therefore miss out on such crucial learning opportunities. This, ties with findings by Nolan et al. (2001) that working in isolation negatively influences nurses' confidence.

Notwithstanding the informal learning opportunities available, some participants expressed the need for more formal learning opportunities where they can improve their knowledge and skills to be able to diagnose and prescribe for patients safely, and effectively.

In spite of their expanding role, the study shows that there are several barriers to diagnosing and prescribing by nurses. A major one is resources constraints. The problem is worse in rural areas where resources are at best rudimentary and in some cases, non-existent. Interview data show that a majority of stakeholders point to lack of essential diagnostic equipment, lack of electricity and poor communication infrastructure in rural areas, as a barrier to effective diagnosing and prescribing by nurses. These findings are consistent with those of previous research which concurs that structural barriers and lack of facilities hamper effective health care provision (Awasum, 1992; Gilson et al., 2001; Prata, et al., 2005; Max Martin, 2009).

According to the findings of this study, diagnosing and prescribing by nurses in Cameroon can be described as extensive in its scope, but without corresponding resources, structures and processes to maximise its effectiveness. It also shows evidence that the nurses employ a wide and varied repertoire of knowledge and skills in an attempt to meet the ever-growing demand for health care. Nurses, particularly those living and working in rural areas are adaptable, resourceful and have in-depth knowledge of the local community, its resources and most importantly how to access it for the welfare of patients. Such nurses providing health care for patients with a variety of health problems across different age groups could be described as "quasi-General Practitioners". Similar conclusions have been noted in Ghana (Akor et al.1995). The findings from this study, suggests that nurses currently provide care which

emphasize a bio-medical model. This could be a contributory factor as to why some patients perceive nurse as "mini doctors".

Corrupt nursing practices were found in this study, suggesting that nurses' pay is relatively low, and in some cases, irregular. To compensate for low salaries, nurses engage in income generating activities considered to be unprofessional behaviour. The implication is that in such cases, the correct procedures and solutions are suspended. Such behaviour engenders hopelessness and jeopardizes trust in the nurses and the health care system resulting in poor quality of care and low utilization of health care services. It could therefore be considered a de facto financial barrier to accessing care particularly for poorer patients and those in rural areas and is contrary to the governments' objective of achieving equitable, accessible and affordable health care for all. It also raises serious ethical issues.

Some nurses were accused of misappropriation of public funds by collecting and not remitting consultation fees. Also, some nurses in public places move around with drugs in their pockets. Similar findings were noted by Israr et al. (2000). Selling unreliable drugs to patients is tantamount to fraud and deceit. It could easily be inferred that the prescription by a nurse involved in such practices may be guided more by the available stock than by the patient's real needs.

Economic incentive as highlighted in the theoretical framework was found to be a driver of diagnosing and prescribing by nurses. A majority of stakeholders reported that some nurses' used their ability to diagnose and prescribe for patients as an opportunity to supplement their income. Similar findings have been reported elsewhere in the literature. Ensor & Witter, (2001), Prata et al. (2005) argue that health care professionals solicit informal payments to supplement their income and this causes various further difficulties in accountability and equity of access to services.

Most of the corrupt practices identified in this study are facilitated by the societal context. Social and financial pressures of all types from an extended family or clan were thought to impact on the professional integrity and responsibility of some nurses to adhere to their code of ethics. Bureaucratic corruption in societies where civil service compensation is low was noted by (Mbaku, 1991a) as shown in chapter one. The implication is that the nurses have to earn money somehow. They have to provide for their families. Nurses have a higher status in Cameroon. As seen in chapter two, according to the Cameroonian society, richer members of the family take care of poorer immediate and extended family members alike (Caiden & Caiden, 1977; Vigh, 2006; Abega, 2006). A dependency culture could therefore indirectly

promote corrupt practices as nurses attempt to satisfy their varied roles as expected by society. Consequently, this acts as a barrier to effective diagnosing and prescribing by nurses.

In addition, nurses' interpersonal skills were found to be a factor affecting diagnosing and prescribing. The evidence suggests that patients value nurses' interpersonal skills as well as their technical skills. It was reported that some nurses implemented standards/competencies which compares with those in chapter two (Appendices 4, 5, & 6), whilst others did not. The nurse in prescribing has a duty to care for her patients. Some patients cited examples which suggest that the nurses are empathetic, polite, respectful, and encouraged patients to be involved in their care. The importance of effective communication and good interpersonal skills in facilitating diagnosing and prescribing by nurses is highlighted by a majority of stake holders. Similar findings were reported by (Luker et al., 1998; Brooks et al., 2001; Latter et al., 2004).

It was found that the way the nurse welcomes, listens/empathises with patients and show respect during consultation can either precipitate their recovery or discourage them from seeking health care from nurses. However, it was also found that rudeness to patients by nurses was a particular problem when nurses diagnose and prescribe. As evident in the findings chapter, rudeness to patients was mostly noted amongst younger nurses and in public health care facilities. This therefore implies that the type of organization matters and suggests that perhaps the current nurse training does not fully cater for the interpersonal skills of nurses.

In some cases patients prefer traditional doctors who seem to show more respect to patients and are cheaper. Some patients stated that nurses listen to them more than doctors. Empathetic listening can also enhance patient/client relationship and promote effective diagnosing and prescribing by nurses. Similarly, Latter et al. (2010) found that a majority of patients prefer prescribing pharmacists and nurses who listen to their views and provide medication information to them as opposed to a doctor who does not appear to listen to pay attention to patients.

The majority of patients and other stakeholders reported a perception that nursing did not seem to be a vocation for some nurses in service, which translates into poor interpersonal skills in the diagnosing and prescribing practices. There are similarities between nursing as a vocation and intrinsic factors of motivation. A vocation has a religious orientation. The finding can be explained in the light of the literature on the history of nursing. Historically, nursing was provided by women of religious orders who specialized in caring for the sick

(Davies, 1980; Abel-Smith, 1966; Dingwall et al.,1988; Baly, 1995). Although this point is debatable amongst academics today, to a greater extent, nursing is synonymous with caring. The findings suggest that most patients still believe nursing should be provided by professionals who perceive their job as a vocation and not just 'another job'. It is a calling to do well to others, to nurse the sick back to good health, commitment, compassion and dedication to a job. Implicit in this assertion is the process of caring. A prevailing view is that as a result of rising unemployment, students are enrolling on nursing schools as a last resort, just to secure a livelihood. This could have a significant influence on their nursing practices such as diagnosing and prescribing.

As evident in the findings chapter, it is suggested that in the mission and private health care facilities, the culture of caring for the sick was mostly perceived as a religious duty with a typical shift starting with prayers. The former is due to the fact that it was established by a religious body and the latter because of the strong religious beliefs held by the owner of the hospital. The findings therefore suggest that, nurses feel an obligation to deliver health care services which meets expected standards of care.

5.2 Impact of different stakeholders on diagnosing and prescribing by nurses.

The preceding section has shown that nurses diagnose and prescribe extensively within the health care system in Cameroon, amidst obstacles and challenges. We will now try to see how this aspect of nursing practice is influenced by the various stakeholders involved, namely the state, doctors, nursing managers, and patients.

With reference to box 2 of the post study theoretical framework Fig 5.1 on page 222 the state was found to influence diagnosing and prescribing by nurses in several ways. It is generally agreed that the state has a duty to provide health care for its citizens, including determining the legal framework within which such care is provided.

5.2.1 Legislation for diagnosing and prescribing.

Lack of clear legislation.

Even though the findings suggests that nurses diagnose and prescribe extensively there seems to be some ambiguity in the interpretation of the legal framework within which they operate. Government representatives and doctors reported that there was no legislation permitting nurses to diagnose and prescribe. But in contradiction, they added that there are protocols which nurses have to use to diagnose for minor conditions and refer serious cases to doctors. The definition of what constitutes a minor condition is not explicit. There therefore appears to

be some vagueness in the legislation regarding diagnosing and prescribing by nurses. Also nurses particularly in IHCCs reported treating all health conditions which patient's present with and only referring cases they cannot handle to doctors. Nurses use the same prescribing protocols as doctors which include both minor and major health conditions.

However, the findings suggest that some aspects of the prescribing protocols provided by the state are outdated. A nurse reported that in some cases when they used these out of date protocols to prescribe particularly for malaria, the treatment was not effective. Out of date protocols therefore act as a barrier to effective diagnosing and prescribing by nurses.

The findings of this study suggest a blurring of boundaries between doctors and nurses with a lack of clarity between the role of the nurse and that of the doctor which in some cases can cause some nurses to diagnose and prescribe beyond their area of competence. This is evidence that formal rules do not actually dictate what happens in the workplace since they are subject to different interpretations. The study found that in some contexts, nurses frequently make rules and executive decisions as they go along. Whilst the flexibility in legislation as is the case in Cameroon, could serve to promote diagnosing and prescribing by allowing nurses to stretch their clinical practice to accommodate patient's needs, it sometimes leads to conflict between nurses and doctors.

The developed countries have addressed the problem of professional role conflict by instituting legal and regulatory frameworks which enable nurses to prescribe medicines legally and effectively. However, replication of such frameworks in developing countries although feasible would pose some challenges as a result of staff shortages, lack of resources, lack of physical infrastructures, and poor clinical governance. South Africa and Botswana have set a good example in providing the necessary structures to facilitate diagnosing and prescribing by nurses, but these two countries are not entire representations of the sub Saharan African countries whose economy, political and managerial structures are not as advanced. Botswana has a highly developed health care system that is free at the point of delivery. Furthermore, a counter argument could be that strict legislations would deprive patients particularly the vulnerable of necessary care.

5.2.2 Training of nurses for their role in diagnosing and prescribing.

In Cameroon, the state is the main provider of nurse training, which covers a wide range of subjects as discussed in previous chapters. It is therefore deemed that nurses have the required knowledge and skills to meet the expectations of the people in health matters. It was found that the pre-registration nurse training is based on the UK model but with adaptations such as

training for diagnosing and prescribing to cater for contextual differences such as extreme shortages of doctors. In contrast, the UK training of nurses for their prescriptive role is done post registration. Similarly, in the USA, to qualify as a nurse prescriber, a second advance practice nurse licence is required (Banning, 2006; Campbell in Nolan & Bradley, 2008; Pulcini, 2002; Pearson, 2004).

5.2.3 *Impact of doctors on diagnosing and prescribing by nurses.*

As discussed above, legislative ambiguity in Cameroon could lead to conflict between doctors and nurses. Similarly, as noted in the literature review chapter, professional conflict has been documented as a barrier factor for diagnosing and prescribing by nurses in developed countries (Luker et al.,1997, 1998; Avery et al., 2007; Baird, 2001). Wilhemsson and Foldevi (2003) drew similar conclusions in Sweden. Similar findings have also been echoed by Hales, (2002 cited in Plonczynski et al. (2003) who states that nurse prescribing has not been well accepted by many physicians in the United States. Professional conflict is not only restricted to developed economies. Ziegler et al. (1997) reported similar findings in Uganda.

Although there is a potential for role conflict between doctors and nurses as highlighted above, a new finding in this study as highlighted in box 5 of the theoretical framework suggest that doctors are involved in the design and teaching of the nursing curriculum (as shown in the findings chapter) in relation to diagnosing and prescribing. Also, doctor's support of CPD for nurses was cited by both nurses and doctors. Some of the doctors cited their support in teaching nurses and facilitating learning in clinical settings. The fact that doctors are actively involved in teaching nurses and promoting teamwork is an example of the kind of inter-professional approach towards maximizing diagnosing and prescribing by nurses.

Despite the potential for conflict arising from ambiguous legislation, evidence was found in this study to suggest that professional relationships between doctors and nurses with regards to nurse prescribing were dependent on confidence and trust. Some doctors felt comfortable and trusted the abilities of certain nurses to diagnose and prescribe for patients.

Age and experience also influenced doctors' attitudes towards nurse prescribing. There were variations in doctor's attitudes towards diagnosing and prescribing by nurses. The younger and less experienced doctor in the mission hospital had less confidence in nurses' ability to diagnose and prescribe safely for patients. The doctor, had confidence only in a few nurses to diagnose and prescribe in his absence, citing the nurses' knowledge and clinical experience as factors influencing his trust in the nurse. The doctor's confidence in the nurses could also be

influenced by the size of the health care facility which is smaller than public hospitals, allowing doctors and nurses work together more closely and therefore have a greater understanding of each other. Older doctors especially those working in public health care settings had more confidence and were generally in favour of diagnosing and prescribing by nurses for patients with minor conditions, given the very limited number of doctors.

The doctors in this study cite personal knowledge, individual characteristics of the nurse (the educational knowledge of the nurse, clinical experience and attitude to care and personal knowledge of the individual) as significant determinants of working relationships with nurses. In comparison with previous studies (Jenkins-Clarke, 1998; Humphries & Green, 2000; Mackay, 2003), some doctors stated having a positive working relationship with nurses.

Nonetheless, some doctors also expressed serious concerns about some nurses' knowledge and skills in diagnosing and prescribing, suggesting that some nurses have an exaggerated perception of their competency and consequently are putting patient's lives at risk. The implication is that doctors do not trust some nurses to diagnose and prescribe for patients. However, the practice still goes on. Ambiguity in doctors' attitude towards diagnosing and prescribing demonstrates how context / lack of resources / ineffectual legislation can lead to doctors turning a blind eye on what they clearly perceive to be risky behaviour of some nurses in performing their role of diagnosing and prescribing.

Some nurses and nursing managers, particularly in public health care facilities, gave the impression that doctors had ulterior motives in accepting to share diagnosing and prescribing power with nurses, feeling that it simply made it easier for nurses to cover for doctors when they were in their private practice instead of at their regular place of work. Implicitly, the findings suggest that there could be a case of exploitation of nurses by doctors.

As explained before, there are acute shortages of doctors in Cameroon. Low pay and poor working conditions account for why doctors emigrate abroad. The doctors who do not emigrate may resort to extra activities to supplement their income, resulting in unauthorized absence from the workplace, leaving the nurses to diagnose and prescribe for patients and even sometimes handle cases beyond their clinical competence because there is no doctor to refer the patient to. This finding concurs with that of Prata et al. (2005) who note that some of the staff employed in the public sector also worked in the private sectors in Africa. Such doctors pursue personal gain with the knowledge that chances of being caught are low, (Mbaku, 1996). All of these factors demonstrate a lack of governance in the way doctors are managed. It shows a culture of "laissez-faire" and lack of accountability. Such attitudes in

health care service provision by doctors partly accounts for why nurses are increasingly engaged in diagnosing and prescribing.

The fact that doctors charge higher consultation fees also has an impact on the amount of diagnosing and prescribing by nurses as reported by nurses and patients from the interview data in this study. Winston & Patel (1995) as shown in Appendix 1, drew similar conclusions. There appears to be a tacit understanding between nurses and doctors that the nurse can diagnose and prescribe for those patients whom the nurse realises cannot afford to see the doctor.

5.2.4 Impact of nursing managers on diagnosing and prescribing.

As shown in chapter two, the role of nursing managers in diagnosing and prescribing is important as they are responsible for supporting and facilitating this aspect of the nurses' role through supervision, ensuring that nurses have the right equipment, knowledge and skills in order to promote effective diagnosing and prescribing.

In this study, it was found that lack of resources create a dilemma for nursing managers. The care that they provide is not based on their job description and level of competence but on patient needs, relying on whatever nurses can do to save lives. It could be argued that by acting beyond their job description nurses could save lives, but on the other hand it could also harm lives. Evidence from interview data demonstrate nursing managers try to cope with limited resources by selecting which staff members can prescribe or not, thus using their knowledge of the nurse and discretion in delegating diagnostic and prescriptive authority. Selection criteria included the nurses' level of competence, education and clinical experience.

Nursing managers complained of lack of opportunities to monitor and coach junior colleagues at work. One nursing manager complained that lack of vehicles / transportation and poor communication infrastructure made it difficult to travel to remote parts where such colleagues may be working. Consequences are that such nurses are missing out on learning opportunities which could promote effective diagnosing and prescribing.

A unique contribution of this study to knowledge of diagnosing and prescribing by nurses, highlighted in box 6 of the theoretical framework (see Fig 5.1, page 222) and not previously identified suggests a use of different management control / performance management techniques by nursing managers as a means of achieving effective diagnosing and prescribing by nurses. Findings from interviews with doctors /hospital administrators, nursing managers and nurses showed that nursing managers in this study attempted to do so by rewarding good

behaviour whilst punishing poor behaviour. Another instance in which similar measures were taken has to do with corrupt practices amongst nurses in relation to diagnosing and prescribing for patients. The government representative implemented anti-corruption measures similar to those by nursing managers. These measures appear to be at institutional level only. For them to be effective, they must apply at individual, institutional and at a national level. Considering the scope of the phenomenon, there is a need to put in place structures in place to act as a deterrent of corrupt practices by nurses.

5.2.5 Impact of patients on diagnosing and prescribing by nurses.

Patients in this study came across as an important determinant of diagnosing and prescribing by nurses. First, patients have to present themselves for diagnosing and prescribing by nurses to take place. Patient's health seeking behaviour depended on several factors. Given the broader socio-cultural aspects of Cameroon, patients will decide to consult with the nurse depending on what he/she thinks is the cause of their illness. Similar conclusions were reached by (Chabal, 2009). Interview data from a significant number of nurses and patients indicate that the majority of patients self-medicated and only went to consult with a nurse or doctor as a last resort. The findings from this study gathered from documentary evidence, supported by interview data suggest that people have a choice of where to seek help depending on their health beliefs. This compares with Ryan (1998) who found that in Cameroon, people have six choices when faced with ill health as shown in the literature review chapter (See appendix 1). Such attitudes often result in delay in seeking modern medical treatment.

Findings from interviews with nurses show that some patients reported a belief that injections are better than oral medication. Also, there are cultural issues such as female Muslims not wanting to be examined by male nurse unless chaperoned by the patient's family member. Health beliefs are significant as they can facilitate or impede diagnosing and prescribing by nurses.

There is considerable research which suggests that an understanding of patient's health beliefs and expectations can lead to concordance and adherence to treatment (Latter et al., 2007; Cushing & Metcalf, 2007; Gilson, 1994; Nolan et al., 2001; Vermeire et al., 2001). It underscores the need for ongoing patient education particularly during patient consultation, where nurses can use effective communication skills to encourage patients to seek early treatment and thereby enhance the effectiveness of diagnosing and prescribing.

Poverty was reported as a key determinant of where patients go to consult for their health needs. Similar findings have been noted by Winston & Patel, (1995) and Baltussen & Ye (2005). As a result of poverty, some patients are unable to afford their prescribed treatment which means patients not being able to complete their course of drug therapy in which case, reducing the effectiveness of treatment.

Traditional doctors were reported to be cheaper and more accessible, given the long distances where some villagers had to trek, to get to the nearest modern healthcare establishment. By the time the patient present to medical facilities, their condition would have been more complicated with side effects of other previous treatment making it difficult for the nurse to easily arrive at a definitive diagnosis. This finding suggests that the primary health care objective of accessibility, availability, affordability and equitability are still to be attained, that access to quality health care services is still determined by the ability to pay.

In addition, poor interpersonal skills and lack of respect from nurses and doctors were cited by patients as some reasons for preferring other sources of health care such as "native doctors" to hospitals. This finding supports those of a report by Lafond (1995), Fonn & Xaba (2001) and the World Bank (2000) as seen in Appendix 1. Andaleeb (2001) noted similarly that patients feel discouraged to consult due to perceived unsympathetic previous experience with a health care professional.

Findings from interviews with patients and nurses suggest that patients reported a preference for consulting with a doctor but in the absence of doctor, a male nurse who is generally more likely to command greater respect from patients than a female nurse. Male nurses are perceived to be more knowledgeable than female nurses. Similar findings were reported by Dudwick cited in Hentschel (1999). In this study, male nurse are more likely to be referred to as "doctor" than female nurses. The gender preference finding in this study could be explained in several ways. Cameroon is a patriarchal society where women have a lower status than men. Female subordination is evident. Women are expected to be caring, nurturing and gentle. In contrast, female patients expressed a preference for consulting with a female GP particularly for intimate conditions as reported by Brooks and Philips (1996).

The culture of accepting and seeking treatment from nurses by patients has always been widespread in Cameroon and perhaps in other developing economies, partly because nurses out of necessity, have been involved in diagnosing and prescribing for such a long time that it has come to be expected of them. Similar findings in low income countries were reported by Stark et al. (1999). In the Cameroon study, patients expect nurses to treat only minor

conditions and refer the more serious ones to the doctor. Patients expect the nurse to be kind, caring and to empathise with them. A majority of patients accept nurses prescribing without challenge particularly in the rural areas where nurses are even referred to as 'doctors'. However, it has to be said that a majority of patients preferred to consult with a doctor rather than a nurse, if given the choice. Patients stated that due to the doctors prolonged period of training, doctors are more knowledgeable than nurses.

As noted in previous chapters, in Cameroon there is a gender divide in terms of education, with a preference for educating boys over girls. Based on the demographics and individual characteristics of patients and interview data from patients, it would appear that patients with a lower literacy rate in both rural and urban areas reported poorer nursing care than patients who were literate. A possible explanation could be that these groups of patients do not know any better whether they are prescribed poor quality drugs. They are powerless and cannot challenge the nurse's authority. Documentary and interview data suggest that poverty and illiteracy could be major determinants of quality of care provided during diagnosing and prescribing by nurses. Some patients whose interviews were conducted in Bafut, (the local language) or pidgin English due to poor literacy level, complained of poor diagnosing and prescribing by nurses. Illiterate patients may not have the confidence to require much of the nurse and may not even know there is a difference between the nurse they are consulting and a doctor. On the contrary, the literate patient may even challenge the nurse and specifically ask to see the doctor. This point is further illustrate in the findings chapter where "patient L" who is a university lecturer perceives that she gets better treatment from nurses given who she is as compared to some poor and illiterate patient "who does not know their rights". As seen in the literature review section, society places a premium on education, especially for boys in Cameroon. Whilst the literate and employed benefit from a steady income, the illiterate are in the informal sector with precarious incomes.

They may not always have the resources to pay the required fee to see a doctor. It therefore implies that an illiterate patient will perhaps not receive the same level of care as a literate patient.

