

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**

**ASSESSMENT OF THE QUALITY OF NEONATAL HEALTH CARE
AT THE PEDIATRIC UNIT OF THE UNIVERSITY OF GHANA
HOSPITAL**

**BY
AMMA ACHEAMPONG BOATENG
(10551564)**

**THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF
GHANA, LEGON IN PARTIAL FULFILLMENT OF THE
REQUIREMENT FOR THE AWARD OF MASTER OF PUBLIC
HEALTH DEGREE**

JULY 2016

DECLARATION

I, Amma Acheampong Boateng, declare that with the exception of references that have been cited in the work, this dissertation, which has been supervised according to the guidelines laid down by the University of Ghana, Legon is the result of my personal effort.

.....
Amma Acheampong Boateng
(Student)

.....
Dr Reuben Esena
(Supervisor)

.....
Date

.....
Date



DEDICATION

I dedicate this work to

Almighty God

Who is always with me!



ACKNOWLEDGEMENT

I am most grateful and thankful to the almighty God for his abundant grace and mercy upon my life. I also wish to express my sincerest appreciation and gratitude to my academic supervisor, Dr Reuben K Esena, who in spite of his very busy and tight schedule, took time off and painstakingly read through this research. His encouragement, advice, and recommendations helped to shape this proposal. I am also grateful to Dr. Genevieve Aryeetey for her various contributions. Indeed I am very grateful to them for their invaluable contribution to the successful completion of this work.



ABSTRACT

Background: Quality of care for neonates is one of the key factors that contributes to the survival of babies in the under-five group. So the assessment of the quality of care given at the first 28 days of the baby's life is very crucial and upon which improvement of health service delivery can be undertaken. The Donabedian model of quality of care was adopted in the assessment of quality of care (structure, process and output). The aim of the study is to explore on the perceptions about mothers of new-borns, availability of adequate and skilled human resources for neonatal care and equipment and care processes at the paediatric unit of the University of Ghana Hospital Legon.

Method: The study was a cross-sectional survey employing both qualitative and quantitative approaches. Exit interviews were carried out for 36 mothers whose neonate were admitted with neonatal morbidities, in-depth interview was done with 14 staff of the paediatric ward to analyse the availability of human workforce available for neonatal care delivery. Direct observation was done using the Ghana Health Service observation guide to assess the availability of equipment and care processes available. Descriptive analysis was done using Stata version 12 and interviews done were coded into themes for analyses.

Result: Mother's perception about care was portrayed by a high satisfaction index being 61.10% and their rate on neonatal care is 58.35%. Staff with skills in neonatal care were inadequate. Some basic equipment's for neonatal care were not available and some available equipment were inadequate for neonatal care at the paediatric unit of the University of Ghana Hospital Legon.

Conclusion: Mothers were dissatisfied with babies being put together with other babies in the same ward and staff also complained of the same situation, lack of adequate staff and basic equipment. It is recommended that the management get an intensive care unit with adequate staff and equipment.

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF TABLES.....	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS.....	xi
DEFINITION OF TERMS.....	xii
CHAPTER ONE	1
INTRODUCTION	1
1.0 Background	1
1.1 Problem statement	3
1.2 Conceptual Framework for Quality of Neonatal Health	5
1.3 Justification	7
1.4 objectives.....	7
1.4.1 General objective	7
1.4.2 The specific objectives of this study are to:	7
1.4.3 Research questions.....	8
CHAPTER TWO	9
LITERATURE REVIEW	9
2.1 Introduction.....	9
2.1.1 Historical roots of quality of care	9
2.1.2 Quality of health care	10
2.1.3 Quality of care in maternal and neonatal health	13
2.1.4 Perspectives model	14
2.1.5 The Patient	14
2.1.6 The health care provider.....	14
2.1.7 Health care managers	14

2.1.8 Characteristics model	14
2.2 Mothers perception on the quality of neonatal care	15
2.3 Availability of specialist skills in the workforce	16
2.4 Availability of equipment and supplies.....	17
2.5 Delivery Care processes.	19
2.5.1 Immediate new born care	19
2.5.2 Clean neonate birth	19
2.5.3 Cord care	20
2.5.4 Keeping New born warm	20
2.5.5 Resuscitation	21
2.5.6 Breastfeeding	21
2.6 Hand hygiene	22
2.7 Aseptic technique	22
CHAPTER THREE	24
METHODOLOGY	24
3.0 Introduction.....	24
3.1 Study Design.....	24
3.3 Study Area.....	25
3.3.1 University of Ghana Community.....	27
3.3.2 Profile of University of Ghana Hospital Legon.....	27
3.3.3 Study Population.....	30
3.3.4 Inclusion Criteria	30
3.3.5 Exclusion Criteria: Mothers of.....	30
3.4 Study variables.....	30
3.5 Sampling	31
3.6 Sampling Methods.....	32
3.7 Subject selection	32
3.8 Training of Research assistant	32
3.9 Data collection methods and tools.....	32
3.10 Quality control	33
3.11 Data processing and analysis	33
3.12 Audio Recording and Notes Taking.....	34
3.13 Direct Observation.....	34

3.14 Data Analysis for qualitative data	35
3.15 Ethical Consideration	36
3.16 Pilot study	37
3.17 Limitations	37
CHARPTEr FOUR.....	38
ANALYSIS OF FINDINGS	38
4.1 Introduction.....	38
4.2 Demographic characteristics of Mothers of neonates from the quantitative study	38
4.3 Demographic characteristics of clients satisfied and dissatisfied with the quality of neonatal care.....	40
4.4 Mothers perception with the indicators of quality of care	41
4.4.1 Environment of the surrounding of the antenatal clinic	41
4.4.2 Attending Antenatal.....	41
4.4.3 Communication skills	42
4.4.4 Competence of health worker	42
4.5 Rating of quality of neonatal care.....	43
4.6 Mothers overall satisfaction with care.....	44
4.7 Indicators of satisfaction	45
4.8 Qualification of Staff Respondents	45
4.9 Emerging Themes from the qualitative Study	46
4.9.1 Availability of Staff with skills in neonatal care	46
4.9.2. Lack of Equipment	50
4.9.3 Lack of a Neonatal intensive care unit (NICU)	51
4.9.4 Aseptic Procedures on the Wards	53
4.9.5. Availability of Protocols	54
4.9.6 Coping Strategies.....	55
4.9.7 Referral.....	56
CHAPTER FIVE	57
DISCUSSION.....	57
5.0 Introduction.....	57
5.1 Perceptions of Mothers on the Quality of Neonatal Care	57
5.2 Availability of Staff with Skills in Neonatal Care.....	59

5.3 Availability of Equipment and Care Processes of Neonatal Care	62
5.4 Aseptic Techniques	63
CHAPTER SIX.....	65
CONCLUSION AND RECOMMENDATION.....	65
6.0 Introduction.....	65
6.1 Clients (Mothers of New-borns) Perception on the Quality of Care for Neonates.	65
6.2 Availability of Adequate and Skilled Human Resources for Neonatal Care	65
6.3 Availability of Equipment and Care Processes of Neonatal Care	65
6.4 Aseptic Techniques.....	66
6.5 Recommendation	66
REFERENCES	68
APPENDICES	73



LIST OF TABLES

Table 1: Distribution of the Accra sub-metro	26
Table 2: Hospital Bed State at the University of Ghana Hospital Legon	28
Table 3: Staff Strength of the University of Ghana Hospital as at 1 st April, 2015.....	29
Table 4: Socio-demographic characteristics of mothers	39
Table 5: Demographic characteristics of mothers satisfied and dissatisfied with the quality of neonatal care.....	40
Table 6: Mothers perception with the indicators of quality of neonatal care	43
Table 7: Rating of quality of neonatal health care.....	44
Table 8: Mothers overall satisfaction with quality of neonatal care.....	44
Table 9: Indicators of satisfaction.....	45
Table 10: Demographic characteristics of staff respondents	46



LIST OF FIGURES

Figure 1: Conceptual Framework of Quality of neonatal health care (modified from Donabedian model (1998))......5

Figure 2: The theoretical framework for the emergence of quality of care 10

Figure 3: showing map of Accra sub-metro.....25

Figure 4: The university of Ghana hospital Legon showing the various departments. The unit under study is the children’s ward.25



LIST OF ABBREVIATIONS

ANC – Antenatal clinic

GHS – Ghana Health Service

MOH- Ministry of Health

UNICEF- United Nations Children’s Fund

WHO- World Health Organization



DEFINITION OF TERMS

Neonatal period: Babies under the age of 0-28 days. It's divided into early neonatal period, age less than seven days, and the remaining late neonatal period.

Neonatal care: the care of babies in the period immediately after their birth. The duration of the neonatal periods is from birth to 28 days.

Neonatal Mortality: The statistical rate of infant death during the first 28 days after live birth, expressed as the number of such death per 1000 live births in a specific geographic area or intuitions in a given time

Parity: the number of full-term children previously borne by a woman, excluding miscarriages and abortions in early pregnancy but including stillbirth.

Neonatal morbidity: is a term used to describe how often a disease occurs in a specific environment

Apgar score: describe the state and condition of the new-born immediately after birth. It comprises of 5 components: heart rate, respiratory effort, muscle tone, reflex irritability, and colour, each of which is given a score of 0, 1, 2 which is reported at 1 and 5 minutes after birth.

Neonatal sepsis: refers to the presence in a new born baby of a bacterial blood stream infection (meningitis, pneumonia, pyelonephristis or gastroenteritis in the setting of fever)

Phototherapy: is the use of visible light for the treatment of neonatal jaundice.

Quality care: A measurement of the health care received at the doctor's office, the local emergency room or during hospital stay.

Preterm birth: A live or stillbirth that takes place after at least 20 but before 37 completed weeks of gestational period.

Perinatal: this is the period immediately after delivery or birth. It starts from the 20th to 28th week of gestation and ends 1 to 4 weeks after birth.



CHAPTER ONE

INTRODUCTION

1.0 Background

As technology and medical science have advanced at a rapid pace the health care delivery system has challenges in its ability to provide consistently high quality of care (WHO 2006). This means that technical know-how and increased resources will not, in themselves, automatically lead to quality of health care delivery which populations and individuals normally expect (WHO 2006). Neonate's health and survival depends largely on the quality of care given to the new born. One of the most essential ways of reducing child morbidity and mortality is new born care, which often receives less attention (Yinger and Ransom 2003).

Before quality of care can be assessed a decision would have to be made on how health and our responsibility for it is to be defined, whether the assessments is to be of performance of practitioners only or also include that of patients and health care system and whether the amenities and management of inter personal process are to be included in addition to technical care (Donabedian 1998).

Donabedian (1998) provided three information, on which inferences can be drawn about the quality of care, these are: (1) Structure; and this denotes the processes of the settings in which care is given, these includes; material resources such as facilities and equipment, human resources such as the staff strength and qualifications and organizational structure such as medical staff organization, methods of peer review, and methods of reimbursement.(2) Process; involves what is actually in the giving and receiving care such as patients involvement in seeking care and carrying. The neglecting of new born care can be blamed on various reasons and why most neonatal morbidities and death are not seen and undocumented. Every minute seven new-born babies die worldwide (415 new born worldwide). Thirty seven percent of all

under five age group deaths occur in the neonatal period (Lawn 2003). Infant morbidities accounts for 6.2% of all the world burden of mortality and disability (Lawn 2003).

In developing countries death in the new born period which is from 0-28days account for 50-70% of infant mortality. The major direct causes of morbidity and mortality are preterm birth (27%), infection (26%), Asphyxia (23%), congenital anomalies (7%), tetanus (7%) and diarrhoea (3%) (Lawn 2003).

The problem of neonatal care is very serious especially in sub-Saharan Africa with Ghana being no exception. Even though new born is to bring joy, neonatal health has now become a serious health concern, as large numbers of babies are infected with neonatal infections leading to death in the first four weeks (neonatal deaths), and most of those during the first week (early neonatal deaths), for every baby who dies in the first week after birth, another is born dead (foetal death or stillbirths) (WHO, 2006).

Some governments of developed and developing countries have taken a critical look into the situation. An overpopulated country like China has included neonatal health care in their health policies. This policy has helped reduce mortality among neonates from 24.7 per 1000 in 1996 to 9.3 per 1000 in 2008. This reduction puts them at par with the United Kingdom with 3 per 1000 as at 2008, Singapore with 1 per 1000 and United states of America with 3 per 1000 (Ahman & Zupan, 2007). The current situation in Africa is quite different from these countries. By a World Health Organizations report (WHO, 2006) Africa has the highest risk of neonatal morbidity of about 41 per 1000 live births.

The mortality rate in Ghana as at 2010 remains at 59 per 1000 live births. Out of this a population survey was done on the causes of neonatal deaths, and the leading major causes of neonatal morbidity and mortality were infection, birth asphyxia and injury, prematurity, perinatal- related disorders. In the northern part of the country a study done indicated that a

strategy used in service delivery cause a decrease in child mortality. And these were based on quality improvement and use of health service (Kikucki et al 2015).

For the purpose of this study, Quality of care as explained by Donabedian (1998) using structure, process, and output was adopted in the assessment of the quality of neonatal health care. That is a medical science and technology in a way that uses its strength and potential in health care with a decrease in risk. The expectation is that quality of neonatal care would improve if the quality of service care in health institutions in Ghana was given the much needed attention to quality.

The study assessed the current state of quality of neonatal health care at the paediatric unit of the University of Ghana Hospital Legon. General assessment guide from Donabedian model (1998) was used to assess the specialist human workforce, the availability of modern equipment's and also mother's views of neonatal or new born care in order to evaluate their perceptions on quality of care in the health facility.

1.1 Problem statement

There are a number of areas where quality of facility-based care needs improvement. These include neonatal resuscitation and management of the sick new born or neonate (GHS 2002). An assumption is generally made that staff training will result in improved practice and hence improved quality care. Limited quality of care could be due to a number of reasons and which include lack of staff training, lack of supervision, unavailability of essential equipment, medicines and supplies and problems associated with referring severely ill neonates (GHS 2002). Four million neonates die in the first month of their birth. (Lawn et al 2005). The major factor here is morbidity, and normally occurs between 0-28 days of the postnatal life and detected both at the hospital and at home (WHO 2012). The four million of the world's still births and 500000 maternal deaths also occur close to time of birth. About 99 percent of all

new born mortality occurs in low and middle income countries, with two- thirds of those occurring in Asia and Africa (Lawn et al., 2001). The huge percentage of this estimated number of mortality and morbidity occur mostly at developing countries where asses to health care is low (WHO 2012). Most developing countries have done little about reducing mortality in the past 10- 15 years (WHO 2012).

The main cause of neonatal morbidity and mortality is infection which constitutes about 64% and these include pneumonia, septicaemia, meningitis, diarrhoea, tetanus, and jaundices (Lawn et al 2005). There are also other indicators which include feeding difficulty, breathing difficulty, seizure, fever, coma, skin infections and umbilical cord infection. With the introduction of free antenatal care, most pregnant women now attend the antenatal clinic hence improving the life of mothers. However, improving the life of the neonate in the first month of life remains a challenge to the country as a whole (Addo- Yobo 2011).

There are evidence that demand for services is also another major problem in some areas where mothers do not seek care for their new-born and these include poor quality of service, distance and lack of awareness of the importance and the urgency in prevention and treatment services. The birth delivery process in most health facilities, coupled with the intense pressure causes about two thirds of morbidities, as most deliveries are done under emergencies and adequate precautions are not taking, resulting in increased rate of morbidities. Also most health facilities are not well equipped with biomedical equipment and trained staff to meet the growing demand in quality of neonatal health care. Ghana's goal and measure to reduce neonatal morbidity and mortality faces serious infrastructure and logistical challenges (Addo- Yobo 2011).

Quality improvement is still a growing concern and for development especially in child and neonatal care (Addo-Yobo 2011). The situation is not different at the University of Ghana Hospital Legon precisely the paediatric unit where this study was carried out. At the East Legon

community, the University Hospital is the referral point for small clinics who can't handle complicated issues like antenatal care, deliveries and paediatric care. But at the University hospital's paediatric unit there is an evidence of increasing rate of neonatal morbidities in the last 3 years. In 2013 the number of admissions for neonatal morbidities was 201 out of the 610 admissions and increased to 219 in 2014 out of the 634 admissions (University hospital paediatric unit 2013/2014). In light of this information the researcher decided to undertake this study to assess the quality of neonatal health care using (Donabedian 1998).model of structure (facility and staff, process (delivery, hand hygiene, Aseptic and number of cots), output (mothers perception about quality of care) and to identify the key challenges in order to inform policy on the appropriate services given to neonate.

