

QUALITY OF SERVICE ANALYSIS TOWARDS DEVELOPMENT OF A MODEL FOR
PRIMARY-LEVEL MATERNITY CARE IN IBADAN, NIGERIA

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A thesis submitted in fulfilment for the degree
Philosophiae Doctor in Nursing, in the Faculty of Community and Health Sciences,
University of the Western Cape



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2015

ABSTRACT

The unacceptable high rate of maternal and neonatal deaths in Nigeria has been persistently unabated. Therefore, the present quality of maternal care evident by the magnitude of severe maternal/neonatal morbidity and mortality in this region makes designing of a model that will serve as a framework for provision of quality maternity care to women and their new-born a worthwhile study. The global report of deaths related to pregnancy and childbirth documented 600,000 maternal deaths annually. Developing countries, including Nigeria, have the highest burden of maternal and neonatal deaths resulting from complications related to pregnancy and childbirth. There has been no improvement in Nigeria as far as maternal and neonatal deaths are concerned. In Nigeria, the maternal mortality ratio in 2008 was recorded as 545/100,000 live births, and 576/100,000 live births in 2013. Women and children from low socioeconomic background are the vulnerable groups. The peculiarity of their vulnerability predisposes them to finding quicker and cheaper avenues to seek health care. The Primary Health Care (PHC) maternity facilities are to serve this large population of women and their babies at grassroots level. Few studies have been done to measure quality of antenatal and delivery care separately at higher level of care with resultant subjective findings and conclusions. Each of these aspects of maternity is a part of the whole and not the whole. Currently, there is gross dearth of literature regarding quality of maternity services at the disposal of the vulnerable women, who are likely to utilize the PHC facilities. The measurement of the quality of the existing maternity services at primary level is imperative for designing a more effective model capable of improving quality of services at this level.

This study sought to develop a quality service improvement model for primary level-based maternity following rigorous analysis of the quality of its structure, the process and the outcome as proposed by Donabedian. The specific objectives of the study were to describe the status of infrastructures, equipment, instruments, medications; investigate the degree to which the services rendered are timely, appropriate, satisfactory and consistent with current professional knowledge; investigate the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights; measure clients' return rates for maternity-related services in the facilities; and to develop a validated model to guide provision of quality maternity care in PHC facilities.

Using a theory-generating approach, the study was conducted in two distinct phases. The first phase focused on analysis of the existing maternity services at PHC level, while the second phase concentrate on model development. The first phase, which is an embedded mixed-methods

approach, utilized validated clients' questionnaire, health workers' questionnaire, observation checklist, focused group discussions, and in-depth interviews for data collection. A multistage sampling method was used for sample size selection. Five local government areas (LGAs) in Ibadan were selected purposively. Similarly, all the facilities that offer maternity care in each LGA were purposively selected. Postnatal women, health workers in each facility, medical officers of health (MOHs) and heads of facilities were the participants in the study. A total of 755 postnatal women who participated in the surveys were recruited from the sample frames (attendance registers) using systematic random sampling. A validated structured questionnaire was utilized to elicit information on their experiences with their chosen places of antenatal and childbirth care from pregnancy to puerperium. Similarly, the 130 health workers who participated in the surveys were recruited from the sample frames (duty rosters) using systematic random sampling. A validated structured questionnaire was utilized to elicit information on their competences, attitudes and the midwifery practice in their respective facilities. In addition to the quantitative surveys, focus group discussions (FGDs) and in-depth interviews (IDIs) were conducted for some postnatal women and four MOHs/heads of group of facilities. The participants for the FGDs and the IDIs were conveniently and purposively selected, respectively. FGD guide and IDI guide were used to guide the interviewers. The study was approved by the Faculty Board Research and Ethics Committees, the Senate Research Committee of University of the Western Cape and Oyo State Research Ethical Review Committee in Nigeria. Informed consent was obtained from each study participant. Autonomy, anonymity, and confidentiality of information provided by the participants were ensured. Nobody was coerced to participate in the study. The data collected with the aid of observation checklist and questionnaire from the selected PHC, health workers and client (postnatal women) were analyzed using descriptive statistics (frequency/percentage distributions); while association between variables of interest and difference in mean values were done using chi-square and t-test statistics, respectively. The second phase of the study focused on model development, and was done in line with a theory-generating research process in the literature supported by McKenna & Slevin, (2008) and Chinn & Kramer (2014). The developed model was tested for its appropriateness, adequacy, accuracy and whether it represents reality, for it to be assumed effective in achieving the goal if applied in midwifery practice at primary level.

Client-participants were between 15 and 44 years; their mean age \pm standard deviation was 28 ± 5.3 . The health workers were between 20 and 58 years; mean age \pm standard deviation being 41 ± 10 . Out of the 730 client-participants, 92.1 % were married. None of the women had access to preconception counselling in any health facility. A total of 92.6 % of the women received

prenatal care under the existing traditional model of antenatal care (ANC), out of which 22.6 % registered for ANC in two different facilities for various reasons. Although there was gross shortage of manpower in all the facilities, the percentage of nurses/midwives was fewer than that of the community health extension workers (CHEWs) and health assistants (HAs), while only one medical doctor was employed to cover all the different types of facilities in each local government area . There was a questionable staff level of competence reported in the study. Evidence of training in life-saving skill (LSS), post-abortion care (PAC) and safe motherhood was rare among the health worker participants. Among health workers who had witnessed vaginal laceration and those who claimed to have performed episiotomy on women, 30.2% and 32.6 % would depend on other health workers for repair of the vaginal traumas, respectively. Partograph was not in use for management of progress of labour by any health worker in any of the facilities. Both quantitative and qualitative data analysis showed evidences of abuse of women's rights to timely, quality and respectful maternity care and risky practices by the health workers.

The conditions of the buildings used for PHC centres and the beds were not satisfactory. There was gross inadequacy of essential and basic items needed to provide standard and quality care across all the facilities, while significant proportion of the available equipment/instruments were obsolete, dirty, rusty and faulty. The infection prevention and control practices were sub-standard. Inadequate funding by respective local government authorities was implicated for the poor conditions of infrastructures, equipment/instruments, staff recruitments and consequent shortage of manpower. Low level of patients' satisfaction, evidenced by verbal expression, percentage difference between antenatal registration and childbirth record, immunization clinic visits and childbirth record in each facility, was reported. Therefore, fixing the deplorable and/or non-commodious building infrastructures to meet the required standard, provision of facilities and items needed for quality care and infection prevention, recruitment of skilled qualified health professionals, establishing a new Primary Health Board in the state to provide efficient funding and effective monitoring systems were recommended, based on the findings of the study. Lastly, the implementation of the newly developed model is strongly recommended in order to improve women's and new-born's health.

KEY WORDS

Quality

Analysis

Maternity

Service

Development

Neonate

Primary Health Care

Model



DECLARATION

I declare that *Quality of service analysis towards development of a model for primary level maternity care in Ibadan, Nigeria* is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Full name: **Joel Ojo ALUKO**

Date: **November 27, 2015**

Signed:



DEDICATION

This work is wholeheartedly dedicated to the King eternal, Immortal, Immutable, Invisible, Invincible and the only wise God; to whom all honour and glory are due forever and ever. Amen.



ACKNOWLEDGEMENTS

My resounding praise, sincere thanksgiving, solemn adoration and awesome worship go to the El-Shaddai (Almighty), the source of life, wisdom, understanding, knowledge and all help. His covenant with me is as sure and real as His existence: "...there has not failed one word of all His good promises, which He promised...." What shall I more say, for time would fail me to tell of His steadfast lovingkindness, unceasing mercy, uncommon favour, manifold grace, unfailing health and uncompromised security that my entire household and I enjoy daily, particularly during the course of the doctoral programme. He is the Alpha and Omega; the First and the Last; the Beginning and the End of this programme. His word has been a lamp unto my feet and a light unto my path. Therefore, I shall sing of His mercies and wonderful works forever. "Now to Him who is able to do exceeding abundantly above all that we ask or think, according to the power that works in us, unto Him is glory ... by Christ Jesus throughout all ages, world without end. Amen."

This doctoral programme was supported with CENTALS Postgraduate Scholarship Award by the Centre for Teaching and Learning Scholarship, School of Nursing, University of the Western Cape. The award was a great relieve and encouragement to me. It covered the registration fee, tuition fees and motivation cost of this study. I am indeed grateful. May God bless CENTALS! May God bless School of Nursing. May God bless University of the Western Cape.