Findings from interviews with patients clearly demonstrate that patients prefer to participate more in their care and to be listened to. Research shows that shared decision making between health care providers and patients are important factors affecting treatment compliance by patients (Vermeire et al. 2001). However, as discussed in the findings chapter under the section how patients influence diagnosing and prescribing by nurses, interview data from nurses and patients suggest that patient's preference of involvement in their care will depend

on patient's expectations and health beliefs. Some patients perceive the nurse as their "doctor" who knows everything and is not to be challenged. Such patients prefer the nurse to make all the health care decisions. Similar conclusions have been drawn by Rycroft-Malone et al. (2001) and Ong et al. (1995) cited in Rycroft-Malone, (2001).

Part of the second aim of this research was to analyse the outcome of diagnosing and prescribing by nurses on the different stakeholders. In this study, there is no evidence to enable assessment of clinical outcomes of diagnosing and prescribing by nurses, although the perceptions of key stakeholders suggests that there are some risks involved as discussed above. However, the overall view of respondents is that the benefits of diagnosing and prescribing by nurses to patients include accessibility of treatment, as a result of the availability of nurses both in urban and rural areas, and because of lower consultation fees. It was found that consulting with nurses, saves time, meaning patients can access treatment more quickly. Similar findings were reported by (Avery et al., 2004; Courtenay & Berry, 2007; Latter et al., 2005; Brookes et al., 2001; Luker et al., 1998b; Meyer, 2001).

Having discussed the first two aims of this study, the next section will address the third aim which is to create a theoretical framework to analyse the role of nurses in diagnosing and prescribing in a resource-constrained economy.

The foregoing analyses and discussion of the findings of this study have led to the creation of a theoretical framework that could serve to analyse the role of nurses in diagnosing and prescribing in resources constrained economies like Cameroon's. The post-study theoretical framework highlights additional factors in bold font which appear to be particularly important in this study, but which are not emphasized or mentioned in the literature. The findings contribute further evidence that diagnosing and prescribing by nurses is a complex topic and needs to be understood in the context of a larger environment which takes into account interweaving individual, organizational, political, socio economic and cultural factors.

Post-Study Theoretical Framework for Understanding the role of Nurses in Diagnosing and Prescribing.

Fig 5.1

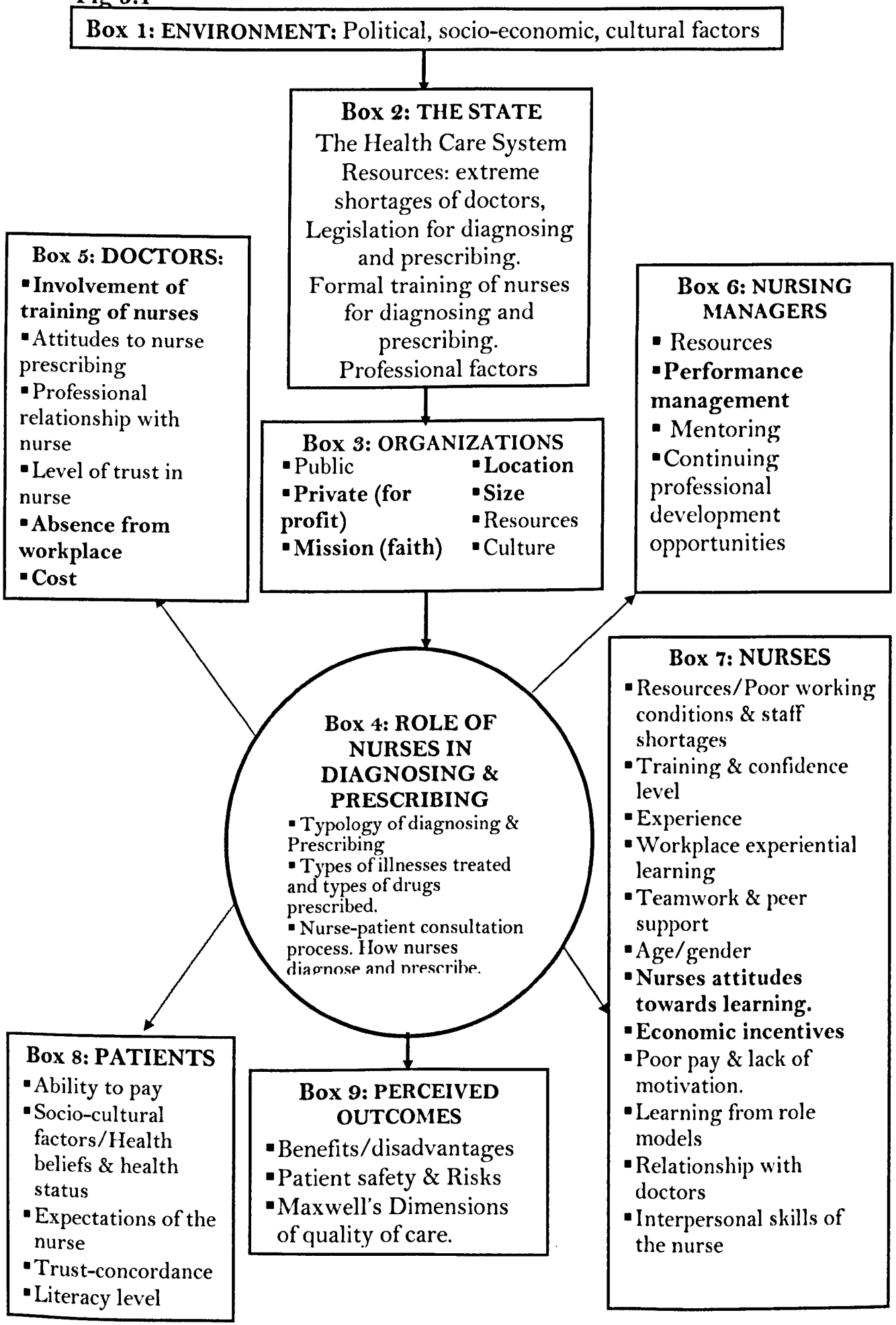


Fig 5.1, is a snapshot of suggested factors based on documentary evidence and stakeholder perceptions, as affecting diagnosing and prescribing by nurses in Cameroon. It shows the inter-connecting relationships between these factors perceived to explain the situation of diagnosing and prescribing by nurses in Cameroon. There are great similarities between the findings in the literature and the findings of this research which explored nurses' diagnosing and prescribing in Cameroon. However, there are also variations in explanations of factors as a result of contextual differences which have been discussed fully in this chapter. The overarching theme linking the additional factors in bold font is scarcity of resources (human and financial).

In summary, the unique contribution that this study has made to knowledge of diagnosing and prescribing by nurses is as follows: A nurse carried out a caesarean section. This is an extreme example of the extended role of the nurse in Cameroon. Nurses are not sufficiently trained for their extended roles. Nurses adjust doctor's prescriptions. Nurses practice team diagnosing and prescribing. Economic incentives influence nurses' role in diagnosing and prescribing. Legislation on diagnosing and prescribing is vague and subject to varying interpretations. There is a lack of clarity between the doctor's role and those of the nurses. Doctors are involved in the design and delivery of nurse training curriculum including diagnosing and prescribing. Absence of doctors in the workplace partly account for shortage of doctors. Patients health beliefs determine where patients seek health care and illiteracy was found to affect the quality of care patients received from nurses during consultation.

The findings of this study demonstrate that human resources form a core aspect of Cameroon's health care system, confirming what others have observed (Hongoro & McPake, 2004; Narashimhan et al., 2004; Dussault & Dubois, 2004). Given the above discussion, the following section will examine the human resource implications of the findings in this study.

5.3 Human resource implications and training.

As evident in the above findings, human resources such as nurses, form the backbone of health care system in Cameroon, confirming previous literature that the management of human resources are a critical component and are at the heart of the health care system in developing and developed countries alike (Gray, 1999; Meyer et al. 2001; Hongoro & McPake, 2004; Narashimham et al., 2004). The human resource literature although largely conceptual asserts that people are the most valuable assets of an organization (Pfeffer, 1994, Peters and Waterman1982 cited in Delaney and Huselid, 1996). However, Delaney & Huselid (1996) make a compelling claim to support expert opinion by conducting an empirical study

and drawing similar conclusions. It was found that HRM practices such as selection, training, incentive compensation, motivation, have a positive relation to perceptual measure of organizational performance.

In the Cameroon study, lack of post-registration training was identified as a barrier to diagnosing and prescribing by nurses. CPD will equip nurses with the necessary knowledge and skills to be adaptable for present needs as well as to be better prepared to deal with on-going changes as shown in previous chapters (epidemiological, socio-economic, cultural and technological amongst others). As noted by Lange, (2006 cited in Georgellis, 2007), a highly trained workforce will be better equipped to accommodate the rapid changes which have become a characteristic of modern economies. HRM literature suggests that "Providing formal and informal training experiences, such as basic skills training, on-the-job experience, coaching, mentoring, and management development can further influence employees' development" (Huselid 1995, pg 637) and positively affects performance. Also, training improves job satisfaction (Georgellis & Lange, 2007) as well as organizational commitment from employees (Bartlet, 2001).

A majority of the nurses particularly those in the public health care settings reported that they do not feel they are getting rewarded for the services they provide. One of them refer to it as "it's a service to God" since the rewards are not commensurate with the job. Such perception by nurses implies a sense of unfairness. In the UK for instances, nurses are paid according to grade and position held within the organization. Although nurses are also graded and paid accordingly in Cameroon, they are nonetheless stretched in terms of workload, unfairness, and relative inequity (Georgellis & Lange, 2007). Poor pay and low motivation could also be explained in terms of the social exchange theory (Rynes et al. 2004). Since the majority of nurses felt that their salaries were not a reflection of their contribution to health care, they felt de-motivated. It is generally agreed that the workload for consulting, diagnosing and prescribing for patient was too much for the few nurses available. Research on motivation suggests that people are more productive when they feel they get a better pay for more work. In this study, nurses complained of increasing workload, being underpaid for work done, have fewer or no learning and personal development opportunities and don't feel valued for their contribution towards health care delivery. The resulting dissatisfaction and frustrations can lead nurses to be rude, carry out rushed consultations and sometimes involve in unsafe practices which may be harmful to patients. Given this reported context, lack of commitment, de-motivation, low productivity is not surprising.

A majority of nurses and nursing managers claimed to have a cordial working relationship with doctors. They stated that the doctors are happy for nurses to do their work for them since there are few doctors to cater for patients' needs. However, the nurses also reported accounts which suggest that they were being exploited by their employers to performing doctors' work due to extreme scarcity of doctors. The perceived discrepancy between what nurses expect and what they get, could lead to de-motivation. Job satisfaction is dependent on employees' perceptions of a correspondence between their expectations and what they receive from the firm (equity) (Georgellis & Lange, 2007).

The findings from this current study indicate that nursing managers employed different types of performance management strategies ranging from praising a nurse for performing their job well, providing financial incentives as well as using coercive power to punish such as transferring a nurse to a different department where there is little opportunity for mal-practice. This reflects expectancy theory of motivation stating the perceived relationship between effort and performance as well as instrumentality, the relationship between performance and outcome. It is concluded that employees are more likely to be motivated if they perceive accuracy in their managers' appraisal of their performance (George & Jones, 2002; Rynes et al. 2004; Nsimba et al., 2002).

However, the findings point to an appropriate health care set up/system with structural and process barriers impacting negatively on diagnosing and prescribing by nurses. It shows the current health care system lacking accountability. There were variations in nurses' responses when asked whether there was legislation allowing nurses to diagnose and prescribe for patients as evident in the findings chapter. The findings show overwhelming evidence of mal-practice by some nurses with little or no punishment by the state. There is therefore, a call for the state to institute measures which will promote accountability as a way of tackling mal-practice amongst nurses engaged in such practices. This way, justice and expected behaviour will be achieved towards maximizing diagnosing and prescribing by nurses and achieving organizational goals.

It is evident from the above discussion that poverty and scarcity of resources are the main drivers of diagnosing and prescribing by nurses in Cameroon as compared to cost cutting which is the main driver of nurse prescribing in developed economies. An analysis of how key stakeholders influence diagnosing and prescribing can lead to useful recommendations on how to optimise this aspect of nursing practice.

The next chapter (Conclusion and implications for practice) will document contribution to knowledge about diagnosing and prescribing by nurses, implications for practice, limitations of the study and recommendations for further research in Cameroon.

CHAPTER SIX

Conclusion and implications for practice.

Using mixed methods, an exploratory case study was conducted to explore and explain the factors affecting diagnosing and prescribing by nurses in Cameroon. The unique contribution of this study is that through adaptation of a multiple key stakeholder approach, diagnosing and prescribing by nurses have been studied from different perspectives. This study uncovers contextual, individual, professional, organizational, economic, socio-cultural and political factors affecting diagnosing and prescribing which are fundamentally different from those in advanced economies, thereby adding to our knowledge of the phenomenon.

The region of Cameroon where this study takes place was once a British colony. The health care system is culturally influenced by its colonial past. A significant proportion of the population of Cameroon is rural, living in villages dotted over large geographical areas. Thick rain forest and other climatic conditions make it a fertile breeding ground for the anopheles mosquitoes which transmit malaria. Cameroon is a patriarchal society. There is a preference for larger families given a high infant and adult mortality rates. Life expectancy in Cameroon is low. Close family ties and a sense of community are valued. Richer members of the family are expected to look after the poorer ones. The elders are respected for their extended knowledge, experience and wisdom.

Traditional health beliefs are deeply rooted in Cameroon. Causes of diseases are explained following both traditional and Western ideologies. The country has a pluralistic medical setting in that there are several sources where patients can obtain health care. Demographic and epidemiological changes have placed a greater demand on health services. Tropical diseases such as malaria are on the increase. Recent years have seen a rise in non-communicable disease such as hypertension, diabetes due to life-style changes. Also, there is an increase in the rate of HIV/AIDS (Wright & Clark, 2006; Coleman et al., 1998; Kengne et al., 2008; Lehmann et al., 2009; WHO, 2010).

The government is the principal provider of health care in Cameroon. A majority of health care is provided at the provincial and district levels in both primary and secondary health care settings. Health care is also provided by mission/faith and private institutions. The Cameroon health care system has as its vision to provide a more affordable, equitable access to quality care and to ensure a more efficient use of resources. The health care reforms have been partly

influenced by international public health agenda such as Health for all, Primary Health Care, and the Millennium Development Goals (Litvack & Bodart, 1993; Ndumbe et al., 2005).

Cameroon is a developing country. The global financial crisis has brought more challenges which have necessitated a rethink of how best to achieve optimal care amidst shrinking resources. The country's high indebtedness in the 1970s was worsened by the global recession that followed. As a result of the economic recession which started in the mid 1980's following a collapse in the world prices of raw material such as cocoa and timber, the Cameroon government implemented structural adjustment programmes at the behest of the IMF and the World Bank. Tangible effects included: a cut to the health care budget and a dramatic reduction in salaries of civil servants. Concurrently, the currency Franc CFA was devalued by 50% (Waage, 2006). Other visible effects are corruption, poverty, a widening gap between the rich minority on the one hand and the poor majority on the other hand (Abega, 2006). Since then, there has been a struggle for survival. The economic and psycho-social effects have been immeasurable.

Poverty is on the increase in Cameroon. The economic crisis in 1984 seems to be a major contributory factor to the collapse in the health care system. As part of the structural adjustment programmes, the government suspended the training of nurses. Cameroon is experiencing serious shortages of medical doctors. The dire economic situation fuelled a brain drain with Cameroonian professionals including doctors and highly qualified nurses, emigrating to developed countries. There are more nurses than doctors and as a result, nurses are substituting for doctors in Cameroon.

Prior to commencing this study, little or nothing was known about diagnosing and prescribing by nurses in Cameroon from a review of the literature. Thus, this finding has contributed to knowledge as it identifies contextual-economic factors such as poverty and extreme scarcity of resources and its' effects on diagnosing and prescribing by nurses in a developing country.

This study found that the role of nurses in Cameroon compares with the role of nurses in the UK (Graham, 2004). However, traditionally in Cameroon, hospitals rely on patient's relatives as unpaid carers, freeing nurses from providing basic care for patients and nurses tend to focus more on clinical and technical care of patients. This finding has contributed to knowledge by adding to our understanding of how socio-cultural factors influence the nurses' role in a developing country.

It was noted that many nurses in Cameroon perform more advanced roles which are similar to those of specialist nurses such as Nurse Practitioners in the UK and other developed

economies, mainly owing to shortages in medical doctors. The findings are consistent with existing literature on nurse prescribing in developed economies, concurring that the role of nurses' develops in response to changing societal needs (DoH 2000; DoH, 2002; DoH 2005; Huges & Lockyer, 2004; Latter & Courtenay, 2004; Embrey & Lowndes, 2007). A major distinction is that some senior nurses in Cameroon do not have the same advanced training as nurses in developed economies to perform some of the advanced specialist tasks.

Thus the main duties of a nurse in Cameroon were found to include; assessing, screening of patients and prescribing treatment in the absence of the doctor. Nurses are more available than doctors by sheer virtue of their numbers and their pre-registration training includes diagnosing and prescribing. This puts nurses in Cameroon in a situation where they function as Nurse Practitioners. Nurses act as the first point of contact in delivery of health care services in Cameroon particularly in the rural areas where the first port of call for patients is generally the Integrated Health Care Centre (IHCC). These Centres are nurse-led and form the backbone of the health service infrastructure in Cameroon.

Nurses in rural areas tend to perform greater roles than nurses working in urban areas where there are more doctors and in some cases more resources. The role of the nurse evolves in response to needs which compares with nurses in the UK but in different ways. The only difference being that unlike Cameroon, the UK has regulatory frameworks and structures in place to monitor the work that nurses do (NMC, 2004). The findings suggest that nurses in Cameroon are heavily involved in diagnosing and prescribing for patients. Although there is legislation which restricts the types of diseases and medication which nurses can diagnose and prescribe, the legislation appeared to be ineffective as nurses were found to diagnose for a wide range of diseases and prescribe a wide range of drugs. However, the extent to which they do so is dependent on several factors. It could therefore be argued that nurses spend less time providing other forms of care for patients.

The study uncovered a different pattern of diagnosing and prescribing by nurses in Cameroon to those currently found in the literature. In some instances, nurses actually overruled the doctor's prescription. Nurses tended to review lengthy and costly prescriptions to poor patients by mostly newly qualified doctors, justifying their actions with claims that they have a better understanding of patient's economic realities which means in most cases they are unable to afford all the drugs and in which case taking part of the treatment is better than nothing.

On the surface, nurses in Cameroon have greater autonomy in diagnosing and prescribing than their counterparts in developed economies. They are compelled to diagnose and prescribe with lack of equipment and support, particularly in locations / rural areas where doctors do not want to work with poor remuneration and difficult working conditions.

This study demonstrates that nurses are the bedrock of the health care system in Cameroon and contribute significantly in health are provision, a finding which is consistent with previous research (Ako et al., 1995; Stark et al., 1999; Dovlo, 2004; Jones et al., 2009). Nurses hold unique positions with patients and their families. They are at the forefront of health care delivery. It can therefore be concluded that nurses are in a similar position in other countries developing and developed in terms of nurses' role expansion (Gray, 1999; Meyer et al., 2001; Ngcongco & Stark, 1986; Shaw, 2002; Pearson, 2009) and in some cases performing the duties that doctors do not want to do.

Contrary to the hypothesis that larger organizations are more likely to have job descriptions, with clear division of labour and accountability, the findings from this study indicate that although the larger public hospital had some form of job description, they were rarely used because of severe staff shortages. Consequently, some of the nurses are performing roles that are the domain of the medical doctors, practicing beyond their level of competence and in some cases putting patient's health at risk. It is evident that regulations alone, do not guarantee implementation.

As this study suggests, there is an inherent difficulty in achieving a balance between resources, policies and quality of care. In putting forward any recommendations, there is a risk of oversimplifying a complex phenomenon such as diagnosing and prescribing with theories. Whilst one could argue that people are ill as a result of poverty, by the same token, poverty is exacerbated by poor health. Diagnosing and prescribing is dependent on the context in which it takes place and therefore change can only come about when the structures that produce it change. Diagnosing and prescribing has many contributing factors and therefore call for multifaceted solutions. There is a requirement to address institutional and human capacity needs. There is a need to reflect on policies and practices by actively seeking solutions to improving care provision by nurses, improve the economy, and reduce poverty.

The state/organizations are seen an exploitative instrument. The findings suggest that the state/organizations are to a greater extent exploiting nurses and nursing managers through poor pay. As a result of shortages of doctors, nurses are increasingly substituting for doctors. Nurses perform doctor's roles such as diagnosing and prescribing. Nurses' workload is

continually rising due to demographic and epidemiological changes, yet there has been no correspondent increase in nurses' salaries. Nurses perceive that their contribution to the health care provision is not being valued, implying a lack of psychological contract as nurses feel their reciprocal obligations with their organizations is not being fulfilled. This can have serious negative impact on nursing practices as they attempt to compensate for perceived injustice as the evidence suggests.

The findings suggest weak governance, lack of systems to put a check on nurses' practices. Poor governance is manifested in a number of ways: the government, through a vague legislation and outdated diagnosing and prescribing protocols used by nurses and also through a lack of structures in fighting mal-practices by health care professionals such as doctors and nurses. Lack of resources act as a barrier as nursing managers are unable to regularly supervise the work done by nurses particularly those in rural areas.

Corruption is facilitated / hindered by societal context. There seems to be an aspect of inertia on the part of the state to actively regulate the activities of health care professionals. It is a major problem which could potentially be endangering patient's lives. This perceived lack of commitment by the government raises a number of questions: Why is accountability of state employees not promoted? Is it a case of corrupt nurses are better than nothing given the scarcity of doctors? Is it a fear of not "rocking the boat" in case nurses go on strike and demand for pay rises and better working conditions? Is it because government officials/ policy makers are mainly from higher social classes, have access to better health care facilities and therefore do not understand the true extent of poverty and how it affects patients particularly in the rural areas? There seems to be a lack of understanding of the realities of the poor and their daily struggle for survival.

Doctors on the other hand are also exploiting nurses through their unauthorized absences from the workplace, whilst pursuing private practice for financial gains. This finding adds to our understanding of causes of doctor shortages. Unauthorized doctor's absences leaves nurses feeling obliged to diagnose and prescribe for patients beyond their area of competence. Poor attitudes and high costs of consultation imposed by some doctors result in increasing numbers of poorer patients preferring to consult with nurses since it is cheaper. There needs to be measures instituted towards managing unauthorized absences by doctors. Doctors want nurses to diagnose and prescribe for minor conditions only and refer the more serious conditions to them. However, there are conflicting accounts as nurses complain that when they have referred patients to doctors, the doctors are not there to consult the patient.