1.2 Conceptual Framework for Quality of Neonatal Health

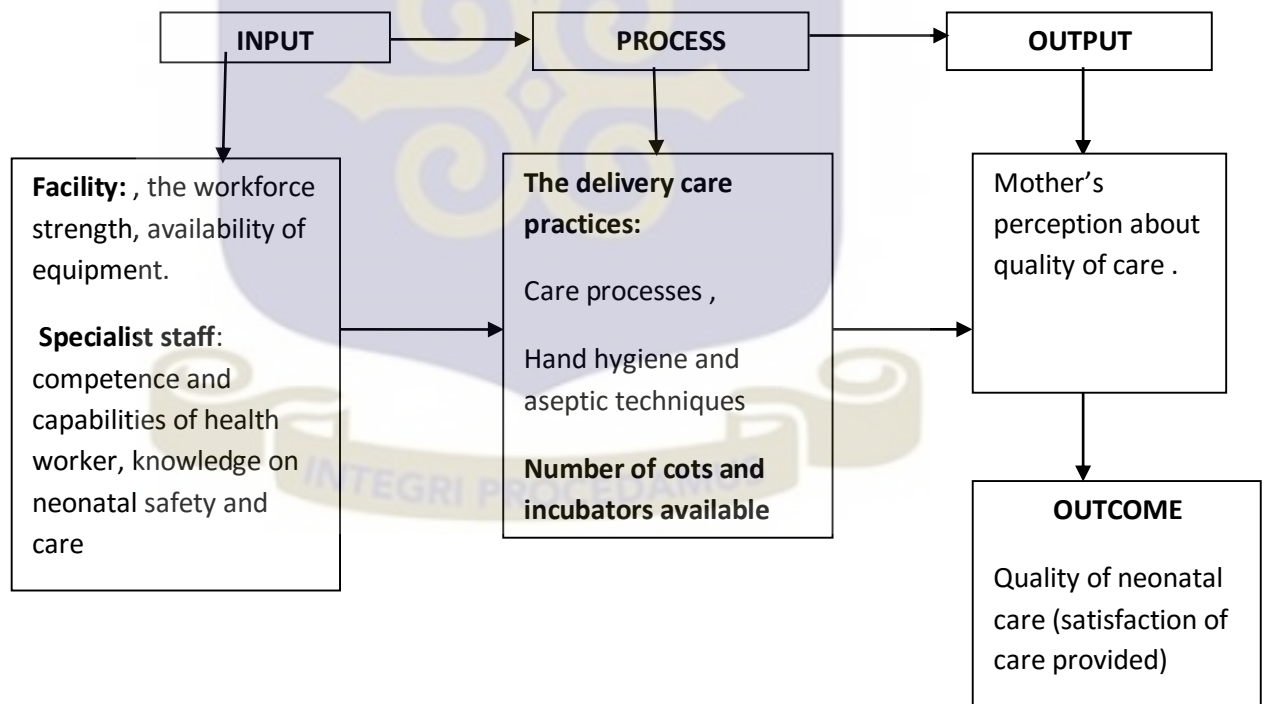


Figure 1: Conceptual Framework of Quality of neonatal health care (modified from Donabedian model (1998)).

As shown in Figure 1, the model which consists of the different stages of Donabedian model of quality of care for the assessment of neonatal health care.

Input

This consists of the characteristics and strength of the workforce in the health delivery system. thus the human resources available with the needed request specialist care in health delivery system, the availability of modern and functioning equipment, policy and management systems of lay down procedures guiding the affairs of the facility. These may be seen and even measurable, but unless related to process and outcome lacks information (Donabedian 1998).

Process

The process generally assess if a client received quality of known care. A typical example is patient and doctor encounter where interpersonal skills such as providing them with adequate information about the status of their health by helping and supporting them to make the best choice inconformity with the standard of treatment available to the patient (Donabedian 1998).

Care given to a neonate and this case the care process of neonate involves delivery care processes (immediate new-born care, clean neonate birth, resuscitation keeping baby warm, breastfeeding and cord care), hand washing, aseptic techniques and number of cots and incubators available.

Output: it simply refers to a change, improvement and in health circumstances, survival of the patient. That is at the end of the treatment stage there must be success. That is survival of the neonate. Even though outcome is often used largely to result, such measure are normally process reason in the survival of the patient. (Donabedian 1998).

Outcome: When quality of care has been achieved at this stage. Success has been attained by Recovery and survival of the neonate.

Some studies have assessed quality of health care provision, and identified poor quality care as a factor that may result in low uptake of care where this is available as well as non-adherence to treatment when care is received (Raven et al., 2011).

1.3 Justification

The most crucial gap in neonate care is mostly during the first 0-28 days of their life when morbidities and mortality occur at the hospital or when discharged to the house. Morbidity normally occurs during the delivery process as certain aseptic techniques and other neonatal care process devices missing could lead to increase in morbidity and mortality. These challenges are quality deficiencies that need to be addressed to ensure survival of neonate and holistic work performance.

The study assessed the quality of neonatal care and provided inputs into developing a sustainable neonatal care intervention to improve upon the health of neonates at the University of Ghana hospital Legon and serve as baseline information for future research work.

1.4 objectives

1.4.1 General objective

The general objective of the study is to assess the quality of care for neonates at the university of Ghana hospital.

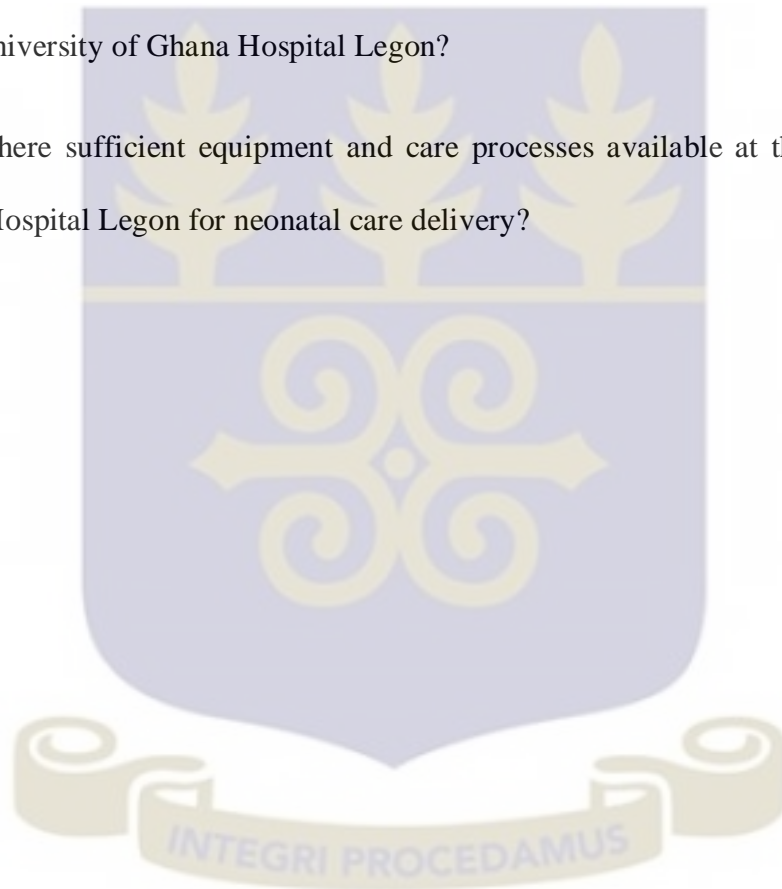
1.4.2 The specific objectives of this study are to:

1. Determine the perception of mothers about the quality of care for their neonates at the University of Ghana Hospital Legon.
2. Analyse the human workforce available for neonatal care delivery at the University of Ghana Hospital Legon.

3. Assess the availability of equipment and care processes available for neonatal care service delivery at University of Ghana Hospital Legon.

1.4.3 Research questions

1. How do mothers of neonate perceive the quality of care for their babies at the University of Ghana Hospital Legon?
2. Are there adequate skills of the human workforce available neonatal care delivery at the University of Ghana Hospital Legon?
3. Are there sufficient equipment and care processes available at the University of Ghana Hospital Legon for neonatal care delivery?



CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The core responsibilities of health services providers for quality of care are different. Providing quality of care may be seen as the role of the whole organization, teams or individual health workers, in each instance it would be seen as all health workers committed to the goals of providing quality health care, but their main concern will be to ensure that services rendered are of high quality standards and meets the individual, their communities and their families health needs (WHO 2006). Quality health care outcome is not the responsibility of the providers alone but the community and service users are all co-producers of health. New-born survival is a matter of great concern especially to developing countries. Though a number of attempts have been made by government and stakeholders to improve the quality of neonatal care, it has received little attention. Of the four million global neonatal mortality that occurs annually, 98 percent of which happens in developing countries are as a result of neonatal morbidity and either occurs at the health facility or at home (WHO, 2006).

2.1.1 Historical roots of quality of care

The evolution of quality healthcare and medical practice started to emerge in the 1970s and the concept developed to some extent in the 1980s. And by the end of the 1990s, there were models and frameworks developed for implementing, assessing and measuring quality care which started from different concepts.

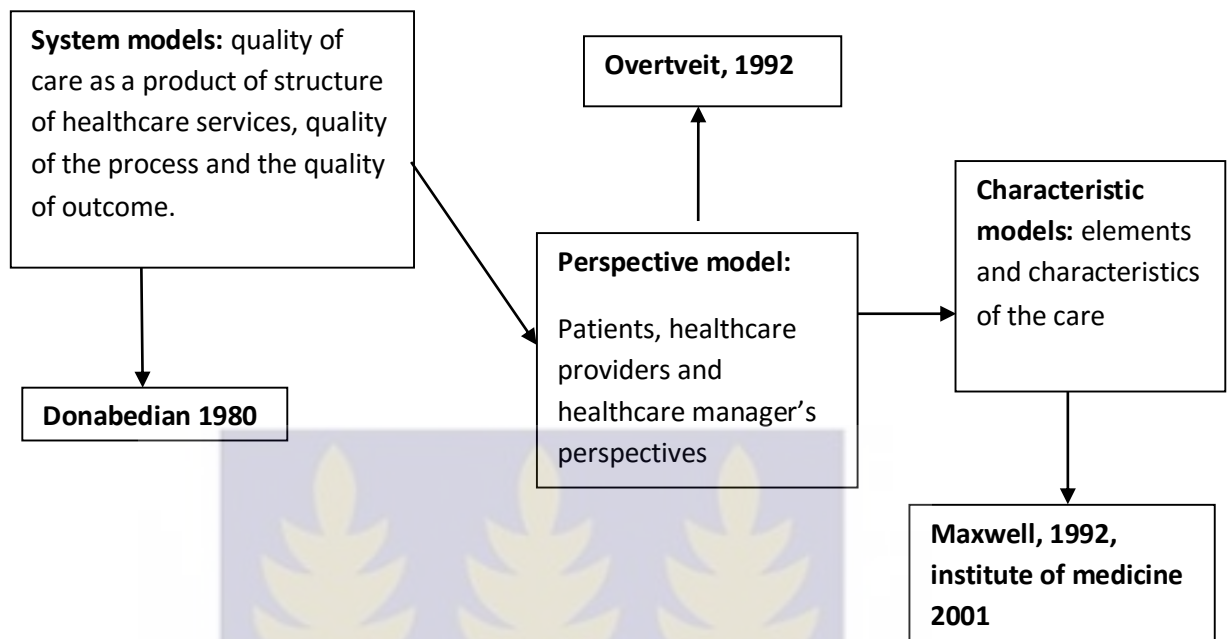


Figure 2: The theoretical framework for the emergence of quality of care

2.1.2 Quality of health care

The most integral part of ensuring good quality of care for new-born babies is well recognised in literature, however there is currently no agreed single and comprehensive definition described (Raven et al 2012). Before assessment of quality can be started a decision must be taken on how quality can be defined, and that depends on whether one assesses only performance of practitioners or also the contributions of patients and health care system. There should also be a causal linkage among structural attributes of the settings in which care occurs, the processes of care, and the outcomes of care (Donabedian 1988). Quality of maternal and child health care is defined as the degree to which maternal health services for individuals and population increase the likely hood of timely and appropriate treatment for the purpose of achieving desired out comes that are both consistent with current professional knowledge and uphold basic reproductive right . GHS (2005) has defined quality health care as the proper performance of interventions that are known to be safe, affordable to the society in question and impact positively on morbidity, disability and mortality. Another definition by the (GHS

2005) defines quality as the degree to which health services meet the expectation of the individual or group and expected to be delivered according to professional standard.

Wilson and Goldsmith (1995) describe quality of care as: ‘the sum of its four components: technical quality (measured by patients' health status improvement), resource consumption (measured by the costs of care), patient satisfaction (measured by patient perception of the subjective or interpersonal aspects of care), values (measured by the acceptability of any trade-offs that must be made among the three previous outcomes)’.

WHO (2006) has defined quality by given a six point working areas, that seeks to make improvement in the dimensions of quality of care. The dimension of quality of care focuses on the following:

Effective; delivering health care that is in shows evidence of improved health outcome for individual or communities based on need.

Efficient; delivering health by avoiding the wastage and maximizing the use of resources.

Accessible; delivering health care in an accessible location, making judicious use of time and providing service in a setting where skills and resources are appropriate to medical needs.

Acceptable/patient-centred; delivering health care which takes into account the choice and preferences of the individual service users and the cultures of community.

Equitable; delivering health care which does not differ so much in quality because of Effective; delivering health care that is in shows evidence of improved health outcome for individual or communities based on need.

Efficient; delivering health by avoiding the wastage and maximizing the use of resources.

Accessible; delivering health care in an accessible location, making judicious use of time and providing service in a setting where skills and resources are appropriate to medical needs.

Acceptable/patient-centred; delivering health care which takes into account the choice and preferences of the individual service users and the cultures of community.

Equitable; delivering health care which does not differ so much in quality because of someone's personal characteristics such as gender, geographical location, race, socioeconomic factors and ethnicity.

Safety: health care delivery that has low risk and harm to service users.

The GHS (2005) base its judgement on the quality of care by the presence of 8 attributes called dimensions. These dimensions are grouped as access, amenities, technical competence, efficiency, effectiveness, safety, continuity of service and interpersonal skills.

The two dimensions are both using the same concept of dimensions for quality care. An efficient service is the utilisation of available resources in a conscious manner to achieve desired result, thus providing quality service with minimal use of resources and reduction in the "five Ds" death disability, discomfort, and dissatisfaction. Patient's safety should always be ensured in the health facility to reduce the barest minimum injuries, infections and harmful side effects. Safety also includes security for the belongings of clients (GHS, 2005).

All these definitions contain components that are important. The technical component of quality care means that patient receives care and outcome which is status improvement exceeds health risks by a sufficiently wide margin with the procedures and services being perform in a technically excellent manner. Secondly, patients who are recipients or consumers of health care services have their own rights and are responsible for making their own decisions about their health and have a right to high quality care; (Raven et al 2012).

2.1.3 Quality of care in maternal and neonatal health

An estimated 2million Intrapartum-related stillbirths and neonatal death occur every year. And this accounts for 42% in children in the under five year (Lawn et al 2004).

The most effective ways of providing good quality care is ensuring access to and availability of skilled birth attendance and essential obstetric care, these are the key strategies to help reduce maternal and new-born morbidity and mortality (WHO 2005). It is important to increase coverage with care and matched with improved quality of care in order to really influence health outcomes. In addition where quality of care is poor women are less likely to access care even if it is available.

Lack of appropriately trained staff delay in referral, incorrect treatment, poor staff attitudes, poor co-operation and interpersonal relationship between health providers as well as inadequate supplies and equipment are evident in many resources poor setting (Pattinson 2006; Wagaarcuhchi and Fernando 2002). For quality of care to be improved it is necessary that to clearly understand and define the concept of quality care and develop and apply models that are user friendly and relevant to health services in both resources and poorly resourced settings.

Quality of neonatal health care is based on considerations such as care giving by the practitioners, thus technical knowledge and interpersonal skills, care processes implemented and the outcome of care received. Mothers of neonate's perceptions play a major role in diagnosing and identifying of new-born illness. And mothers' awareness would be of great help during neonatal support strategies to improve neonatal health care in the health facility and the community (Mbuele et al).the three models most commonly used are: perspective, characteristics, and systems model. These have been explained below:

2.1.4 Perspectives model

The underlying principle used in this model is that there are different perspectives on the quality of care (Overtveit, 1992) for example, the following questions can be asked: What does quality of health care mean for the communities and patients that depend on it, the health care providers who provide it and the managers and administrators who oversee it?

2.1.5 The Patient

The model takes a critical look at whether the health services meet the patients perceived needs and expectation. It's often believed that satisfied patients are more likely to comply with treatment and continue use of service (Raven et al 2012).

2.1.6 The health care provider

The perspective of the health care provider, examines how quality is perceived by trained providers, is all about technical competence concerning medical issues, which patients may not be technically qualified or may be too ill to assess (Raven et al 2012).