I cannot but thank the people God used in different but magnificent ways to contribute immensely to the success of this work. Most prominent among them is my supervisor and mentor, Professor Rhoda Anthea. The sacrifice, commitment, diligence and thoroughness she put into the supervision of this work are rare qualities that could be found in academic nowadays. May God the great Rewarder of all human endeavours bless her for the good work in life and in eternity, Amen. Also, I am greatly indebted to my co-supervisor – Dr Regis Rugira Marie Modeste, who also, as an angel of God, gave this work a facelift. I sincerely appreciate her usual useful brilliant suggestions, uncommon patience, and commitment. She too gave this work undivided attention both at convenient and inconvenient periods. Her sacrificial contribution to the work shall be divinely rewarded. I also thank Professor Oluyinka Adejumo, who was used by God to lay a solid foundation capable of standing the test of times for the academic work. His thoroughness and painstakingness during the proposal writing added academic rigour to the thesis. May God's presence be with him home

and abroad. I sincerely acknowledge Professor Susan, whose initial contribution played the function of a ‘catalyst’ to this work. My sincere appreciation goes to Dr Abimbola Oluwatosin for her support, advice and encouragement throughout the course of the work. Similarly, I cannot but thank Dr Chritiana Olanrewaju Sowunmi, Mrs Wura Osayuwa, Mrs Adetola Adedeji, and Mrs Bello for their support, words of encouragement, and useful suggestions, which really worked as catalyst to this work. May God bless you all.

I am indeed grateful to the Oyo State Government, the chairpersons and the medical officers of health of all the various local governments for granting me ethical clearance and permission to use their facilities for data collection. Moreover, I sincerely acknowledge all the postnatal women and the health workers who participated willingly in this study. Again, I sincerely appreciate all my colleagues in Nurse Tutors Programme, University College Hospital, Ibadan; Private Suites, University College Hospital, Ibadan; and Department of Nursing, University of Ibadan for their encouragement and support. I will like to thank Mrs Udom, Miss Eniola Odewusi and a host of others for their useful contributions.

My biography has been a confirmation of the adage: “Beside every successful man there is a woman.” For this reason, my sincere appreciation goes to my jewel; God ordained helpmeet; an incomparable sweet heart; a prudent Homemaker; the exact wife of my dream – Mrs Fragrance Atinuke Aluko. She stands by me always, even when the going is tough or rough. I am what I am today, because of her enduring, indispensable, supportive role. God grant her joy, happiness and fulfilment in life. I appreciate all my children. They all contributed immensely to this work. God grant all of you divine favour and remarkable breakthrough in life.

ACRONYMS AND ABBREVIATIONS

ANC	Antenatal care
CHEWs	Community Health Extension Workers
CHOs:	Community Health Officers
FANC	Focused Antenatal Care
FGD	Focus Group Discussion
GCE	General Certificate Examination
HAs	Health Assistants
ICOMP	Information Complexity-based regularization parameter
IDI	In-depth Interview
IOM	Institute of Medicine
IPPF	International Planned Parenthood Federation
JCHEWs:	Junior Community Health Extension Workers
LGA	Local Government Area
LSS	Life-Saving Scheme
MOH	Medical Officer of Health
MOHs	Medical Officers of Health
NAS	National Academy of Sciences
NDHS	Nigeria Demographic Health Survey
NECO	National Examination Council
NHMIS	National Health Management Information System
NPC	National Population Commission
PAC	Post Abortion Care
PATHO	Pathogenesis
PHC	Primary Health Care
QMSM	Quality Maternity Service Management
RH	Reproductive Health
TBAs	Traditional Birth Attendants
UNICEF	United Nation International Children Education Fund
UNFPA	United Nation Population Fund
VCT	Voluntary Counselling and Testing
VVHWs	Volunteer Village Health Workers
WASSCE	West African Senior Secondary Certificate Examination
WHO	World Health Organisation

CERTIFICATION

We certify that this thesis was by **Joel Ojo ALUKO**, a doctoral (PhD) student in the School of Nursing, Faculty of Community and Health Sciences, University of the Western Cape, South Africa under our supervision.

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CHAPTER ONE

1 INTRODUCTION

1.1 BACKGROUND TO THE STUDY

In spite of the global attempts to improve maternal and neonatal health in the developing countries, the present quality of maternal care evident by the magnitude of severe maternal/neonatal morbidity and mortality in this region makes designing of a model that will serve as a framework for provision of quality maternity care to women and their new-borns a worthwhile study. Poor quality of health care is a major factor contributing to the high maternal, neonatal and child mortality in sub-Saharan Africa, particularly Nigeria (Choudhry, 2005). Globally, pregnancy and childbirth-related complications are major causes of deaths and disabilities. More than 600,000 women die each year from pregnancy-related complications worldwide (World Health Organization [WHO], 2006; Ibeh, 2009). Developing countries, including Nigeria, have the highest burden of maternal and neonatal deaths resulting from complications related to pregnancy and childbirth. As evident in the final report of the Nigeria Demographic Health Survey (NDHS) of 2013, the estimated Maternal Mortality Ratio (MMR) was 576 per 100,000 live births during the seven-year period preceding the survey. This implies that, for every 1,000 live births in Nigeria during the seven years preceding 2013, approximately six women died during pregnancy or within two years of childbirth (National Population Commission [NPC], 2014). The NDHS 2013 put the lifetime risk of maternal death at 0.033, indicating that about 3% of women died during pregnancy, childbirth or within two months of childbirth. The estimated MMR in 2013 (576/100,000 live births) is almost the same as in the 2008 NDHS (545/100,000 live births). The difference between the 2008 and 2013 estimated MMRs is not statistically significant (NPC, 2014). At least 5500 of these deaths are among teenage mothers aged 13 – 19 years

(NPC, 2014). The 2013 NDHS also reported that 70% of the maternal deaths in Nigeria are due to four conditions: haemorrhage, eclampsia, sepsis and abortion complications. Besides, Nigeria's new-born death rate (neonatal mortality) is one of the highest in the world and has been documented at 528 per day (NPC, 2014). More than a quarter of the estimated 1 million children who die under the age of 5 years annually in Nigeria die during the first 28 days of life (neonatal period) (NPC, 2014).

Thus, Nigeria contributes 10% to the global mortality rate (Ibeh, 2009; UNICEF, 2012; NPC, 2014). Research has shown that most of these deaths could be prevented, if women have access to skilled care throughout pregnancy, childbirth, and the postpartum period (WHO, 2006).

The high maternal and neonatal death rates recorded in Nigeria are unacceptable and require urgent and permanent solution. Severe shortage of qualified health providers, weak health systems characterized by deficiencies of functioning health care equipment, instruments and essential medications, and a range of physical, cultural, and financial barriers have been implicated for inaccessibility of skilled care to many women (Lanre-Abass, 2008).

It is not surprising if the status of infrastructures in the facilities where maternity services are provided impact seriously on their quality. The consequence of compromised quality of maternity services described above is capable of having a far-reaching influence on the outcome of pregnancy. This is because poor quality has been found to be responsible for sub-standard care provision, unnecessary interventions and subsequent maternal and neonatal complications that may necessitate referral to higher levels of health care facilities (Caughey, Cahill, Guise & Rouse, 2014).

In order to combat the maternal and neonatal deaths that have been sustained close to a decade, quality maternity care ought to lie at the core of all strategies for accelerating progress towards Sustainable Development Goal (SDG) 3, targets 1 and 2. SDG 3 aims at reducing “the global maternal mortality ratio to less than 70 per 100,000 live births by 2030”; and “ending preventable deaths of new-borns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births by 2030” (United Nations Department of Economic, 2008). The reasons for reviewing measurement of quality of maternity services in developed countries are not different from why it is useful in Nigeria, particularly in primary health care (PHC) facilities (Caughey, Cahill, Guise & Rouse, 2014). These reasons include: (1.) most users are from low socio-economic background and often find it difficult to afford the cost of services at a higher level of care; (2.) this category of women is more than their counterparts who could access and afford a higher level of care without constraints; (3.) this category of nation’s population rarely has any form of health insurance; (4.) the accessibility of these women to formal health care facilities is frequently influenced by culture, ethnicity and economic status; (5.) they are frequently confronted with the problem of shortage of health workers to meet their health care needs; and (6.) they belong to the vulnerable group who are likely to face challenges of getting the right care at the right time (Caughey, Cahill, Guise & Rouse, 2014).