A call for an increase in the number of doctors by all stakeholders seems unrealistic in the short run, given the contextual factors culminating in increasing poverty levels in Cameroon. Instead viable options include better trained nurses who have access to resources such as equipment to facilitate role performance, ongoing supervision with better support. Also, encouragement of strong working links between doctors and nurses seems a better solution to doctor shortages whilst providing improved quality of care which meets patient's expectations and needs.

The findings suggest a culture of powerlessness experienced mainly by nursing managers, nurses, and patients. Nursing managers and nurses feel abandoned, restricted in what they can do given minimum resources and poor working conditions. The nursing managers need more human and capital resources. There is increasing workload without a correspondent increase in the number of nurses to cater for these patients. Also, the health care facilities lack basic diagnostic tools and equipment to carry out an effective diagnosis and prescribing for patients. The nursing managers and nurses feel powerless and a sense of abandonment as they work in extremely difficult working conditions without tools. The nurses particularly those working in rural areas add that poor infrastructure act as a barrier for diagnosing and prescribing for patients. Lack of electricity and poor communication network makes it difficult for nurses to access doctors for health advice with regards to diagnosing and prescribing for patients. It was found that the mission and private hospitals were better equipped than public health care facilities.

Lack of resources and poor working conditions restrict nurses and nursing managers in what they can do which leads to improvisation in some cases and a sense of helplessness. It suggests that diagnosing and prescribing practices are dependent on the system within which it operates such as: scarcity of resources, poverty and traditional beliefs. Given these problems, nurses are compelled to do what they have to do with resulting consequences.

There is a need for improved infrastructure, better roads which will facilitate transportation of produce from the farm to the market. This way, the patient can be better placed to access adequate care. Also, it will enable nursing managers to regularly supervise and support nurses working in rural areas. Availability of electricity and telephones will ease communication problems enabling nurses to reach a doctor at the other end of the line/phone for advice.

The nursing managers in the study as seen in the findings chapter reported using different management styles to monitor and discipline poor standards of behaviour by nurses. The evidence generated in this study points to a health care system in chaos where the nursing

managers and some government representatives are single-handedly managing poor/dangerous nursing practices.

Younger nurses were found to be satisfied with their current training for diagnosing and prescribing, however, they also added that they would like opportunities for continuous professional development in order to be able to provide safe and effective care to patients. Older nurses whose training was apprenticeship/hospital based, feel that their training did not adequately prepare them for their role in diagnosing and prescribing and therefore feel that post-registration training/workshops will facilitate their role in diagnosing and prescribing. There is a call for further training of nurses to adequately prepare them for their role in diagnosing and prescribing for patients.

The state could ask for support from drug companies. After all, it is no good sending out cheap drugs to developing countries without the skilled and competent personnel and well informed public with instructions on how to maximize its benefits. There is a need for drug companies to get involved in training of nurses and the public on how to use them even though the counter argument is that of potential conflict of interest with drug companies seeking to maximize profits.

Key stakeholders want to be sure that nurses are trained properly. There is a need for nurses' training to be standardized. The Cameroon study shows that doctors support CPD for nurses and are more involved in the design and implementation of the nurse training curriculum. This finding is clearly in contrast with the findings in the UK where doctors are involved in the supervision of nurses during their nurse prescribing training, post-registration.

Continuing professional development will ensure that nurses are up-to-date with current practice to ensure better standards of care. A participatory approach in designing policies involving nursing leaders, patients and doctors will be beneficial.

Experiential and team learning were reported to be significant and effective ways of learning by nurses. The implication is that nurses should be exposed to situations where they will have opportunities to maximize such learning prior to being posted in IHCCs particularly in rural areas where they have less access to other experienced colleagues.

A key message is that nurses diagnose and prescribe for patients beyond their area of professional competence. This has been shown to be as a result of a variety of factors. There is a need for clearer legislation defining roles between doctors and nurses. There seems to be some confusion as to what the nurses' roles are. Also, economics is a contributory factor.

Nurses are poorly paid and in some cases, salaries are not paid on time. The implication is that given personal and family demands, nurses have to earn money somehow.

Economic incentive was identified in this study as a driver of diagnosing and prescribing by nurses thereby adding to existing theories on nurse prescribing. The culture of health care organization suggests weak governance. Nurses do what they do knowing that they can get away with it. Good governance and structures are crucial in addressing corruption. The state needs to take a participatory approach such as liaising with a nursing body to oversee the work that nurses do. This institution will act as a forum where nurses can channel their problems. The role of a nursing professional body will include: keeping an update register of qualified nurses; setting standards and codes of conduct; protecting the public by guaranteeing such standards; determining the educational and training requirements of nurses and overseeing the conduct of nurses and taking appropriate disciplinary measures in case of misconduct. Such measures may curb the current trend of disrespect as evident in stakeholder perceptions of some nurses and promote greater accountability by nurses. Such an approach has been adopted by developed countries with great success (NMC, 2004). However, it's applicability in a developing country such as Cameroon could be challenging.

A significant number of patients are dissatisfied with the diagnosing and prescribing process. Patients expect nurses to be nurses first and secondly to be "mini doctors". There is a suggestion that some nurses display attitudes which amount to "compassion impotence" and behaving like doctors. Perhaps it is because there are no other jobs to go to as a result of high unemployment. Perhaps nurses are using emotional detachment as a defence mechanism to cope with their difficult working conditions. Overall, patients complain of a lack of vocation on the part of nurses. However, the evidence also suggests that there are some conscientious nurses who work beyond the call of duty under very difficult circumstances and are devoted to their patients. Nurses working in the private and public health care facilities expressed greater satisfaction than those working in the public health care facilities.

Due to poverty and in some cases illiteracy, patients are unable to access quality health care. In such cases, the government's objective of providing accessible health care to all is not achieved. Hospital settings are hierarchical in nature and patients appear to be situated at the bottom of the hierarchy. This calls for better structures where patients can channel their dissatisfaction and also provide disciplinary measures with the aim of protecting patient's interests. There is a pressing need for positive changes to be made in order for the government to achieve its primary health care objectives of accessible, affordable and equitable health

care, ensure optimal utilization of very limited resources and make progress towards attainment of the Millennium Development Goals by the year 2015.

There is a need for nurses to maintain and promote public confidence in order to ensure increased utilization of public health care services. This can be promoted through listening to patients, explaining patients' health conditions in a way that they understand and treating patients with respect and confidence. These can be achieved with improved interpersonal skills without resorting to additional external resources. Nursing educationalist need to stress the importance of training with emphasis on human relations aspects, with more humanistic elements.

To achieve change, requires public awareness. There is a need for a major cultural and social change. This can be achieved through health promotion and education in schools. The public needs to be informed about health matters and causes of diseases in an attempt to change health beliefs. Globalization is having an effect on attitudinal changes in both beneficial and limiting ways. Health education by nurses should be emphasized. Also, school children should be taught about health beliefs, whilst acknowledging the place of traditional medicine in the fight against diseases. Such an approach could result in the public being more responsible, educated and lead to behavioural changes such as seeking health care from the right people at the right time to prevent complications of diseases.

Extended roles for nurses have the potential to enhance accessibility to care, to enhance the status and job satisfaction of nursing staff and maximise the use of resources (Luker et al., 1997; Stark et al.,1999; Mtonga & Ndhlovu, 2001; Latter et al., 2004; Nolan et al., 2001; Avery et al. 2007; Bradley & Nolan, 2007; Courtenay & Berry, 2007). Despite the benefits, there is growing concern that nurses do not have the advanced level of training necessary to take on this expanded role and that some are neglecting the traditional caring side of their profession in pursuit of a more medical oriented disease-focused approach. As economically developed countries continue to expand the role of the nurse in diagnosing and prescribing, these findings are of interest to policy makers in the design and implementation of health care services.

This study provides support to the idea that there may be relatively universal features of the nurse-doctor and nurse-patient relationships. Most of the findings in this study point to the universality of diagnosing and prescribing by nurses albeit with contextual differences. What nurses do and what their actual roles are, varies considerably over time and within and between societies.

The study has lent theoretical support to the evaluation of the role of the nurse in diagnosing and prescribing as an aspect of health care policy in a resource constrained economy. The study has shown how different factors interact and affect this aspect of the role of the nurse. The study adds to the growing literature on nurse prescribing in different health care settings and the consequences on key stakeholders. Furthermore, the use of an exploratory case study methodology to investigate a clinical role of nurses contribute to knowledge as well as provide useful insights for policy makers and other stakeholders not only in Cameroon but also for other countries with similar epidemiological profiles and similar quality of care.

Structural and individual conditions affect diagnosing and prescribing by nurses. It can be concluded that diagnosing and prescribing is dependent on individual, organizational and institutional factors. The context of the study has been analyzed. Factors affecting diagnosing and prescribing identified and possible recommendations put forward. It is important to overcome the challenges in order to maximise / optimize the role of nurses in diagnosing and prescribing in a resources-constraint economy such as Cameroon.

In conclusion, diagnosing and prescribing is a complex phenomenon that needs to be understood in the context in which it takes place. The findings are a basis to further explore in-depth with the view to assist policy makers to implement measures that will make it possible to make maximum gains to the health system from diagnosing and prescribing by nurses. Increased knowledge will enable health care providers in developing and developed economies to improve access of high quality of care to patients.

The following suggestions are made for future research.

1) There is a need for a more extensive study which covers a wider region including level 1 in the health care set up and the French speaking regions.

2) A study using observation methods during nurse-patient consultation to investigate what actually happens in reality rather than rely on stakeholder accounts.

3) A study which includes nurse educators/lecturer's perspectives on diagnosing and prescribing by nurses.

4) A study which includes traditional doctors to ascertain how they diagnose and prescribe for patients and the lessons that can be learnt from them.

Limitations of the study

The findings from this study are the authors interpretations based on strict adherence to empirical criteria for conducting qualitative research. There is scant published literature on diagnosing and prescribing by nurses in Cameroon and other developing countries. These findings need to be seen in the light of the research context. The findings need to be tested by way of a confirmatory research. This study serves as a starting point for future research on the role of nurses in developing countries with particular emphasis on diagnosing and prescribing.

Collectively, the research design and sampling procedure in this study enabled the researcher to have a sample that was trustworthy in achieving the goals of the research. However, there are limitations of this study.

First, a limitation of a qualitative study is that there is an inherent lack of sufficient breadth for transferability. A major weakness in this study is that it only includes six cases covering levels two and three of health care settings. The study could have improved with a larger sample particularly if it included level 1 health care facilities. Consequently, there is a potential risk of localization of the findings since the study takes place in one region of the country. This makes it difficult to extrapolate regional, organizational influences and contextual factors.

The findings cannot be transferable beyond the immediate cases. The question arises as to how much one can apply findings of this study to other nurses in other parts of Cameroon, given the cultural and ethnic diversity of the country. This criticism has been noted as a major problem with case study research. Critics argue that case studies, are unscientific in nature, and cannot be replicated, lack validity, rigour in that findings are not transferable and widely applicable in real life (Yin, 1999). Fisher & Ziviani (2004) add that these criticisms are based on the traditional understanding of case studies as either descriptive or exploratory. However, case studies can also be used in explaining causal relationships between factors thereby supporting as well as lead to theory building such as this study. The case study approach in this study was useful in addressing the research aims.

The limited sample of doctors and government representatives means that the study may not have captured different views especially as the aim of the study is to explore perceptions of different key stakeholders / variations between groups. The study has not got full breadth of perceptions and may have resulted in a slightly narrower view because of not having spoken

to many people. Some of the cases (IHCC) are nurse-led and so there are no doctors, therefore elements of diagnosing and prescribing by nurses may not be known by doctors.

Therefore a larger sample of doctors and government representatives would have been more appropriate (Guest et al. 2006). The limited sample of doctors and government officials results in a certain degree of uncertainty that their views/ perceptions are shared by others in similar positions.

A strength of this study is that the researcher has an understanding of the research context. The researcher was more in tune with the interviewees and was able to utilize her local knowledge, customs and traditions in conducting the research and understanding the concepts explored more accurately. However, this could also be a potential weakness in that the researcher may not have seen some things which could have further enhanced the findings of the study.

Furthermore, whilst survey studies seek to generalize by using larger samples, case studies, rely on analytical generalizations, whereby attempts are made to generalize a particular set of results to some broader theory. Case studies provide very little basis for scientific generalizations. Instead they are generalizable to theoretical propositions and not to populations or universes (Yin, 1994).

Second, the use of a theoretical framework enabled a structured approach, but has a weakness in that it is inspired by a priori theories from the literature rather than allowing the data to speak for itself thereby achieving originality. It has been argued that no matter how comprehensive a model is, there is bound to be an oversimplification of what happens in reality. Using a model therefore can distract one from seeing the inherent complexities involved in diagnosing and prescribing. Somehow, the model provides us with a way of seeing but at the same token it puts a screen on what is being seen. However, the counter argument is that, the theoretical framework has proved a fruitful analytical tool from which to examine the research problem and could provide a framework for a further empirical study.

A focal point in this thesis is that using a systematic conceptual framework has enabled an understanding of diagnosing and prescribing as a contextualized and multifaceted phenomenon. By adopting this stance, policy makers can adopt flexible strategies, nurses can have an increased understanding of patient's expectations of them, nursing managers can understand how best to utilize their limited resources, and nurse educationist can tailor their nursing curriculum to align with key stakeholder expectations .

Furthermore, there is an inherent reliance on memory recall for information. The four to six months cap that was set as the last consultation when patients had consulted with nurses might have been too long, impacting negatively on patients' memory. A shorter time period would have been more appropriate. But due to logistic problems that was not possible. However, the fact that some of the findings echo what other researchers had found put paid this risk.

Nonetheless, steps were taken throughout the research process to minimize some of these criticisms. The criticism of qualitative analysis as a creative process relying on the theoretical capabilities and insights of the researcher (Patton, 2000) was minimized. The involvement of different health care settings in this study adds to transferability (Denscombe, 1998; Lincoln & Guba, 1985 cited in Begley, 2004; Davey, 1991; Gray, 2009) and of any conclusions drawn, as it attempts to reflect the different types of health care settings in Cameroon. It is hoped that by investigating the views of different stakeholders, variability/similarities add to the dependability of individual accounts of stakeholders and therefore mitigate any accusations from critiques of interviews as a method of data collection who claim that the correlation of what people say they do and what they actually do in practice is often low (Pope and Mays, 2006; French et al., 2001).

The data obtained from this study is to be used to increase our insight into aspects of nurse diagnosing and prescribing rather than assume generalisation. The detailed and rigorous qualitative approach adopted in this study has highlighted important issues demonstrating the complexity of diagnosing and prescribing which would not have been possible if a mainly survey quantitative approach was adopted. Important issues have been highlighted from different stakeholder accounts thereby giving the phenomenon a fuller picture which warrant further investigation. The aim of this qualitative method is to explore and understand a complex phenomenon and to generate hypotheses, rather than to apply the findings to a wider population. In this study, while the geographical location may be restrictive and sample size small, findings may nonetheless be indicative of larger trends.

REFERENCES & BIBLIOGRAPHY

Abbas, Z.G & Archibald, L.K (2007) Challenges for management of the diabetic foot in Africa: doing more with less. *International Wound Journal.* Vol.4, No. 4, pp.305-313.

Abega, S.C "The practice of Anthropology in Francophone Africa: The case of Cameroon In Ntarangwi, M, Mills, D & Babiker, M (2006) African Anthropologies: History, Critique and Practice. London: Zed Books.

Abel-Smith, B (1960) A History of the Nursing Profession. London: Heinemann.

Abel-Smith, B (1966) A History of the Nursing Profession. London: Heinemann.

AbuAIRub, R.F, Omari,F.H & Al-Zaru, I.M (2009) Support, Satisfaction and retention among Jordanian nurses in private and public hospitals. *International Nursing Review*, 56, 326-332.

Achanyi-Fontem, J (2007) Kidney diseases on the increase, only 6 specialists for Cameroon.m March 30th, Cameroon Tribune. Yaounde: Cameroon.

Agbeyegbe, L (2007) Risk Communication: The over-looked factor in the Nigerian Polio Immunization Boycott crisis. *Nigerian Medical Practitioner.* Vol. 51, No.3 (40-44).

Agha, S (2000) The determinants of infant mortality in Parkistan. *Social Science & Medicine.* Vol. 51, Issue 2, pp199-208.

Ako, S, Fokoua.S, Sinou, M.T, Leke, R (2006) Reproductive Health in Cameroon. Geneva: Geneva Foundation for Medical Education and Research.

Akor, S.A, Adibo, M.E.K, Azindow, I.M (1995) Tracer study of the product of the Rural Health School-Between 1989 and 1993 (MOH Preliminary Report) Accra. Ghana.

Allen, J & Fabri, A (2005) An evaluation of a community aged care nurse practitioner service. *Journal of Clinical Nursing,* 14: 1202-1209.

Amani A (2010) The Health Workers Crises In Cameroon. Unpublished public health theses.

Andaleeb, S.A (2001) Service quality perception of patient satisfaction: a study of hospitals in a developing country. *Soc. Science and Medicine.* Vol.52, Issue 9, pp1359-1370.

Anderson, S (2002) The state of the world's pharmacy: a portrait of the pharmacy profession. *J Interprof Care*, 16:391-404.

Anderson, DM & Hampton, MB (1999) Physician assistants and nurse practitioners: rural-urban settings and reimbursement for services. Journal of Rural Health 15(2):252-263.

Arifeen, S.E, Bryce, J, Gouws, E, Baqui, A.H, Black, R.E, Hoque, D.M.E, Chowdhury, E.K, Yunus, M, Begum, N, Akter, T & Siddique (2005) Quality of care for under-fives in first-level health facilities in one district of Bangladesh. Bulletin of the World Health Organization, 83 (4) 260-267.

Ashworth, P.D (1993) Participant agreement in the justification of qualitative findings. *Journal of Phenomenological Psychology.* 24: 3-16.

Asscher, A.W, Parr G.D & Whitmarsh, V.B (1995) Towards the safer use of medicine. BMJ 311:1003.

Avery, A.J, Pringle, M (2005) Extended Prescribing y nurses and pharmacists. *British Medical Journal.* 331, p1154-1155.

Avery, A, Savelyich, B & Wright, L (2004) Doctors' views on supervising nurse prescribers. Prescriber 5, 56-61.

Avery, G, Tood, J, Green, G & Sains, K (2007) Non-medical prescribing: the doctor-nurse relationship revisited. *Nurse Prescribing.* Vol. 5, Issue 3, pp.109.

Awases, M., Gbary, A., Nyoni, J., Chatora, R., (2004), Migration of health professionals in six countries: A synthetic report, WHO, Brazzaville.

Awasum, H.M (1992) Health and Nursing services in Cameroon: Challenges and demands for nurses in leadership positions. *Nurs Admin Q,* 16(2), 8-13.

Baber, N (2002) Nurse Prescribing (2002) *British Journal of Clinical Pharmacology.* December. 54 (6) pp 684-685.

Baird, A (2001) Diagnosing and Prescribing: the impact of nurse prescribing on professional roles. *Primary Health Care* 11, 24-26.

Baltussen, R & Ye,Y (2005) Quality of care of modern health services as perceived by users and non-users in Burkina Faso. *International Journal for Quality in Health Care*; Vol.18, No.1:pp30-34.

Baly, M. E (1995) Nursing And Social Change. Third Edition, London: Routledge.

Banning, M (2004) Nurse Prescribing, nurse education and related research in the United Kingdom: a review of the literature. Nurse Education Today, Vol.24, Issue 6:420-427.

Banning, M (2006) Medication review : The role of nurse prescribers and community matrons. *Nurse Prescribing,* Vol.4, No.5.198-204).

Bartlett, K.R (2001) The relationship between training and organizational commitment: A study in health care field. Human Resource Development Quarterly, Vol. 12, No.4, pp335-352.

Benner, P (1984) From Novice to Expert: Excellence and Power in Clinical Nursing Practice. Menlo Park, CA : Addison-Wesley.

Benner, P (2001) From Novice to Expert : Excellence and Power in Clinical Nursing Practice, Commemorative Edition. New Jersey: Prentice- Hall Health.

Berry, D; Bradlow, A & Courtenay, M (2008) Patient's attitudes towards, and information needs in relation to, nurse prescribing in rheumatology. Journal of Clinical Nursing,17:266-273.

Bessie L.M & Huston, C.J (2006) Leadership roles and Management Functions in Nursing:Theory and Application. Fifth Edition. Philadelphia: Lippincott Williams & Wilkins.

Black, R.E, Morris, S.S, Bryce, J (2003) Where and why are 10million children dying every year? Lancet, 361: 2226-34.

Bloland, P.B (2001) Drug Resistance in malaria. World Health Organization. WHO/CDS/CSR/DRS/2001.4

Boonstra, E, Lindbaek, M, Khulumani, P, Ngome, E & Fugelli, P (2002) Adherence to treatment guidelines in primary health care facilities in Botswana. *Tropical Medicine and International Health,* Vol.7 No.2, pp178-186 (Feb).

Bourgain, A, Pierettiy, P, Zou, B (2009) The Migration of Medical Workers from Developing Countries and Substitution Policy. Working paper.

Bowers, B.J, Esmond, S & Jacobson, N (2000) The relationship between staffing and quality in long-term care facilities: Exploring the views of nurse aides. *Journal of Nursing Care Quality,* Vol.14, Issue.4:55-64.

Bowling, A (1997) Research Methods in Health: investigating Health and Health Services. Buckingham, Philadelphia: Open University Press.

Bowling, A (2009) Research Methods in Health : Investigating health and health services. Maidenhead: Open University Press.

Bradley, E. and Nolan, P (2007) Impact of Nurse Prescribing: A qualitative study. *Journal of Advanced Nursing.* Vol.59, Issue,2:120-128.

Bradley, E, Campbell, P & Nolan, P (2005) Nurse Prescribing: who are they and how do they perceive their role? *Journal of Advanced Nursing,* 51 (5), 439-448.

Bradshaw, A (2000) Competence and British nursing: a view from history. *Journal of Clinical Nursing,* Volume 9, Issue 3, pages 321–329.