2.1.7 Health care managers

The perspective of health care managers is to look at provider for the needs and demands of both patients and health care providers. They are responsible for resource allocation, supervision and financial, logistic, and human resource management (Raven et al).

2.1.8 Characteristics model

The model as described by Maxwell (1992) sees quality of care as comprising of different characteristics. These characteristics are include; Access to care: defines access to care as geographical access (to transport from home to facility), organizations access(waiting time,

human resource service), linguistic access(ability to communicate with patient), financial access(the ability to pay for services rendered to pay for service) ,Social acceptability : (that personnel and service should respect patients cultural values, beliefs and attitudes),effectiveness, equity and efficiency. All these characteristics of health care quality as described by Maxwell (1992) must be noted that they can vary in importance depending on the type of health care being provided (Raven 2012). As explained by Donabedian (1998) the process of quality service assurance may examine or look at just one of these characteristics or multiple characteristics.

Studies that have assessed quality of health care provision have identified poor quality as a factor that may result in low uptake of care where this available as well as non-adherence to treatment when care is received (Raven et al 2012).

Quality of care as related to the structure refers to all the health services. This indicates characteristics of the resources in the delivery system. For example number of qualified staff, functioning equipment, policy guidelines and management systems (Donabedian 1988). The quality of actual care activities that is the process involves what is actually done to and for the patient (Donabedian 1998) and quality of the outcome , to measure the effects of care can be more difficult to carry out and not often done comprehensively (Donabedian 1998) all measureable and together these three constitute quality of care.

2.2 Mothers perception on the quality of neonatal care

A lot of research have been done and put in place towards decreasing maternal and neonatal(morbidities and mortalities) but very little has been done to involve mothers perception and behaviours' when it comes to child birth and care to determine the support mothers received from health care facilities(Mbwele et al 2013). The ways that mothers of

neonates relate to issues concerning quality of care, should be of utmost importance to the health facility provider. The mothers and neonate use the services offered to them by the health facility therefore they are their clients. Mother's involvement and perception in neonate care brings about better outcome (Mbwele et al 2013). Every patient's desire is to be satisfied with services provided to them and get well or recover from illness (GHS 2005).clients satisfaction a report for Ghana Health Service as stated by Cynthia Bannerman et al is based on these considerations affordable fees, promptness of attention, good staff attitude, respecting patients and their right, providing privacy and confidentiality, providing adequate information, availability of drugs and other logistics and clean environment.

These considerations are important, due to the fact after delivery of health service, a mother of a neonate perception about the care given is of much value as it predicts weather the women would assess or not assess the service (Kumbani et al 2012). There is evidence that patient centeredness, as a quality care indicator has decreased in recent times. This is seen as a serious public health problem because patient centeredness is connected to compliance to medical recommendations, decreasing misdiagnosis caused by miscommunication and reducing information load on patients as well as cost caused under –utilisation of services (Wheatley et al., 2008).These inputs by mothers opinions and suggestions in healthcare go a long way to support the designing of strategies to improve the quality of care (Mbwele et al 2013).

2.3 Availability of specialist skills in the workforce

The most crucial component of quality new born care is availability of skilled providers (Jitta et al., 2008). The human workforce shortage causes a major obstacle to providing quality care (Dogba and Fournier 2009). Over the next decade if 334,000 supplementary midwives, 140,000 nurses and 27,000 doctors and technicians are not trained or retrained it would cause a major gap in the workforce (WHO 200). There are serious issues regarding shortages of health

care specialist providers in Ghana, especially in the neonatal care. With the existence of three medical schools with paediatric care specialist, there are still not enough skilled care doctors in neonatology. Of the five qualified neonatologist in Ghana who are all in the practising at higher level health institutions like korle teaching hospital and komfo Anokye teaching hospital there is no one left for the other small hospitals, even in the big health facilities the 5 is not enough(Addo-Yobo, MOH 2011).

Migration, HIV/AIDS, and abandonment of public structures are affecting the availability of the human resource. Further reduction in the workforce would breakdown and weaken the quality of care by adding more workload to the staff with specialist skills and clients or patient time spent at the health facility is increased (WHO 2006).

A study done to assess some hospitals and other health facilities found out that staff numbers were inadequate for provision of neonatal care. And even when these personnel's were at post they don't work for the 24/7 hours of care. High levels of motivation should be directed towards health professionals in neonatal care by investing money towards recruitment, enhancing their competencies and retaining them especially the nurses to help improve neonatal outcomes.

2.4 Availability of equipment and supplies

Hospital infrastructure and equipment play a vital role in the provision of quality of care and a investing in it improves efficiency and quality of service. It is estimated that one in every twenty babies needs help with breathing at the time of birth (WHO 1997) and for that matter providing neonatal resuscitation for 99 percent of deliveries that require resuscitation taking place in health facilities would save more than 93000 new born lives each year(wall et al 2010). A survey taking at the national service level on provision Assessment study in Egypt, Ghana, Rwanda, Kenya, Tanzania and Uganda, only 8-22 percent of facilities had equipment for new

born respiratory support. Result especially for Ghana showed that only 19 percent of health facilities in the country had equipment for new born respiratory support (Wall et al., 2009). There are available evidence that indicates shortage of basic equipment and supplies such as feeding tubes, resuscitation equipment, and oxygen delivery systems at a special care baby unit in Uganda and Afghanistan contributed to poor perinatal care (Neogi et al). The availability of sufficient number of functional equipment is very essential and crucial for the operation and functioning of a neonatal unit which is directly linked to the quality of care. Without essential equipment and supplies, specialist skilled service providers may not be able to provide quality of maternal and neonatal health services.

Studies done by Kumar & Darmstadt (2009) suggested that having essential equipment and supplies for neonatal resuscitation can prevent some neonatal mortality due to birth asphyxia which is a major cause of death in new born. It also suggested that, the heating devices such as radiant warmers and incubators are necessary for preventing hypothermia in neonates.

Evidence shows that apart from lack of adequate essential equipment, availability of functional equipment was a problem. A study done in India found out that none of the neonatal units in a hospital in India, had adequate number of functional baby warmers and only 50% of them had adequate number of phototherapy units (Neogi et al., 2011).

The reality is that most health professionals do not know how to handle the bag and mask equipment nor give breaths during resuscitation equipment by health professionals (Addo-Yobo, 2010).

2.5 Delivery Care processes.

2.5.1 Immediate new born care

New born care is of great importance for the proper development and health of the life of neonates (UNICEF 2004). Neonatal care is the most essential ways of preventing infections. Knowledge on what is needed for the optimal care is lacking in many cases. Most hospital these days do not pay much attention to the basic needs of new born which includes: cleanliness, cord care, safety, warmth, breast milk and resuscitation all have the tendency to preventive effects (WHO, 2006).

The World Health Organization (1996) recommends the following essential care interventions:

2.5.2 Clean neonate birth

Neonates are likely to survive when the delivery is clean. That is if necessary precautions are taking help reduced and prevent infections during and after birth. The World health organization recommends (1996) recommends that all those attending to the mother and new born should have clean hands during delivery and after delivery, the perineal area of the vagina should be washed before each examination is done and during delivery and surface used for the delivery should also be cleaned.

A study done in Pakistan, found out that even though respondents knew about the benefits of clean delivery, they hardly practice. In addition good knowledge and practices for maintaining the new born warmth were predominant, while delayed initiation of breastfeeding avoidance of colostrum's and prelacteal feeding were also common. Knowledge on some danger signs was common, but timely action upon recognition was not provided (Yadav 2007).

2.5.3 Cord care

Clean cord care is considered to be an effective measure in infection prevention. The umbilical cord should be cut with a sterilized blade and tied with clean materials, and no substances be put on the cord stump (WHO 1996). Materials such as threads, strips of cloth and strings are used to tie the cord (Woodruff et al., 1984). The cord stump remains the main entry point for infections after birth. If the umbilical stump becomes red, with the redness extending to the skin around it and within this same period the baby stops suckling well, is sleepy, does not wake up or is having difficulty breathing, this may be a sign of serious infection (WHO 2006).

2.5.4 Keeping New born warm

Low birth weight neonates are more susceptible to becoming cold. There hypothermia should be avoided as it is important for new born health because hypothermia increases morbidity and mortality (UNICEF 2006). Just after delivery or bath there is a big risk of the baby losing heat because of the wetness. A baby can lose one degree of body temperature per minute when wet, even when the room temperature is obviously not cold. To stop the heat loss, it is very important to dry up the baby and wrap the baby in a clean, dry cloth and make sure the baby's head is covered (WHO, 1997). A study in South Asian countries in most cases umbilical cord was not cut until the expulsion of placenta and till that time the baby was left on the labour bed, during this period the baby has still not been wiped with dry clothes nor placed besides the mother. During this period attendants are busy with expulsion of placenta, as almost all of them believed that cleaning and keeping the baby warm were only appropriate after expulsion of placenta (UNICEF 2006). Thus hypothermia can easily occur in a new born who left exposed and wet.

2.5.5 Resuscitation

One to Five percent of neonates are estimated to require resuscitation at birth and many of them may die or suffer from long-term disabilities. However, oxygen and more complex procedures, such as endotracheal intubations, are not necessary to save most of these neonates (WHO, 2006).

A study done on this issue found out that 80 percent of neonates requiring resuscitation needed only a bag and a mask (ambul bag) and room air (Saugstad et. al., 1998).the main barriers to effective resuscitation are lack of simple equipment and lack of competent staff (UNICEF, 2006).

2.5.6 Breastfeeding

Early and exclusive breastfeeding despite its well known advantages and benefits require active support at all levels of quality of care. Support for individual mothers of neonates is crucial. Helping the mother to position the baby correctly to avoid sore nipples and answering her concerns can increase a woman's confidence in her ability to supply adequate nutrition to her neonate. New mothers need the full support from those around her to enable her to initiate and sustain breastfeeding. The WHO (2006), explains that breast milk provides optimal nutrition and promotes the neonates growth and development. It is very essential especially during the first 28 days of the neonatal period. For mother once breast feeding starts, the immunization process begins and it protect the neonate against a variety of viral and bacterial pathogens before the acquisition of active immunity through vaccination. Anti-infective properties exist in breast milk, therefore frequent and exclusive breast-feeding can be an appropriate method of fertility regulation for most women, particularly when other family planning methods are not readily available.

Immediately after birth every contact between the mother and baby has a beneficial effect on the breast-feeding. Early suckling provides the baby with colostrum's that offers protection from infection, gives important nutrients, and has a beneficial effect from infection, gives important nutrients, and has a beneficial effect on maternal uterine contractions (WHO 2006).

According to a study conducted in Haryana, India revealed that about 75 percent of neonates were given prelacteal feeds of honey, tea and diluted milk and babies are often not breast fed during the first 3 days. They are often given sweetened water, this presumes that colostrum's was discarded (Bhandari et al., 2003).

2.6 Hand hygiene

Washing of hands properly is the most effective and efficient way of reducing the spread of infections in health settings and should be done within the shortest ever possible way in emergency situations (engender health 2003). During procedures that involve touching a patient the care giver should wash their hands before and after examining the patient, during procedure hands should be properly washed before gloves are put on, after procedure , and gloves are removed hands should be washed again.(Engender health 2003).

2.7 Aseptic technique

Aseptic technique are methods used to help prevent contamination of wounds and other susceptible sites by organisms that can lead to infection, by ensuring the use of only uncontaminated equipment and other fluids that comes in contact with sterile body sites during a particular clinical procedure (Engender health 2003). The main aim of aseptic technique is prevent the introduction of pathogens micro-organisms into susceptible sites, like wounds, also to prevent the transfer of pathogenic micro-organisms from one patient to another and to prevent the acquiring of infection by staff.

In assessment of quality of health care provision, some studies have identified poor quality as the factor that may result in low uptake of care where this is available as well as non-adherence to treatment received (Raven et al., 2011). Lack of appropriately trained staff, incorrect treatment, poor staff attitudes, and delay in referral, poor cooperation and interpersonal relationship between health providers as well as inadequate supplies and equipment are evident in many settings (Walls et al, 2009).

Number of babies in incubators/ cot

An optimal thermal environment is desirable for preterm babies. Maintenance of body temperature should be high in priority when doing the planning of care for new-borns. Because of the increased risk of illness and death, it is critically important for preterm and low birth rate be kept in an incubator (Collins 2008).

Many studies found out that one neonate in a cot promotes faster recovery, reduces hospital stay and thus reduces cost to the patient and above all advances good quality care (Collins 2008). Hypothermia in neonates is a common problem and one of the leading causes of morbidity and mortality in neonate (Collins 2008).

Ineffective thermoregulation leads to other complications and patients poor response to treatment (Collins 2008).

CHAPTER THREE

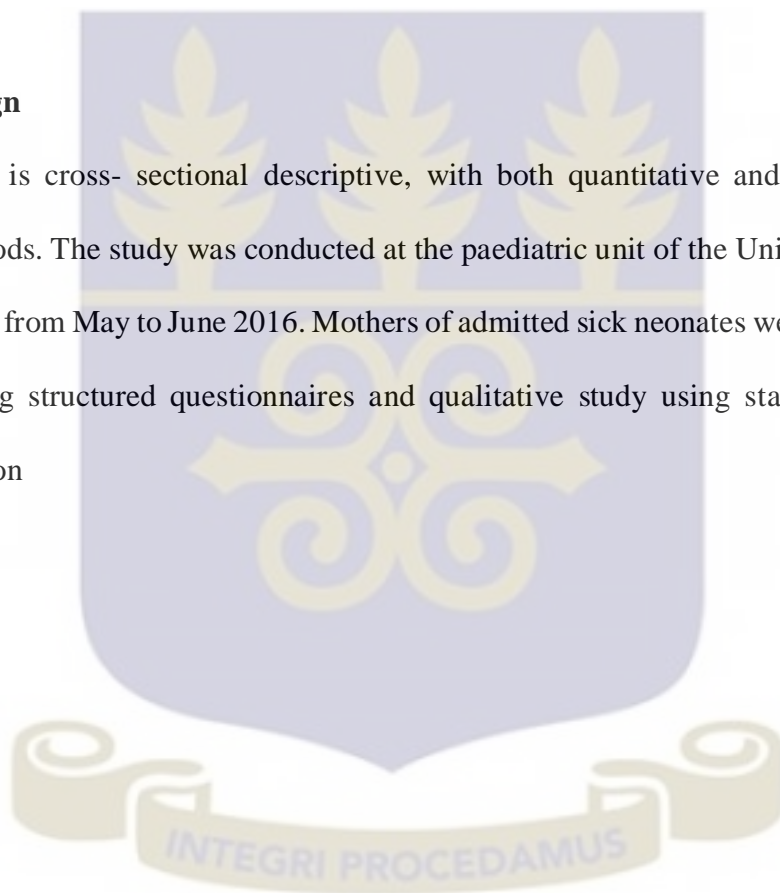
METHODOLOGY

3.0 Introduction

This chapter discusses the study area and methodology that was used in the study. The chapter includes the profile of the study area, the method section, the research participants, data collection techniques and tools, data analysis, ethical considerations and limitations

3.1 Study Design

The study type is cross-sectional descriptive, with both quantitative and qualitative data collection methods. The study was conducted at the paediatric unit of the University of Ghana Hospital Legon, from May to June 2016. Mothers of admitted sick neonates were selected cross sectionally using structured questionnaires and qualitative study using staff interview and direct observation