1.2 STATEMENT OF THE PROBLEM

Studies have shown that the maternal and neonatal health indicators in Nigeria are not improving despite previous interventions, such as ‘Health for all’ and ‘Millennium Development Goals (MDGs), which targeted years 2000 and 2015, respectively (Ibeh, 2009; Olopade & Lawoyin, 2008). Some Nigeria-based studies have focused on utilization of antenatal care (ANC) and focused antenatal care (FANC) services. Most of these studies,

which sought to assess issues related to quality service in health care targeted either secondary or tertiary health facilities (Osungbade, Oginni & Olumide, 2008; Aluko & Oluwatosin, 2008; Oluwatosin, Aluko & Onibokun, 2011). Therefore, there is dearth of studies focusing on maternity services at primary level. Moreover, the researcher has observed over time, that the calibre of health workers who dominate the PHC facilities, including centres that are designated to offer maternity care to women and their new-borns, lack the required aptitude and educational preparation it takes to participate in clinical research. Few studies done in the PHC arena have revealed certain serious deficiencies that relate to quality of maternity care. For instance, Ehiri, Oyo-Ita, Anyanwu, Meremikwu & Ikpeme (2005) reported that PHC facilities were adequately equipped for provision of immunization services and management of diarrhoea but not for other aspects of care expected of a PHC centre. In almost all the PHC centres in Nigeria, including the South-West Zone where this study was conducted, supply of essential medications is inadequate and facilities for emergency care are lacking (Ehiri et al., 2005). Many of the health care workers have adequate training in immunization, and their knowledge scores on immunization issues higher than in other aspect of PHC, pregnancy and child delivery care inclusive (Ehiri et al., 2005). The conditions of primary level health care services described above, among others, culminate in what is referred to as quality of care.

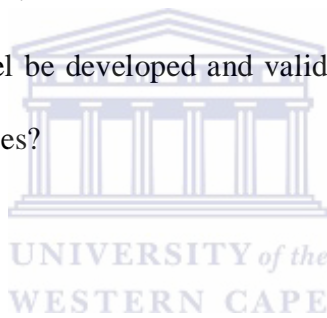
Women of low socio-economic status are more likely to use primary maternity services, particularly in Ibadan (Aluko & Oluwatosin, 2008; Oluwatosin et al., 2011). This category of women forms the greater part of the nation's population (NPC, 2014). Oftentimes, complications resulting from pregnancy and childbirth are blamed on women illiteracy, poverty, delayed or non-utilization of formal health facilities (Ehiri et al., 2005; Aluko & Oluwatosin, 2008). It implies that these unfavourable attributes make them vulnerable and to be in need of health care more than their privileged counterparts that enjoy financial and

social support without delay at higher levels of health facilities, where most studies have concentrated. Similarly, the researcher has observed that obstetric complications reaching secondary and tertiary facilities are brought late from the primary facilities or home (for non-users of formal facilities). The PHC-based maternity facilities are usually blamed by secondary and tertiary health care providers for not providing quality care for the women. Since there seems to be no research to support these claims, they will remain mere assumptions requiring verification by scientific inquiries. Up till now, it is difficult to clearly describe the quality of care available to women and their new-borns in primary maternity facilities in Ibadan, Nigeria. Most related studies have focused on behavioural researches. Examples of such studies are those carried out by Aluko & Oluwatosin (2008) and Oladapo & Osiberu (2009). Model-generating research in most studies in the West African sub-region is rare. This is evident by dearth of model-generating studies among West African scholars in literature. An effective, easy-to-adapt model to guide operation of PHC and its services, particularly maternity service, is imperative to quality assurance. However, the existing PHC framework/model seems not to be meeting the expected goal in Nigeria (NPC, 2014). Besides, the contents of maternity care rendered in PHC facilities vary from place to place in Ibadan. The above observable problems form the premise for this study. Thus, it is necessary to find answers to the following questions, as they affect the maternity section of the primary health care (PHC): (i.) What type of infrastructures and resources was available for provision of maternity care in PHC facilities? (ii.) What was the quality of maternity care services rendered to women in PHC facilities? (iii.) How satisfactory were the care and services rendered to clients utilizing the facilities? (iv.) Was there any challenge confronting caregivers in the performance of duties to client? (v.) Can a model to improve the quality of maternity care services rendered in PHC facilities be developed?

1.3 RESEARCH QUESTIONS

This study sought to provide answers to the following research questions:

- What is the status of infrastructure, equipment, instruments and medications available for provision of maternity care to women and new-borns in the selected facilities?
- What is the degree to which the services rendered in the facilities are timely, appropriate and consistent with current professional knowledge?
- What is the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights?
- What are the rates of clients' return for maternity-related services at least within six months prior to data collection?
- How will the proposed model be developed and validated to guide provision of quality maternity care in PHC facilities?



1.4 AIM OF THE STUDY

The overall goal of the study was to develop a model to guide provision of quality maternity care services in PHC facilities in Ibadan, Nigeria.

1.5 SPECIFIC RESEARCH OBJECTIVES

The specific research objectives this study sought to meet were:

- to describe the status of infrastructures, equipment, instruments and medications available for provision of maternity care to women and new-borns in the selected facilities;
- to investigate the degree to which the services rendered in the facilities are timely, appropriate and consistent with current professional knowledge;

- to investigate the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights;
- to measure clients' return rate for maternity-related services at least six months prior to data collection; and
- to develop and validated model that will guide provision of quality maternity care in PHC facilities.

1.6 SIGNIFICANCE OF THE STUDY

The findings of this study revealed the quality status of maternity care services available to women of childbearing age at the primary level of health care in five local government areas in Ibadan, Nigeria. The model developed from the findings of the study will serve as a useful framework to guide provision of quality maternity services in primary level facilities through dissemination of its findings to relevant stakeholders. The model, which represents empirical phenomena and their relationships, and was validated for its accuracy, adequacy and appropriateness, is promising enough to improve obstetric and midwifery practice in PHC facilities. Consequently, the reported persistent maternal and neonatal mortalities are likely to reduce in Nigeria, if the model is fully implemented. The newly developed model has really contributed significantly to the existing literature and the body of knowledge of midwifery/nursing obstetric practices, because the two new concepts identified and reported in this study are unique in the new model. It will be made available through publications and conference presentations to be tested and adopted by stakeholders. The contribution is planned to be disseminated firstly through the doctoral thesis. They will also be disseminated through publications, academic writings, conference paper presentations and relevant discourses. Finally, its findings will be useful resources for future researchers who will be

interested in the testing of the new model, similar studies or replication of the same study locally or globally.

1.7 RESEARCHER'S MOTIVATION FOR THE STUDY

The researcher has worked in different health care facilities (both private and public) as either a student nurse or a graduate nurse, holding varying nursing positions. Most importantly, the researcher was privileged to work in a private health facility designed to render gynaecological and obstetric services to women of all ages, including teenagers with gynaecological and obstetric health challenges. While working as a registered nurse in the above-mentioned private 'Specialist Hospital for Women,' he witnessed varying degrees of cases of pregnancy-related complications, most of which were referred from PHC facilities, homes and other alternative birthing centres. While a significant number of those complications are mitigated through expert management, morbidity and mortality became inevitable in some cases owing to delayed referral and evidences of mismanagement.

There was no obvious difference in the researcher's clinical experience during his undergraduate days. He witnessed many preventable pregnancy-related complications and deaths. His clinical posting to different levels and types of health facilities, such as tertiary health facilities, secondary level health facilities, PHC centres and few alternative birthing centres within Oyo State, Nigeria, helped him to observe varying midwifery and obstetric practices capable of influencing treatment outcomes. Moreover, for any complication, morbidity or mortality associated with pregnancy and child delivery in either the PHC facilities or other alternative birthing centres, the health professionals blamed them on informal alternative birthing centres. In spite of the above, users of those lower levels of health facilities seldom utilize the secondary and tertiary facilities due to cost. The researcher viewed the claims of the health professionals in the tertiary facilities as mere assumptions

since they were not supported empirically. Since that time, he had been going about with unanswered questions relating to the services rendered to women and their neonates at the primary level of care. In order to find answers to those questions, he sought to carry out a situation analysis of the existing primary level maternity facilities in part of the south-west geopolitical zone, where he resides. This is because of his philosophy of life. He believes that the health of the women is the health of the nation. If a woman is healthy, it is almost certain that her family and, by extension, the nation, will be healthy. Besides, the researcher also believes that what is good for the rich is also good for the poor. Therefore, if the rich get relative quality care, the poor need it more. In addition, the researcher holds pragmatic views that a single problem usually is multifaceted and any attempt to finding solutions to the problem requires identification of its causes that are usually multiple. This was what informed the use of a mixed-methods approach for this study

1.7.1 DEFINITIONS OF TERMS

Analysis: This is the detailed and systematic examination or study of the nature, content and quality of maternity services provided for women of childbearing age

Quality: This is the degree to which maternity services for women and their new-born populations increase the likelihood of timely and appropriate treatment for the purpose of achieving desired outcomes and are consistent with current professional knowledge and uphold basic reproductive rights.