Braun, V & Clarke, V (2006) Using thematic analysis in Psychology. *Qualitative research in Psychology* 3, 77-101.

Brinkerhoff, D (2004) Accountability and health systems: toward conceptual clarity and policy relevance. *Health Policy and Planning*; 19(6):371-379.

British Council (2007) Final Report of the Seminar on Nurse and Nurse Educator capacity Building in Cameroon. University of Buea, 18th to 19th September 2007.

Brooks, F & Phillips, D (1996) Do women want women health workers? Women's views of the primary health care service. *Journal of Advanced Nursing,* 23:1207-1211.

Brooks, N, Otway, C, Rashid, C, Kilty, E & Maggs, C (2001) The patients' view: the benefits and limitations of nurse prescribing. *British Journal of Community Nursing* 6, 342-348.

Brooten, D, Naylor, M.D, York, R, Brown, L.P, Munro, B.H, Hollingsworth, A.O, Cohen, S, Finkler, S, Deatrick, J & Young-blunt, J.M (2002) Lessons Learned from testing the quality cost model of Advanced Practice (APN) transitional care. *Journal of Scholarship* 34(4), 369-375.

Brown, CA & Busman, M (2003) Expatriate health-care workers and maintenance of standards of practice factors affecting service delivery in Saudi Arabia. *International Journal of Health Care Quality Assurance,* Vol.16, No.7, pp347-353.

Brugha, R & Zwi, A (1998) Improving the quality of private sector delivery of public health services: challenges and strategies. *Health Policy Planning,* 13: 107-120.

Bryant, R (2009) International Perspectives. *International Nursing Review*, ICN.56: 277-283.

Bryman, A& Bell, E (2003) Business Research Methods. New York: Oxford University Press,

Buchan, J & Calman, L (2004) Implementing Nurse Prescribing. Geneva: International Council of Nurses.

Buchan, J Mario, R & Poz, D (2002) Skill Mix in the health care workforce: reviewing the evidence. Bulletin of the World Health Organization, 80 (7). Geneva: WHO.

Buchanan, D & Huczynski, A (2004) Organizational Behaviour: An introductory text. Fifth edition, England:FT Prentice Hall.

Buchanan, D.A & Huczyinski, A.A (2010) Organizational Behaviour. Seventh edition. Harlow, England: Prentice Hall, Pearson.

Bullock, S & Manias, E (2001) A submission to the National Review of Nursing Education: The Inadequacy of Pharmacology Education in Pre-registration Nursing Courses. Unpublished paper, Australia.

Bulluck, S & Manias, E (2002) The educational preparation of undergraduate nursing students in pharmacology: a survey of lecturers' perceptions and experiences. *Journal of Advanced Nursing,* 40(1), 7-16.

Bushy, A (2002) International Perspectives on rural Nursing: Australia, Canada, USA. *Aust. J. Rural Health,* 10, 104-111.

Caiden, G.E & Caiden, N.J (1977) Administrative corruption. Public Administration Review, Vol.37, No. 3,pp.301-309.

Calman, K (1998) The 1848 Public Health Act and its relevance to improving public health in England now. British Medical Journal. 317: 596

Calnan, M (1998) Towards a conceptual framework of lay evaluation of health care. *Social. Sci Med,* 27:927-933.

Calnan, M.W (1998) The Patient's perspective. *International Journal of Technol Assess Health Care,14*: 24-34.

Calpin – Davies, P.J & Akehurst, R.L (1999) "Doctor- Nurse substitution: the workforce equation" *Journal of Nursing Management,* Vol. 7, No.2, pp71-79.

Campbell, P (2004) Professional Issues Nurse prescribing: the higher education institutions' perspective. *Nurse Prescribing.* Vol.2, pp194.

Campbell, S.M, Roland, M.O & Buetow, S.A (2000) Defining Quality of Care. *Social Science & Medicine, 51*:1611-1625.

Carbone, G, (2009) Does democratisation deliver social welfare? Political regimes and health policy in Ghana and Cameroon. Conference paper. Università degli Studi di Milano.

Carr-Hill, RA, Dixon, P, Griffiths, M, Higgins, M, Mc Caughan, D, Rice, N & Wright, K (2006). The Impact of nursing grade on the quality and outcome of nursing care. Health Economics, Vol.4, Issue 1:57-72.

Casey, G (1996) Analysis of Akinsanya's model of bionursing. *Journal of Advanced Nursing* 23, Issue 6,pp1065-1070.

Chabal, P (2009). AFRICA: The Politics of Suffering and Smiling. Zed Books: London & New York. University of KwaZulu-Natal Press.

Cheesman, S (2006) Promoting Concordance: the implications for prescribers. *Nurse Prescribing.* Vol.4 No.5 pp 205-208.

Clemens, M.A & Pettersson, G (2008) New data on African health professionals abroad. Human Resources for Health. 6 (1) http://www.human- resources-health.com/com/content/6/1/1.

Coleman, R, Gill, G & Wilkinson, D (1998) Non-communicable disease management in resource-poor settings: a primary care model from rural South Africa. Bulletin of the World Health Organization, 76 (6): 633-640.

Collins, K, McDonnell, A, Read, S, Jones, R, & Cameron, A (2000). Do new roles contribute to job satisfaction and retention of staff in nursing and professions allied to medicine? *Journal of Nursing Management,* 8, 3-12.

Collis J & Hussey, R (2003) Business Research: A practical guide for undergraduate and postgraduate students. Second Edition. Basingstoke: Palgrave, Macmillan.

Courtenay, M & Berry, D.C (2007) Comparing nurses' and doctors' views of nurse prescribing: a questionnaire survey. *Nurse Prescribing.* Vol5 No. 5. pp 205-210.

Courtenay, M & Carey, N (2009) Nurse prescribing by children's nurses: views of doctors and clinical leads in one specialist children's hospital. *Journal of clinical nursing* 18, 2668-2675.

Courtenay, M (1991) A study of the teaching and learning of the biological sciences in nurse education. *Journal of Advanced Nursing* 16, 1110-1116.

Courtenay, M, Carey, N & Burke, J (2007) Independent extended and Supplementary nurse prescribing practice in the UK: A national questionnaire survey. *International Journal of Nursing Studies* 44(7), 1093-1101.

Coyne, I. T (1997) Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries? Journal of Advanced Nursing, **26**, pp 623-630.

Crabbé, F, Carsauw, H, Buvé, A, Laga, M, Tchupo, JP, & Trebucq, A (1996) Why do men with urethritis in Cameroon prefer to seek care in the informal sector? Genitourin Med; 72:220-222.

Cresswell, J (1998) Qualitative enquiry and research design: choosing among five traditions. California, Sage publications.

Cruickshank, J.k, Mbanya, J.C, Wilks, R, Balkau, B, Forrester, T, Anderson, S.G, Mennen, L, Forhan, A;, Riste, L, McFarlane-Anderson, N. (2001). Hypertension in Africa-origin populations: current `Rule of Halves´, quality of blood pressure control and attributable risk of cardiovascular disease. *Journal of Hypertension,* Vol. 19, Issue 1:41-46.

Cushing, A, Metcalfe R (2007) Optimizing Medicines management: From compliance to concordance. Ther Clin Risk Mang 3(6):1047-1058.

Czarniawska-Joerges, B (1997). Narrating the Organization: dramas of institutional identity. Chicago: The University of Chicago Press.

D'Avanzo, CE (2008) Cultural Health Assessment, St Louis, Missouri: Mosby Elservier.

Davey, L (1991) The Application of case study evaluations. Practical Assessment, Research & Evaluation, 2(9). http://PAREonline.net/getvn.asp?v=2&n=9 accessed January 25, 2011

David, A & Brown, E (1995) How Swedish nurses are tackling nurse prescribing. *Nursing Times,* 91(50), 23-24.

Davies, C (1995) Gender and the Professional Predicament in Nursing. Buckingham: Open University Press.

Davies, C (2000) Getting health professionals to work together. *British Medical Journal,* Vol. 320, p 1021-1022.

Davies, C (ed.) (1980). Rewriting Nursing History. London: Croom Helm London.

Davies, C, Salvage, J & Smith, R (1999) Doctors and nurses: changing family values? *British Medical Journal,* Vol. 319, Aug, p463-464.

Davis, K & Drennan, V. (2007) Evaluating Nurse Prescribing Behaviour using constipation as a case study. *International Journal of Nursing Practice,* 13, pp 243-253.

Dean, B, Schachter, M Vincent & Barber, N (2002) Prescribing errors in hospital in-patients: their incidence and clinical significance. Qual Safe Health Care. Dec; 11(4): 340-4.

De-Graft Aikins, A (2005) Healer shopping in Africa: new evidence from rural-urban qualitative study of Ghanaian diabetes experience. *BMJ*, 331:737. BMJ. Online First bmj.com.

Delancey, M.W & Delancey, M.D (2000) Historical Dictionary of the Republic of Cameroon. Third edition, Lanham, Maryland:The Scarecrow Press.

Delaney, J. T & Huselid, M.A (1996) The impact of human resource management practices on perceptions and organizational performance. The Academy of Management Journal. Vol. 39, No.4, pp 949-969.

Denscombe, M (1998) The good research guide for small-scale social research projects. Buckingham, England: Open university press.

Denscombe, M (2003) The good Research Guide for small-scale social research projects. Second edition. England : Open University press.

Department Of Health (2002) Liberating Talents: helping primary care trusts and nurses to deliver the NHS Plan. London: DoH.

Department of Health (2005) Commissioning a patient-Led NHS. London: DoH

Department of Health (2005a) An evaluation of extended Formulary Independent Nurse Prescribing. London: Department of Health.

Department of Health (1999) Review of Prescribing, Supply and Administration of Medicines. Final Report. (Crown 11 Report). London: DoH.

Department of Health (2001) Investment and Reform for NHS staff-Taking forward the NHS Plan, London: DoH.

Department of Health (2000) The NHS Plan: a plan for investment, a plan for reform. London: DoH.

Devisch, R (1995) Frenzy, Violence, and ethical renewal in Kinshasa. Public Culture, 7:593-629.

Dingwall, R & McIntosh J (eds.) (1978) Readings in the Sociology of Nursing. Edinburgh: Churchill Livingstone.

Dingwall, R; Rafferty, A.M; Webster, C (1988) An introduction to the social History of NURSING. London : Routledge.

Doherty, C (2008) Jurisdictional Change and Nursing's Professionalization: Liberating nurses or losing the plot? Unpublished Thesis.

Donabedian, A (1990) The seven pillars of quality. *Archives of pathology and laboratory Medicine* 114: 1115-118.

Donabedian, A (1980) The definition of Quality and approaches to its Assessment. *Health Administration Press.* Vol.1, Ann Arbor;

Donabedian, A (1986) Criteria and standards for quality assessment and monitoring. *Quality Review Bulletin*(QRB), 12 (3) pp99-108.

Donabedian, A (1996) The Effectiveness of Quality Assurance. *International Journal for Quality in Health Care*, Vol.8, No.4, pp.401-408.

Donovan, J.L, Blake D.R, Fleming W.G (1989) The patient is not a blank sheet: lay beliefs and their relevance to patient education. *British Journal of Rheumatism*, 28, 58-61.

Dovlo, D (2004) Using mid-level cadres as substitutes for internationally mobile health professionals in Africa. A desk review. *Human Resources for Health* , 2:7

Dowling, S, Barrett, S & Richard, W (1995) With nurse practitioners, who need house officers? British Medical Journal 311:309.

Dresser, J.G, Herzberg, C.L, Yoder S.D & Schuler, S (2001). Implementation of prescriptive practice: Resolution of institutional Issues and evolution of community standards. *Journal of American Psychiatric Nurses Association.* Vol. 7, Issue 6, pp191.

Dudwick, N. (1995), 'A Qualitative Assessment of the Living Standards of the Armenian Population, October 1994-March 1995', George Washington University, Institute for European, Russian and Eurasian Studies, Washington, DC. Cited in Hentschel, J (1999) Contextuality and data collection methods: A framework and application to health service utilization. *Journal of Development Studies.* Vol.35,Issue 4, pp 64-94.

Dussault G & Dubois, CA (2004) Human resources for health policies. *Human Resource Health.* Vol. 1, pp1-16.

Easterby-Smith, M, Thorpe, R & Lowe, A (2004) Management Research : An Introduction. Second Edition. London : Sage Publications.

Easterby-Smith, M, Thorpe,R & Jackson, P.R (2008) Management Research. Third Edition. London: Sage Publications Ltd.

Easterby-Smith, M, Thorpe, R and Lowe, A (1991) Management Research: An Introduction, London. Sage.

Easterby-Smith,M, Thorpe, R. & Lowe,A (2002) Management Research: An Introduction, Second edition, London: Sage Publications.

Edoho, F.M (2001) Management in Africa: the quest for a philosophical framework in Edoho, FM (ed) Management challenges for Africa in the Twenty-first century. Theoretical and Aplied Perspectives. Westport: Praeger, pp 73-90.

Edwards, C & Robinson, O (2004) Evaluating the Business Case for part-time working amongst Qualified Nurses. *British Journal of Industrial Relations,* 42:1, pp.167-183.

Elwyn, G, Edwards, A & Kinnersley, P (1999) Shared Decision-Making in primary care: the neglected second half of the consultation. *British Journal of General Practice.* 49, 477-482.

Embrey, N & Lowndes, C (2007) Nurse Prescribing: benefits and limitations for the clinical nurse specialist in Multiple Sclerosis. *British Journal of Neuroscience Nursing.* Vol.3, Issue 6, 08 June, pp 253-260.

Ensor, T & Witter, S (2001) Health economics in low income countries: adapting to the reality of the unofficial economy. *Health Policy*:57:1-13.

Eriksen J , Tomson G , Mujinja P, Warsame M.Y , Jahn A, Gustafsson L.L (2007) Assessing health worker performance in malaria case management of under fives at health facilities in a rural Tanzanian district. *Tropical Medicine & International Health.* Vol. 12, Issue 1, 52-61.

Eriksson, P & Kovalainen, A (2008) Qualitative Methods in Business Research. Los Angeles: SAGE.

Essomba, R.O, Bryant, M & Bodart, C(1993) The reorientation of Primary health care in Cameroon: rationale, obstacles and constraints. *Health Policy and Planning.* Vol.8, No.3, pp232-239.

Ferrinho, P & Lerberghe, W (2000) Providing health care under adverse conditions: Health personnel performance and individual coping strategies. *Studies in Health services Organization & Policy.* 16:1-245.

Fisher, I & Ziviani, J (2004) Explanatory case studies: Implications and applications for clinical research. Australian Occupational Therapy Journal, 51: 185-191.

Fombad, CM (2004) The dyanamics of record-breaking endemic corrupt and political opportunism in Cameroon In The Leadership challenge in Africa: Cameroon under Paul Biya (eds) Mbaku, JM & Takougang J. Washington: Africa World Press, Inc.

Fongwa, N.F (2002) International Health Care Perspectives:The Cameroon Example. *Journal of Transcultural Nursing.* Vol.13 No.4, pp325-330.

Fonjong, L.N& Endeley, J.B (2004) The Potentials for female micro entrepreneurial activities within the informal sector in poverty reduction in Cameroon: Opportunities, Constraints and the way forward. Workshop on strategy for West Africa on poverty reduction, development, gender and enterprise Accra, Ghana, 3-6th, August.

Fonn, S & Xaba, M (2001) Health Workers for change: developing the initiative. *Health Policy and Planning;* 16(suppl. 1): 13-18.

Fonn, S, Mtonga, A.S, Nkoloma, H.C et al. (2001) Health providers' opinions on provider-client relations: results of a multi-country study to test Health Workers for Change. Health Policy and Planning 16 (Suppl.1):19-23.

Foskett N.H & Hemsley-Brown, J.V (1998) Perceptions of Nursing as a career. London: DOH.

Frank, C, Asp, M & Dahlber, K (2008) Patient participation in emergency care-a phenomenographic analysis of caregivers' conceptions. *Journal of Clinical Nursing,* 18, 2555-2562.

French, S, Reynolds, F & Swain, J (2001) Practical Research: A Guide For Therapists. Second Edition. Oxford : Buttterworth Heinemann.

Freshwater, D (ed.) (2002) Therapeutic Nursing: Improving patient care through self awareness and reflection. London: Sage publications.

Galanti, G-A (2008) Caring for patients from different cultures. Fourth edition. Pensylvennia: University of Pennsylvania Press.

Galanti, G-A (2004) Caring for patients from different cultures. Third edition, Philadelphia: University of Pennsylvania Press.

Gallagher, J, O'Gara, C, Sessay, M, Luty, J, (2006) Nurse prescribing in addiction Services: Client benefits. *Nursing Standard,* August 9: Vol. 20, No 48. P 42-44.

Gask,L & Ursherwood, T (2002) ABC of Psychological medicine: the consultation. *British Medical Journal 324*:1567-1569.

George, J M & Jones, G, R (2002) Organizational Behaviour, Third edition, New Jersey: Prentice Hall.

Georgellis, Y & Lange, T (2007) Participation in continuous, on-the –job training and the impact on job satisfaction: longitudinal evidence from the German labour market. International Journal of Human Resource Management, 18:6, pp 969-985.

Gilson, L, Alilio, M, & Heggenhaugen, K (1994) Community satisfaction with PHC services: an evaluation undertaken in the Morogoro region of Tanzania. *Soc. Sci. Med.* 39:767-780.

Gilson, L, Jaffar, S, Mwankusye, S & Teuscher, T (1993) Assessing prescribing practice: a Tanzanian example. *International Journal of Health and Management.* 8, 37-58.

Gilson, L, Kalyalya, D, Kuchler, F, Lake, S, Oranga, H & Ouendo, M (2001) Strategies for promoting equity: experience with community financing in three African countries. *Health Policy.* 58:37-67.

Glaser , B (1978) Theoretical sensitivity. Mill Valley: Sociology Press.

Global Health Facts: HIV/AIDS (2005), Data Country by Country.http://www.globalhealthfacts.org.

Goldman, L & Bennett (Eds.) Cecil Textbook of Medicine (2000) 21st edition. Philadelphia:W.B Saunders Company.

Gomart, E. (1996), *Social Assessment Report on the Education and Health Sectors in Armenia,* Eastern and Central Europe Region, World Bank, Washington, DC. Cited in Hentschel, J (1999) Contextuality and data collection methods: A framework and application to health service utilization. *Journal of Development Studies.* Vol.35,Issue 4, pp 64-94.

Gould, D.J & Mukendi, T.B (1989) Bureaucratic Corruption in Africa: Causes, consequences and remedies. International Journal of Public Administration 12 (3):427-57.

Graffy, J (1990) Patient choice in a practice with men and women General Practitioners. *The British Journal of Medical Practice* 40(330):13-15.

Graham, I, Partlow, C, Maxwell, E (2004) What makes a good Nurse?: A study conducted for WDGH NHS Trust by Bournemouth University to identify nursing practice and care within the Trust. Institute of Health and Community Studies, Bournemouth University.

Grandell-Niemi, H, Hupli, M, Leino-Kilpi, H & Puukka, P (2005). Finish nurses' and nursing students' pharmacological skills. *Journal of Clinical Nursing,* 14, 685-694.

Gray, A (1999) Nurses ad the quest for rational drug use. In the changing role of the clinic nurse. Health Systems' Trust Update, Issue 46, policy 4. http://www.hst.org.za/publications/13.

Gray, D.E (2009) Doing Research in the real world. Second edition. Los Angeles: Sage.

Greenwood, D (1998) Resistance to antimicrobial agents: a personal view. *J. Med. Micobiol,* Vol. 47:751-755.

Griffith, R (2006)Legal requirements for prescribing, supply and administration of medicines. *Nurse prescribing, Vol.* 4. No 9, pp365-370.

Guest, D.E (1997) Human resource management and performance: A review and research agenda. *The International Journal of Human Resource Management* 8:3, June, pp264-276.

Guest, G, Bunce, A & Johnson, L (2006) How many interviews are enough? An experiment with data saturation and variability. Field Methods, 18: 59 Sage publications.

Gulis, G, Mulumba, J.A, Juma, O, & Kakosova, B.A (2003) Health status of people of slums in Nairobi, Kenya. *Environmental Reearch* 96(2):219-227.

Hadley, M.B & Roques, A (2007) Nursing in Bangladesh: Rhetoric and reality. *Social Science & Medicine.* Volume 64, Issue 6, March 2007, Pages 1153-1165

Haidar, E (2007) Role of the advanced nurse practitioner in prescribing and general practice. *Nurse Prescribing.* Vol. 5 No.2 pp74-78.

Hall, J, Cantrill, J & Noye, P (2006) Why Don't trained community nurse prescribers prescribe? *Journal of Clinical Nursing* 15(4), 403-412.

Hall, J, Cantrill,J, Noyce,P (2003) Influences on community nurse prescribing. *Nurse Prescribing,* Vol. 1 No. 3 pp127-132.

Hall, L.M (2003) Nursing intellectual capital: a theoretical approach for analyzing nursing productivity. Nursing Economics 21 (1): 14-19.

Hallett, C (2010) An enduring legacy. Royal College of Nursing Bulletin. London:RCN. Issue No.256, 11 AUG.

Harris, R, Richardson, G, Griffiths, P, Hallett, N & Wilson-Barnett, J (2005) Economic evaluation of a nursing-led inpatient unit: the impact of findings on management decisions of service utility and sustainability. *Journal of Nursing Management*, 13, 428-438.

Harrison, A (2003) Mental health service user's views of nurse prescribing. *Nurse Prescribing* 1:78-85.

Hart, C (2006) Doing a literature review: releasing the social science research imagination. London: Sage.

Heller, P.S (1982) A model of the demand for medical and health services in peninsular Malaysia. *Social Science & Medicine.* Vol.16, Issue 3, pp267-284.

Hemachudha, C & Rosenfield, A.G (1975). National Health Services and Family Planning, Thailand, a case study. AJPH August, Vol.65, No8 p864-871.

Hemmingway, S & Davies, J (2005) Non-medical prescribing educational provision: How do we meet the needs of the diverse nursing specialism? *Nurse Prescribing* 2(4). www.nurse-prescriber.co.uk.

Heron, J (2001) Helping the client: A creative Practical Guide. Fifth edition. London: Sage Publications.

Hofstede, G (1980) Culture's Consequences : International differences in work Related Values, Beverley Hills, CA: Sage.