3.3 Study Area

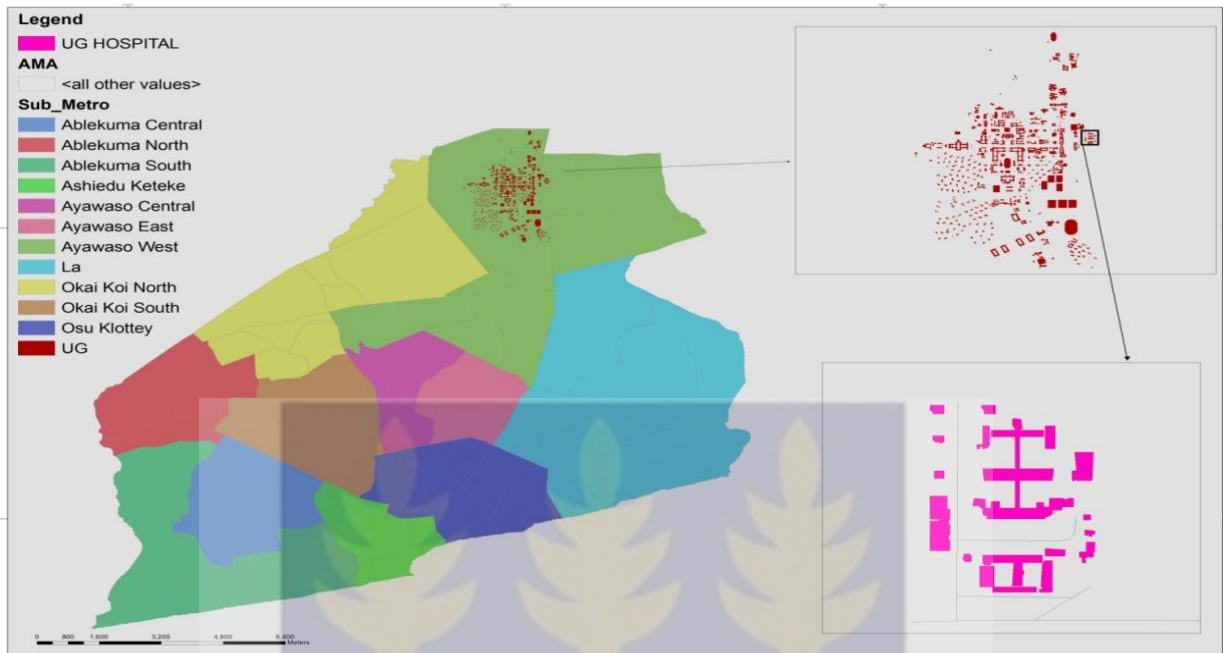


Figure 3: showing map of Accra sub-metro

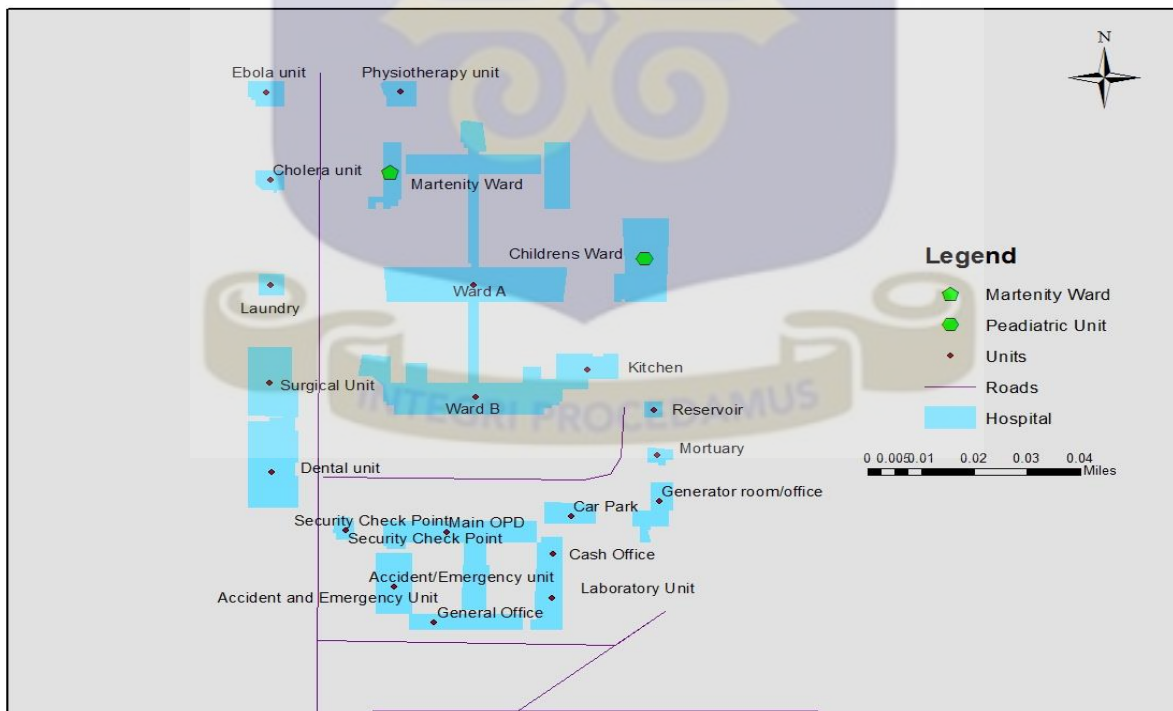


Figure 4: The university of Ghana hospital Legon showing the various departments. The unit under study is the children’s ward.

Source: Ghanaweb.com and Google maps

This section presents information on the study area. (Figure 2 and figure 3) covering location, population, University community and University of Ghana Hospital Legon.

The study area is the children's ward of the University of Ghana Hospital Legon which is part of the facilities run by the University of Ghana School Legon and located in the Accra sub-metro district. The Accra sub- metro has 12 districts and a total population of 2,418,771. This section presents information on the study area (figure 2 and figure 3) above, a table of the districts in the Accra sub- metro, a little background information about the University of Ghana community and the university of Ghana hospital Legon below.

Table 1: Distribution of the Accra sub-metro

Sub -metro	population	male	Female
Ablekuma North	197,024	94,280	102,744
Ablekuma south	213,914	101,392	112522
Ablekuma central	268,424	128,678	139746
Ashiedu keteku	117,525	55,165	62,360
Osu klottey	121,723	58,457	63,266
Ayawaso East	183,498	88,235	95,263
Ayawaso central	142,322	68,390	73,932
Ayawaso west Wagon	70,667	37,065	33,602
Okaikoi South	121,718	58,592	63,126
Okaikoi North	228,271	110,681	117,590
Adenta Municipal	78,215	39,366	38,849
Ledzokukupowor	227,932	109,185	118,747

SOURCE: Ghana statistical service 2010.

3.3.1 University of Ghana Community

The University of Ghana was set-up in 1948 for the purpose of providing, promoting university education. The University has four colleges namely college of basic and applied science, college of education, college of health, and college of humanities. The University also have research centres and institutions' which includes Noguchi Memorial Institute for medical research, centre for topical medicine and clinical pharmacology. The University of Ghana Legon apart from its main purpose of providing and promoting education also have other facilities which include University health services (University of Ghana hospital Legon), University Bookshop, University farms, University supermarket, University laundry service and security services. The university currently has a student population of over 42,000 and staff population of over 6,000.

3.3.2 Profile of University of Ghana Hospital Legon

The study area was the children's ward in fig 3, which is showing above and is located at the university of Ghana hospital also known by the public as Legon Hospital. It's located behind the police station. It's a quasi-government hospital with a bed capacity of 130 comprising of general wards, maternity wing, casualty and emergency ward, surgical ward and children's ward. The children's ward which is the study unit is under the paediatric unit. The paediatric unit admits children, babies and neonates with diagnosed morbidity all under the same block. Has a bed capacity of 24. And has annual admissions of 610 in 2013 and 634 in 2014. The annual admission as at 2013 for neonatal morbidity was 201 and the annual admission for 2014 was 219. The bed state and staff records are presented in the table below

Table 2: Hospital Bed State at the University of Ghana Hospital Legon

WARD	NUMBER OF BEDS
Children's	25
Maternity	17
Surgical	16
Emergency	18
Ward A	30
Ward B	24
Total	130

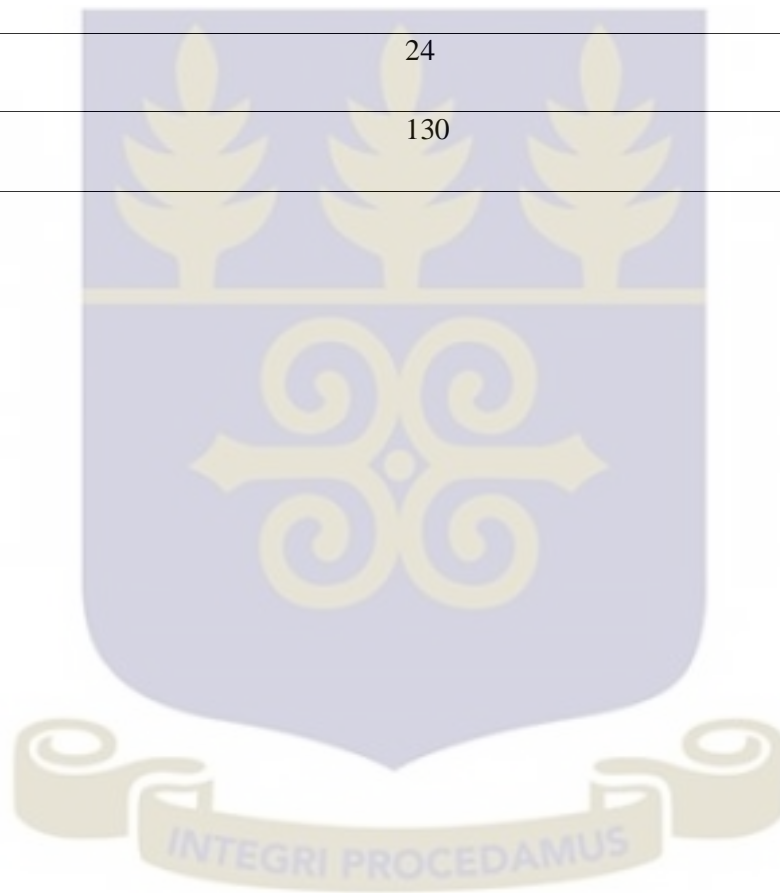


Table 3: Staff Strength of the University of Ghana Hospital as at 1st April, 2015

Staff Category	Number of Staff
Doctors	22
Physician Assistant	22
Nurses	126
Ward Assistant	40
Pharmacy Staff	13
Laboratory Staff	13
X-ray Staff	2
Administrative Staff	6
Account Staff	8
Records Staff	12
Catering Staff	13
Orderlies	29
Drivers	5
Maintenance Officers	1
Conservancy Staff (Mortuary Attendant)	3
Sanitary Staff	1
Environmental Health Staff	1
Total	297

Source : (University of Ghana Hospital Legon 2015)

3.3.3 Study Population

The study population comprised mothers of admitted neonates from the average of historical records from 2013 and 2014, staff at the paediatric ward and maternity unit for an interview, and direct observation.

3.3.4 Inclusion Criteria

All Mothers with neonates who have been diagnosed with neonatal morbidities either referred or born at the university of Ghana hospital.

3.3.5 Exclusion Criteria: Mothers of children who are on admission for other diseases or ailment would be excluded from the study.

3.4 Study variables

Dependent variable is perception of quality of neonatal care.

Independent Variables are: (1) Inputs facility: the human workforce, the equipment available, and staff strength. Staff: competence and knowledge on neonatal care, specialist skills.

(2) **Process:** delivery care process (immediate new-born care, resuscitation, cord care, breast feeding, keeping baby warm, clean neonate care), hand hygiene, Aseptic technique, and number of cot and incubators.

(3) **Output:** mother's educational status, socio-economic status, perception about quality of neonatal care, mother's perception about quality of care, mother's satisfaction with neonatal care provided.

3.5 Sampling

This is a descriptive study, and the sample size was based on medical records of neonates who were admitted at the paediatric unit of the hospital.

At the paediatric unit of the University of Ghana Hospital, medical records show that, there has been an increase in the number of admitted neonates with various morbidities. Their annual neonate's admission was 201 in 2013, 219 in 2014 and 240 in 2015. (Source: 2015 hospital records university of Ghana hospital).

The records indicates that at the paediatric unit there are 20 neonates admitted every month. And since the study was done within an 8week period, the researcher was hoping to get a total of about 40 neonates based on the records, who were on admission at the paediatric unit, but only 36 neonates were on admission during this period and whose mothers were willing to be part of the study. To make a statistical inference in this study at least 30 neonates are needed. The researcher was not looking at making a general inference on the total population but rather a survey of the current situation at the paediatric unit of the University of Ghana Hospital

Purposive sampling was used to select mothers who reported with their neonates and were on admission at the paediatric unit during data collection. Staff at the paediatric unit were also interviewed within this same time period; these staff included paediatricians, paediatric nurses and other key informants at the unit. This interview provided more information on equipment and other skills needed at the facility and an observation schedule was also used to assess the availability of equipment.

3.6 Sampling Methods

The study was conducted at the paediatric unit of the University of Ghana Hospital Legon. University of Ghana Hospital was selected because it serves as a referral hospital for the East Legon community, the University of Ghana school community and its surrounding areas.

3.7 Subject selection

The desired sample size of 40 neonates for the study was selected based on medical records, of mothers whose neonates were admitted for neonatal morbidities but only 36 was achieved during the study. This was due to the daily referral of neonates to other health facilities

3.8 Training of Research assistant

Training was organized for the two research assistants who were one undergraduate student offering pharmacy and a house officer who helped in the collection of data. A two day period was used for the training; the team included data collectors, supervisors and data manager.

3.9 Data collection methods and tools

Quantitative and qualitative methods were used for data collection. Structured questionnaires was used for the quantitative data. The variables used in the data collection were the mothers with neonate background characteristics which included their economic factors, educational status, age and parity and perceptions about the quality of care. Face to face exit interview was employed by the use of structured questionnaires for mothers who were on admission with their neonates. An observation guide from Ghana Health Service was used to assess the equipment used for neonatal health care service at the hospital. Areas covered included delivery care process (resuscitation, immediate new-born care, clean neonate birth, cord care, keeping baby warm and breastfeeding), aseptic technique, the spacing between each neonate, appropriate treatment applied. Qualitative data was collected through in-depth interview with key staff

which included nurses, paediatricians, midwives and doctors with their socio-demographic characteristics, skills in neonatal care, what to expect during neonatal care process, knowledge about neonatal morbidity. (Creswell, 2013).

3.10 Quality control

The whole data collected were standardized to gain a consistent data which is of high quality. The research assistant team were given an extensive training for 2 days to ensure that they understand the objectives and the methodology of the study. The researcher and supervisor were with the team in the field to supervise all data that was collected from participants. Questionnaires were thoroughly checked for completeness on daily basis before being added to other document. Documents were numbered during data entry to ensure non double entry.

3.11 Data processing and analysis

All Data entries, processes and analysis were done using Microsoft excel and Stata 13. The data was described using descriptive statistics. Chi-square test was used to assess the association between dependent and categorical variables. The face to face interview with staff was done using discussion and analysed using thematic analysis by adopting (Braun and Clarks) 6 step guide. which includes becoming familiar with data , coding; developing different labels for important features of the data, search for themes; using code to identify similarity in the data, the fourth by reviewing the themes, the fifth is defining and naming themes. This demand that the researcher to conduct and write a full and detailed analysis of each themes used in the research. The sixth and final stage is the writing up; writing is the vital part of the analytic process in thematic analysis.

3.12 Audio Recording and Notes Taking

It is explained that in much the same way as a good hammer is essential to fine carpentry; a good tape recorder is indispensable to fine fieldwork (Patton 2002; Creswell, 2013).

During interviews with staff of the paediatric ward, notes were taken and recorded using a tape recorder to provide a basis for subsequent analysis. Handwritten notes were also taken of non-verbal actions of interviewees/participants to enhance understanding of participants' explanations of events.

3.13 Direct Observation

Another method that was used to gather empirical data was direct observation. As explained by Trochim (2000) direct observation is quite different from participant observation in so many different ways. During direct observation, the researcher becomes a direct observer and does not try to become a participant in the context. However, the direct observer will attempt to be unnoticeable as possible so as not to bias the observations. Also direct observation recommends a more disconnected perspective as the researcher watches events rather than taking part (Trochim, 2000).

An observation was undertaken in the paediatric ward of the university of Ghana Hospital to check and ascertain the availability of equipment and care processes using a checklist. In the course of the observation the researcher observed posters/protocols in the paediatric wards which described neonatal care processes such as when and how to carry out neonatal resuscitation, how to treat neonatal jaundice, doses of medications for neonates at different gestational ages; specialist doctors on call, adherence to aseptic technique such as hand washing practices by staff and mothers of new born, number of babies on a bed/cot, and equipment such as ambu bag, radiate warmer, phototherapy, glucometer, oxygen, among

others. The researcher was also privileged to be taken round by the nurse in-charge who is a trained paediatric nurse, to explain some of the difficulties they face in discharge of their duties.

3.14 Data Analysis for qualitative data

Thematic analysis was used in the process of data analysis for the qualitative data. This was performed through the process of coding in six phases to create established, meaningful patterns. These phases are: familiarisation with data, generating initial codes, searching for them among codes, reviewing themes, defining and naming themes, and producing the final Report (Braun and Clarks 2006). The phases has been explained below.

Familiarisation with Data

This is familiar to forms of qualitative data. This is first stage where the research absorbs data by reading and going back and forth through the data after transcribing and also listening to the audio- recording used in the recording of the interviews. During reading major issues seen to be embedded in the data are Identified (Brauns and Clarks 2006).

Generating Initial Codes

After data familiarisation, the researcher generate codes for the data. The researcher not only reduce the data, but use verbal descriptions to small amounts of data. Each stage of coding process will differ according to circumstances. The researcher ends by putting all generated codes together and important data extracts. (Brauns and Clarks 2006).