Satisfaction: It is the good feeling that a client/patient has when her expectation concerning the service received is realized or fulfilled.

Maternity: It is the period during pregnancy and around the time of childbirth.

Childbearing age: It means the age between 20 and 45 year when most women are actively involved in childbearing.

Infrastructure: This consists of basic facilities such as building, ambulance, power source, water supplies, screens, examination couches, hospital beds, infusion equipment, pharmacy, laboratory, toilets, sterilizing, stationeries, and record books.

Equipment: This consists of things which are used for carrying out procedures on women or their new-borns (for example, sterilizing unit, resuscitator, oxygen cylinder and suctioning machine).

Instruments: Basic tools or devices such as stethoscope, foetal stethoscope, measuring tape, delivery forceps, cord clamps, vulselum, artery forceps, etc. that are used to attend to women or their babies during antenatal, childbirth and after childbirth.

Medications: These are basic medications given to women or their babies to treat pregnancy-related problems/illnesses or to prevent complications that could develop from pregnancy and childbirth (for example, Oxytocin, Ergometrine maleate, folate and iron supplements, tetanus toxoid vaccine, vitamin K, antimalaria tablets, antibiotics agents, infusion and infusion sets).

Model: This is an analogy of interaction of various concepts coming up from the proposed study aimed at describing and suggesting a new strategy to achieve desired maternity service outcomes.

New-born (neonate): Babies between 0 and 28 days old.

Postnatal: A period between 0 and 42 days or 6 weeks after childbirth.

Caregivers: These consist of nurses, midwives, community health extension workers who render antenatal, child delivery and postnatal care to women and their babies within the primary maternity facilities.

Development: It is the systematic formation of an idea. In this study, the idea is the formation of an improvement-based model for primary maternity facilities.

Facilities: These are buildings, pieces of equipment purposely meant to provide maternity services for women and their babies at the grassroots level.

Outcomes: These are end results of maternity care rendered to women or their babies during pregnancy, childbirth and after childbirth. They include, clients' satisfaction, clients return for services, recommendation of services to others, willingness to return for same service or other relevant services and prompt referral when necessary.

1.8 OUTLINE OF THE THESIS

This thesis is presented in eight chapters. The first chapter provides background information on the study problem statement and research objectives and purpose. The second chapter presents the literature that has been reviewed for the study; covering mainly aspects relating to the concept of quality, quality health care and quality maternity services at the PHC; the factors influencing quality care. In addition, other related studies and Donabedian's quality of health care model – the theoretical framework that guided the study across the two phases – was presented. Chapter three of the thesis presents the methodology and the approaches adopted in conducting the study. Chapters four and five present the findings of the quantitative and qualitative strands of the study, respectively. Chapter six captures discussion of findings from both strands of the mixed methods used in the first phase of the study. The seventh chapter is devoted to presentation of the process of model development, while the conclusion and recommendations are provided in the final chapter of the report.

1.9 SUMMARY OF CHAPTER

This chapter provides the background information about the study and gives up to date information about issues that affect women's and new-borns' health globally and locally. The problem addressed by the study is explained, with emphasis on the research questions and the significance of the study. The researcher's motivation for the study is mentioned.

Maternal and neonatal mortalities/morbidities are major health problems in developing countries, including Nigeria. The PHC facilities are designed to take care of the need of the vulnerable groups, which are the largest fraction of the nation's population. There cannot be any significant improvement in the nation's vital statistics if the health of these vulnerable groups is not given the necessary attention. Midwives, nurses and other health professionals contributing towards improvement of women's and neonatal health in the form of research to promote evidence-based quality care are contributing to development nationally and globally. The foregoing stresses the necessity of the situation analysis for the aim of developing a model to improve quality at the primary level of health care.



CHAPTER TWO

2 LITERATURE REVIEW

2.1 INTRODUCTION

This chapter presents the review of the literature related to the status of maternity care services under the primary health care in Nigeria. The researcher critically examined previous studies that are related to women's and new-borns' health, particularly those ones that focus on midwifery/obstetric practices, as well as prenatal, intranatal and postnatal care. This academic rigour became necessary in order to identify the gap filled by this study. In addition, detailed explanation of the conceptual framework employed to guide the study and its application to the study is also discussed in this chapter.

2.2 THE CONCEPT OF MATERNITY CARE

The concept of maternity care is a very broad component of maternity and child health. Maternity care covers both the health of the mother and her new-born. It ensures safe delivery of pregnant mothers, the care of mothers and their new-borns following delivery. It also includes maintenance of lactation. Maternity care has three major sub-divisions: prenatal (antenatal) care, natal (intranatal) care and postnatal care.

2.2.1 Prenatal (antenatal) care

Adesokan (2010) defines antenatal care as the attention, education, supervision and treatment given to the pregnant mothers from the time conception is confirmed until the beginning of labour, in order to ensure safe pregnancy, labour and puerperium.

The main aim of prenatal care is to prevent complications, which may occur to the mother and/or her baby-in-utero. Such complications include vaginal bleeding, anaemia, accident,

infection (such as malaria), discomfort or pain (Akinsola, 2006). Therefore, for a woman to benefit maximally from prenatal care, she must be strongly advised to register for and attend prenatal care. This type of advice should be a part of the health education programme designed for any community (Akinsola, 2006). It is better for a woman to have access to such health education prior to conception so that she can prepare and make favourable decisions early. Therefore, the place of preconception counselling in prenatal (antenatal) care cannot be underrated.

2.2.1.1 Preconception care

Preconception counselling is vital to all categories of women, particularly women with pre-existing medical conditions that are capable of affecting or influencing pregnancy outcome. Such medical conditions include diabetes mellitus, thrombotic conditions, and cardiac diseases. Preconception counselling will require a multidisciplinary team approach to stabilize the underlying medical condition and plan prenatal care. Preconception counselling is beneficial to couples that are at risk of foetal anomalies, such as child having single gene disorder or a family with the history of genetic disorder or parental chromosomal abnormality. Counselling is a major part of prenatal diagnosis, as 95% of abnormalities occur in pregnancies that are considered not at risk (Mangione, Fries, Godard, Capron, Mirlesse, Lacombe, & Duyme, 2011).

A woman ought to report to the antenatal clinic for confirmation of pregnancy as soon as she misses her period. For prenatal care to be of maximum advantage to women, it must fulfil the following objectives stated by Adesokan (2010): promotion and maintenance of good physical, mental and social health of maternal and perinatal morbidity and mortality; ensuring mature life and healthy baby at term; ensuring early and appropriate detection treatment and/or referral of at-risk conditions that would endanger life or impair the health of mother

and her baby; preparation of mother for labour, successful breastfeeding, uneventful puerperium and subsequent care of her baby; immunization of mother against tetanus in order to pass immunity to her baby; equipping the woman with knowledge and skills that will help her take decisions on related reproductive health issues, such as family planning, breast self-examination (BSE) and pap smear for prevention of breast and cervical cancers, respectively; helping mother to plan for her delivery (birth preparedness); and preparing her psychologically towards labour.

2.2.1.2 Focused antenatal care

Focused Antenatal Care (FANC) is a new approach to antenatal care, which is recommended by WHO after randomized trials (Villar, Ba'aqeel, Piaggio, Lumbiganon, et al., 2001; Carroli, Villar, Piaggio, Khan-Neelofur et al., 2001). It emphasizes evidence-based, goal-oriented actions and family-centred care quality than quantity of visits, and care by skilled providers. FANC has been defined by Adesokan (2010) as a qualitative care given to a pregnant woman by a skilled or trained health provider to promote the health and survival of mother and child. FANC, according to him ensures skilled attendant at birth, enhances continuity of care, guarantees early detection and treatment of existing complication and problems, prepares for birth and potential complications (birth preparedness), and fosters health promotion and disease prevention. The availability of skilled health workers is very vital to provision of FANC to women.