Hofstede, G (1991) Cultures and Organisations: Software of the mind, London: McGraw-Hill.

Hogerzeil, HV; Bimo, D; Ross-Degnan, RO et al.(1993) Field tests for rational drug use in twelve developing countries. Lancet, 342:1408-1410.

Holland, K; Jenkins, J; Solomon, J & Whittam (eds.) (2003) Applying the Roper, Logan, Tierney Model in Practice. Edinburgh: Churchill Livingston.

Holloway, I & Freshwater, D (2007) Narrative Research in Nursing. Oxford: Blackwell Publishing.

Hongoro, C & McPake, B (2004) How to bridge the gap in human resources for health. *The Lancet.* Vol.364, October 16, pp1451-1456.

Hooker, RS & McCaig, L (1996) Emergency department uses of physician assistants and nurse practitioners: a national survey. American Journal of Emergency Medicine 14(3):245-249.

Horrocks, S, Anderson , E, & Salisbury, C (2002) Systematic review of whether Nurse Practitioners working I Primary care can provide equivalent care to doctors. BMJ; 324 (7341): 819-823.

Horton, R (2002) Nurse-Prescribing in the UK: right but also wrong. *The Lancet* 359, 1875-1876.

Hoskins, C.N & Mariano, C (2004) Research in Nursing and Health: Understanding and using quantitative and qualitative methods. Second edition. New York: Springer Publishing Company.

Howell-Jones, RS, Price, PE, Howard, AJ, & Thomas, DW (2006) Antibiotic prescribing for chronic skin wounds in primary care. Wound Repair and Regeneration 14:387-393.

http:///www.cia.gov/cia/publicationsfactbook/geos/cm.html

http://hdr.undp.org/statistics/data/indic/indic_8_1_1.html

http://jrn.sagepub.com at Kingston university library on March 9, 2010.

http://www.ethnobiomed.com/content/2/1/48.

http://www.human-resource-health.com/content/6/1/1

http://www.internurse.com/cgi-bin/go.pl/library/article.cgi?uid=23709;article=BJNN accessed 11/02/2008

http://www.medscape.com?viewarticle/502806.

http://www.ncbi.nlm.nih.gov/pubmed/14687290 accessed 11/02/ 2008

http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1874500 accessed 11/o2/2008

http://www.who.int/violenceprevention/approach/ecology/en/index.html

http://www.camnet.cm (Official Cameroon Home page).

http.//www.africaonline.com (News and resources about Africa including Cameroon.

Hudon, P.S (2003) Leapfrog Standards: Implications for Nursing Practice. *Nursing Economics*. Vol.21, No.5:233-236.

Hughes, F & Lockyer, H (2004) Evidence and engagement in the introduction of nurse prescribing in New Zealand. *Nurse Prescribing*, Vol.2, No.3, pp131-136.

Humphries, J.L & Green, E (2000) Nurse prescribers: infrastructures required to support their role. *Nursing Standard* 14(48), 35-39.

Huselid, M. A (1995) The importance of human resource management practices on turnover, productivity, and corporate financial performance. The Academy of Management Journal, Vol. 38, pp 635-672.

Hutchinson, L, Marks, T & Pittilo, M (2001) The physician assistant: would the US model meet the needs of the NHS? *BMJ*, Vol. 323 24 Nov. 1244-1247.

International Council for Nurses (ICN) (2004) *Implementing Nurse Prescribing*. Geneva: ICN,

Inyang, B.J (2008) The challenges of evolving and developing management indigenous theories and practices in Africa: *International Journal of Business Management*, 3 (12) 122-132.

Isely, R.B (1980) Use of a Time –Motion study to evaluate the activities of rural health center chief nurses in the Cameroon. Journal of Tropical Pediatrics, April. pp.46-49.

Israr, S.M, Razum, O, Ndiforchu, V and Martiny, P (2000). Coping strategies of health personnel during economic crisis: A case study from Cameroon. *Tropical Medicine and International Health*, 5(4):288-292.

Ives, G, Hodge, K, Bullock, S & Marriott, J (1996) First Year RNs' actual and self-rated pharmacology knowledge. *Australian Journal of Advanced Nursing* 14, 13-19.

Jacobson. P.D, Parker, L.E & Coulter, I.D (1999). Nurse Practitioners and Physician assistants as primary care providers in institutional settings. INQUIRY- Blue Cross and Blue Shield Association; Winter; 35, 4; 432-446. ABI/INFORM Global.

Jagwe, J & Merriman, A (2007) Uganda: Delivering Analgesia in Rural Africa: Opiod Availability and Nurse Prescribing. *Journal of Pain and Symptom Management.* Vol.33, No.5: 547-551.

Jegede, A.S (2007) Policy Forum. What led to the Nigerian Boycott of the Polio vaccination campaign? *PLoS,* Vol.4 Issue, 3:0417-0422.

Jenkins-Clarke, S, Carr-Hill, R & Dixon ,P (1998) Teams and Seams: skill mix in primary care. *J. Adv Nurs;* 28:1120-06.

Jones, J.L (2008) Nothing is straight in Zimbabwe: The rise of the Kukiya-kiya Economy 2000-2008. Journal of Southern African Studies.VOL.36 (2), 285-299.

Jones, M (ed.) (1999) Nurse prescribing: politics to practice. London:

Jones, M , Bennett, J, Lucas, B, Miller, D & Gray, R (2007) Mental health nurse supplementary prescribing: experiences of mental health nurse, psychiatrists and patients.

Kamadjeu,R.M; Tapang, E & Moluh, R.N (2005) Designing and implementing an electronic health record system in Primary care practice in Sub-Saharan Africa: a case study from Cameroon. Informatics in Primary Care, Vol. 13, No.3:pp179-86.

Keddy, B, Gillies, Mj, Jacobs, P, Burton, H, Rogers, M (1986). The doctor-nurse relationship : A historical perspective. *Journal of Advanced Nursing,* 11, p745-753.

Kengne, A.P, Sobngwi, E, Fezeu, L.L Awah, P.K, Dongmo, S & Mbanya, J.C (2008). Nurse-led care for asthma at primary level in rural sub-Saharan Africa: the experience of Bafut in Cameroon. *J Asthma.* 45(6):437-43.

Kernick, D & Scott, A (2002) Economic approaches to doctor/nurse skill mix: problems, pitfalls, and partial solutions. British Journal of General Practice, January, 42-46.

Kinley J., Hancock D. & Casterton, J. (2004) Nurse prescribing in palliative care: putting training into practice. *Nurse Prescribing* 2(2), 60–64.

Kinnersley, P, Anderson, E, Parry, K, Clement J, Archard, L, Turton, P, Stainthorpe , A.et al. (2000) Randomized controlled trial of nurse practitioner versus general practitioner care for patients requesting "same day" consultations in primary care. *BMJ* 320:1043-1048.

Korsch, BM (1984) What do patients and parents want to know? What do they need to know? Journal of American Academy of Pedriatics. Pediatrics. Vol.74 No.5, pp.917-919.

Kosnik, L, Brown, J & Maund, T (2007) Patient Safety: Learning from the Aviation industry. *Nursing Management.* 38, Issue 1, pp25-30. www.nursingmanagement.com.

Krause, G, Borchert, M, Benzler, J, Heinmuller, R, Kaba, I, Savadogo, M, Siho, N & Diesfeld, H.J (1999). Health Policy and Planning. Vol.14, No.3, pp291-298.

Kurowski, C, Wyss, K, Abdulla, S, Yemandji, ND, Mills, A (2004) Human Resources for health: requirements and availability in the context of scaling up priority interventions in low-income countries. Case studies from Tanzania and Chad. HEFP working paper 01/04. London: London School of Hygiene and Tropical Medicine.

Kvale, S (1996) Interviews. An introduction to Qualitative Research Interviewing. Thousand Oaks, London: Sage Publications.

Kyriacos, U, Jordan, S & Van den Heever, J (2005) The biological sciences in nursing: a developing country perspective, *Journal of Advanced Nursing,* 52(1), 91-103.

Labhardt, N.D, Aboa, S.M, Manga, E, Bensing, J.M & Langewitz, W (2010) Bridging the gap: how traditional healers interact with their patients. A comparative study in Cameroon. *Tropical Medicine and International Health. Vol.* 15, No. 9, pp 1099-1108.

Labhardt, N.D, Schiess, K, Manga, E & Lanewitz W (2009) Provider-patient interaction in rural Cameroon- How it relates to the patient's understanding of diagnosis and prescribed drugs, the patient's concept of illness, and access to therapy. *Patient Education and Counseling.* 7: 196-201.

Lafond, A.K (1995) Improving the quality of investment in health: lessons on sustainability. *Health Policy and Planning,* 10, pp63-76.

Langsten, R & Hill, K (1995) Treatment of Childhood diarrhoea in rural Egypt. *Social Science & Medicine* 40:989-1001.

Lantum, D.N (1985) Traditional Medicine-Men of Cameroon: the case of Bui Division. Yaounde: UCHS/CUSS.

Lantum, D.N. (1977) Traditional Medicine: problems of practice and communication in Cameroon. Yaounde:UCHS/CUSS.

Larsen, D (2004) Issues affecting the growth of independent prescribing. *Nursing Standard* 19(2), 33-39.

Latter, S & Courtenay, M (2004) Effectiveness of nurse prescribing: a review of the literature. *Journal of Clinical Nursing, 13*, 26-32.

Latter, S (2008) Safety and quality in independent prescribing: an evidence review. *Nurse Prescribing,* Vol.6, No.2:59-66.

Latter, S (2010) Evidence base for effective medicines management. *Nursing Standard.* Vol 24, No.43:62-64.

Latter, S, Blenkinsopp, A, Smith A, Chapman, S, Tinelli, M, Greard, K, Little, P, Celino, N, Granby, T, Nicholls, P & Dorer, G (2010). Evaluation of nurse and pharmacist independent prescribing, university of Southampton & Keele University: Department of Health policy Research Programme Project 0160108

Latter, S, Rycroft-Malone, Yerrell, P & Shaw, D (2001) Nurses' educational preparation for a medication education role: findings from a national survey. *Nurse Education Today,* 21 : 143-154.

Latter, S, Maben, J, Myall, M, Courtenay, M, Young, A & Dunn, N (2004). An evaluation of Extended Formulary Independent Nurse Prescribing. Executive Summary of Final Report.. University of South Hampton: Department of Health.

Latter, S, Maben, J, Myall, M & Young, A (2007) Evaluating nurse prescribers' education and continuing professional development for independent prescribing practice: Findings from a national survey in England. *Nurse Education Today,* 27, 685-696.

Latter, S, Maben, J, Myall, M & Young, A (2007) Perceptions and practice of concordance in nurses' prescribing consultations: Findings from a national questionnaire survey and studies of practice in England. *International Journal of Nursing studies* 44:9-18.

Latter, S, Maben, J, Myall, M, Courtenay,M, Young, A & Dunn, N (2005) An evaluation of the extended Formulary Independent Nurse Prescribing. Executive summary of final Report. London: DoH.

Latter, S, Maben, J, Myall, M, Young, A & Baileff, A (2007) Evaluating prescribing competencies and standards used in nurse independent prescribers' prescribing consultations: An observation study of practice in England. *NT research,* Vol.12, Issue 1, pp7.

Latter, S, Rycroft-Malone, J, Yarrell, P & Shaw, D (2000) Evaluating Educational preparation for a health education role in practice: the case of medication education. *Journal of Advanced Nursing,* 32(5), 1282-1290.

Latter, S, Yerrell, P, Rycroft-Malone, J, and Shaw, D (2000) Nursing and medication education: the preparation and role of nurses in patients', clients' and carers' medication education. Researching professional Education Series. London:ENB.

Laurant, M, Reeves, D, Hermens, R, Braspenning, J, Grol, R & Sibbald B (2007) Substitution of doctors by nurses in primary care (Review): The Cochrane Collaboration. By J Wiley & Sons Ltd.

Lee, E; Mishna, F & Brennenstuhl, S (2010) How to critically evaluate case studies in social work. Research on social work practice, 20(6) 682-689.

Lehmann, U, Van Damme, W, Barten, F & Sanders, D (2009) Task shifting: the answer to the human resources crises in Africa? *Human Resources for Health,* 7:49

Leininger. M.M (ed.) (1984) Care: The essence of Nursing and Health. Thorofare, NJ: Slack.C

Leonard, K.L & Masatu, M.C (2005) The use of direct clinician observation and vignettes for health services quality evaluation in developing countries. *Social Science & Medicine,* 61:1944-1951.

Lesar, T.S, Briceland, L.L, Delcoure, K, Parmalee, J.C, Masta-Gornic, V & Pohl, H (1990). Medication prescribing errors in a teaching hospital. JAMA, 2. Vol.263. No.17:2329-2334.

Lewis-Evans, A, Jester, R (2004). Nurse prescribers' experience of prescribing. *Journal of Clinical Nursing,* 13, 796-805.

Lichtman, M (2006) Qualitative Research in Education: A user's Guide. Thousand Oaks: Sage publications.

Liese, B, Blanchet, N & Dussault, G (2003) The Human Resource Crisis in Health Services In Sub-Sahara Africa. Background Paper. The World Bank.

Likic, R & Maxwell, RJ (2009) Prevention of medication errors: teaching and training. *British Journal of Clinical Pharmacology.* 67:6, 656-661.

Lincoln, Y.S & Guba, E (1985) Naturalistic Inquiry. Thousand Oaks, CA:Sage In Tobin, G.A & Begley, C.M (2004) Methodological rigour within a qualitative framework. Methodological Issues in Nursing Research. Journal of Advanced Nursing, 48(4), 388-396

Lindgreen, A (2001) A framework for studying relationship marketing dyads. Qualitative Market Research: An International Journal. Vol.4, No.2. pp.75-87.

Litvack, J & Bodart, C (1993) User fees plus quality equals improved access to health care: results of a field experiment in Cameroon. *Social Science & Medicine* 37 (3): 369-83.

Litvack, J.I & Bodart, C (1993) User fees plus quality equals improved access to health care: Results of a field experiment in Cameroon *Social Science & Medicine*, Volume 37, Issue 3, August , Pages 369-383.

Luker, K & McHugh, G.A (2002) Nurse prescribing from the community nurse's perspective. *International Journal of Pharmacy Practice.* (December), 273-280.

Luker, K, Austin, L, Hogg, C; Ferguson, B & Smith, K (1997b) Nurses' and GPs' views of the `Nurse Prescribers´ Formulary. *Nursing Standard* 11(22):33-8.

Luker, K.A, Austin, L, Hogg, C , Ferguson, B & Smith, K (1998b). Nurse –patient relationships: the context of nurse prescribing. *Journal of Advanced Nursing*, 28 (2), 235-242.

Luker, K; Austin, L; Hogg, C; Ferguson, B & Smith, K (1997a) Patients' views of nurse prescribing. *Nursing Times* 93(17):51-4.

Luker, K, Hogg, C, Austen L, Ferguson, B & Smith K (1998a) Decision making: the context of nurse prescribing. *Journal of Advanced Nursing*, 27(3)657-65.

Lupton, D (1995) The imperative of health: Public Health and the Regulated Body. London: Sage

Mackay, B (2007) Leadership strategies for role development in primary health care nursing. *Nursing Journal NorthTec,* 11, 31-39.

Mackay, B (2003) General practitioners' perceptions of the nurse practitioner role: an exploratory study. *Journal of the New Zealand Medical Association,* Vol.116, No 1170,

Mainous A.G, Diaz, V.A & Geesey M.E (2008) Acculturation and Healthy lifestyle among Latinos with diabetes. Annals of Family Medicine 6:131-137

Maltby, J, Williiams, G, McGarry, J; Day, L (2010) Research Methods for Nursing and Healthcare. Harlow, England; PEARSON

Manias, E & Bullock, S (2002). The educational preparation of undergraduate nursing students in pharmacology: clinical nurses' perceptions and experiences of graduate nurses' medication knowledge. International Journal of Nursing Studies, 39(2002)773-784.

Mariko, M (2003) Quality of care and the demand for health services in Bamako, Mali: the specific roles of structural, process, and outcome components. *Social Science and Medicine* 56: 1183-1196.

Markus, H,R, Kitayama, S (1991) Culture and the self. Implications for cognition, emotion and motivation. *Psychological Review*, 98,224-253.

Mason, M (2010) Sample Size and saturation in PhD Studies using qualitative interviews. Forum Qualitative sozialforschung ? Forum: Qualitative Social Research, Vol. 11, No. 3.

Mason-Whitehead, E & Mason, T (2004) Study Skills for Nurses. Second edition. London: Sage.

Masters, K (2009) Role Development in Professional Nursing Practice. Boston: Jones and Bartlett Publishers.

Maw, J (2004) Too much to handle? *Occupational Health*, 56(2):26-28.

Max Martin, H (2009) Nursing Contradictions: Ideals and improvisation in Uganda. Diemen: AMB-Press.

Maxwell, R.J (1984) Quality Assessment in Health. *British Medical Journal.* Vol.288.pp1470-1472.

Maxwell, R.J (1992) Dimensions of quality revisited : from thought to action. *Quality in Health Care.* 1:pp171-177.

Mbaku, J.M (1991a) " Military Expenditures and Bureaucratic Corruption for Rents" Public Choice 71 (2): 19-31.

Mbaku, J.M (1996) Bureaucratic Corruption in Africa: The futility of clean ups. Cato. Journal, Vol.16, No.1. http://www.cat.org/pubs/journal/cj16n1-6.html.Accessed 13th June 2011.

Mbaku, J.M (2005) Culture and Customs of Cameroon. WestPort, Connecticut: Greenwood Press.

McAuliffe, M & Henry B (1998) surveys of nurse anaesthesia practice, education, and regulation in 96 countries. *AANAJ.* Vol.66:273-86.

McCann, T.V & Baker, H (2002) Community mental health nurses and authority to prescribe medications: the way forward? *Journal of Psychiatric and Mental Health Nursing* 9, 175-182.

McCartney, W, Tyrer, S, Brazier, M & Prayle, D (1999). Nurse prescribing: radicalism or tokenism? *Journal of Advanced Nursing.* 29 (2) 348-354.

McGrath, S. (1990) The Cost Effectiveness of Nurse Practitioners. Nurse Practitioner 15(7)40-42.

McHale, J (2003) A review of the legal framework for accountable nurse prescribing. *Nurse Prescribing,* Vol.1, No 3, p107-112.

McPake, B, Asiimwe, D, Mwesigye, F et al.(1999). Survival strategies of public health workers in Uganda: implications for quality and accessibility of care. *Soc Sci Med*; 49:849-65.

Meyer, J.C, Summers,R.S, Möller, H (2001) Randomized Controlled trial of prescribing training in South African Province. *Medical Education,* 35 :833-840.

Miers, M (2000) Gender Issues and Nursing Practice: Sociology and Nursing. Basingstoke : MacMillan Press Ltd.

Miles K, Seitio, O, & McGilvery, M (2006) Nurse Prescribing in low-resource settings : Professional Considerations. *International Nursing Review* 53, p290-296.

Miles, K, Clutterbuck, DJ, Seitio, O, Sebego, M & Riley, A (2007). Antiretroviral treatment roll-out in a resource-constrained setting: capitalizing on nursing resources in Botswana. Bulletin of the World Health Organization, 85(7):555-560.

Miles, M & Huberman, A (1984) Qualitative data analysis. London: SAGE.

Miles, B & Huberman, A.M (1994) Qualitative Data Analysis: An expanded sourcebook, 2nd edition, Thousand Oaks, CA, Sage publications.

Mills, A, Brugha, R, Hanson, K & McPake, B (2002) What can be done about the private health sector in low-income countries? Bulletin of the World Health Orgnization, 80:325-30.

Ministère de la Santé publique du Cameroun (2010) Stratégie Sectorielle de Santé, MINSANTE, Yaounde.

Ministère de la Santé publique du Cameroun (1999) Junang, J (ed.) (1999) Ordre National Des Professionels Medico Sanitaires (Infirmiers, Sage-Femme, Technicien Médico-Sanitaire. Assemblee Generale De L'ordre 2ème session ordinaire, Yaounde, 26 Avril 1996.

Ministère de la Santé publique du Cameroun (1999) Decret No 87-529 du 21 Avril 1987. Fixant la Nomencleture Générale des actes professionnels ses Medcins, Chirurgiens-dentists, pharmaciens Biologies et des professionnels Medico-Sanitaires (Infirmier, Sage-Femme, Technicien Medico-Sanitaire).

Ministry of Health and National Drug Authority (2003) Uganda clinical guidelines . Ministry of Health and National Drug Authority, 341-349.

Moller P, & Begg E (2005) Independent nurse prescribing in New Zealand. N Z Med J;118, 1225.

Morankar, S. (1993) 'Utilisation of Health-Services in Rural Maharashtra - An Anthropological Perspectivee', *Collegium Antropoligicum,* Vol.17, pp.257-65. Cited in Hentschel, J (1999) Contextuality and data collection methods: A framework and application to health service utilization. *Journal of Development Studies.* Vol.35,Issue 4, pp 64-94.

Morse, J. M (1995) The significance of saturation. Qualitative Health Research 5 (3):147-49.

Morse, J. M (2008) Styles of collaboration in qualitative inquiry. Qualitative Health Research, 18(1), 3-4. cited in

Mortimer, B; McGann, S (eds.) (2005) New Directions in the History of Nursing : International Perspectives. London: Routledge.

Mosby's Medical Dictionary, 8th Edition, 2009, Elsevier.

Mundinger, M.O, Kane, R.L, Lenz, E.R, Totten, A, Tsai, W.Y & Cleary, P.D (2000). Primary care outcomes in patients treated by nurse practitioners or physicians: a randomised controlled trial. *Journal of the American Medical Association,* 283, 59-68.

Murphy, A.L, Martin-Misener, R, Cooke, C & Sketris (2009) Administrative claims data analysis of nurse practitioner prescribing for older adults. *Journal of Advanced Nursing* 65(10), 2077-2087.

Mwenesi, H, Harpham, T & Snow, RW (1995) Child malaria treatment practices among mothers in Kenya. *Social Science & Medicine.* Vol.40, Issue 9, pp1271-1277.

Narasimhan, V, Brown, H, Pablos-Mendez, A et al. (2004) Responding to the global human resource crisis. *Lancet:*363, pp 1469-72.