Searching for Themes

At every point of the analysis, the researcher will stop and make changes to the analysis in the direction of the research questions, as ideas develop. The focus is really to get a direct fit of the Coding's to the data as possible without having an overabundance of unusual coding's (Braun and Clarks, 2006).

Reviewing Themes

This is where the researcher tries to identify themes coded in relation to what was extracted and the full data set. This stage is a trial-and-error process in which change and adjustment will be a regular feature. The researcher may find it necessary to join two themes or split to define each theme sufficiently so that it is clear to others exactly what the themes is.(Braun and Clarks 2006).

Defining and Naming Themes

The researcher is required to identify and write in full analysis of each theme. Identify examples of each theme to illustrate what the analysis has achieved (Braun and Clarks, 2006).

Writing up:

This is the final stage where all data extracts are put together to make a meaningful and persuasive story to the reader. (Braun and Clarks 2006).

3.15 Ethical Consideration

Ethical clearance was obtained from the ethical review board of the Ghana Health Service.

The permission to proceed with the study was sought from the School of Public Legon and the management of the University of Ghana Hospital.

Informed consent was sought from every participant, procedure for the structured interview, and direct observation was clearly explained to all respondents and they signed a permission

form after agreeing to participate in the research. The study was non-invasive and the safety of the respondent was assured

Confidentiality of the client responses were ensured. Measures were taken to ensure that the structured interview for both mothers and staff are only accessible and available to the research team during the course of the study safely stored after the study.

3.16 Pilot study

Pre testing of the questionnaires was carried out at Maamobi polyclinic. The hospital had similar characteristics as the University of Ghana Hospital in the study area. This enable me to clarify the adequacy of the questions and help to make the necessary corrections for the questionnaire for the actual study.

3.17 Limitations

Due to the lack of a neonatal intensive care unit at the University of Ghana Hospital Legon it was very difficult getting sick neonates (0-28) mothers to interview as most of them are referred to other teaching hospitals for treatment. Hence the small number of 36 mothers which took 8 weeks to get them for the interview. None of the indicators of quality of care had a significant association with satisfaction when tested due to the small number.

CHARPTEER FOUR

ANALYSIS OF FINDINGS

4.1 Introduction

This chapter presents analysis of the findings of the field work undertaken for the Research. The total number of 36 participants mothers of neonates were obtained by structured questionnaire and 14 staff of the paediatric ward were obtained by in-depth interview and an observational guide from Ghana Health Service was used to observe the use and availability of equipment at the University of Ghana Hospital. Data obtained was analysed using stata version 12. The data was described using descriptive statistics. Interviews with staff was audio taped, transcribed and themes identified using the various data collected.

4.2 Demographic characteristics of Mothers of neonates from the quantitative study

From table 4, the ages of mothers ranged between 15 and 30 years and above with a mean age of 1.583 years (standard deviation of +5yrs). Most of the client (58.3%) were between the ages of 30 and above. Ages of neonates ranges between 0-28 days with a mean age of years 0.82years. Most of the neonates (50.00%) were between the days of 1 and 7days.The overwhelming majority (97.22%) of the respondents were married with 2.78% of the women single. Most of them were well educated with the largest proportion, representing 66.67% of participants being up to primary school. Most of the mothers were employed representing 75.0% while a minority (25%) were unemployed. As shown in table 4, most of the mothers had between one and two children (41.67%) while about 13.89% had 5 and 2.78% had 6 children.(Table 4).

Table 4: Socio-demographic characteristics of mothers

Variable	Frequency (n)	Percentage (%)
Age(years)		
15-30	15	41.67
30years and above	21	58.30
Parity		
One child	15	41.67
Two children	15	41.67
Three children	5	13.89
Six plus	1	2.78
Educational level		
Primary	1	2.78
Secondary	11	30.56
Tertiary	24	66.67
Employment status		
Employed	27	75.00
Unemployed	9	25.00
Marital status		
Married	35	97.22
single	1	2.78
Baby's age		
Below 7days	18	50.00
7-14	12	33.33
14-21	5	13.89
21-28	1	2.78
Sex of baby		
male	15	41.67
female	21	58.3

4.3 Demographic characteristics of clients satisfied and dissatisfied with the quality of neonatal care.

From table 5, most of the mothers satisfied with the quality of neonatal care were between the ages of 30 and above years (70.37%), those with two children were most satisfied (40.76%) And majority (96.30%) were married. About 70.37% of mothers satisfied with quality of neonatal care had attained the highest form of education at the tertiary level with majority (77.78%) of mothers being employed.

Table 5: Demographic characteristics of mothers satisfied and dissatisfied with the quality of neonatal care.

Demographic characteristics	Satisfied with quality of neonatal care N=27	Dissatisfied with quality neonatal care N=9
Age		
15-30	8(29.63)	7(77.78)
30 and above	19(70.37)	2(22.22)
Parity		
One child	10(37.04)	5(55.56)
Two children	11(40.74)	4(44.44)
Three children	5(18.53)	0(0.00)
Six plus children	1(3.70)	0(0.00)
Marital Status		
Married	26(96.30)	9(100)
Single	1(3.70)	0(0.00)
Employment status		
Employed	21(77.78)	6(66.7)
unemployed	6(22.22)	3(33.33)
Educational level		
primary	1(3.700)	0(0.00)
secondary	7(25.93)	4(44.44)
tertiary	19(70.37)	5(55.56)

4.4 Mothers perception with the indicators of quality of care

4.4.1 Environment of the surrounding of the antenatal clinic

In exploring mother's perception about neonatal care with place of attending antenatal care from table 6, most mothers (59.26%) perception of antenatal care was perceived as been satisfied as far as services provided. About 40.74% mothers were not satisfied with antenatal services at Legon Hospital in terms of the different location of medical services offered within the same hospital and this agrees with a 33-year old mother who said:

"The maternity it's far from the laboratory, the records office, the cash office and the pharmacy. Anything you come for antenatal you are made to go to all these places for folders, for labs, to pay fees for service and to go for drugs it very tiring and sometimes you get home with baby pains you wonder if you went for check-up at the hospital"

A mother of 2 also added up

".....when I was pregnant with my first child I went through the same problem with moving from one place to another, I get pregnant again and this time decided not to come back here but I met a friend who told me the place has changed only to come back and it's just a laboratory which has been moved to the maternity but all the other units are still at the same place....."

4.4.2 Attending Antenatal

Attending antenatal was measured by the stage of pregnancy when starting antenatal. From table 6, Majority of mothers (74.01%) were satisfied with the care given to them when they started antenatal at the first trimester and 25.93% were also satisfied with care given at the second trimester. A mother agrees with this and this is her response

".....the nurse were very nice to me when I came as soon as I discovered that I was pregnant with my second child. My first child I did not know I was supposed to come early, so when I got to the antenatal clinic they openly shouted at me that why am I now coming to antenatal with a five month old pregnancy....."

4.4.3 Communication skills

Communication was measured by clarity of diagnosis and clarity of treatment. From table 6, most of the mothers (66.67%) were satisfied with the clarity of diagnosis communicated to them by the doctor in a language clearly understood by them. This is in line with a response by a 32 year old mother during the interview,

“.....I don't speak English and I can't speak Twi, the only language I understand is Ewe. So when I got here I was fortunate to have a nurse who speaks my language. When she is not around they get me someone else who understand my language.....”

Minority of mothers (33.33%) were not satisfied and is support by a 27year old mother's frustration who said:

.....some talk too much medical terms, if you don't ask they would not explain.....

About 69.44% were satisfied with the clarity of treatment and 30.56 were not satisfied with clarity of treatment communicated to them by the doctor.

4.4.4 Competence of health worker

Approximately 75.0% of mothers were satisfied with the competence of health workers while 25% were not satisfied with their competence (table 6)

Most mothers (77.78%) were not satisfied with cots and bed arrangement of the paediatric ward and is expressed sadly by a 32 year old mother (table 6)

“.....the neonate are kept in a corner and in the same room as other children, who are there for various degree of illness, and their other families visit in the same room. Am scared for my baby's life I only pray we would be discharged early so we can go home.....”

Table 6: Mothers perception with the indicators of quality of neonatal care

Indicators of quality of neonatal care	satisfied	dissatisfied
	N (%)	N (%)
Attending antenatal		
Legon hospital	16(59.26)	11(40.74)
Another health facility	2(22.22)	7(77.78)
Stage of starting antenatal	20(74.01)	7(25.93)
First trimester	20(74.01)	9(100.0)
Second trimester	7(25.93)	0(0.00)
Communication skills		
Doctors explained baby's illness	24(66.67)	12(33.33)
Doctors made it clear treatment plan	25(69.44)	11(30.56)
Competence of health worker	27(75.00)	9(25.0)
Separation of neonates from other children	8(22.22)	28(77.8)

4.5 Rating of quality of neonatal care

About 58.33% of mothers rated the quality of neonatal care as good whiles 16.67 rated as excellent and 25.0% rated as fair. (Table 7)

Table 7: Rating of quality of neonatal health care.

Rating of quality of care	Frequency (n)	Percentage (%)
Excellent quality of neonatal care	6	16.67
Good	21	58.33
Fair	9	25

4.6 Mothers overall satisfaction with care

Mother's opinion on overall satisfaction with the quality of neonatal care was mostly positive. 61.10% of the respondents were satisfied with the quality of neonatal care (table 8). This agrees with a 44year old mother of six during the interview she said:

".....This is my sixth child and they have all passed through this paediatric ward, so am very satisfied with the care given to me....."

38.89% were ok with the care given to them. (Table 8)

Table 8: Mothers overall satisfaction with quality of neonatal care.

Satisfaction	Frequency (n)	Percentage (%)
satisfied with quality of neonatal care	22	61.10
okay with quality of neonatal care	14	38.89

4.7 Indicators of satisfaction

About 85.19 were willing to return with their baby's for follow-up because they were satisfied with the quality of care for their neonates. About 81.48 were willing to recommend the hospital to their friends with sick neonates because they were satisfied with the quality of care.(Table 9).

Table 9: Indicators of satisfaction

Variable	Willingness to	
	take return with baby for follow-up	
Satisfaction	Willing (%)	Not willing (%)
Satisfied with quality NNC	23(85.19)	4(14.81)
Not satisfied with quality NNC	7(77.78)	2(22.22)
	Willingness to recommend the hospital	
Satisfied with quality of NNC	81.48(22)	5(18.52)
Not satisfied with quality of NNC	7(77.8)	2(22.22)

4.8 Qualification of Staff Respondents

Of all the fourteen (14) staff respondents, three (3) were midwives, two (2) Medical officers, One(1) Paediatrician (Medical officer), seven(7) Nurses, and one (1) paediatric nurse trained in the U.K. neonatal and paediatric care. This means that with a little bit of training in Neonatal care, they would be able to provide adequate and quality care for the neonates. (Table 10)

Table 10: Demographic characteristics of staff respondents

CODE	AGE	MARITAL STATUS	QUALIFICATION
HP-1	56	Married	Paediatric Nurse
HP-2	33	Married	Nurse
HP-3	26	single	Nurse
HP-4	34	Married	Doctor(Paediatrician)
HP-5	40	Married	Midwife
HP-6	31	Single	Midwife
HP-7	34	Married	Nurse
HP-8	42	Married	Nurse
HP-9	32	Married	Medical officer
HP-10	35	Married	Nurse
HP-11	31	Single	Medical officer
HP-12	55	Married	Midwife
HP-13	54	Married	Nurse
HP-14	28	Single	Nurse

4.9 Emerging Themes from the qualitative Study

From the interview of health professionals transcripts, four main themes emerged some of which were further categorized into sub-themes. The main themes are: availability of staff with skills in neonatal care, lack of equipment's, lack of a neonatal intensive care unit (NICU) and availability of protocols.

4.9.1 Availability of Staff with skills in neonatal care

Availability of staff, most especially in the area of neonatal care is critical to the delivery of quality of care. And for the university hospital even though you see nurses in uniforms and other doctors moving around in the wards, there is only one nurse trained in neonatal care and one doctor who is also a paediatrician. The rest are nurses doing their best with the in-service

training giving to them and also the other doctors are residents on training. One surprising thing I noticed was the way they carry out their duties, with the regular in-service training given by the paediatric nurse and the paediatrician they have been able to acquire some skills. But as expressed by one health provider:

‘..... There are some processes easily done by our in charge, especially in setting iv.line and administering drug dosages for pre-term and low-birth weight neonates. So when she is on leave it becomes a problem.....’ (HP-3)

This problem was also emphasized by several staff spoken to:

‘...We need to have more staff with skills in neonatal care as very soon she would be going on pension and also those of us who have acquire skills through in –service training should be given the opportunity to have training in neonatal care.....(HP-8)

During visits to the paediatric ward it was observed that the number of staff available for managing sick neonates were few, however the few nurses who had stayed long on the paediatric wards were also very good. This was notwithstanding the fact that most of these health personnel were not trained on how to manage the neonates. They were rather trained as General Nurses, and health assistants. There is a reshuffle of nurses which goes on every year at the wards for nurses, so during this period whosoever finds him or herself in the paediatric ward had to somehow manage to quickly adjust and learn on how to care for neonates. This did not support quality of care. During the interview most staff spoken to have received training in neonatal care as part of their training requirement not as a speciality, when it comes to neonates you require practice and skills to manage their care processes. However, some of

these health personnel lack the confidence in handling the babies, especially during neonatal resuscitation. As expressed by one health provider;

..... Just yesterday we had an emergency where we had to resuscitate a neonate and just two of us nurses were on duty, the paediatrician was on her way, but we had to use the training we had received at our in-service training to resuscitate the neonate, we really had a tough time, but as soon as the paediatrician got here everything got so easy.....HP-14

Moreover, since the training they received at school was basic some healthcare providers expressed fear at managing neonates until they had gone for in-service training. Most staff were of the view that the in-service training had increased their confidence level as they felt more comfortable to do neonatal resuscitation afterwards. As expressed by one health provider:

‘.....I was so happy when my in charge picked me to attend a workshop which was organised outside the hospital and it was on management of common new-born problems, most of the common new-born problems were discussed especially on neonatal resuscitation. I must confess, it has really help improve upon my skills in neonatal care.....HP-12

Almost every week there is an in-service training done in the ward by our in-charge who is a paediatric nurse. And is mostly on neonatal resuscitation. From the interview it was gathered it is the commonest new-born problems encountered by both the midwives and the other nurses at the paediatric ward. Others new-born problems birth asphyxia, prematurity, neonatal jaundice and neonatal sepsis. However some new rotational nurses were at the ward from the word go you could easily detect that they were new at the ward ,they either seen moving from one cot to the other as the nurses at the ward attend to sick neonates.

The ward in-charge was seen busily attending to patients, putting in intravenous (IV) Lines, serving medications, supervising the junior nurses, my interview with her took three to

complete due to her busy schedule. This is because most of the experienced nurses were either on afternoon, night shift and the rest are on leave. During this period the ward had to make do with inexperience rotational nurses who are there for training and needed to be guided and supervised to carry out some of the duties. As expressed by one health provider;

.....most mothers at the ward think we are all qualified with the requisite skills to attend to their babies, so when you ask them to wait for you to finish with one neonate before attending to her baby they get upset. And most of the time because the rotational nurses are on training we do a lot of talking and teaching, when they see you standing at a cot side and you have two or three student nurses with you they get so upset.....HP-1

Most staff interviewed were worried about yearly rotation of staff at the paediatric ward as this was interfering with the quality neonatal care. It's very important for staff who work at the paediatric to be stationed and maintained, in the wards like it is done for the midwives. The challenge here is that anytime there is reshuffle it means a whole new set of nurses who obviously have not worked around neonates for a while, it takes some time for them to get used to the activities and processes. For typical example is how long it takes for new nurses to get accustomed to dosing regimens for premature babies and neonates, setting of IV lines for babies and other specialized care for neonates. This yearly rotation of staff have the tendency of slowing down the quality of care given to neonates. A staff expressed rather painfully:

.....neonates are so fragile and tender and their care requires a lot of skills and practice staff who work around them should be stationed and maintained just like they do to the midwives who are at the maternity to ensure an increase in the quality of care given to the neonates.....HP-10

Most midwives at the maternity also complained about feeding problems. They were of the opinion that they also needed training on the feeding patterns for the neonates .As expressed by one midwife:

.....feeding the neonate is a big challenge for us sometimes especially the sick ones. Most deliveries are done in the night, if you are lucky you would get a gynaecologist, his only duty there is to help with the delivery especially the difficult ones. Once the baby comes out its left in the care of the midwife who has to do the assessment which is known as the Agar score and if there is any complication you have to start something for the baby, and since we do not have a paediatrician stationed at the maternity you have to help manage the baby until the paediatrician can take over. They should give us some form of in-service training on calculation of neonatal feed and drug dosages to help us manage them well.....HP-12

4.9.2. Lack of Equipment

During visits to the University hospital paediatric ward ,some use of equipment were observed, they had functional perfusor, weighing scales and Ambu bags (bag and mask) which were seen been used on a neonate. . The ambu bags were of appropriate sizes for both premature and term babies and also the maternity wards had ambu bags. They also had functional suction device, glucometer and a phototherapy unit. For the phototherapy unit as expressed by one doctor they had only two and it was not enough as most of the cases that comes there are yellowish eyes of neonates.