2.2.2 Natal care

Natal care ensures that every expectant mother has normal delivery and bears a healthy child or children. Usually, an expectant mother is instructed on what she must bring along when labour begins. Such items that will be needed for the child and herself must have been packed ready. Such items include baby's clothing, napkins, towels, soap, body lotions, pads, night

gowns, gloves (if requested), cups and spoon. Akinsola (2006) is of the view that the essence of packing these items in a ready kit is that, immediately labour starts, most women become so disorganized that they cannot remember where most items are and, therefore, they are likely to forget many essential items until when the midwife asks for them. Getting the items ready will solve this kind of problem that could result into unnecessary embarrassment.

The function of the midwife includes continuous monitoring and care of the woman in labour until the child is safely delivered. The efficient monitoring and care of the woman must continue even after childbirth because of the possible occurrence of complications after child delivery, especially bleeding in mothers and respiratory distress in babies (Chong, Su & Arulkumaran, 2004; Engle & American Academy of Pediatrics Committee on Fetus & Newborn, 2008).

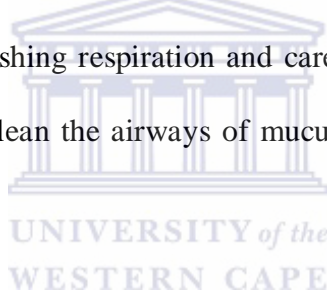
Child delivery must always be undertaken by a qualified midwife or nurse/midwife because of the skill and technicality involved in labour management and child delivery. For instance, a midwife attending to a woman in labour must ensure that the head of the baby is not on the perineum and the baby is delivered slowly to prevent cerebral damage. Besides, immediately any complication is observed during labour, a medical doctor should be informed to decide on the next line of action, whether the child should be delivered normally, through forceps or caesarean section.

Furthermore, as soon as the baby is born, the mouth should be gently swabbed and suctioned to remove any mucus that may be inhaled and cause respiratory problems. Other subsequent nursing care include: bathing, weighing and continuous monitoring of the vital signs of both mother and the newly born baby. These are to be done based on the established routine of the facility concerned. Although the routine for discharge varies from one health facility to another, particularly in developing countries, like Nigeria, the mother and her new-born

should be observed for at least 24 hours, provided they are both in good condition of health and assured of safe hands at home. However, the baby should be given full physical and laboratory examinations to detect any congenital abnormality (Akinsola, 2006).

2.2.3 Postnatal care

Postnatal care is given to a mother from the time of complete expulsion of placenta up to 6 weeks. It is a period of adjustment when the organs altered during pregnancy return to their pre-gravid state. There are various prominent features that characterise the period. They are immediate postpartum, care of the new-born, management of breastfeeding, postnatal follow-up/visits, child welfare clinic visits. Activities that are vital to these features are better performed by skilled midwives or nurse-midwives. For instance, the immediate care of the new-born, which includes establishing respiration and careful suctioning of the nostrils and mouth with mucus extractor to clean the airways of mucus and liquor amnion, requires the expertise of a trained midwife.



The unskilled birth attendants have been observed to attempt establishment of respiration in the new-borns either by slapping baby's feet or back or putting hot or cold water on baby or applying methylated spirit into the nostrils of the baby (Bang, Bang, Baitule, Reddy & Deshmukh, 2005). These kinds of ill-treatment of the new-born are injurious to the baby. Therefore, they should be discouraged. Furthermore, conducting APGAR score on the new-born at 1 minute and 5 minutes requires the expertise of a trained midwife. This scoring helps in decision-making on the new-born's health.

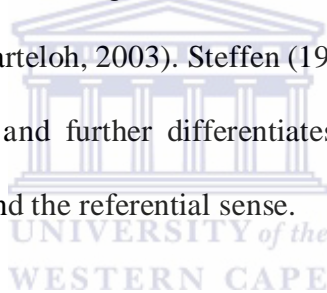
2.3 THE CONCEPT OF QUALITY CARE

The concept of quality is presented in this section. The definitions of the concept of 'quality' and 'quality care' are also discussed.

2.3.1 Definition and aspects of the concept of quality

All innovations undertaken by respective stakeholders to improve quality and outcomes in health systems have some understanding of what is meant by ‘quality’. Without this understanding, to design the interventions and measures used to improve results will be a mirage (WHO, 2006). Many definitions of quality that are related to health care, health systems and in other spheres of human activity abound.

Harteloh (2003) defines ‘Quality’ as “an optimal balance between possibilities realised and a framework of norms and values.” This conceptual definition reveals the fact that quality is an abstraction and does not exist as a discrete entity. Rather, it is constructed based on an interaction among relevant actors who agree about standards (the norms and values) and components (the possibilities) (Harteloh, 2003). Steffen (1988) views quality as the capability of an object to achieve a goal, and further differentiates between two senses of quality, namely: the metaphysical sense and the referential sense.



The metaphysical sense of quality includes those properties of care independent of how they are perceived. In other words, metaphysical senses of quality are aspects of an organization and its services that are believed to contribute to quality. Different preferences and values of patients affect quality. Poor quality of care is the underuse of effective services, the overuse of services when the potential far exceeds the potential benefit, or the misuse of services resulting in preventable complications (Chassin & Galvin, 1998). Quality is the level of excellence produced and documented in the process of patient care based on the best knowledge available and achievable at a particular facility (Chassin & Galvin, 1998).

For the purposes of this study, a working definition is needed to characterize quality in health care and health systems. Without such a working definition, the process of selecting new

interventions and designing strategies, such as model for quality improvement, would be seriously impaired (WHO, 2006).

2.3.2 Definition of quality care

Quality care has been defined in various ways by different authors. For example, the Institute of Medicine (IOM) considers patient safety “indistinguishable from the delivery of quality health care” (Erickson, Wolcott, Corrigan, & Aspden, 2003). Mitchell (2008) argues that quality was one of the great ideas of the Western world. Some definitions of quality appear to be listings of quality indicators, which are expressions of the standards. An example of this is the definition by the World Health Organization. The WHO (2006) identifies six areas or dimensions of quality where health system should seek to make improvements. These aspects require that health care be: (i.) *effective*, delivering health care that is adherent to an evidence base and results in improved health outcomes for individuals and communities, based on need; (ii.) *efficient*, delivering health care in a manner which maximizes resource use and avoids waste; (iii.) *accessible*, delivering health care that is timely, geographically reasonable, and provided in a setting where skills and resources are appropriate to medical need; (iv.) *acceptable/patient-centred*, delivering health care which takes into account the preferences and aspirations of individual service users and the cultures of their communities; (v.) *equitable*, delivering health care which does not vary in quality because of personal characteristics, such as gender, race, ethnicity, geographical location, or socioeconomic status; and (vi.) *safe*, delivering health care which minimizes risks and harm to service users.

The IOM defines quality care as “the degree to which health services for individuals and population increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (Chassin & Galvin, 1998). The IOM also proposed six dimensions for quality improvement in the health care delivery system. They are: safety of patients,

effectiveness of services, patient-centred care, timeliness of care, efficiency of use resources and equity of care across gender, ethnicity, geographic location and socio-economic background (Chassin & Galvin, 1998).

According to Clancy (2003), “health care quality is getting the *right* care to the *right* patient at the *right* time every time.” Similarly, in its health report, the Nigerian NDHS (2008) wrote that quality health care means doing the *right* thing, at the *right* time, in the *right* way, for the *right* people and having the best possible results. Clancy (2003), in her statement made before the Committee on Finance Sub-committee on Health Care in United States Senate, illustrated, with the aid of Donabedian’s model, the three dimensions of health quality, namely: the structure, the process and the outcome (SPO). All the above quoted definitions of quality do not only fit accurately into the quality model by Donabedian, but also expatiate on what the SPO ought to be like in an ideal situation. The areas covered by the Donabedian model of quality service are:

1. **Structure:** Physical structures, facilities, equipment, organization form, administration, staff/qualification and fiscal health;
2. **Process:** Diagnosis, treatment, surgery, consultation, referral coordination and continuity of care; and
3. **Outcome:** Mortality complications and client’s satisfaction.