National Association of the professions of Nurse, Midwife and Health Technicians (2005). Useful information on the need for more powers to the National Association of Nurses, Midwives, and Health Technicians. A document addressed to the Honourable members of parliament

National Prescribing Centre (NPC) (1999) Signposts for prescribing-general principles of good prescribing. *The Nurse Prescribing Bulletin,* 1 (1): PP1-4.

National Prescribing Centre(1999) *Prescribing Nurse Bulletin.* www.npc.co.uk

National prescribing Centre (2001) An Outline Framework to help nurse prescribers. Liverpool: National Prescribing Centre.

Nche, A.A & Fon, A.G (1999) Rights and Obligations of Nurses, Midwives and Health Technicians: A Guide to Quality Behaviour. Second edition, Cameroon: North West Branch: Association for Nurses, Midwives and Health technicians.

Ndeso-Atanga, S (2003) Health Care Quality and the Choice of Care Providers: Cameroon II. UCIAS Edited Vol. 5, Article 5, pp125-144.

Ndiwane, A (1999) Factors That Influence Job Satisfaction of Nurses in Urban and Rural Community Health Centers in Cameroon: Implications for policy. *Clinical excellence for Nurse Practitioners.* Vol 3, No.3, pp172-180.

Ndiwane, A (2000) The effects of Community, Co-worker and Organizational support to job Satisfaction of Nurses in Cameroon. ABNF (Association of Black Nursing Faculty). 11(6), pp145-149.

Ndumbe, P.M (2005) Human Resources for Health Joint Learning Process: The training of human resources for health in Africa. Yaounde, Cameroon: Faculty of Medicine and Biomedical Sciences, Yaounde University.

Ngcongco, V.N.& Stark, R. (1986) The development of a family nurse practitioner programmes in Botswana. *International Nursing Review*, 33 (1), 9-14.

Nkematabong, M (2004) Cameroon: Malaria Treatment: Cloroquine Ruled Out, Thursday, Oct 28, Cameroon Tribune: Yaounde, Oct, 27th.

Nolan, P & Bradley, E (2007) The role of the nurse prescriber: the views of mental health and non-mental health nurses. *Journal of Psychiatric and Mental Health Nursing* 14, 258-266.

Nolan, P & Bradley, E (2008) Non-Medical Prescribing: Multidisciplinary Perspectives. Cambridge: Cambridge University Press.

Nolan, P, Sayeed Haque, M, Badger, F, Dyke, R & Khan, I (2001) Mental Health nurses' perceptions of prescribing. *Journal of Advanced Nursing,* 36, 527-534.

Norton, A. and A. Kessel, (1996), *Africa Region Systematic Beneficiary Consultation on Health, Sector Operations: Messages from our Clients,* World Bank, Washington, DC. Cited in Hentschel, J (1999) Contextuality and data collection methods: A framework and application to health service utilization. *Journal of Development Studies.* Vol.35,Issue 4, pp 64-94.

Nsimba, S.E.D, Massele, A.Y, Eriksen, J, Gustafsson, L.L, Tomson,G & Warsame, M (2002) Case management of malaria in under-fives at primary health care facilities in a Tanzanian district. *Tropical Medicine and International Health,* Vol.7, No. 3, pp 201-209.

Ntembe, A.N In Amin, A.A (ed.) (2008) Developing a sustainable economy in Cameroon. Dakar, Senegal: Council for the development of Social Science Research in Africa.

Nursing and Midwifery Council (2006) Standards of Proficiency for Nurse and Midwife prescribers. London: Nursing and Midwifery Council.

Nursing and Midwifery Council. (2004) Code of professional Conduct: standards for conduct, performance and ethics. London: Nursing and Midwifery Council.

O'Neil, C, & Franklin, R (2006) When the Nightingale Sang; A nurse's Life in the 1950s &1960s. Cornwall:Diggory Press.

Okeke, I.N, Lamikanra, A & Edelman, R (1999) Socioeconomic and Behavioural factors leading to Acquired Bacterial Resistance to Antibiotics in Developing Countries. *Emerging Infectious Diseases,* Vol. 5, No. 1:18-27.

Otway, C (2002) The development needs of nurse prescribers. *Nursing Standard* 16(18),33-38.

Palmer, L & Lisk D (1997) Who prescribes better: doctors or dispensers? *World Health forum,* 18 (3-4):352-4.

Palmer, N, Mills, A, wade, H, Gilson, L & Schneider, H (2003) A new face for private providers in developing Countries: what implications for public health? Bulletin of the World Health Organization. Vol. 81, No.4

Patterson, M.G, West, M.A, Lawthom, R & Nickell, S (1997). Impact of People Management Practices on Business Performance Institute of Personnel and Development, London: Cromwell press.

Patton, M. Q (1999) Enhancing the quality and credibility of qualitative analysis. Health Service Research 34:3 Part II, PP1189-1208.

Pearce, L (2003) Shorter hours for junior doctors are to be legally enforced next year, leaving trusts to find other ways of getting their work done. *Nursing Standard,* February, 12, Vol. 17, No. 22. pp14.

Pearson, L (2004) Sixteenth Annual Legislative update: How each state stands on legislative issues affecting Advanced Nursing Practice. *Nurse Practitioner.* Vol.29, Issue 1, pp26-31.

Pearson, LJ (2009) The Pearson Report: The annual state-by-state national overview of Nurse Practitioner legislation and healthcare issues. *The American Journal for Nurse Practitioners.* Vol.13, No2, pp4-82.

Perez-Cuevas, R, Guiscafre, H, Munoz, O et al. (1996) Improving physician prescribing patterns to treat rhinopharyngitis. Intervention strategies in two health systems of Mexico. Soc. Sc. Med 42(8): 1185-94.

Petti, C.A, Polage, C.R, Quinn, T.C, Ronald, A.R & Sande, M.A (2006) Laboratory Medicine in Africa: A Barrier to effective Health Care. Clinical Infectious Disease, 42:377-82.

Ploncynski, D, Oldenburg, N & Buck, M (2003) The past, present and future of nurse prescribing in the United States. Nurse Prescribing, Vol.1, No.4, pp.170-174.

Pontin, D & Jones, S (2007) Children's nurses and nurse prescribing: a case study identifying issues for developing training programmes in the UK. Journal of Clinical Nursing, Vol.16:540-548

Pope, C & Mays N (2006) (eds.) Qualitative research in health care. Third edition. Massachusetts : Blackwell Publishing.

Porter, S (1992). Women in a women's job: the gendered experience of nurses. *Sociology of Health & Illness,* Issue14, No.4, p510-527.

Porter,S.A (1991) A participant observation study of power relations between nurses and doctors in a general hospital. *Journal of Advanced Nursing* 16:728-735.

Prata, N, Montagu, D & Jeffreys, E (2005) Private sector, human resources and health franchising in Africa. Bulletin of the World Health Organization, 83(4).

Pratt, M.G (2009) From the editors, For the lack of a Boilerplate: Tips on writing up (and Reviewing) qualitative Research. *Academy of Management Journal.* Vol.52, No.5:856-862.

Preux, P-M, Tiemagni, F, Fodzo, L, Kandem, P, Ngouafong,P, Ndonko, F, Macharia, W, Dongmo, L and Dumas, M (2000) Antiepileptic Therapies in the Mifi Province in Cameroon. *Epilepsia,* Vol.41, No. 4, pp432-439.

Pulcini, J (2002) Tracking Nurse Practitioner prescribing trends. *The Nurse Practitioner.* 27, No.10: pp38-43.

Raynor, D.K, Savage, J & Knapp, P (2004) We are the experts: People with Asthma talk about their medicine information needs. *Patient Education and Counselling.* Vol.53, Issue 2, pp167-174.

Read, S M, & George S (1994) Nurse practitioners in accident and emergency departments: reflections on a pilot study. Journal of Advanced Nursing. Vol.19, Issue,4: 705-716.

Read, S.M, Jones,NMB, & Williams, B.T (1992) Nurse practitioners in accident and emergency departments: what do they do? British Medical Journal. Vol. 305: 1466-1470.

Redman, T & Wilkinson, A (2002) The informed Student Guide to Human Resource Management. United Kingdom: Thomson Learning.

Redshell, S.A & Cheater, F.M (2008) Nurses' role in primary care: developments and future prospects. *Quality in Primary Care,* 16: 69-71.

Reid, N.G & Boore, J.R.P (1987) Research Methods and Statistics in Health Care. London: Edward Arnold.

République du Cameroun (1992) Dèclaration de politique Sectorielle de Sante, Yaounde: MINSANTE

République du Cameroun (2001) Stratègie Sectorielle de Santé, Yaounde: MINSANTE.

Reveley, S (1998). The role of the triage nurse practitioner in general medical practice: An analysis of the role. *Journal of Advanced Nursing,* 28(3), 584-591.

Reverby, S (1990) The duty or right to care? Nursing and womanhood in historical perspective. In circles of care In Abel, E.K & Nelson. M.K (eds.) Albanny: State University of New York Press.

Richardson, G & Maynard, A (1995) Fewer doctors? More Nurses? A review of the knowledge base of the doctor-nurse Substitution. Discussion Paper, 135.

Richardson, G, Maynard, A Cullum, N & Kindig, D (1998) Skill mix changes: sunstitution od service development? Health Policy. Vol. 45, Isse 2, P119-132.

Richie, J; Lewis, J & Ellam, G (2003) Designing and selecting samples. In Richie, J & Lewis, J (eds) Qualitative research practice. A guide for social science students and researchers9pp.77-108) Thousand Oaks, CA.: Sage.

Riesmann, C.K (1993) Narratives Analysis. London: Sage.

Riessman, C.K; Quinney (2005) Narrative In Social Work: A critical review. London: Sage publications.

Ritchie, J & Lewis, J (eds.) (2006) Qualitative Research Practice: A Guide For Social Science Students and Researchers. London : Sage Publications Ltd.

Ritchie, J & Lewis, J (eds.) (2003) Qualitative Research Practice: A Guide for Social Science Students and Researchers. London: Sage.

Ritchie, J, & Spencer, L (1994) qualitative data analysis for applied policy research. In Bryman, A; Burgess, R.G (eds.), Analyzing qualitative data. London: Routledge, pp173-194.

Robotham, A & Frost, M (eds.) (2005) Health Visiting: Specialist Community Public Health Nursing. Second edition. Edinburgh: Elsevier, Churchill Livingstone.

Rodden, C (2001) Nurse prescribing: views on autonomy and independence. British Journal of Community Nursing 6, 350-355.

Romney, A K., Batchelder, W & Weller, S. C (1986) Culture as consensus: A theory of culture and informant accuracy. American Anthropologist, 88 (3)13-38.

Rosenfield, A.G, & Limcharoen, C (1972). Auxillary Midwife prescription of Oral Contraceptives: An experimental project in Thailand. *Am. J of Obste & Gynecol.* 114: 942-949.

Rosenfield, A.G, Heachudha, C, Asavasena, W & Varakamin, S (1971) Thailand: Family Planning Activities 1968-70. Stud. *Fam. Plann.* 2: 181-191.

Ross, D.A & Vaughan, P (1986) Health Interviews survey in developing countries: A methodological review. *Studies in Family Planning.* Vol. 17, No.2, pp78-94.

Rowe A.K, Rowe S.Y, Snow R.W, Korenromp E.L, Armstrong Schellenberg J.R, et al. (2006) The burden of malaria mortality among African children in the year 2000. *Int J Epidemiol* 35: 691–704.

Ryan, G.W (1998) What do sequential patterns suggest about the medical decision-making process?: Modelling home case management of acute illnesses in a rural Cameroonian village. *Soc.Sci. Med,* Vol.46, No. 2, pp209-225.

Ryan, G & Bernard, H.R (2004) Techniques to identify themes in qualitative data, http://.analytictech.com/mb870/ryan-bernard_techniques_to_identify_themes_in html (accessed September 2004).

Rycroft-Malone, J, Latter, S & Yerrell, P (2001). Consumerism in Health Care: the case of medication education. *Journal of Nursing Management,* 9: 221-230.

Rynes, S.L , Gerhart, B & Minette. K. A (2004) The importance of pay in employee motivation: Discrepancies between what people say and what they do. Human Resource Management, Vol.43, No. 4, pp381-394.

Sachs, J (2005) The End of Poverty: How can we make it happen in our lifetime. London: Penguin Group.

Sailes, P (2009) The importance of Continuing professional development (CPD) For A DEA, 27TH Jan. http//ezinearticles.com/?The-importance –of-continuing-profcssional-Development-For-a-DEA&id=1727321, Accesses 2nd Feb, 2010.

Salvage, J & Smith, R (2000), Doctors And nurses: doing it differently. *British Medical Journal (*International ed.) 320, Issue 7241: 1019-1020.

Sandelwski, M (Focus on qualitative methods: Sample sizes in qualitative research. Research in Nursing & Health, Vol.18, pp 179-183.

Sandelowski, M (2000) Focus on Research Methods: Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-methods studies. Research In Nursing & Health, Vol. 23, pp 246-255.

Sauerborn, R, Nitayarumphong & Gerhardus, A (1999) Strategies to enhance the use of health systems research for health sector reform. Tropical Medicine and International Health, Vol.4, No.12 pp.827-835.

Scheper-Hughes, N (1992) Death without weeping: The violence of everyday life in Brazil. Los Angeles: University of California Press.

Seidman, I (1998) Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences. New York: Teachers College Press.

Shaw, C.D & Kalo (2002) A background for national quality policies in health systems. Copenhagen:WHO Regional Office for Europe.

Shelty, P (2010) Innovating for the health of all. 16-20 Nov. Havana, Cuba. Geneva: Global Forum for Health Research.

Shenton, A.K (2004) Strategies for ensuring trustworthiness in qualitative research projects. Education for information, **22**:63-75.

Shum, C, Humphreys, A, Wheeler, D, Cochrane, M, Skoda, S, Clement, S (2000) Nurse management of patients with minor illness in general practice: multicentre randomized control trial. *BMJ.* 320:1038-1043.

Shumbusho, F, Van Griensven, J, Lowrance, D Weaver, MA, Price, J & Binagwaho, A (2009) Task shifting for scale-up of HIV Care: Evaluation of Nurse-Centred Antiretroviral Treatment at Rural Health Centres in Rwanda. *PloS Medicine,* Vol.6, Issue, 10:1-12.

Silverman, D (2005) Doing Qualitative Research. London: Sage.

Sim, J & Wright, C (2000) Research in Health Care: Concepts, Designs and Methods. Cheltenham: Stanley Thornes publishers Ltd.

Smith, B. A (1999) Ethical and Methodologic benefits of using a reflexive Journal in Hermeneutic-Phenomenologic research. *Journal of Nursing Scholarship* Vol.31, Issue 4:359-363.

Sodha, M, McLaughlin, M, Williams G & Dhillon, S (2002) Nurses' confidence and pharmacological knowledge: a study. *British Journal of Community Nursing* 7, 309-315.

Stake, R (1995). The art of case study research. Newbury Park, California, Sage publications.

Stark, R (1997) Nurses and Midwives: nurse practitioners in medically underserved rural areas. World Health, 5,30.

Stark, R, Nair, N.V.K; & Omi S (1999) Nurse practitioners in developing countries ; Some ethical considerations. *Nursing Ethics 6* (4) p273-277.

Stein, C.M, Todd, W.T.A, Parrenyatwa, D;, Chakonda, J & Dizwani, A.G.M (1984). A Survey of antibiotic use in Harare primary care clinics. *Journal of Antimicrobial Chemotherapy.*14 , 149-156.

Stein, L.I, Watts, D.T & Howell, T (1990) The doctor nurse game revisited. Nursing Outlook, Nov/Dec:264-268.

Stenner, K & Courtenay, M (2007) A qualitative study on the impact of legislation on prescribing controlled drugs by nurses. *Nurse Prescribing,* 5(6), 257-261.

Stenner, K & Courtenay, M (2008) The role of inter-professional relationships and support for nurse prescribing in acute and chronic pain. *Journal of Advanced Nursing.* Vol. 63, Issue 3, pp276-283

Stenner, K, Carey, N & Courtenay, M (2009) Nurse prescribing in dermatology: doctors' and non-prescribing nurses. *Journal of Advanced Nursing* 65(4), 851-859.

Stockwell, M.L, & Shulz R.M. (1993) Medical compliance: the patient's perspective. *Clinical Therapeutics,* 15: 593-606.

Stott, N, Kinnersley, P & Jones Elwyn, G (1997) Measuring general practice-based primary care: generic outcomes. *Family Practice,* Vol. 14, No. 6, pp486-491.

Stredwick, J (2002) Managing people in a small business. The Sunday Times Business Enterprise Guide. London : Kogan Page.

St. Francis School of Nursing and Midwifery (2006) Organization of Training: State Enrolled Nurse and Midwives, Proposed programme: Syllabus for the Higher National Diploma (HND) in Nursing. St Francis Higher institute of biomedical studies. Bokoko, Buea Cameroon.

St. Theresa Catholic Medical Centre Mambu-Bafut (2007) Annual Report. St TCMC.

Swanborn, P (2010) Case Study Research: What, Why and how? Los Angeles: Sage Publications Limited.

Tellis, W (1997) Application of a Case Study Methodology. The Qualitative Report, Vol.3, No.3, September.

http://www.nova.edu/sss/QR/QR3-3/tellis2.html.

Tembong, A.C (1996) Health Care Provider Choice: The North West Province of Cameroon. *International Journal of Health Planning and Management,* Vol.11: 53-67.

Thorne, S (2000) Data analysis in qualitative research, Evidence Based Nursing. Vol.3: 68-70.

Tsui, A.s & Wu, J.B (2005) The new employment relationship versus the mutual investment approach: implications for human resource management. Human Resource Management. Vol. 44, No.2, pp 115-121.

Tye, C, & Ross, F (2000) Blurring boundaries: professional perspectives of the emergency nurse practitioner in a major accident and emergency department. *Journal of Advanced Nursing* 31, 1089-1096.

Ulrich, B (1992) Leadership and Management according to Florence Nightingale. Norwalk, CT: Appleton & Lange.

UNDP (1998) Over-coming Human Poverty. New York; United Nations Development Programme.

UNDP (1999) Poverty in Cameroon. Human Development Report. UNDP, Yaounde, USA: Greenwood Press.

Unger, J-P, Paepe, P.D & Green, A (2003) A code of best practice for disease control programmes to avoid damaging health care services in developing countries. *International Journal of Health Planning and Management.* 18: S27-S39.

United Nations (2000) Implementation of the first United Nations Decade for the Eradication of Poverty (1997-2006). Report of the Secretary-General, A/55/21, pp1-20.

Utzinger, J, Wyss, K, Moto, D.D, Tanner, M & Singer, B.H (2004). Community health outreach program of the Chad-Cameroon petroleum development and pipeline project. *Clin Occup Environ Med.* 4(1):9-26.

Van Der Geest, S (1987) Self-care and the informal sale of drugs in South Cameroon. Soc. Sci & Med. 35:293-305.

Van Der Geest, S & Hardon, A (2006) Socio and cultural efficacies of medicines: Complications for antiretroviral therapy. *Journal of Ethnobiology and Ethnomedicine,* 2:48

Van Der Geest, S & Sarkodie, S (1998) The fake patient: A research experiment in a Ghanaian Hospital. *Social Science & Medicine.* Vol. 47, No.9, pp1373-1381.

Venning, P, Durie, A, Roland, M, Roberts,C, Leeses, B (2000) Randomised controlled trial comparing cost effectiveness of General Practitioners and Nurse Practitioners in Primary care. *BMJ*; 320:1048-1053.

Vermeire, E, Hearnshaw, Van Royen, P & Denekens, J (2001) Patient adherence to treatment:three decades of research. A comprehensive review. Journal of Clinical Pharmacy and Therapeutics, 26, 331-342.

Vigh, H.E "Social Death and violent Life Chance" In Christiansen, C, Utas, M & Vigh H.E (eds.) (2006) Navigating Youth Generating Adulthood; Social Becoming in an African Context. Sweden: Nordiska Afrikainstitutet-The Northern African Institute.

Vujicic, M, Zurn, P, Diallo, K, Adams, O & Pos M.D (2004) The role of wages in the migration of health care professionals from developing countries. *Human Resource Health.* Vol.2, pp1-14.

Vujicic, M (2005) Macroeconomic and fiscal Issues in scaling up Human Resources for Health in Low-Income countries. Background paper prepared for the World Health Report 2006. Human Development Network: The World Bank, Washington DC.

Waage, T "Coping with Unpredictability: Preparing for life in ngoundéré, Cameroon In Christiansen, C, Utas, M & Vigh, H.E (eds) (2006). Navigating Youth, Generating Adulthood; Social Becoming in an African Context. Sweden: Nordiska Afrikainstitutet-The Northern African Institute.

While, A.E & Biggs, K.S.M (2004) Benefits and Challenges of nurse prescribing. *Journal of Advanced Nursing,* 45(6), 559-567.

White, A (1994) Pharmacology for nursing practice. *British Journal of Nursing* 3, (10) 506-509.

Whitehead M, Dahlgren, G & Evans T (2001) Equity and health sector reforms: can low-income countries escape the medical poverty trap? *The Lancet,* Vol. 358 • 833-836

Wilhemsson, S & Foldevi, M (2003) Exploring views of Swedish district nurses' prescribing-a focus group study in primary health care. *Journal of Clinical Nursing,* 12 pp643-650.

Williams, A & Jones, M (2006) Patients' assessments of consulting a nurse practitioner: the time factor. *Journal of Advanced Nursing,* 53(2):188-95.

Williams, A (2000). Nursing, Medicine and Primary care. Buckingham: Open University Press.

Wilson, A (1991) Consultation length in general practice: a review. *Br J Gen Pract.* 41(344):119-122.

Winston, C.M & Patel, V (1995) Use of traditional and orthodox health services in Urban Zimbabwe. *International Journal of Epidemiology;* 24: 1006-1012.

Wooten, L.P & Crane, P.C (2003) Nurses as Implementers of Organizational Culture. *Nursing Economics,* Vol.21, No.6: 275-279.

World Bank (2000) World Development Report 2000-2001: Attacking Poverty. Hendon, VA, World Bank Publications.

World Bank (2004) The World Development Report: Making services work for poor people. New York: Oxford University Press.

World Health Organization (2005) Strengthen health Systems, save more lives. An insight into WHO's European health systems' strategy, Copenhagen:WHO.