.....the phototherapy unit we have is not enough to take care of all the cases that we admit and the neonate needs to go under a phototherapy and even if we are to get more we don't have enough space to keep them since we don't have a NICU.....HP-4

Some important equipment's were also missing, a radiant warmer most newly-admitted infants are cared for on radiant warmer beds in order to provide accessibility for resuscitation or procedures without jeopardizing thermal stability. As long as an infant remains critically ill and is likely to require resuscitation or frequent procedures the neonate is kept on a warmer bed especially the very small infants. As expressed by one health professional

.....Due to lack of a radiant warmer most preterm babies are referred to other places, hence the few admission recorded in neonate, and even if we are to purchase one there is still lack of a NICU, where it would be kept.....HP-1.

All the staff interviewed at the ward said there were no radiant warmers for managing preterm babies and even the incubator we have is not enough to cater for the cases we receive. One staff described the lack of radiant warmer as interesting as she wondered how they could manage neonates without a warmer. Some respondents were also of the view that since the babies were so vulnerable and needed warmth to survive, radiant warmers and incubators would help to maintain their temperature and thus improve their quality of care. There were no bedside laboratory facilities such as bilirubinometer for checking of quick haemoglobin and bilirubin levels for anaemic and jaundiced patients / babies. Due to lack of equipment for neonates, some staff had to improvise and this put their lives in danger sometimes.

4.9.3 Lack of a Neonatal intensive care unit (NICU)

Neonatal Intensive care unit is a critical aspect in maintaining the health and wellbeing of neonate patients in the hospital. The Neonatal unit is focused specifically on the health of new-borns and care for medically unstable or critically ill new-borns requiring constant nursing. For the health professions interviewed at the paediatric ward almost everyone made mention of lack of a NICU. One health provider expresses painfully

.....there are cases you wish to help, but if you keep them here you put the neonates life at risk, some needs the environment with the required equipment to survive so we quickly refer them to other general hospital which has a NICU. Most cases referred are the pre-term neonate since we don't have a radiant warmer and the incubator we have is not sufficient to help with the cases we get. So referral is our best option for now.....HP-12

Another staff also expressed another issue with the lack of NICU

.....just yesterday someone delivered a baby through caesarean section and the baby was pre-term, we could not keep the baby, because we do not have enough incubator to keep the neonate. The only one we have was occupied so we had to refer.....HP-4

Another staff also spoke about how the babies are been kept in a line

..... We don't even have a separate room where the neonate are kept, the place given to them is known as our neonatal corner or sometimes also refer to as the baby's line. We really need a NICU to be able to perform our duties well and provide the best of care.....HP-7

During the interview most neonates were seen without their mothers around them, this was due to the fact that there was not enough space for all mothers to stay around their babies so most of the things needed to be done were also done by the nurses. As one nurse explained

.....I have been working here for some years now, I always wish management would get us a Neonatal intensive care unit (NICU) to addresses this problem of lack of space. As spaces that support the new-born include delivery rooms, nurseries, and other spaces where high-risk neonates are monitored and given both extensive and immediate care, but what do you see just a corner. To me this conforms to quality of care.....HP-1

4.9.4 Aseptic Procedures on the Wards

During visits to the paediatric ward one very alarming situation was that, they did not have any aseptic procedures for staff and visitors entering the wards and since there is no special room for neonates and they are mixed with other babies. Important things like facemask, caps, and aprons was not worn before entering the wards. The neonatal corner or line as referred to by most staff is the place where the neonates are kept and other older babies are also seen there. it was observed that mothers were allowed to have visitors, are seen seated comfortably close to a sick neonate without any facemask on, and chatting happily with the mothers. Again, it was observed that mothers were allowed to sit with their sick neonates similar to what happens to mothers with older children, but they did not allow visitors to enter the emergency resuscitation room. This seeming lack of protocols for entering the wards was attributed to the way the wards have been structured. A staff expressed rather painfully that:

.....if we had a NICO with all the protocols available and specific rooms or wards have been designed for special cases it would be easy to stop certain things. But with our current arrangement, how do you stop a relative or a parent whose child is in the same room with a neonate from visiting.....HP-2

Most family members of sick babies were seen coming in and going out, especially after ward rounds when the doctors have retired to the consulting rooms. As expressed by one health worker

.....it's very hard to restrict certain family members from coming to see their sick baby when other family members are allowed to visit other babies in the same room , but once we have separate rooms it would be easy to restrict certain family members.....HP

It was observed that hand washing by staff was also done frequently. But sometimes between caring for older children and neonates it was observed that the hand washing was not always

done by Staff as they are all in the same room so the temptation is high. According to the staff interviewed, the heavy workload they experience sometimes makes it difficult for them to wash their hands frequently.

Apart from these, it was observed that neonates were mixed with older babies. One surprising observation also made was that babies in cot were mixed with premature babies in incubators in the same line as designed for neonates. This does not conform to quality of care standards for neonates. As expressed by one worried staff:

.....Sometime we need some isolation for premature babies ,but where is the space to do this , we have no choice but to mix them and provide the best of care for the babies to get well amidst the struggle for space for both mothers and babies

4.9.5. Availability of Protocols

During observation at the delivery room where care of new born starts, the following things were observed for the new born, a protocol for resuscitation of new-born's which included: steps in Apgar scoring for the new born, three ambu bags of appropriate sizes for full term and pre-term babies, suction device, weighing scale and a small refrigerator containing essential injections and danger signs to look out for so us to refer when necessary to the paediatric ward at the paediatric ward, new-born emergency room has the following protocols on neonatal resuscitation, one ambu bag of appropriate sizes for both full- term and preterm neonates, weighing scale, oxygen, an emergency trolley containing injections. During the observation one important equipment which was not seen was dosiflow, which was later confirm by a staff that it's an essential equipment which is needed for regulating of I.V fluids. Without the dosiflow, regulating fluids because very difficult. At the paediatric ward they had a big notice board filled various protocols includes the following: Intravenous fluid therapy for new-borns,

management of seizures, and management of hypoglycaemia in neonates, and assessment and management of neonatal jaundice among others. There were other posters most common ones were HIV, healthy diet for the pregnant women, directing them with a sign to see the dietician, they also had various ones on malaria treatment guides, tuberculosis, they also information about specialist, especially their contact, names and phones numbers of various general hospital in case there is the need for transfer of a neonate, which they do a lot especially in the case of preterm babies. Most of these posters were mostly about pregnancy issues and older children, but not much on neonatal issues. Protocols on medication dosing which is very important was not boldly displayed but hiding in a corner of the big notice board. There is no gainsaying that protocols are essential as they serve as a quick reference for the health worker: they become very handy during emergencies.

4.9.6 Coping Strategies

During interview staff at the paediatric ward spoke about many ways that they improvise in taking care of neonates at the ward in the following words:

.....Most of the cases we handle here is yellowish eyes or jaundice, and we only have two phototherapy unit so most of the time we have to use the sun and the blue which is quiet involving, because once you decide to use the sunlight you have to be monitoring to see if it's the right temperature.....HP-1

.....We don't have enough incubators so we sometimes use hot water bottles and also do kangaroo mother care. And the risk here is that if the mother is not well it means you the nurse have to do it, plus your other duties.....HP-3

..... *When the ambu bag is too big for neonates we need to think fast to provide an improvise device ... {Laughing} sometimes we use soft bottle water container.....HP-6*

The risk here is that apart from the long term effects of stress on the health worker there is also the risk of acquiring all sorts of neonatal infections from some of these procedures. These could even result in the death of the neonate.

4.9.7 Referral

Most of the staff interviewed spoke about the referrals that they do and in most cases it's the preterm neonates due to lack of Neonatal intensive care unit. Spoken to indicated that they refer babies to a higher centre if a neonate had a problem. Most of the centres visited did not have an ambulance for emergencies, including referrals. Therefore, when babies are referred, they were transported in a taxi, most often not accompanied by any staff. Some staff interviewed explained further:

'...We don't have a neonatal unit so we refer if there is anything; we refer all our premature babies to the Regional hospital...' (HP- 4)

'.....There is no paediatrician here so we quickly refer if the baby has any problem.....' (HP- 10)

When mothers are transferred unaccompanied, some mothers may decide even not to go.

Inexperienced mothers may panic when complications such as seizures occur. This could also result in delays in receiving care and could prolong hospital stay as the child also acquires new infections during the transfer.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter, discusses the findings of the study in relation to the objectives aim to discuss mothers perception about the quality of neonatal care, focuses on availability of staff with skills in neonatal care and examines the availability of equipment and care processes of neonatal care. The study is limited to views of the mother's satisfaction and staff knowledge with the quality of care at the paediatric ward of the university of Ghana hospital

5.1 Perceptions of Mothers on the Quality of Neonatal Care

Care receivers measure quality of care on outcome criteria such as feeling comfort, Happy, informed and satisfied (Wheatley, Kelley, Peacock, & Delgado, 2008). Furthermore, according to the perspective model (Ravern *et al.*, 2011) quality of health Care means different things to health providers, patients and even managers who oversee It. In this study, mothers of new born babies were concerned about the care they had received from the health facilities and how it met their expectations and needs. The study revealed that more than half of mothers were overall satisfied with the quality of care provided at the paediatric ward of the university of Ghana hospital. More than 60% were satisfied with the overall care. With most mothers rating quality of care as good (58.35%). More than 60% of mothers were satisfied with clarity of diagnosis and treatment and competency of staff. Which is similar to a study by Cynthia Bannerman *et al.*, 2009 which states that client's satisfaction is based on promptness of information, respecting patient and providing them with adequate and clarified diagnoses. And also shows that about one-third of mothers were okay with the quality of neonatal care thus neither showing satisfaction nor dissatisfaction. it may be explained that mothers often tend to be okay with responses especially in clinical settings. Arguably, University hospital paediatric

ward been a small unit with just six cots for neonatal care, mothers would usually feel more comfortable and relieved , therefore this could also be the reason for the high level of satisfaction.

Satisfaction with the place or environment where mothers attended antenatal was found to be more than half. This was found to be higher compared to a similar study done in Nigeria (Sholeye et al., 2013) in which it was found to be 48.5%.

Satisfaction with the clarity of diagnosis communicated to mothers by the doctor was quiet high but contrary to a study done by (Montasser el al., 2012) which revealed that only 16.3% were satisfied with clarity of diagnosis. This is in consistent with a study done by Kumbani et al., (2012) provision of such information helps to make informed decisions about the health of patients and family. By helping the new mother understand the illness of the baby, treatment given and how long they are likely to stay on the ward, care providers enable parents are likely to be patient enough to comply with the treatment.

Mothers were satisfied competence of health workers. This is in consistent with a study done by Sholeye et al.,(2013).in Nigeria in which clients satisfaction of competence of health workers were found to be high. This could be explained that most mothers see University hospital as the best with highly advanced technology and health workers in the Madina district.

Mothers were however highly dissatisfied with the bed and cots arrangement at the paediatric ward with the mixing of both neonates and other older children.

5.2 Availability of Staff with Skills in Neonatal Care

During the duration of the study a lot of findings were made and among the many factors affecting and influencing the quality of care was the shortage of staff with skills in neonatal care. This is in line with a study done by Addo-Yobo in 2011 that there is shortage of health care specialist providers in neonatal care. The study also made some revelations about the fact that country has only five neonatologist who are working in the teaching hospitals. Just as described in the quality of care model, the findings of the study reveal that health provider's major concerns were about the medical capacity and technologies available to them in order to function effectively. A similar finding has been documented by (Raven *et al*, 2012, Jitta *et al*; 2008 and Dogba and Fournier). The health providers who provide care at the paediatric ward of the University hospital, for example, were concerned about the number of staff available, their competency and also availability of equipment for them to work more effectively and efficiently. As suggested by a lot of studies done on neonatal care, staff with skills in neonatal care were inadequate for neonatal care (Opondo *et al.*, 2009; Neogi *et al.*, 2011).

Almost all staff interviewed complained of the yearly rotation of staff, they also complained of the work load, limited number of staff with skills in neonatal care, among others. Unique to this study was the lack of a Neonatal intensive care unit which was painfully expressed by all staff interviewed. A small space has been allocated to neonates at the paediatric ward and mixed with other older babies, and sometimes you only find one nurse on duty with rotation nurses on rotation. Thus one professional against other staff with no skills in neonatal care hence inadequate staff. Neonates were mixed with older babies and children in the same ward. This confirms studies done by (English *et al*, 2004; and Opondo *et al*) that patient death as a result of nosocomial infections are linked to inadequate nurse to patient ratios. The vulnerability of neonates to infections is due to their weak immune system. The danger of mixing neonates with older babies is that it could result in the spread of hospital acquired infections from baby

and to the older children and staff. This therefore does not support quality of care. Due to shortage of staff with skills in neonatal care, babies at the ward do not receive the attention needed for their care and thus most essential things like, given of medication and feeding are not served as scheduled. In some instances most mothers are on admission at the maternity and the neonates are left in care of the nurses and other family members whose voices are not as strong as the mothers to prompt the attention of the overloaded health worker to attend to the sick neonate on time. This in most cases result in medication inaccuracies, which sometimes leads to partial or permanent disability or in worse cases mortality.

The care for new-borns requires a lot of attention especially during feeding of neonates either through breastfeeding or cup feeding, if care is not taking could lead to aspiration. Care for neonates entails a lot of things, which includes managing them in a separate unit or ward away from other older babies so as to provide them with the special care they require to improve upon their illness and recover promptly. (Neogi et al., 2011).

Evaluation of quality of care by providers also places emphasis on competency of staff (Neogi *et al.*, 2011). The study found that there was only one nurse trained in paediatrics, the rest were train on the job and has acquired some skills from the in-service training organised at the ward. In light of this some of them are not familiar with the care of sick neonates. There is therefore the need to train and maintain not only the skilled staff but also unskilled staff should be trained and this is essential in order to improve upon the care given to neonates. This is because rotational nurses are also involved in routine care of neonates, especially when only one nurse is on duty at the paediatric ward and the maternity ward. During visits to the maternity and labour ward there is a lot of care processes needed to take place and if there is only one midwife on duty with a rotational nurse who is not competent it makes the work difficult. There was, therefore, increased risk of the baby developing.

Hypothermia, which might consequently lead to death. There was also the risk developing other infections. This is in line with the study done by Kumar et al., (2009) that neonatal mortality could be as a result of improper use of equipment and procedures in order to improve upon the quality of neonatal care with the shortage of neonatal nurses, it is therefore important as an interim measure to train more staff on the job training programmes. During the study it was gathered that in-service training were done, but not regularly. This pattern should be changed such that more in-service training and on-the-job training programmes could help improve quality of care for neonates as new technologies and innovations keep springing up every day in the medical field. Therefore there is the need staff to be updated. This is consistent with a study done by Plaat (2008) and in its findings, believes that.

Training is a must for any health professional that may be present at a delivery of services to clients. During interviews some healthcare respondents were of the view that in-service training has helped improve upon their skills and confidence especially in neonatal resuscitation and their response to emergencies has improved. However, some staff respondent complained that due to the heavy workload at the paediatric ward (same staff taking care of neonates and other older babies) not all staff got the opportunity to attend, training, especially those who needed these programmes most. For example, most in-service and out-service training programmes were on Neonatal resuscitation and newborn management, which were mainly organised for midwives and the senior nurses. Continuous professional development courses should be included care of sick neonates and staff should be given the opportunity to attend such courses, this will enable staff who had not undergone any training on managing neonates function well in their daily activities at the ward. This is in line with the World health organization (WHO 1978),

5.3 Availability of Equipment and Care Processes of Neonatal Care

Every essential aspect of assessment of quality of care is the availability of equipment for neonatal care. This is in-line with the findings of studies done by English *et al* and Opono *et al.* (2004). This study found out that equipment such as radiant warmer was not available. This is contrary to studies done by Kumar & Darmstadt (2009) who suggested that having essential equipment and supplies for neonatal resuscitation can prevent some neonatal mortality due to birth asphyxia which is a major cause of death in new born. It also suggested that, the heating devices such as radiant warmers and incubators are necessary for preventing hypothermia in neonates. There was only one incubator available which was inadequate. Phototherapy machine was available but not in adequate for the number of cases receive in yellowish eyes. Bedside centrifuge and bilirubinometer were not available in the ward. Dosiflow used for administration of fluids for neonate was not available, due to this it is a challenge for most staff to correctly give dose of I.V fluid and sometimes overdose and under dose fluids happens at the ward. As has been identified by Wong *et al.* (2009) and Lansdowne & Bevan, (2012) overdose and under dose of IV fluids and medications are very common in neonates because of their small size. Most of the staff interviewed also had issues with calculation of feeds for neonates as these feeds are done according to body weight and age of the baby. Studies done by Lansdowne & Bevan, 2012 identified that the availability of protocols are essential for proper care of patients and most especially for neonate who are vulnerable to medication errors. These help staff to manage common new born problems and respond well to emergencies when paediatricians are not available. Protocols were available at the ward but poster at the corner of their notice board but other protocols and guidelines on other conditions such as healthy eating, tuberculosis, malaria and HIV. Were boldly displayed on the board. Hence, neonatal care has been neglected (Vanden Broek & Graham, 2009). The provision of adequate Protocols and

guidelines on neonatal care will enhance safety in the use of medicines and hence, promote quality care.