2.4 MAJOR QUALITY ASPECTS OF MATERNITY CARE

The World Health Organisation recommended some criteria that are capable of ensuring a good quality and effective maternity care system, if adhered to (WHO, 2006). The guiding principle states that the primary health care level (the basic level of care) offers antenatal care, normal delivery and case referral services. The secondary level of care, which is the next tier or first referral, concentrates on looking after case referrals, handles complicated

pregnancies and deliveries and takes care of puerperal complications. The tertiary care level is concerned with a small minority in need of highly specialized care and others that require intensive care. It is also tasked with the responsibility of training and developing manpower.

From the above-stated levels of health care by the WHO, it is obvious that the system of quality maternity care that is capable of reducing neonatal and maternal morbidity and mortality has to be built around primary and secondary levels of maternity care. It is very clear that complicated pregnancies and deliveries should not be attempted at the primary level of care. Rather, patients with the complications, such as multiple pregnancies and pre-eclampsia, should be referred to a higher level of care without any delay. However, there are situations where a pregnant woman or a woman in labour may develop obstetric complications that were not anticipated initially and may need urgent referral (WHO, 2012). It may be advantageous to clients that the birth attendants do something to control or prevent the complications from being worsened before the patient gets to the higher level of care (Choudhry, 2005). Thus, it may not be proper to send a woman with complication to a higher level of care without following the due clinical and administrative process that will prevent her condition from worsening. Therefore, the midwife attending to pregnant women and women in labour should not be ignorant of the necessary criteria that good quality maternity care must fulfil (Choudhry, 2005). According to Choudhry (2005), criteria that good quality maternity must meet are as follows:

- 1. Technical Competence of Health Workers:** Good quality maternity care should be based on health workers' technical competence with care guidelines for treatment. Technical competence is guaranteed by rigorous professional training. Clear guidelines for treatment or management of obstetric conditions or complications should also be provided in health facilities to guide health workers in their clinical practice.

- 2. Partnership of Mothers in Health Care:** Involving the mother in decision-making and seeing her as a partner in health issues that affect her is crucial to good quality maternity care. For instance, mother's decision on who should stay with her in labour room or birthing position to assume should be respected. Thus, the traditional ways of chasing away significant others from labour room or compelling a woman in labour to assume dorsal position during childbirth have become aberration in modern midwifery and obstetric practice. The mother's instinctive preference is always a primary consideration in terms of birthing position (Downe, Gerrett & Renfrew, 2004). Therefore, as much as the midwife desires to ensure safe delivery based on his/her understanding of the mechanism of labour, the mother's right of choice of birthing position should not be blatantly denied.
- 3. Continuity of care and follow-up:** This aspect is very vital to good quality maternity care. Therefore, health workers in facilities should endeavour to prevent abrupt cessation of care during visit, discharge or referral. For instance, a woman who has been discharged home should be given appointment following uneventful vaginal delivery or be visited at home to ensure continuity of care to the mother and her neonate. At primary-level health facilities, it is within the responsibility of community health extension workers or social workers to carry out home visits as community health nurse would do. This is a form of follow-up. In health facilities where women are discharged home within 24 hours of childbirth, follow-up in the form of home visits could help early detection and treatment of neonatal jaundice. Similarly, women with complications such as puerperal sepsis could be easily diagnosed and treated through follow-up. Thus, a lot of complications that present late in health facilities could be detected diagnosed and treated promptly.

- 4. Availability and nearness of effective and safe services:** These criteria constitute a major priority of interest in the provision of good quality maternity care. Good quality maternity care services should be available and as close as possible to where the mother lives. Again, it should be at the lowest (primary) level facility that can provide the services safely and effectively.
- 5. Equipped with essential supplies:** Going by this criteria, the primary level facilities ought to be staffed with qualified health personnel and equipped with the minimum relevant hospital equipment/instrument. For instance, it is not out of place to ensure availability of resuscitators and sonicaid/doppler (that uses cell battery) oxygen-filled cylinder with necessary accessories, to mention but a few. If maternity care services are going to be safe and effective, the primary-level facilities are not to be deprived of the essential and basic items.
- 6. Provision of counselling and information for mothers:** Women have a right to information regarding their health and health needs. Good quality maternity care should provide counselling and information services for women in the form of pre-conception and postnatal counselling. These services help to improve women's attitude and health status. The pre-conception counselling prepares prospective mothers for safe motherhood. Pre-marital counselling is a part of the preconception counselling services. Genetic counselling is an integral part of preconception counselling. The antenatal counselling helps mothers to understand the physiology of pregnancy and how to cope successfully with the condition. It also helps them to be complication-ready and birth-prepared. The postnatal women are also in need of relevant counselling and information provision regarding their health and that of their neonate, or infant or child.

7. **Responsiveness to cultural and social norms:** Good quality maternity care should be responsive to cultural and social norms so that it can be acceptable to potential users, regarding preferences for privacy and confidentiality.
8. **Comprehensive care and linkage:** Good quality maternity care must give comprehensive care and linkage to other reproductive health services. A facility where such care is to be provided must embrace integrated reproductive health services. The fragmented services being practised in many health facilities discourage utilization of such services with the formal health facilities.
9. **Social and economic supports for health workers:** Good quality maternal care services will always be a mirage when such services are not adequately and efficiently supported socially and economically. While social support addresses the welfare packages for health professionals and other paramedical staff coupled with the nature of the working environment, the economic support focuses on funding of health facilities and services being rendered in them. Poor remuneration and inadequate funding have been implicated for substandard care provision in health facilities. Perhaps, the poor remuneration and inadequate funding have been responsible for extortion of fund and items from service users.
10. **Staffing health care facilities with qualified health workers:** Good quality maternity care services may be extremely impossible if unskilled or semi-skilled personnel are the calibre of health workers that are providing care in the facilities. Maternity care that meets the current available knowledge is within the practice of trained qualified midwives. This cadre of health professionals cannot be replaced with the semi-skilled and unskilled workers (Nursing and Midwifery Council of Nigeria [N&MCN], 2006; Marshall, & Raynor, 2014).

2.4.1 Healthcare system in other developing countries

The foundation of a strong community is healthy women, and the future of any society is healthy new-borns. However, nearly 600,000 women die from complications of pregnancy and childbirth yearly, and an estimated three million new-borns die within the first month of life (WHO, 2006; Ibeh, 2009; WHO & UNICEF, 2012). It implies that there are still too many avoidable deaths, and the greatest burden of these mortalities occur in developing countries, where available health services are often grossly inadequate and sometimes inaccessible (Prata, Passano, Sreenivas, & Gerdts, 2010). This unacceptable health status in developing countries causes many women to patronize and give birth in facilities where adequate, appropriate equipment and staff are lacking. Sometimes, women decide to give birth at home without skilled health workers on ground to prevent or mitigate obstetric complications. However, the intervention programmes that focus on the continuous use of the high-impact, low-cost interventions to save lives by Jhpiego has improved the health of women and their new-borns a little in some low-income countries (WHO & UNICEF, 2012).

Jhpiego is an international health organization affiliated with The Johns Hopkins University. The organization has been working to bring life-saving measures to mothers and their new-borns universally for the past forty years. In all of the international programs, Jhpiego plays a vital role in channelling the societal efforts towards attainment of the United Nations Millennium Development Goals (MDGs); now referred to as SDGs which include reduction of maternal and new-born morbidity/mortality (Kim, Zainullah, Mungia, Tappis, Bartlett, & Zaka, 2012).

According to WHO & UNICEF (2012), Jhpiego currently has maternal and new-born health programs in 40 African, Asian and Latin American countries (WHO & UNICEF, 2012). Jhpiego was able to achieve these by partnering with respective ministries of health and

hundreds of international and local organizations to address the barriers to the use of high-quality maternal and new-born health care from the household to hospital (Prata, et al., 2010; Kim, et al., 2012).

The collaborations with the above mentioned stakeholders focus on an expanding range of critical technical interventions such as drawing on our clinical expertise in obstetrics/gynecology, midwifery and new-born health; then, increasing access to skilled providers who can deliver evidence-based interventions by utilizing a framework of respectful maternity care. The evidence-based interventions include focused antenatal care, prevention and case management of malaria in pregnancy, prevention of mother-to-child transmission of HIV, provision of essential obstetric and new-born care, provision of basic and comprehensive emergency obstetric and new-born care and family planning (Kim, et al., 2012).