World Health Organization (2010) www.who.int/whosis/whostat/2010/en.

World Health Organization (WHO) (2001a) Strengthening Nursing and Midwifery Progress and future directions Summary document 1996-2000. WHO/EIP.OSD/2001.5, Geneva: WHO.

World Health Organization (2006) The world Health Report 2006. Working together for Health. Geneva: WHO.

World Health Organization/ UNICEF (1978) Primary Health Care. WHO, Geneva, p24.

World health Statistics. Retrieved 11th August 2010(www.who.int/whosis/whostat/2010/en.)

Wright, D, Flis, N and Gupta M (2008) The 'Brain Drain' of physicians: historical antecedents to an ethical debate, c. 1960–79. *Philosophy, Ethics, and Humanities in Medicine* , 3:24

Wright, M & Clark, D (2006) Hospice and Palliative Care in Africa: A review of developments and challenges. Oxford: Oxford University Press.

Yin, R.K (1994) Case Study Research: Designs and Methods. Second Edition, Berverly-Hills, CA: Sage.

Yin, R. (1992) The case study method as a tool for doing evaluation. Current Sociology; 40, 119-137.

Yin, R.K (1999) Enhancing the quality of case studies in health service research. Health Services Research, 34, 1209-1224.

Yin, R. K. (2003) Case Study Research Design and Methods, Third edition, London: Sage

Yin, R. K. (2009) Case Study Research Design and Methods, Fourth edition, London: Sage

Zwerdling, M (2004) Postcards of Nursing: A worldwide Tribute. Philadelphia: Lippincott Williams &Wilkins.

APPENDICES

Appendix 1

Context of the research:

1*Cameroon's political, socio-economic, cultural context and health care system.*

Diagnosing and prescribing by nurses in Cameroon cannot be fully understood and appreciated without a description of macro and micro factors which impact on health and health care delivery.

1.1 Geography

Physical, demographic and socio economic factors are major determinants of health. Cameroon has a population of approximately 19.088 million, 57% of the population living in urban areas while the remaining 43% is sparsely distributed over a wide geographical rural area (WHO, 2010). It has a surface area of 475,440 square kilometres (183,569 square miles) on the Atlantic coastline of West Africa. It is bordered by Nigeria to the West, Chad to the North East, Central African Republic to the East, Congo, Gabon and Equatorial Guinea to the South. Yaoundé is the political capital and Douala, the economic capital (www.Camnet.cm) . Cameroon has often been described as Africa in miniature (Mbaku, 2005) because of its diverse vegetation which ranges from the deep equatorial forest in the South to the semi desert vegetation around Lake Chad in its northern tip, passing through the rolling grass fields. Its population is equally diverse with representatives of virtually all the physical traits found in the continent. It is a tropical country situated above the equator and has two seasons: the rainy season and the dry season. Temperatures range between 15 and 40 degrees centigrade. The climate is savannah in the north while the southern area is thick rain forest, a fertile breeding ground for the anopheles mosquito which transmits malaria parasites accounting for why malaria is endemic in Cameroon. Malaria's enormous burden has been noted (Nkematabong, 2004; Rowe et al., 2006). Malaria is a leading cause of mortality amongst children in Sub-Saharan Africa.

1.2 Politics.

The Political system drives health policy and organisation of health services. Cameroon is an independent and democratic country although the constitutions gives the president substantial powers. It is subdivided into ten administrative regions, each headed by an appointed governor. It has a multiparty system of government with a presidential political system. The president appoints the prime Minister and head of government who in consultation with the President appoints the ministers. There are about 30 ministries including the Ministry of public Health (Ako et al. 2006).

Legislative power is held by the parliament, which consist of the National Assembly and the Senate. Parliament adopts laws and has oversight over the activities of the government. The National assembly consists of 180 members elected by direct and secret universal suffrage to serve a renewable term of five years (Mbaku, 2005).

1.3 Families.

Members of a family are related by blood, marriage and adoption. There is a preference for large families. Given high infant mortality rate especially in rural areas, having a large family ensures that the family has surviving children. However, traditional views on gender and family have significantly been affected by increased levels of literacy amongst women and migration. Foreign educated Cameroonian women and men are opting for smaller families and these same groups tend to favour monogamous marriages even though some still favour polygamy. Raising children is the job of the entire village.

Close family ties and a sense of community are valued. People are defined in terms of their family ties. There are no individuals but families. It's not uncommon to be asked "Which family does this child come from?" It is perfectly acceptable to be told off by an older member of the public for doing something wrong. In some cases one even gets a smack. And if your parents get to find out about your misdemeanour then you get punished again. Communal parenting is commonplace. Respect for elders is highly valued. The elderly are respected for their knowledge, experience and wisdom which they in turn pass down to future generations.

Cameroon's rural agrarian economy encourages and supports the practice of polygamy and large families due to the fact that agriculture is labour intensive. Family members socialize children in the customs and traditions of the group. The family maintains discipline and compliance with rules. In rural areas, the family functions as a production unit which provides for the needs of the family and also generates wealth. A family serve as a form of insurance and welfare for the elderly, unemployed, sick and the needy. Children provide for their parents in their old age. Those who are economically successful are expected to share their wealth with the less fortunate of the extended family. There is a Bantu philosophy "Ubuntu" – a humanist philosophy focusing on allegiances and relations with each other. It is common to hear someone in Cameroon say "If your brother is at the top of a plum tree, you will eat a black/ripe plum" Or " If your brother is in a noble house then there is no chance of you standing outside" In summary, we must look after our own. The sense of sharing means people sometimes share medication that has been prescribed for a single person with someone who is suffering from similar symptoms. The population in rural areas is mixed but mostly made up of older people. Increasing deaths from diseases such as HIV/ AIDS mean the older people are left to look after orphans and the sick youths.

Those living in the rural areas are mainly farmers hence the need for larger families to cultivate the farms. The main occupation is farming with a clear division of labour. While the men cultivate mainly, cash crops (cocoa, coffee, banana, oil palm) women produce, although not exclusively, foodstuff for consumption and to sell the surplus. Younger children on the other hand, do household chores and babysitting. Some people farm just to have enough to feed the family and others farm for both family consumption and for commercial purposes. Cameroon's transport system does not appear adequate to meet the requirements of moving goods and people. By the mid eighties, Cameroon had about 62,000kilometres of road, only 2,500 kilometres of which were paved, making travelling during the rainy season particularly tedious (DeLancey, 1989 cited in Mbaku, 2005). Given poor infrastructure farmers face difficulties in transporting their produce to the market. Families need to sell their harvest in

order to pay hospital consultation fees and to be able to buy drugs and settle hospital bills. Sometimes due to long distances and bad roads, very critically ill patients die on the way to a hospital when their condition cannot be treated at rural level. Lower socio-economic status has a correlation with lower health status.

1.4 Economics/Poverty

Gross National Income per capita in 2008 was 2180. Approximately 43% of Cameroonians live in rural areas and are engaged primarily in agriculture which is the mainstay of the economy, producing mainly coffee, cocoa, oil palms, banana, timber, cotton, rubber. The services sector is the second largest employer of labour in Cameroon. In 2001, the total per capita expenditure on health care was international $42 or 3.3% of the GDP. The WHO overall health system performance score places Cameroon 164 out of 191 countries. The gross national product per capita is 610 US dollars. The UNDP carried out an in-depth analysis and noted that poverty besides being dynamic was also on the increase in Cameroon. According to UNDP, in 1996, 53% of the population of Cameroon was rated as poor (UNDP, 1998; 1999).The figure dropped to 40.2% in 2001 IMF, 2003, cited in World Bank, 2004. Poverty was further categorized as follows in Cameroon; farmers have a higher rate of poverty (57%). 50% of the rural population are poor as compared to 22% of the urban population. There is also a gender dimension of the state of poverty in Cameroon, with 52% of the poor being women (UNDP, 1998). These people are considered poor because they cannot meet the basic family needs of clean water, food, clothing, shelter, education, general sanitation, and health. (Fonjong and Endeley, 2004; Sachs, 2005).

Previous studies have shown that price, income and distance are important determinants of choice of health provider (Heller, 1982; Chernichovsky et al., 1986 cited in Ndeso Atanga 2003). Patients seek inexpensive and physically proximate health providers and the poor are more likely to seek inexpensive and closer facilities. The poor spend half of their income on malaria treatment (Nkematabong, 2004). Many health care professionals in Cameroon have expressed concern that many patients are unable to follow treatment recommendations for economic reasons (Labhardt et al. 2009).

Poverty and health are inextricably interrelated and the poor are the most affected if faced with health care costs. An estimated 40 % of the population of Cameroon are living below the national poverty threshold and 98.3% of private health care costs are paid out of pocket. Less than 2% have health care insurance. The rest have to pay for health care out of their pocket (World Bank, 2004, WHO, 2008 cited in Labhardt et al. 2009, Chabal, 2009). Poverty is the single most important factor of morbidity and mortality. Poverty provides the conditions in which infectious diseases flourish (Greenwood, 1998). Chabal (2009) observed that the cost of health care treatment is relatively high if not prohibitive for most people in developing countries. The gap between the rich and the poor continues to widen. The burden of ill health and health inequality is high in Cameroon. Illness has often been cited as a cause of poverty in Africa. But, Chabal (2009) contends that Africans are not poor because they are ill, rather they are ill because they are poor. Because of the culture of strong family ties, the illness or death of a family member, particularly if such a person was the main bread winner in the family has a significant impact on the rest of the family.

1.5 Millennium Development Goals (MDG's).

Health issues are central to the MDGs which are internationally agreed targets. The health related MDGs as listed by WHO, 2010 are as follows:

1) Eradicate extreme poverty and hunger.
3) Promote gender equality and empower women.
4) Reduce child mortality
5) Improve mental health
6) Combat HIV/AIDS, malaria and other diseases
7) Ensure environmental sustainability
8. E) Access to affordable essential medicines

Despite government health service reforms poverty reduction strategy initiatives, there remains a striking need for improved accessibility to quality medical care and training of doctors and nurses to be able to care for patients with malaria, HIV/AIDS, TB etc. (Global Health Fact, 2005)

The Millennium Declaration to halve poverty by the year 2015 alongside other objectives of the MDG such as, to increase substantially the number of doctors, nurses and other medical personnel is one framework within which countries and the international community are addressing health needs of the global population. Though some of the objectives of the MDG's specifically concerns health care, it could also be argued that they are cross-cutting because a healthy population provides a solid foundation for the attainment of all the MDG's.

1.6 Culture.

Hofstede (1980) concurs that the appreciation of the national culture is imperative to fully understand the behaviours of individuals within an organization. National cultures influence behaviour to some extent (Hofstede, 1991). Similarly, Markus & Kitayama (1991) posit that culture is pervasive, yet has a powerful influence on human behaviour and interaction. Culture transmits values to its members. The notion of culture refers to individuals' beliefs and values and how reality is seen and interpreted, how individuals behave and how things are done in a given setting. These shared values mediate the group members' beliefs as concerns, for instance health and preferred avenues to seek health care. Health beliefs and practices are integrated into one's ethnic and cultural orientation (Pachter 1994 cited in Mainous et al. 2008). Physical illness is not divorced from the socio-cultural context. Schütz, (1973) cited in Czarniawska-Joerges (1997), posits that we cannot conduct research on human behaviour if we ignore its' intentions. Similarly, we cannot understand human intentions if we ignore the settings in which they make sense. The settings in this case are the country, the health care organization and practices of nurses.

1.7 Traditional Beliefs and the use of traditional healers.

In Cameroon, causative agents of illnesses can be explained in traditional and Western ideologies. Traditional healers remain a popular alternative to Western medicine (Lantum, 1977, 1985, Dean, 1981, 1986, 1989, cited in Tembon 1996; Ndeso-Atanga, 2003; Labhardt, 2010). Theories of causes of disease include witchcraft, or the wrath of the gods, leading people to seek treatment from traditional doctors. It is widely believed that illness can be

caused through poisoning by one's enemy, for example, because of a dispute over a piece of land (land boundary disputes) or perception that property/inheritance has been unfairly distributed. Illness is also perceived from a modern medical perspective, a belief in the germ theory, illness caused by bacteria or viral infection etc. Consequently, an individual's health belief will influence where they seek health care. These beliefs help in providing psychological care, explaining causes of diseases as well as enabling individuals to cope with complex issues.

Patients and relatives have several options in the face of poor health. They have a choice of traditional and modern medicine. There is a real problem in that very often people do not look for scientific explanations to an illness. The belief in traditional doctors and witch doctors is quite strong. This in some cases has been noted to be problematic, making it difficult for nurses to get patients to accept their diagnoses and to adhere to prescribed treatment.

The plurality of health care delivery in Cameroon has been noted by other writers. Ryan (1998) recognized that most of the world's medical care is in the hands of lay people. In pluralistic medical settings, a patient chooses what to do and the sequence in which to do so. Ryan (1998) carried out a study in a small Kom village in Cameroon. He concluded that the villagers had six different sources where they can seek health care. First of all, the patient will delay taking any action, ignoring symptoms whilst waiting to see if the illness will go away. Secondly, the patient uses home remedies which may come in the form of a powder, paste, liquid from boiled herbs. In most cases the patient will seek advice from family members, friends, neighbours and the community. Thirdly, the patient can self medicate with drugs bought from hawkers or from a local drug store. Most often, the drug sellers are not trained medical personnel, so what limited medical knowledge they possess has been gained informally. The key point here is that they are confident and convincing, particularly to the lay person and more so to those who are illiterate. How well informed the drug sellers are, is a key question which needs addressing but not in this thesis. Fourthly, the patient could go to a traditional healer, preferably a traditional doctor who has a reputation for curing illnesses, with a high success rate mainly from word of mouth. Fifthly, the patient could go to a clinic. In the Cameroon case, it could be a government-sponsored clinic or a privately-managed clinic owned by an individual or groups of individuals or a clinic owned and managed by missionaries. Sixthly, the patient could go and consult with a nurse in the nurses' house and finally, the patient could go to the district or General hospital.

According to the theory of home case management for acute illnesses espoused by Ryan (1998), lay people minimize uncertainly by identifying illnesses that require particular health actions and by delaying action. Secondly, the lay person minimizes costs by choosing the less expensive treatment and thirdly, the layperson maximizes treatment variety whilst hoping that ultimately, they will find a treatment which will cure the illness.

Mills et al. (2002) note that in low-income countries, private and traditional health care services are popular because they are often cheap and are adjusted to the purchasing power of the clients, and even partial doses of drugs are sold. Preux et al. (2000) noted that there prevails a lack of confidence amongst the patients studied towards orthodox/conventional medicine in the treatment of some diseases especially epilepsy. In many cases patients seek traditional healers because they cannot afford the cost of modern medicine or cannot access it

(Winston, & Patel, 1995) Cost was found to be a significant factor in influencing where such patients seek health care. 62% reported that it is expensive to consult with a physician therefore a majority of patients consulted faith/traditional healers.

Lafond (1995), Fonn & Xaba (2001) and the World Bank (2000) wrote that poor quality of curative services at community level directly contributes to the phenomenon of high levels of self medication, low utilization of Community Health centres and over utilization of tertiary health care facilities, including traditional healers.

Labhardt et al. (2009) wrote about health beliefs that patients come into the consultation with their own concept of their illness. They found that health professionals react with more disapproval in consultations in which the patient's concepts are explicitly mentioned. This finding concurs with a study in Kenya by Kim et al. (1999). Health beliefs and practices are integrated into one's ethnic and cultural mindset. Health culture is a group's beliefs about health promotion and illness prevention, disease causation and health maintenance, treatment and care. It also forms the group's knowledge of where, when, and from whom to access care as well as the nature of the patient-provider encounter. DeSantis in D'Avanzo (2008) proposes that health care practices cannot be readily separated from the cultural values, beliefs and practices that shape the social structure, political economic systems and other socio-cultural institutions of a group including those of health care providers.

1.8 Public health spending.

Public spending over the years has fallen behind the needs of the population. For the year 2002, the health sector's needs were estimated at 320 billion Central African Francs (XAF), or 5% of GDP, while the health budget represented only 1.1% of GDP. As a result, individual households continue to foot the bill and are responsible for the burden of their health costs. Individuals' direct payments for health services account for 76% of total financing, compared to 18.5% from the government, and 5.5% from external financing. The Health expenditure as share of total government expenditure in 2002 was 7.8% as compared to 8.1% for Benin and Burkina-Faso respectively (Hinchcliff, 2004, cited in Vujicic, 2005).

The argument is that growing demand for health care services partly as a result of the above contextual factors puts certain pressures on the provision of health services. Consequently, the Cameroon government is carrying out several measures in an attempt to address the growing demand for health care. Such measures include: Government reforms, organization of health care system, issues of legislation, the role allocated to nurses in health care provision and training of nurses. Most governments recognise the fact that health care forms a significant aspect of social and public policy and as a result of limited resources the issue of cost containment, value for money and efficiency drives a lot of health care policy decisions.

1.9 Government reforms.

Legal and regulatory functions are at the core of enhancing accountability. All governments seek to contain the cost of health care. Enhanced roles for nurses require the review of legislation, policy and guidance (Miles et al. 2007). Limited institutional framework and political commitment have been known to influence care provision by nurses (Liese et al. 2003).

The primary intent of all Governments is to enhance health. Since the 1970s the health policies of African countries have been strongly influenced by international public health agenda such as Health for All and Primary Health Care (PHC). The ratification of *Charte de dévelopement sanitaire de L'Afrique* charter for health promotion in Africa in 1980 marked the start of a new period in health care reforms (Carbone, 2009). The implementation of the recommendations of the Alma Ata Conference based on PHC was consolidated nationwide in Cameroon in 1982 following a presidential decree which officially made it a government policy. Cameroon's health policy was centred on the notion of village-based primary health care. This led to a vertical program with emphasis on training and deployment of community health care workers including nurses and traditional birth attendants (Ndumbe et al. 2005). 1985 saw a reform process. The PHC strategy was substituted with a Reorientation of Primary Health Care. The main aim was to achieve health for all by the year 2000 as set by the WHO. To this end, Cameroon sought to reinforce the district health system and encouraged communities to participate in the management of their health.

Another significant factor which preceded health care reforms in Cameroon was the Bamako (Mali) Initiative launched in 1987/88 at the behest of the WHO and UNICEF. Its' objectives were:

- to ensure the right of all children and women to good quality essential health care,
- to strengthen and broaden partnership for health,
- to maximize efficient use of limited resources and
- To introduce packages of care including strategies to control new and re-emerging problems.

An evaluation of the program in 1988 found that the health system was unsatisfactory and was not on track to achieve the social goal of "Health for all by the year 2000". As a result, the Cameroon Government decided to re-think how it would shape the health care system in order to achieve these goals.

The impact of reforms initiated in the 80s has been a key determinant of the present health care situation in Cameroon. This was a time when many African countries were confronted with a dramatic fall in public revenue from exports of commodities. Cameroon's problems were compounded by the fact that the country went through a severe economic recession between 1986 and 1994 largely due to shrinking oil production, worsening terms of trade for the country's main commodity exports and collapsing world oil prices. These factors led to a sharp decline in public revenue and a stiff increase in the external debt.

By the late 80s the country bowed to external pressures from the international financial institutions and embarked upon a Structural Adjustment Program and implemented as series of reforms including a significant restructuring of the public service with negative effects on health services. Resources became even scarcer and the public health sector infrastructure deteriorated at a faster rate. Overall, per capita health expenditure almost halved from $15.3 in 1985-86 to $7.9 in 1991-1992 (Essomba et al. 1993; Carbone, 2009).

Appendix 2

Fig 3.4.1 Organization of the Health Care System in Cameroon in descending order

LEVEL	ADMINISTRATIVE UNIT	HEALTH UNITS/SERVICE DELIVERY		
1) CENTRAL (National)	Ministry of Public Health	Reference Hospitals		
		Yaounde(Capital)	General Hospital Central Hospital Obs / Gynae/Paed/ Hospital Teaching Hospital General Hospital Laquintinie	
		Douala (Economic capital)		
INTERMEDIARY 2) (Provincial)	PROVINCIAL DELEGATION	Provincial Hospital & Associates		
		Province	Prov. Head quarters	Associates
		Adamawa	Ngoundere	Lutherian
		Centre	0	CNPS
		East	Bertoua	0
		Far North	Maroua Yagoua	0 0
		Littoral	Nkongsamba	0
		North	Garoua	0

		North West (focus of this research)	Bamenda	BBH
		South	Ebolowa	0
		South West	Buea Limbe	0 0
		West	Bafoussam	0
PERIPHERAL 3) (District)	DISTRICT HEALTH SERVICE	DISTRICT HOSPITAL. The Health District is divided into Health Areas created around Health Centres or Sub medical Centres (Health centres offering the services of Medical practitioners) which are the entry point into the health system.		

Appendix 3

Table 2.2.2.2: Breakdown of hours of studies:

Year of study	Theory	Practical		Total
		Practical Demonstration	Probation	
Year One	700 hours	807 hours	602 hours	2109 hours
Year Two	655 hours	1.052 hours	946 hours	2653 hours
Year Three	632 hours	1.102 hours	1.000 hours	2734 hours

Sources : National Association of the professions of nurse, Midwife and Health technician (2005)

Appendix 4

Standards of proficiency for nurse prescribers.

Principle areas	**Knowledge**	***Competency***
Practice	Philosophy and psychology of prescribing	Understands the complexity of the external demands and influences of prescribing
	Up-to-date clinical and pharmacological knowledge	Makes an accurate assessment and diagnosis and generates treatment options
		Relevant to own area of expertise
	Principles of drug dosage, side effects, reactions and interactions	Able to prescribe safely, appropriately and cost effectively
	Communication, consent and concordance	Able to work with patients/clients as partners in treatment
		Able to assess when to prescribe or when to make an appropriate referral
		Able to refer back to a medical practitioner when appropriate.

Source: Nursing and Midwifery Council, (2006).