5.4 Aseptic Techniques

Most studies done have demonstrated the cost benefit ratio and positive effects of simple Hand washing for preventing transmission of pathogens in hospitals (Collins, 2008). Studies done by Calderdale and Huddersfield 2008, revealed that Medical staff and other health care workers are the bases for enforcing and ensuring infection control practices to help fight infection and transmission of organisms to other Aseptic technique methods which help prevent contamination of wounds and other susceptible sites by organisms that can lead to infection. The main purpose of aseptic technique is prevent the introduction of pathogens micro-organisms into susceptible sites, like wounds, also to prevent the transfer of pathogenic micro-organisms from one patient to another and to stop the acquiring of infection by staff. On the contrary clinical staff are often not consistent with hand washing practices, this normally happens in hospitals with low nurse staffing levels, makes adherence to hand washing a challenge (Collins 2008). Which is in line with the findings of this study on aseptic practices as staff of the hospital visited complained of heavy workload and inadequate staff. Health personnel were not washing their hands in between patients, as from a bed to a cot it's just a touch. And since it's just a ward and not an intensive care unit the use of personal protective equipment (PPE) such as face masks, caps was not practiced by staff. Nevertheless, footwear was changed before staff entering the Labour wards and the theatres to pick babies. The wards environment were clean but regular hand washing and use of these PPE would further enhance safety and prevent other infections.

This study found that babies slept one each in a cot. This is in contrast to the researcher's

experience of putting four babies in a cot as a result of pressure at the Komfo Anokye Teaching Hospital, where she had worked as a House Officer. As a study done by Silvestri et al., 2005 one baby per cot reduces the incidence of cross infection and promotes good quality care. Even though the one cot per baby is a good practice at the hospital, its benefit could be altered by the negative practice of mixing them with other older babies in the same ward. This exposure could increase the risk of acquiring all sorts of infection during their stay in the hospital and can even prolong the study thereby increasing the cost of care to parents and families.



CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.0 Introduction

This last chapter presents the conclusions and recommendations of the study.

The main conclusions of the study are:

6.1 Clients (Mothers of New-borns) Perception on the Quality of Care for Neonates.

It can be concluded that mothers were highly satisfied with the quality of neonatal care and a few were not satisfied with the care for their neonates. Whilst some mothers of neonates interviewed were somehow satisfied with care given at the facility others thought otherwise. The reasons for being satisfied were that the staff gave clarity in their diagnosis and treatment; examined their babies well, and most especially their babies health improved and hence recovered. Mothers who were not satisfied with the care given. They were of the opinion that, babies were mixed with older children, this made them quite uncomfortable.

6.2 Availability of Adequate and Skilled Human Resources for Neonatal Care

The study made conclusion that there was not enough staff with adequate skills in neonatal care. Most of these staff admitted that they needed more skills and that more of the in-service training on the job could help improve their skills in neonatal care.

6.3 Availability of Equipment and Care Processes of Neonatal Care

The study concludes that some essential equipment for neonatal care were either not available or the available ones were not enough to help in neonatal care. These include: dosiflow for regulating and administering fluids for sick neonates, Radiant warmers and incubators for

maintaining temperature in premature babies, phototherapy machines for jaundiced babies, and bedside centrifuge and bedside bilirubinometer.

6.4 Aseptic Techniques

The study concludes that in relation to aseptic techniques, hand washing technique was been used. With this it was not been adhered to. For example it was not done frequently by staff and mothers of the neonate. Visitors were seen coming in and going out without doing the hand washing. Other essential personal protective equipment such as facemask, caps, aprons were not worn in the paediatric ward around the sick neonates. These were seen only to be used in the labour wards where they change their footwear and in the operating room where midwives are expected to receive babies born through caesarean section they put on aprons, caps and protective mask before entering. Due to lack of a Neonatal intensive care unit Babies were found to be sleeping in separate cots at designated corner and mixed with older children. This was inappropriate.

6.5 Recommendation

The study suggests that management of the University of Ghana Hospital should provide a Neonatal intensive care unit for managing sick neonates and also separate them from other older babies and not mixed them as its currently done now. Setting up of neonatal units in

The hospital should take into account the mothers' welfare and thus provision of a mothers hostel were they can rest.

The paediatric unit for attending to sick neonates should have paediatricians, neonatologists, and neonatal nurses just as there are other specialties in midwifery, gynaecology, ophthalmology, among others. During recruitment, nurses who are trained in paediatrics should be employed and put permanently at the paediatric unit. More of the in-service training should

be done regularly. Staff nurses, who are interested in neonatal and Paediatric nursing, could be given sponsorship to train internally in some of the country's Institutions or in related institutions outside Ghana.

There is the need for management to pay attention to these issues raised above in order to improve the quality of neonatal health care at the university of Ghana Hospital.



REFERENCES

- Addo-yobo, E .O. D (2010) Neonatal Survival in Ghana- challenges and way forward.
Retrieved November 5, 2012 from
<http://dspace.knust.edu.gh:8080/muli/handle/123456789/549>
- Ahman, E., & Zupan, J. (2007). Neonatal and perinatal mortality: Country, regional and global estimates 2004. Retrieved from [http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?Isiscript=iah/iah.xis&src=google & base= REPIDISC](http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?Isiscript=iah/iah.xis&src=google&base=REPIDISC&lang=p&nextAction=ink&expr=search=176874&indexsearch=ID)
- Ballough, .C. Med,N. Makoweida, K. Bossman, C.Achadi, E.L, Husseina 2006: Current strategies for the reduction of maternal mortality British journal of obstetrics' and gynaecology112, 1180-1158
- Bhandari N, Bah/R, Mazumdars, Martines J, Black R, Bhan M. Effect of community –based promotion of exclusive breastfeeding on diarrhoeal illness and growth: a Custer randomized controlled trail, Lancet 2003
- Braun V, Clarke V: Using thematic analysis in psychology. In Qualitative Research in Psychology, Volume 3. 2nd edition. Bristol: University of the west of England., 2006: 77-101,.11 doi:10.1191/14780887069 p06309.
- Collins, A.S.(2008).Preventing health care associated infections, Patient safety and Quality. An Evidence Based handbook for Nurses 547-575.
- Creswell,J.W.(2013).Qualitative inquiry and research design, choosing among five approaches.(3rd ed.). Thousand Oaks, CA: Sage.
- Dogba M, Fournier P. Human resources and the quality of emergency obstetric care in developing countries a systematic review of the literature Human Resource Health. 2009. 7(7). Available from: [http// dx. doi. Org/10.1186/1478-4491-3-3](http://dx.doi.org/10.1186/1478-4491-3-3)
- Donabedian, A. (1988). The quality of care. JAMA: The Journal of the American Medical Association, 260(12), 1743-1748.
- Engender Health: COPE handbook: a process for improving quality in health services. United States of America, 2005

- English, M, Esamai, F., Wasunna, A., Were, F., Ogutu, B., Wamae, A.,....Peshu, N.(2004).Assessment of inpatient paediatric care in first referral level hospitals in 13 districts in Kenya. *The Lancet* 363(9425), 1948-1953
- Faye M. Mariama, N. Ibrahim., 2011. Home birth in women who have given birth at least once in a health facility: the contributing factors in developing countries. *Acta obstetrics Gynaecological. Scandinavia* E publication.
- Ghana Health Service.(2005). [Annual Report].
- Ghana Statistical Service (GSS),Ghana Health Service (GHS), & ICF Macro. 2009. *Ghana Demographic and Health Survey 2008: Key Findings*. Calverton, Maryland, USA: GSS, GHS, and ICF Macro.
- Ghana Statistical Service, Health Service Macro International Inc.Calverton, Maryland, U.S.A.(2009).*Ghana Maternal Health Survey, 2007.Accra*
- University of Ghana <http://ugspace.ug.edu.gh>
- Goldman DA, Durbin WA, Freeman J, Nosocomial infections in a neonatal intensive care Unit Infections. *Dis* 1981., 144:448-459
- Houlton, A. L, Mathews, Z. Stones, R. W., 2007. Applying a framework for assessing the quality of maternal health services in Urban India. *Social sciences and medicines* 64.2081-2095.
- Kikuchi K, Ansah E, Okawas, Shibanuma A, Gyapong M, Owusu –Agyei S, et al.Ghana’s Ensure mothers and Babies Regular Access to Cure (EMBRACE) program: study protocol for a cluster randomized controlled trial. *Trails*. 2015. 16:22. Doi: 10.1186/s/3063-034-0539-3 PMID:25887849.
- Kumar, V., Shearer, J. C., Kumar, A., & Darmstadt, G. L. (2009). Neonatal hypothermia in low resources settings: A review. *Journal of Perinatology*, 29(6), 401-412.
- Kumbani, L. C., Chirwa, E., Malata, A., Odland, J O., & Bjune, G. (2002). Do Malawian women critically asses the quality of care? A qualitative study on women’s perception of perinatal care at a district hospital in Malawi. *Reproductive Health*, 9(1), 30. doi: 101136/ archdischild-2012-301728.20
- Lansdowne, Z.,&Bavan, A.(2012). Assessing the Calculation skills of child health nursing staff. *Archives of Disease in childhood* 97(5), elo-elo, do i:10,1136.1 archdischild-2012-301728.20

- Lawn, J. E., Cousens S., Zupan J. (2005). 4million neonatal deaths: when? Where? Why? The lancet 365: 891-900
- Lawn, J. E., Cousens S., Bhutta, Z.A., Darmstadt G. L, Martines J., PaulV. Knippenberg R., Fogstadt H., Shetty P., Horton R., (2004): Why are 4million new-born's dying each year? The Lancet 362: 399-401.
- Mbuele B, Reddy E, Reyburn H: A rapid assessment of the quality of neonatal healthcare in Kilimanjaro region, Northeast Tanzania BMC Pediatr.2012,12(1):182.
- Maxwell, R. J. 1992. Dimensions of quality revised: from thought to action. Quality in Health care 11, 171-171.
- Montasser, N.A.E.-H., Randah, M.W.M., Amin, S. K., Adel, M.S., Elmoneem, T. R. I., & Haithem, M. A. (2012). Egyptian Women's Satisfaction and Perception of Antenatal Care. International Journal of Tropical Disease & Health, 2(2), 145-156.
- Neogi, S.B., Malhotra, S., Zodpey, S., & Mohan, P. (2011). Challenges in scaling up of special care new born units-lesson from India. Indian Paediatrics, 48(12), 931-935
- Opando, C., Ntoburi, S., Wagai, J., Wafala, J., Wasanna, A., Were, F.,.....English, M.(2009). Are hospitals prepared to support new born Survival? An evaluation, of eight First-referral level hospital in Kenya-Tropical medicine and international Health, 14(10), 1165-1172
- Overtveit, J. 1992. Health services Quality an introduction to quality methods for Health services.
- Patton, M. (2002) Qualitative research and evaluation methods. Thousand Oaks, CA: Sage
- Pattinson, R.C. 2006 Saving Mothers: Third Report on confidential Enquiry into maternal Deaths in South Africa 2002-2004. Government Printers Pretoria. South Africa.
- Plaat, F. (2008). Neonatal resuscitation- the team needs a leader. AVMA medical and legal Journal, 14(2), 43-45. Doi: 1258/cr. 2008. 080014. Retrieved July 21, 2013 from <http://cri.sagepub.com/content/14/2/14>.
- Trochim, W.M.(2000). The research methods knowledge base (2nd ed). Atomic Dog Publishing, Cincinnati, OH.

- Raven, J.H., Tolhurst, R. J., Tang, S., & van den Broek, N. (2011). What is quality in maternal and neonatal health care? *Midwifery*. Retrieved July 21, 2013 from <http://www.Sciencedirect.com/science/article/pii/S0266613811001367>.
- Saugstad OD, Root welt T, Aalen O. Resuscitation of asphyxiated new born infants with room air or oxygen: an international controlled trail: The Resair 2 study *Paediatrics*. 1998,. 102(1): el. [PubMed 9651453]
- Sholeye, O., OA, A., J. (2013). Three Decades after Alma –Ata: Are Women Satisfied with Antenatal Care Services at Primary Health Centres in Mushin, Lagos? *Online Journal of MedicineandMedicalScienceResearch2* (3),29.
[http://onlineresearchjournals.org/JMMSR/pdf/2013/mar/Sholeye et al..pdf](http://onlineresearchjournals.org/JMMSR/pdf/2013/mar/Sholeye%20et%20al..pdf)
- Silvestril, L., Petros, A.J.,Sarginson,R.E., delacal, M.A., Murray, A. E.,& Van Saene, H.K.F(2005)/. Handwashing in the intensive care unit: A big measure with modest effects. *Journal of Hospital infection*, 59(3)172-179.doi 10,106/j. jhim, 2004.11.005
- UNICEF 2006. *The State of World Children*.
- U.G (2015) *University of Ghana Hospital Records*.
- Van den Broek, N. R., & Granham, W. J (2009) *Quality of Care for maternal and new born health: the neglected agenda*, *BJOG, An international Journal of Obstetrics and Gynaecology*, 116, 18-21
- Wagaarachchi, P.T., Fernando, L , 2002.Trends in maternal mortality and assessment of substandard care in a tertiary care hospital, *European Journal of Obstetrics gynaecology, and Reproductive Biology* 101.36-40.
- Walls, S.N., Lee, A.C., Niemeyer, S., English, M., Keenan, W. J., Carlo, W., Ariawan, I. (2009). Neonatal resuscitation in low-resource settings: What, Who, and how to overcome challenges to scale up? *International journal of gynaecology and obstetrics: the official organ of the international federation of Gynaecology and Obstetrics*, 107(suppl 1), S47.
- Wheatley, R.R., Kelley, M. A., Peacock, N., & Delgado, J. (2008). Women’s narratives on quality in prenatal care: A multicultural perspective. *Qualitative Health Research*, 18(11), 1586-1598.

- Wilson, L. Goldsmiths P. 1995. Quality and its measurement, in; Wilson, L. Goldsman P. (Edu). Quality Management in healthcare. McGraw Hill. Sydney, Australia pp. 229-258.
- Wong, I. C. K., Wong , L.Y.L., & Cranswick, N. E (2009). Minimising medication errors in children. Archives of Disease in childhood. 94(21,161-164,doi., 10.1136/adc.2001.116442
- Woodruff A.W., Grant J., el-Bashir E. A., Baya El., Yugusuk A. Z., elsuni A.,(1984): Neonatal tetanus, mode of infection, prevalence, and prevention in southern Sudan. Linking hub Elsevier. Com/retrieve/pii/S0140673684904239. Accessed on 23rd March 2008
- World Health Organization (1996). Perinatal mortality, A listing of available information. FRH/MSM.96.7. Geneva.
- World Health Organization (1999). Care in Normal Birth: A practical guide. WHO. Geneva.
- World Health Organization (2002). Neonatal & perinatal Mortality; country, Regional and global Estimates.
- World Health Organization (2006). Essential New born Care Manual. Geneva
- Yadav Sidhartha (2007), new born care: Traditional practices in Nepal. Archive. Student. Bmj, Com/issues/07/09/life/308. Pdf Accessed on 23rd March 2008.
- Yinger N .V and Ransom E. I, (2003). Why invest in new born Health? Population Reference Bureau: Washington DC. Retrieved November 16, 2013 from http://www.igwg.org/pdf/whyinvestnewborn_eng.pdf

APPENDICES

Appendix 1: Consent form for study participants

Project Title: “Assessment of the quality of neo -natal health care at the paediatric unit of the university of Ghana hospital”

Principal Investigator: Amma Acheampong Boateng

Qualification: Pharmacy Technician

Institution of affiliation: School of Public Health, University of Ghana, Legon.