2.4.2 Health system's challenges in Nigeria

From the available records, the Nigerian health system is below the expected standard when compared with the current professional knowledge and what the situation is like in other parts of the world (Asuzu, 2005; Frenk, Chen, Bhutta, Cohen, Crisp, Evans, Kelley, 2010; WHO, 2010). The poor state of health system in Nigeria is traceable to several factors. Prominent among them are gross under-funding of the personnel and inadequate infrastructure (Uneke, Ogbonna, Ezeoha, Oyibo, Onwe & Ngwu, 2008). These factors have produced adverse ripple effect on other aspects that contribute to quality care delivery. The ripple effects include poor remuneration and compensation packages for health workers, brain drain of health professionals to developed countries, lack of courteous courtesy and respectful maternity care to patients, failure to treat patients in a timely manner, failure to conduct proper patient examination, lateness to work and high level of absenteeism (Uneke et al., 2008).

In 2000, the WHO reported worse health system performance in Nigeria than many of the sub-Saharan countries. The situation is yet to improve because of decrease or stagnation in accessibility, availability, quality and utilization of health services (WHO Country Cooperation Strategy, 2007). The three prominent factors that impact directly or indirectly on the quality of health system in Nigeria and, by extension, the primary health care system are challenge of funding and challenge of health workers as discussed below:

2.4.2.1 Challenges of funding and quality of health care

The poor state of health system in Nigeria is traceable to financing (funding). Studies have shown that gross underfunding of the health sector contributes significantly to the reported poor key health indicator in the country.

The chronic under-funding has resulted in health personnel drift to developed countries considered as ‘greener pastures.’ This is why Nigeria became one of the several major health staff exporting countries in Africa. For instance, 432 nurses were reported to have migrated legally to Britain between April 2001 and March 2002 (Martineau, Decker & Bundred, 2004). In a previous survey, only 41.9% of primary health facilities provide antenatal and delivery services. Nearly 60% of such health facilities work without any midwife (WHO, 2008).

2.4.2.2 Challenges of health workers and quality of health care

Another challenge facing the health system in Nigeria is acute shortage of competent, skilled health care providers. One of the contributing factors to shortage of manpower in health system in Nigeria is the migration of health personnel to developed countries in search of fulfilling and lucrative appointments (Naicker, Plange-Rhule, Tutt, & Eastwood, 2009). Apart from the brain drain problem, there is disproportionate geographical distribution of health care professionals in Nigeria. There are fewer qualified health professionals in rural areas

than urban centres. In addition, health workers serving in health facilities in rural areas have motivational problems at work. The motivational problems manifest in different forms, such as lack of courtesy to patient, denial of respectful maternity care to patient, repeated lateness and high level of absenteeism (Chankova, Nguyen, Chipanta, Kombe, Onoja, & Ogungbemi, 2007).

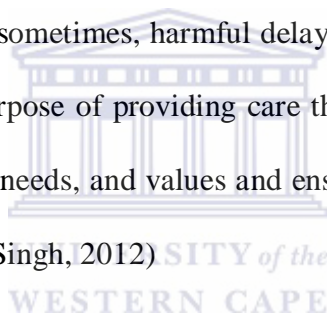
The disparities in the remuneration and welfare package received by federal and local government staff are also a contributing factor to shortage of health staff at the local government level. This problem is capable of truncating the PHC programmes, including maternity care services (Ozgediz, Galukande, Mabweijano, Kijjambu, Mijumbi, Dubowitz, Luboga, 2008; Monjok, Smesny, Ekabua, & Essien, 2010).

Generally, apart from the medical officers of health, nurses/midwives, CHEWs and CHOs make up the majority of the workforce in primary-level facilities. The ratio of the skilled birth attendants to that of unskilled birth attendants within the workforce requires evaluation. This is because the maximal use of strategies such as emergency and life-saving interventions requires the availability of adequate skilled health personnel. In some countries, there are programmes put in place to train non-physician paramedics for essential obstetrics, including emergency surgery in rural settings (Mullan, 2005; Kruk, Pereira, Vaz, Bergström, & Galea, 2007; McCord, Mbaruku, Pereira, Nzabuhakwa, & Bergstrom, 2009; Monjok, et al., 2010). Many of the reported maternal and neonatal deaths occur in rural health facilities because of severe lack of skilled birth attendants (Filippi, Ronsmans, Campbell, Graham et al., 2006).

2.4.3 Components of Health Care Quality in Nigeria

According to the National Demographic and Health Survey of 2008, quality health care is the care that is equitable enough to provide care that does not vary in quality because of personal characteristics. Such characteristics include gender, ethnicity, geographic location, and

socioeconomic factors; and efficient in its capability to avoid waste, including waste of equipment, supplies, ideas, and energy (Rai, Singh, & Singh, 2012). In the survey, several ways that health care quality is measured include clinical performance measures of how well providers deliver specific services needed by specific patients, such as whether children get the immunizations they need; assessments by patients of how well providers meet health care needs from the patient's perspective, such as whether providers communicate clearly; outcome measures, such as vital statistics, that may be affected by the quality of health care received; effective provision of services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit; safe to a degree, that injury to patients from the care that is intended to help them are avoided and timely to a point of reducing time waits and sometimes, harmful delays for both patients and caregivers. Lastly, patient-centred for the purpose of providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions (Rai, Singh, & Singh, 2012)



2.5 FACTORS CAPABLE OF INFLUENCING QUALITY CARE DELIVERY

Various factors are capable of limiting the structure, process and outcome of maternity care rendered under the control of local government areas in Nigeria. The degree to which PHC programmes, particularly, the maternity services are funded will possibly affect the status of the structure, process and, consequently, the outcome of the services. The general observation is that the Nigeria's health system is in a poor state. Some authors have traced the cause of the poor state of health system in Nigeria to many factors. Two major identifiable factors are the gross under-funding of the health sector and shortage of skilled health personnel, particularly at the primary health care level (Uneke et al., 2008).

Some years ago, Nigeria became one of the major health-staff-exporting countries in Africa. This unfavourable development was caused by inadequate infrastructure, poor remuneration packages, and reduction in the proportion of physicians, nurses and other medical professionals. It was this that made it easier to lure away health professionals to developed countries in search of ‘greener pasture’ (Uneke et al., 2008). Other areas that relate to quality are lack of courtesy to patients; failure to turn up at work on time; poor process quality such as failure to conduct proper patient examinations; and failure to treat patients in a timely manner. Most of these challenges can be addressed by increased funding of the health sector and the introduction of multiple incentives to health workers to make working more appealing (Uneke et al., 2007).

In addition, the quality of maternity services overseen by the local governments is likely to be influenced by the calibre of health workers attending to women during antenatal clinic visits, labour, childbirth and after childbirth. In Nigeria, primary health care facilities are staffed with semi-skilled health workers referred to as community health extension workers (CHEWs) with few qualified nurse-midwives. The curriculum of training of the calibres of health workers could show the level of the expected job description and competencies.

2.5.1 Job description of community health extension workers

The community health extension worker (CHEW) is a member of the health team for primary health care (PHC). The community health extension worker will spend 50% of his time on community-based functions and 50% in the clinic. He/she has the responsibility of supervising the junior community health extension workers (JCHEWs), the community health extension worker in-training, the volunteer village health workers and traditional birth attendants. He/she is to be supervised by the community health officer (CHO) (Community Health Practitioners Registration Board of Nigeria, 2006).

2.5.2 Aptitudes and community-based functions of CHEWs

A prospective candidate for CHEW must have four credit-level passes at WASSCE/NECO/GCE ordinary level at not more than two sittings. These must include just two science subjects: Biology and Health Science (Community Health Practitioners Registration Board of Nigeria, 2006).

The community health extension worker is to explain to the community the primary health care approach of the Nigerian health system and his/her role as a member of the health team to link the community with health care system. A CHEW is to carry out community mobilization for health action. He/she should guide and support the volunteer village health workers (VVHWs)/traditional birth attendants (TBAs) and junior community health extension workers (JCHEWs) to initiate preliminary contact with the leaders. He/she must familiarise himself/herself with the target population and health services within the community. He/she is to follow-up and provide support for the initial contact made by the VVHWs/TBAs or JCHEWs with the community leaders (Community Health Practitioners Registration Board of Nigeria, 2006).