Appendix 5:

Prescribing Competency framework for nurse Prescribers

Establishing options	**Communicating with patients**	**Prescribing safely**
Makes a diagnosis and generates treatment options for the patient. Always follows up treatment	Establish a relationship based on trust and mutual respect. Sees patients as partners in the consultation. Applies the principles of concordance.	Knows the limits of own knowledge and skill, and work within them.
Takes a comprehensive medical history and	Listens to, and understands the patient's beliefs and	Knows when to refer to, or seek guidance from another

undertakes an appropriate physical examination	expectations	member of the team or a specialist
Make a working or final diagnosis by considering and systematically deciding between the various options	Understands the cultural, language and religious implications of prescribing	Prescribes a medicine only with up-to-date, adequate knowledge of its actions, indications, contraindications, cautions, dose and side-effects
Requests and interprets relevant diagnostic tests	Deals sensitively with the patient's emotions and concerns	Checks doses and calculations to ensure accuracy and safety
Views and assesses the patient's needs holistically	Does not create a relationship based on prior expectation of a prescription	Knows about common types of medicine errors and how to prevent them
Considers non-drug and drug treatment options	Helps patients to make informed choices about their treatment	Prescribes often enough to maintain confidence and competence
Assesses the effect of multiple pathologies, existing medication and contraindications of treatment options	Explains the nature of the patient's condition and the rationale behind, and potential risks and benefits of treatment options	Understands the need for, and makes accurate, clear ad timely records and clinical notes.
Assesses the risks and benefits to the patient of taking/not taking a medicine	Negotiates an outcome of the consultation that both the patient and the prescriber are satisfied with	Writes legible, complete and clear prescriptions which meet legal requirements.
Selects the most appropriate drug dose and formulation for the individual patient	Encourages patients (and carers) to take responsibility for their own health and self manage their conditions	
Monitors effectiveness of treatment and potential side effects	Adapts consultation style to meet the needs of the different patients	
Establishes and maintains a plan for reviewing the therapeutic objective/end point of treatment	Gives clear instructions to the patient about their medication	
Manages repeat prescribing	Checks patient's understanding of, and commitment to their treatment	

Source: National Prescribing Centre, 2001.

Appendix 6:

Shared decision-making: Competencies

Listening: Listens actively to the patient Gives the patient the opportunity to express their views Listens to the patient's views and discusses any concerns
Communicating: Helps the patient to interpret information in a way that is meaningful to them Uses open questions to elicit information Displays a non-judgemental attitude.
Context: With the patient, defines and agrees the purpose of the consultation Establishes how involved the patient wants to be in decisions about their treatment Keeps focused on the agreed aims of the consultation
Knowledge: Has up-to-date knowledge of the are of practice and wider health services Works in partnership with colleagues Is aware of practical resources and aids to help patient
Understanding: Recognizes that the patient is an individual Agrees goals with the patient Respects the patient's knowledge and expertise on their own condition
Exploring: Discuss illness and treatment options, including no treatment Elicit what the patients understands about their illness and treatment Explores what the patient thinks about medicine in general Discusses what the symptoms and/or illness may be caused by and how it can be managed Establishes whether the health professional or patient have similar or different views about an

illness and/or symptoms Discusses any misunderstandings about illness and / or treatments Encourages the patient to express positive and negative views about treatment / no treatment options
Deciding: Decides with the patient the best management strategy Explains own thought processes why medicines may or may not be necessary Provides full and accurate information about the pros and cons of all treatment options including any side effects Discusses prognosis and likely health outcomes Communicates uncertainty and risks to the patient Checks that the patient understands reasons behind the decisions Negotiates with the patient about the treatment decision Gives the patient time to consider the information before making a decision if appropriate Accept the patient's decisions Explores the patient's ability to undertake the agreed plan Checks that the patient knows what they are taking and why
Monitoring: Agrees with the patient what happens next Ensures that the patient knows what to do if their symptoms change or if a problem arises Expresses a willingness to review the decision

Sources: The Medicines Partnership, NPC, (2007)

Appendix 7

RESEARCH COVER LETTER PhD 2008

Dear Sir / Madam,

I am a second year doctoral student at Kingston University in the UK. I am writing to ask you for your help with my doctorate research which I am conducting under the supervision of Professor Christine Edwards who is the Director of The Institute of Leadership and Management in Health (ILMH) and Professor Paul Wainwright, a professor of nursing at Kingston University and St Georges Medical School in London.

The purpose of my research is to understand the role of nurses in prescribing for patients and the lessons that can be learned from the experiences of the different people involved: nurses, doctors, patients, nurse managers and the state.

In the course of the study, I would like to interview you in confidence for about an hour, at your convenience.

All the interviews will be treated as totally confidential. The names of individuals participating and the organisations will not be identified to ensure anonymity.

It is hoped that the findings will be useful in analysing any problems and the benefits of nurse prescribing, and identify the kind of support nurses need in the course of carrying out their diagnostic and prescriptive role. The findings will have implications for nurse training, assist in formulating health policies and also enable nurse managers to ensure efficient use of limited resources.

I will be contacting you in the next few days to arrange an interview.

Thank you for your Co-operation.

Yours faithfully,

Winnifred Ngum Groves

Appendix 8

SELF COMPLETION QUESTIONNAIRE.

(Please circle appropriate age group)

1) I am aged less than -25yrs,

26-30yrs

31-35yrs

36-40yrs

41-45years

46-50 years

50 and above

2) Sex: male or female? (*Please circle correct answer*)

3) What is your job title?

4) How long have you been in your current post?

5) Where did you train as a nurse? Here in Cameroon or abroad? (*please name training school*).

6) How long was your nurse training?

7) What qualifications do you hold? (*Please list*)

8) Was diagnosing and prescribing part of your nursing curriculum? Yes / No?

9) Have you gained any other qualifications since completing your nurse training? Yes / No (*If yes please name them*).

10a) Do you currently have a supervisor or a boss who oversees your work? Yes / No? If yes,

b) What is their job title?

11) Do you supervise other health care workers / nurses? Yes / No?

12) Do you diagnose and prescribe treatment to patients? Yes / No?

13) Is there a legislation / law permitting nurses to diagnose and prescribe treatment to patients? Yes / No?

14) What is the age group of the majority of patients you treat?

15) Are your patients mostly babies, older children, boys / girls, men or women (*Please specify*)

16) How many patients do you receive on average a day?

17) Please list the types of common illnesses that patients come to consult with.

18) Do you have a laboratory at the health centre / hospital? Yes / No?

19) What types of drugs are you allow to prescribe? (*Please name examples*)

20) Are there any drugs that you cannot prescribe independently? Yes / No?

21) Do you have a protocol or rules guiding your prescriptions for particular diseases? Yes / No?

22) Do you carry out home / out of station visits? Yes / No?

23) Do you carry out any referrals to doctors? Yes / No (*Please circle correct answer*), If so when? For example,

a) For cases you cannot handle? Yes / No?
b) Cases you don't know what to prescribe? Yes / No?
c) Other

Appendix 9

INTERVIEW QUESTIONS

NURSES:

1) How long have you been practicing as a nurse?
2) Before training as a nurse did you have any health care experience?
3) Do you have a formal job description? Are roles written down?
4) What exactly are your range of duties, functions, what do you do at the health centre?
5) Please tell me about some unusual circumstances that you have had to deal with in the course of your nursing duty.
6) Can you give me an example of a typical working day for you?
7) Please tell me about some unusual things you have had to do in the course of diagnosing and prescribing.
8)
9) What proportion of your time do you spend diagnosing and prescribing?
10) What are the consequences of this in terms of the time spent on other nursing functions?
11) How did the decision for nurses to diagnoses and prescribe come about?
12) Do you have a protocol for diagnosing and prescribing?
13) What is the procedure as the patients walk through the clinic door?
14) Who sees them first? Tell me how you process a patient? Tell me about the system for dealing with a patient.
15) How much independence do you have when diagnosing and prescribing treatment to patients.
16) Do you diagnose and prescribe alone?
17) How much autonomy /power do you have to diagnoses and prescribe?
18) Do you diagnose single-handedly or do you diagnose together with the doctor?
19) Do you diagnose the disease and then refer patients to the doctor for the Dr to prescribe medication / treatment?
20) Are there instances where the doctor diagnosis the disease and refers the patient to you for you to prescribe treatment?
21) Are there cases where the doctor, nurse, and patient sit together and agree on patient treatment plan?
22) Are there instances where the Dr assess the patient, diagnose the disease and prescribe medication and following from then, the patient makes subsequent / follow up treatment with the nurse e.g for repeat prescriptions?
23) Does the Dr. make the initial diagnosis and prescribing and the nurse sees the patient during follow up visits to change the time and dosage of the medication? For instance patients suffering from diabetes?

24) Can you make a decisions about whether or not a patient gets one drug (a better drug) which is most effective for their illness? While the poor patient gets the cheaper and less effective drug? Or does everyone get the same drug irrespective of ability to pay?

25) Do you work as part of a team or do you work independently? Can you phone up a Dr /senior colleague for advice? Are they accessible?

26) Do you have access to colleague e.g Drs., pharmacists, chief Medical Officer when you need advice?

27) How do doctors feel about your role in relation to diagnosing and prescribing? Are there any professional conflicts. Do nurse pose a threat to doctors as a result of their ability to diagnose and prescribe?

28) Are there any restrictions on what you can prescribe in terms of cost, for whom, and in terms of types of medication?

29) With relation to the nursing tasks you perform do you feel the curriculum of your nurse training prepared you adequately for the nursing functions you currently undertake?

30) Have you undertaken any post qualification courses and how useful have they been to your current job?

31) How would you rate learning on the job? Have you learned more by actually doing things or more from the theory learned at school?

32) Do you feel you have the required skills which enables you to diagnose and prescribe efficiently?

33) Which topics are covered in your nursing curriculum?

34) What additional training is available post-registration?

35) Where did you learn how to diagnose and prescribe?

36) Do you feel that your training adequately prepared you for your role in diagnosing and prescribing?

37) Do you feel you have the necessary equipment needed to enable you diagnose and prescribe patient treatment?

38) How satisfied are you with your current role of diagnosing and prescribing?

39) To what extent do you determine whether or not a patient sees a doctor.

40) What are the categories of patients you diagnose and prescribe for? Do you treat everyone that comes to you or do you treat only certain kinds of conditions or only certain kinds of patients e.g pregnant women only, children only, only the very poor?

41) Does a patient's background influence the way you diagnose and prescribe for them?

42) Do you feel that male nurses are given more or less responsibility and autonomy than female nurses in diagnosing and prescribing? Could it be that male nurses are actually seen as female or assume female characteristics when dealing with patients?

43) Are there performance targets in relation to your role of diagnosing and prescribing e.g costs targets, number of patients treated?

44) What are the advantages and disadvantages to you as a nurse and to the patient?

45) What are the difficulties you face in the course of diagnosing and prescribing?

46) What are the risks associated with diagnosing and prescribing? i.e risks to patients, to nurse ?

I'd like to finish now by going over some of the main questions people in the UK might ask about the consequences of nurse prescribing for patients. (This is an opportunity to clarify what the interviewee mean and to pick up anything I have missed).

Robert Maxwell's six dimensions of quality care.

(i) **Effectiveness**: Generally, are you able to give patients the best prescription available? What is the evidence that the prescription was effective as compared to when a doctor prescribes? Do you get a limited range of treatments if you see a nurse rather than a doctor? Is the nurse the best person to diagnose and prescribe than any other health care professional? Objective measures- Was the patient treated adequately for cuts, normal/abnormal pregnancy. Was operation successful? Were they prescribed the adequate level of drugs for their disease? Did they recover in normal time? Did they survive?

(ii) **Acceptability**: Would you administer same level of care to your relation? information about differences in treatment due to costs, social considerations, affordability, feasibility/one weeks rest when pt has to work in the fields, also some people prefer injections to tablets. Is it acceptable for male nurses to treat female patients etc or perhaps men not wanting to be treated for male problems). How humanely and considerate is the process of diagnosing and prescribing to the patient? If another person was observing you diagnose a patient's condition and prescribe medication / treatment, what would they think of your performance? In the process of all this is patient's privacy and confidentiality safeguarded? Key question again here is whether the various stakeholders feel they are getting the best treatment a nurse rather than a doctor prescribes.

(iii) **Efficiency**: How does the cost of diagnosing and prescribing by a nurse compare with that of other health care providers, ie, doctors? Have more time? Can deal with a wider range of health and care conditions (eg dressing wounds, time to talk, give general advice on health),

(iv) **Access**: What is the size of the catchment area for this health centre / clinic/hospital? Can people get your service when they need it? Are there any identifiable barriers such as inability to pay, long distance to come to the clinic, long waiting times at the clinic, breakdown / lack of equipment (sphignomanometer, microscope, stethoscope)? Do patients prefer to see a nurse because they are more accessible? Can be seen more frequently? etc?

(v) **Equity**: In relation to prescribing, are the patients being fairly treated relative to others? Are some people being dealt with less favourably because of their illness, social status, relation to nurse?

(vi) **Relevance**: Is the set up of the clinic and available resources the best that could be provided taking account of the needs and wants of the population / Community?

Are there enough staff to do the job? Are staff well trained. Are the staff motivated enough-better working conditions, better pay etc to do their job effectively? What effect does this have on diagnosing and prescribing by nurses?

THE STATE (LOCAL GOVERNMENT OFFICIALS)

(DEMOGRAPHICS)

i) Can you please tell me what your job title is?

ii) Where did you train as a doctor ? Cameroon, abroad?

iii) How long have you been practicing as medical doctor?

iv) Can you tell me your experiences of the health sector both here and abroad?

v) How long have you been in your current job?

vi) What is your role in this hospital?

vii) Can you give me an example of a typical working day for you?

1) What is the general situation with regards to the role of nurses in Cameroon?
2) What is your policy on deployment of nurses? How do you select and recruit nurses to work in different health care facilities e.g IHCCs?
3) To what extent are nurses involved in diagnosing and prescribing of medication / treatment of patients? How autonomous are they?
4) What is the context in which nurses are allow to diagnose and prescribe? eg. For particular diseases, particular drugs, a selective group of patients?
5) Has it always been the case for nurses to diagnose and prescribe patient treatment Or is their involvement in this role a recent development if so, why? What has brought about such a change?
6) Is there a legislation allowing nurses to diagnose and prescribe?
7) How did diagnosing and prescribing by nurses come about?
8) Do you have a code of practice / conduct for nurses in general as well as specific to diagnosing and prescribing?
9) What are the risks associated with nurse diagnosing and prescribing?
10) How are patients protected against such risks? Are there any documents on consumer/patient protection in relation to nurses diagnosing and prescribing?
11) What would you say are facilitating factors for nurses to be able to diagnose and prescribe effectively?
12) What are the barriers of effective diagnosing and prescribing by nurses?
13) Do you think that male nurses are given more or less responsibility and autonomy than female nurses?
14) What part does the government play in the training of nurses?
15) In your view, do you think the training received by nurses adequately prepares them in their role to diagnose and prescribe patient treatment? If not, what can be done about it?

16) Are nurses in way filling in the gap for skills shortages as a result of scarcity of doctors?

17) Are there any restrictions about where, what, to whom nurses can prescribe?

18) What are the advantages and disadvantages of nurses prescribing and diagnosing to the different stakeholders?

I'd like to finish now by going over some of the main questions people in the UK might ask about the consequences of nurse prescribing for patients. (This is an opportunity to clarify what the interviewee mean and to pick up anything I have missed).

Robert Maxwell's six dimensions of health care quality as seen on page 290.

PATIENTS:

Interview Questions for patients.

Age

Sex

Occupation

Location (place of residence).

1) Have you ever consulted with a nurse when ill ?
2) If yes, how long ago was your last consultation with a nurse?
3) Have you ever consulted with a doctor when ill?
4) If yes, how long ago was your last experience of consulting with a doctor?
5) When you did consult with a nurse was it for a minor condition or a serious condition, how would you describe it?
6) At what point did you decide to go and consult with a nurse?
7) What happens between the time that you are ill and the time that you finally decide to consult with a nurse?
8) Where did you go to consult with the nurse, at his /her home, health centre, private clinic, General hospital, mission hospital or other?
9) Would you normally expect a nurse or a doctor to treat you when you are ill?
10) When you are ill and have sought treatment who do you see first?
    a) A nurse?
    b) A doctor
    c) Seen by a nurse who then refers you to a doctor?
    d) Doctor who refers you to a nurse
    e) Seen by someone else, pharmacist, traditional doctor, other?
11) Would you normally expect a nurse or a doctor to diagnose your condition?
12) Would you normally expect a nurse or a doctor to prescribe your treatment?
13) Who would you prefer to see, a doctor or a nurse and Why?
14) Would you see the nurse for diagnosing or prescribing or both?
15) Do you have a choice of consulting with a doctor if you want to? If not why not?
16) Is it true that only nurses diagnose and prescribe in Health centres or does your experience vary with where you go?
17) How do you feel about a nurse diagnosing your condition?
18) How do you feel about a nurse prescribing your treatment?
19) Do you feel nurses are trained sufficiently enough to be able to diagnose diseases?
20) Do you feel nurse are trained sufficiently enough to be able to prescribe treatment for patients?

21) Overall, are there any advantages of consulting with a nurse?

22) Are there any disadvantages of consulting with a nurse?

23) Who do you feel is more likely to listen to your complaints during consultations, a doctor or a nurse? Please give me an example.

24) What about involving you in decisions about your care, who involves the nurse or the doctor? Please give examples of when this has happened.

25) Are nurses or doctors likely to take your views into account?

26) Have you generally been satisfied with your treatment from nurses? If not why not?

27) Do you feel that the treatment given to you by the nurse was the best available for your condition. Give an example.

28) In terms of cost who is it cheaper to consult with a doctor or a nurse?

29) Do you have a preference as to who you would like to consult with, male or female nurse? And Why?

30) Is it true that only nurses diagnose and prescribe medications in the health centres?

31) How do you feel about the nurse diagnosing your illness and prescribing your medication?

32) Do you think they are trained sufficiently to be able to diagnose and prescribe accurately?

33) What are the advantages of having the nurse diagnoses and prescribe your treatment?

34) What are the disadvantages of having a nurse diagnose and prescribe your treatment?

35) How do you feel about the quality of care provided by nurses?

36) What are the advantages and disadvantages of consulting with a) the doctor, b) the nurse?

I'd just like to finish now by going over some of the main questions people in the UK might ask about the consequences of nurse prescribing for patients. (This is an opportunity to clarify what the interviewee mean and to pick up anything I have missed).

Robert Maxwell's six dimensions of health care quality as seen on page 290.

DOCTORS:

Demographic Questions

i) Can you please tell me what your job title is?

ii) Where did you train as a doctor ? Cameroon, abroad?

iii) How long have you been practicing as medical doctor?

iv) Can you tell me your experiences of the health sector both here and abroad?

v) How long have you been in your current job?

vi) What is your role in this hospital?

vii) Can you give me an example of a typical working day for you?

1) How did nurse prescribing come about?
2) Do nurses prescribe independently of doctors?
3) Are there situations where the doctor assesses the patient arrives a diagnosis but refers the patient to the nurse for the nurse to prescribe treatment regime?
4) Are there situations where the nurse, patient and the doctor sit together and agree a treatment plan for the patient
5) Are there situations where the nurse diagnosis the patient's illness but then refers the patient to the doctor for the doctor to prescribe treatment?
6) Are there instances where the doctor diagnosis a patient's condition, prescribes treatment but the nurse decides to change the prescription?
7) Are nurse sufficiently trained for their role in diagnosing and prescription of medication / treatment?
8) How do you feel about nurses' role of diagnosing and prescribing?
9) What are the risks involved with nurses diagnosing and prescribing patient treatment?
10) Are there any restrictions about where, what, to whom and for what conditions nurses can diagnose and prescribe?
11) Do nurses refer cases they cannot treat to patients?
12) What are the facilitating factors of nurse diagnosing and prescribing?
13) What factors act as barriers to nurse diagnosing and prescribing?
14) What do you think are the advantages of nurses diagnosing and prescribing?
15) What are the disadvantages of nurses diagnosing and prescribing?
16) Do nurses respect their roles/ professional boundaries? Are there any professional conflicts between Drs and nurses?

I'd like to finish now by going over some of the main questions people in the UK might ask about the consequences of nurse prescribing for patients. (This is an opportunity to clarify what the interviewee mean and to pick up anything I have missed).

Robert Maxwell's six dimensions of health care quality as seen on page 290.

NURSE MANAGERS:

i) Can you please tell me what your job title is?

ii) Where did you train? Cameroon, abroad?

iii) How long have you been practicing as a nurse / chief medical officer?

iv) Can you tell me your experiences of the health sector both here and abroad?

v) How long have you been in your current job?

vi) What is your role in this health centre / hospital?

viii) Can you give me an example of a typical working day for you?

1) How did nurse diagnosing and prescribing come about?

2) To what extent are nurses involved in diagnosing and prescribing medication and treatment to patients?

3) How much independence do nurses have when diagnosing and prescribing treatment to patients.

4) Do you diagnose and prescribe alone?

5) How much autonomy /power do you have to diagnose and prescribe?

6) Do nurses diagnose single-handedly or do you diagnose together with the doctor?

7) Do nurses diagnose the disease and then refer patients to the doctor for the Dr to prescribe medication / treatment?

8) Are there instances where the doctor diagnosis the disease and refers the patient to you for you to prescribe treatment?

9) Are there cases where the doctor, nurse, and patient sit together and agree on patient treatment plan?

10) Are there instances where the Dr assess the patient, diagnose the disease and prescribe medication and following from then, the patient makes subsequent / follow up treatment with the nurse e.g for repeat prescriptions?

11) Does the Dr. make the initial diagnosis and prescribing and the nurse sees the patient during follow up visits to change the time and dosage of the medication? For instance patients suffering from diabetes?

12) Are there any restrictions about where, what, to whom and what conditions nurses can diagnose and prescribe?

13) What are the facilitating factors of diagnosing and prescribing by nurses?

14) What factors hinders the nurses' ability to diagnose and prescribe?

15) How do you monitor the work that nurses do in relation to diagnosing and prescribing?

16) What are the risks involved with nurses diagnosing and prescribing?

17) How do you ensure that nurses keep up to date with current practice?

18) How do you supervise the work that nurses do? What is the process of supervision?

19) Who is in charge of making sure that nurses have the required tools which will enable them perform their role of diagnosing and prescribing effectively?

20) How does nurse diagnosing and prescribing affect the quality of patient care?

21) What are the advantages and disadvantages of nurses diagnosing and prescribing? To a) patients b) nurses

I'd like to finish now by going over some of the main questions people in the UK might ask about the consequences of nurse prescribing for patients. (This is an opportunity to clarify what the interviewee mean and to pick up anything I have missed).

Robert Maxwell's six dimensions of health care quality as seen on page 290.