Tel.0244518402.

General information about Research: Quality of care for neonates (babies born from 0-28 days) is one of the key factors that contribute to the survival of babies in the under-five group. So the assessment of the quality of care given at the first 28 days of the baby’s life is very crucial and upon which improvement of health service delivery can be undertaken. The Donabedian model of quality of care would be adopted, (structure, process, output).

Background of interviewer: My name is

From.....(I am a student who is here) or(am helping a student) to collect data purely for academic work for a degree in Masters in Public Health.

Procedure: Information required from you for this study includes background characteristic and your rating of quality of care given to your neonate. Data collection is through the administration of a structured questionnaire and focus group discussion.

Risk and benefits: there are minimum or no risks if you take part in this study. There are also no incentives but the information you provide will help improve on your health and the community.

Right to refuse: Your consent to participate in this study is voluntary and you can withdraw from this study at any time.

Anonymity and confidentiality: you are assured of strict anonymity and confidentiality on any information you give.

If you have further information or questions about the study, you may contact the principal investigator, Amma Acheampong Boateng on phone number: 0244518402 or email

boatena@yahoo.com

Name of Participant:

Signature or Thumb prints of Participant:

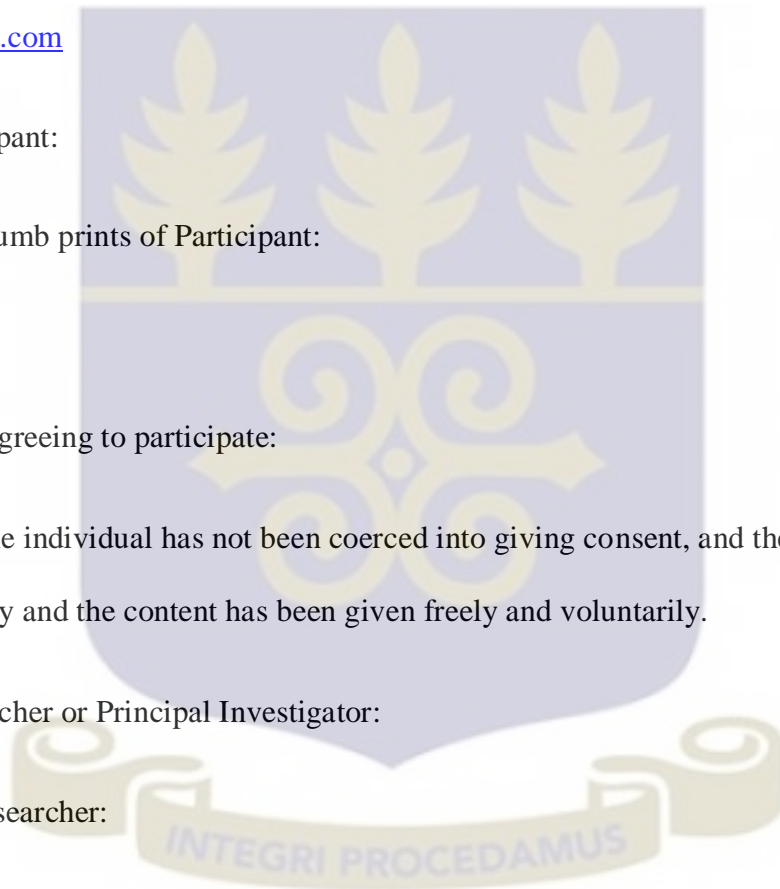
Date:

Thank you for agreeing to participate:

I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and the content has been given freely and voluntarily.

Name of Researcher or Principal Investigator:

Signature of Researcher:



Appendix 2: Voluntary consent

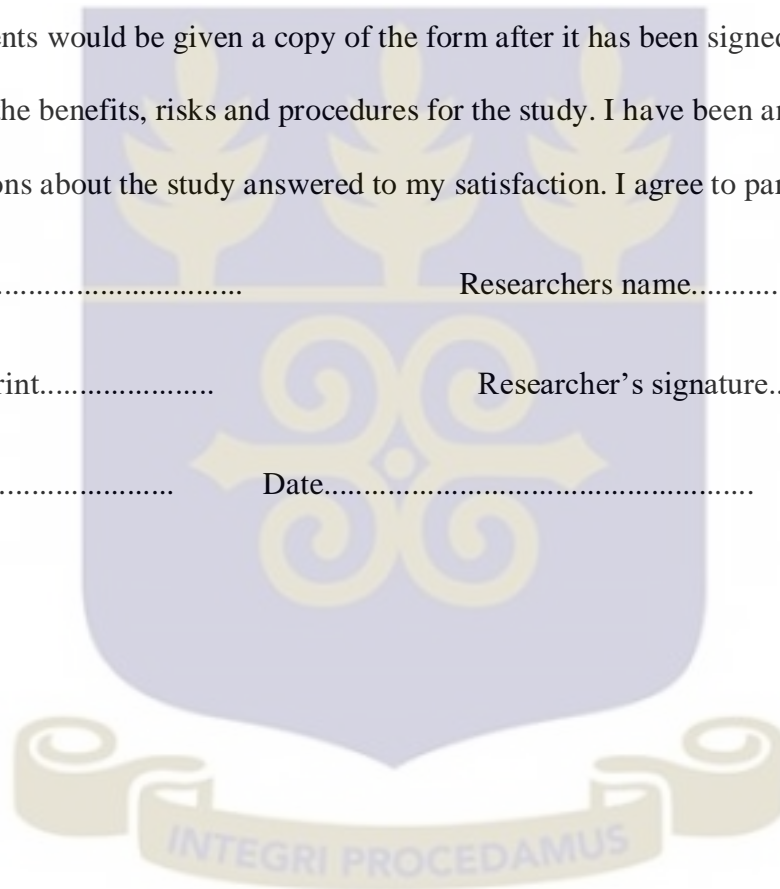
This is an adapted modified Noguchi IRB assent form

I have read the information given or the given information has been read and duly explained to me. My concerns about this study have been duly addressed. By thumb printing it indicates that now voluntarily agree to participate in this study knowing that I have the right to withdraw from the study at any time without it affecting my ability to access healthcare. (Parents would be given a copy of the form after it has been signed). This assent form describes the benefits, risks and procedures for the study. I have been an opportunity to have my questions about the study answered to my satisfaction. I agree to participate.

Child's name:..... Researcher's name.....

Child's Thumbprint..... Researcher's signature.....

Date..... Date.....



Appendix 3: QUESTIONNAIRE ON THE ASSESSMENT OF QUALITY OF NEONATAL HEALTH CARE AT THE UNIVESITY OF GHANA HOSPITAL LEGON.

Interview date:

Name of Interviewer:

Respondents Number:

A. Demographic characteristics of mother

Demographic characteristics	Response(please tick the appropriate answer)
Q1 Age	<input type="text"/>
Q2 Parity	<input type="text"/>
Q3 Educational level (1)None (2)Primary (3)Secondary (4)Tertiary	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Q4 Employment status (1)Employed (2)Unemployed	<input type="checkbox"/> <input type="checkbox"/>
Q5 Marital status (1)Married (2)Single (3)Widowed (4)Divorced (5)Separated (6)Co-habiting	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Q6 Baby's Age	<input type="text"/>
Q7 Sex of Baby (1)Male (2)Female	<input type="checkbox"/> <input type="checkbox"/>
Q 8 What brought your baby to legon hospital? (1)Delivery (2)Admission (3)Delivery and Admission	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Q.09 the older babies are separated from neonates 1. Yes 2. No	<input type="checkbox"/> <input type="checkbox"/>

<p>Q 10 Where did you attend Antenatal clinic?</p> <p>1.Legon Hospital</p> <p>2. Another health facility</p>	<input type="checkbox"/> <input type="checkbox"/>
<p>Q10 When did you start Antenatal clinic?</p> <p>1.first trimester</p> <p>2.Second trimester</p> <p>3.Third trimester</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Q11 What were some of your experiences at antenatal clinic.</p> <p>1.Pleasant</p> <p>2.Unpleasant</p>	<input type="checkbox"/> <input type="checkbox"/>
<p>Q12 What was the mode of the delivery?</p> <p>1.SVD</p> <p>2.Caesarean section</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Q13 Where did you deliver?</p> <p>1.Legon hospital</p> <p>2.Another health facility</p>	<input type="checkbox"/> <input type="checkbox"/>
<p>Q14 why was baby admitted here.</p> <p>1.Low birth weight</p> <p>2.Pre-term</p> <p>3.Fever</p> <p>4.Yellowish eye</p> <p>5.others</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Q15 What has been your experience when entering the ward to see your baby?</p> <p>1.To wash your hands</p> <p>2.Put on protective clothes</p> <p>3.Change your footwear before entering the ward</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Q16What do you think about this practice?</p> <p>1.Strongly disagree</p> <p>2.Disagree</p> <p>3.Agree</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<p>Q.17Are the nurses Available on the wards all the times.</p> <p>1.8am to 2pm</p> <p>2.2pm to 8pm</p> <p>3.8pm to 8am</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

<p>Q.18 The nurses are professional and handled my baby well.</p> <p>1.Strongly disagree</p> <p>2.Disagree</p> <p>3.Agree</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.19 The doctor explained your baby's illness to you.</p> <p>1.Strongly disagree</p> <p>2.Disagree</p> <p>3.Agree</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.20 The doctor made it clear the type of treatment given to your baby.</p> <p>1.Strongly disagree</p> <p>2.Disagree</p> <p>3.Agree</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.21 I would willingly return with my baby for follow-up because Of the quality of care given</p> <p>1.Yes</p> <p>2.No</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.22 I will willingly recommend the facility to my friend with a sick neonate?</p> <p>1. Yes</p> <p>2.No</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.23 overall how would you rate the level of satisfaction with the level of care</p> <p>1=very dissatisfied</p> <p>2=dissatisfied</p> <p>3=okay</p> <p>4=Satisfied</p> <p>5=very satisfied</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.24 The health of my neonate has improved because of the quality of care</p> <p>1.Yes</p> <p>2. No</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>
<p>Q.25.Overall how would you rate the quality of neonatal care.</p> <p>1.Excellent</p> <p>2.Very good</p> <p>3.Fair</p> <p>4.Poor</p>	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>

APPENDIX 4

University of Ghana, Legon

College of Health Sciences

School of Public Health.

Interview guide for Health providers

An assessment of the Quality of Neonatal Care at the Paediatric unit of the university of Ghana hospital

Please kindly assist in answering the following questions. Be assured that the answers provided will be solely used for academic purpose.

Section A: Socio- demographic characteristics

Sex Male Female

Age.....

Marital Status Single Married Divorced Widowed

Educational level None primary JSS secondary technical

Tertiary

Occupation Medical Doctor Midwife Nurse

Section B: Skills in Neonatal Care

1. What are your main duties on the

Ward?.....

.....

.....

2. What are some of the common newborn problems you encounter in this hospital

.....

.....

.....

3. What are your experiences with neonatal care in this hospital

.....

.....

4. Have you had any training in neonatal care?

.....

.....

5. Have you had any in-service training on neonatal health?.....

.....

.....

- In the past year{ } between one and five years { } more than five years
- What was the training on?.....

.....

.....

- How beneficial do you think the training was?.....

.....

.....

- How often do you go for such training?.....

.....

.....

6. What are some of the difficulties you face in carrying out your duties in the neonatal ward when managing neonates.....

.....

.....

7. What are the structures in place for neonatal care?.....

.....

.....

8. What equipment are available for neonatal care?.....

.....

.....

9. What are your experiences in caring for premature babies?.....

.....

.....

10. What are your opinions on the quality of care for the neonates in this hospital?.....

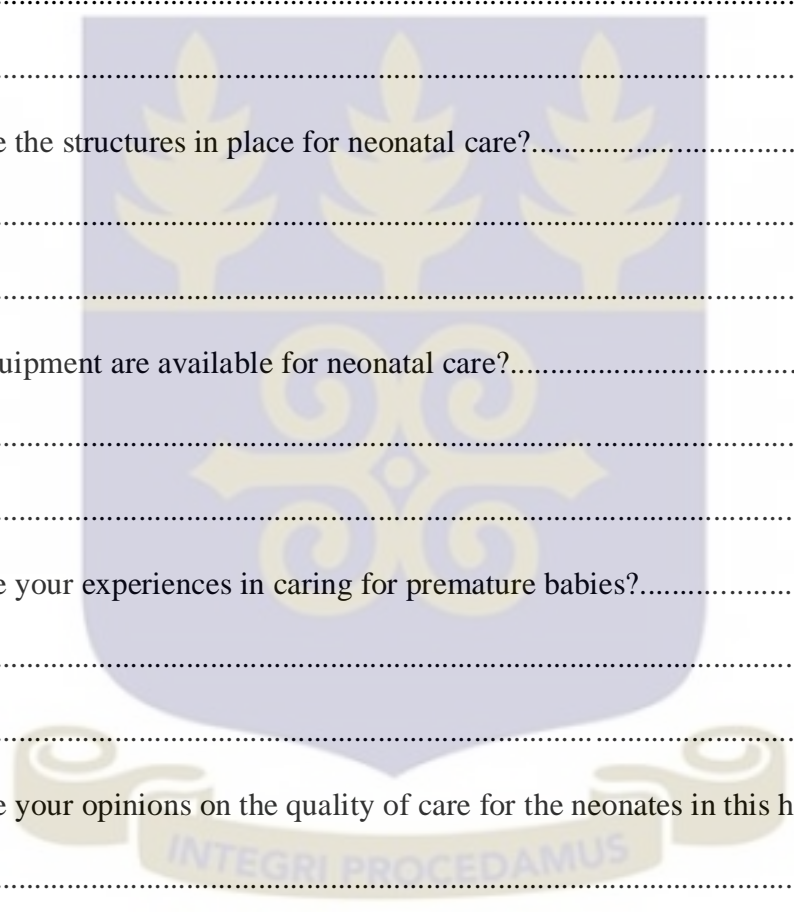
.....

.....

11. How can neonatal care be improved in this facility?.....

.....

.....



Section C: Availability of staff

1. Availability of staff in the delivery room and newborn nursery

Indicate the staff available	Newborn Nursery	Delivery Room
Midwives		
Nurses		
Doctors		
Medical Assistants		

2. Who is available during the weekend?.....

3. if senior staff and specialist are not around how are they called?.....

Section c: Layout

1. Is there a nursery available Yes{ } No{ }
2. How many cots/ beds does the nursery have?.....
3. Up to what age are newborns admitted to the nursery?.....days/weeks
4. Are neonates separated from other babies in the paediatric unit?

Appendix 5:

Observation Schedule

Paediatric wards inspection for the presence of basic supplies and equipment using a pre-prepared checklist:

Bag valve mask	Yes{ }	No{ }
Radiant warmer	Yes{ }	No{ }
Weighing scale	Yes{ }	No{ }
Perfusor	Yes{ }	No{ }
Suction Device	Yes { }	No{ }
Glucometer	Yes { }	No { }
Phototherapy	Yes { }	No { }
Oxygen	Yes { }	No { }



Use of equipment

Use of ambu bag for neonatal resuscitation by staff	Yes { }	No { }
Babies / neonates being kept in a radiant warmer (if available)	Yes { }	No { }
Use of diagnostic test such as bilirubinometer for neonatal jaundice	Yes { }	No { }

Beds

Number of beds/ cots available for neonates.....

Number of babies on a bed.....

Records keeping

Case notes inspection and information extracted regarding presence or absence of a list judged to be essential to the record of a sick neonate.

Apgar score	Yes[]	No[]
Birth weight	Yes []	No []
Gestational Age	Yes []	No []
Rhesus Factor of mother	Yes []	No[]
Blood group of mother	Yes[]	No[]
HIV Screening	Yes []	No[]
Record of neonatal death in a special notebook	Yes[]	No[]
Heart Rate	Yes[]	No[]
Respiratory rate	Yes[]	No[]
Temperature	Yes[]	No[]
Haemoglobin Level	Yes[]	No[]
Blood Glucose Level	Yes[]	No[]

Observation of aseptic techniques

How are the staff/ mothers / visitors observing simple cleanliness in the wards?

Staff/ mothers/ visitors use of facemasks, caps, wearing of gloves and aprons?

Staff/ mothers/ visitors changing footwear, wearing mask and cap before entering neonatal wards?

Hand washing practices by staff and mothers on the wards?

Availability of drugs(list the drugs you wish to find)

Ampicillin	Yes[]	No[]
Gentamicin	Yes[]	No[]
Phenobarbitone	Yes[]	No[]
10% Glucose solution	Yes[]	No[]
Cefotaxime	Yes[]	No[]
Vitamin k	Yes[]	No[]
Aminophyline	Yes[]	No[]
Availability of protocols for management of neonates	Yes[]	No[]