He/She also initiates the formation and facilitates the effective functioning of the development committees. He/she attends community development committee's meetings in rotation at least two times in a year. He/she is to participate in and supervise primary health care house numbering and placement of home-based records and update house numbering and placement of home-based records during home visits, and through reports and records from JCHEWs and VVHWs/TBAs. He/she initiates and works with the community and other health workers to carry out community diagnosis and continuous health needs assessment of the community. Health needs include areas related to provision of good roads, good water

supply, education, agriculture, nutritional problems, HIV/AIDS, and poverty eradication. (Community Health Practitioners Registration Board of Nigeria, 2006).

Similarly, he/she initiates and works with the community and other health workers to carry out general community survey; social and cultural characteristics of the community. A CHEW works with other health workers and the community to identify major health problems of the community, including HIV/AIDS, teenage pregnancies, juvenile delinquency, problems of the elderly, and gender inequality. He/she teaches the junior community health extension workers simple methods of data collection and analysis. He/she participates in the analysis of data collected as well. A CHEW initiates and/or works with his supervising officer and community members to: (i) prioritise health problems, (ii) plan solutions to identified health needs, (iii) identify available resources to solve the health problems, (iv) set coverage objectives (targets), and (v) identify workable interventions. Another function of a CHEW is to prepare and/or assist the supervising officers in preparing budget for implementation of plans (Community Health Practitioners Registration Board of Nigeria, 2006). Other functions include:

1. to prepare a schedule of activities for the delivery of services to tackle the priority health problems;
2. to work with supervising officers, junior community health extension workers, volunteer village health workers/traditional birth attendants and community members to carry out plans;
3. to develop a monthly work plan with the approval of supervising officers;
4. to coordinate the work plan of the junior community health extension workers and the volunteer village health workers/traditional birth attendants;
5. to manage junior community health extension workers and volunteer village health workers/traditional birth attendants referrals and 'at-risk' cases within the community

- using standing orders;
6. to support junior community health extension workers' and volunteer village health workers/traditional birth attendants' efforts on health education, and initiate periodic health education campaigns within the community;
 7. to supervise activities of the junior community health extension workers and volunteer village health workers/traditional birth attendants and give feedback;
 8. to assess the accomplishment of set coverage objectives (targets) by junior community health extension workers and volunteer village health workers/traditional birth attendants;
 9. to collect and collate records collected by junior community health extension workers and volunteer village health workers/traditional birth attendants and forward these to the supervising officer;
 10. to supervise the operation of the essential drug system and the drug revolving fund;
 11. to keep accurate records of activities and health problems as required within the area of coverage.
 12. to analyse and summarise data collected and present in simple graphic form;
 13. to compile monthly returns and reports, and send to the supervising officer and the community development committee;
 14. to update from volunteer village health workers/traditional birth attendants records information on births, deaths and new entrants into the community;
 15. to decide, in consultation with community health officer where available, when there is need for more pre-packaged medications;
 16. to maintain a roster for regular servicing of equipment, if a community health officer is not available;
 17. to constantly monitor staff and vehicle movements, if a community health officer is

not available;

18. to maintain a roster decided upon with VVHWs)/ TBAs for meetings, and inform the community; and
19. to carry out all other duties assigned to him by his supervising officer.

2.5.3 Clinic-based functions of CHEWs

The CHEWs have clinic-based functions, which include provision of integrated primary health care services, organizing and running integrated primary health care services where a community health officer is not available (Community Health Practitioners Registration Board of Nigeria, 2006). These services are listed in the Nigeria National Health Plan to include:

- a. Health education concerning prevention and control of prevailing health problems;
- b. Promotion of water supply and basic sanitation;
- c. Maternal and child health, including reproductive health, e.g. provide ante-natal care and delivery of normal pregnancy, post-natal care and specified reproductive health services;
- d. Provide immunization services;
- e. Manage logistics and cold chain system;
- f. Carry out sterilization of equipment according to established protocol;
- g. Treat common conditions and injuries;
- h. Perform of simple laboratory test and examination. e.g. haemoglobin estimation, stool and urine testing, etc.;
- i. Keep and check that clinic equipment are safe and in good working order; and
- j. Promote mental and dental health.

In addition, he/she is to collect and collate monitoring and evaluation data for the National

Health Management Information System (NHMIS) from the community and health facility and forward them to the ward level. He/she is to carry out with community health officer (where available) the day-to-day administration of health services in the target population.

2.6 INFLUENCE OF APTITUDES AND QUALIFICATION OF MIDWIVES ON MATERNITY SERVICES QUALITY

According to the Nursing and Midwifery Council of Nigeria (2006), the Post-Basic Midwifery Curriculum for Nigeria is designed specifically to prepare a professional category of health care providers who, through comprehensive education, are able to mobilize individuals, families and the community towards achieving optimal health.

The World Health Organization (WHO) and other United Nations (UN) statistical sources rated Nigeria's maternal mortality rate to be 1,000 per 100,000 live births (NPC, 2014). These indices are very high and indicate the need for competent and skilled midwives at every level of health care. The overall goal and objectives of National Reproductive Health Policy is to reduce maternal morbidity and mortality resulting from pregnancy and childbirth by 50% (Gwatkin, 2000). To this end, the practice of midwifery is maintained at an internationally recognized standard, and its curriculum planned and implemented to meet the needs of the West African sub-region, particularly Nigeria. A midwife is a person who has successfully completed a programme of instructions in midwifery, duly registered and licensed by the Nursing and Midwifery Council of Nigeria to practise as a professional midwife providing health care in all areas of clinical practice, such as the home, community, clinics and other health care institutions. By this education and competence, the practitioner is able to make independent judgment; manage normal pregnancy, labour and puerperium; provide appropriate care, including family planning; recognize deviations from normal; manage emergencies; and make prompt referrals to appropriate levels of health care. The

essence of midwifery training is to prepare professionally competent and versatile midwifery practitioners, who are capable of providing high-level health care to individuals and families in homes, communities, health centres, hospitals and clinics in rural and urban centres (N&MCN, 2006).

2.7 KNOWLEDGE GAP FROM PREVIOUS RELATED STUDIES

Quite a number of studies have been done on assessment of quality of health services in Africa and most of these evaluation studies dealt with quality either according to technocratic perspective of health care professionals or from the lay perspective of clients or communities (Oladapo, & Osiberu, 2009; Osungbade et al., 2008). For instance, a study by Lule, Tugumisirize, and Ndekha, (2000) assessed the quality of care and its effects on utilization of maternity services at Chilomoni Health Centre in Malawi. A structured questionnaire and checklist were used for data collection. The study reported poor facilities, family refusal, poor staff attitude and distance, which led to lack of satisfaction and inadequate utilization among the Malawian women (Lule, et al., 2000). For example, out of the 52% women who initiated antenatal care (ANC), only 8% delivered their babies at the centre. In addition, 65% of the women studied initiated ANC because they were ill. Out of the women, about 90% chose to attend ANC to access Tetanus Toxoid injection, obstetric check or to avoid being sent away in case they needed to come to the centre when in labour. In addition, the survey by Lule et al. (2000) revealed poor utilization of formal facilities owing to long waiting time, deficient facilities, inefficient services, poor staffing, lack of privacy and ambulance services.

Another related community-based survey by Uzochukwu, Onwujekwe & Akpala (2004) employed the use of questionnaire and focus group discussions (FGDs). The women's rating of the quality of services was quite good and satisfactory. However, the ANC and childbirth services were described by the women as unaffordable. Besides, distance, cost, poor staff

attitude, lack of medications, absence of doctors and long waiting time were noted by the women. Therefore, most of the women could not utilize the facilities.

Lungu, Malata, Chirwa & Mbendera (2011) also worked on quality but their focus was on assessment of focused antenatal care (FANC) services in Malawi. They used Donabedian's Model to guide their research, with only questionnaire and checklist for data collection. They, however, assessed ANC, which is just a part among the whole (maternity services) but not the whole. Therefore, a study that has the potential of looking at the spectrum of all the three stages of pregnancy and childbirth (antepartum, intrapartum and postpartum) may be a better option (Bashour, Abdulsalam, Al-Faisal & Cheikha, 2008).

Other Nigerian studies focused on just one component of maternity services as well. For instance, Osungbade et al., (2008) worked on "content of antenatal care services in secondary health care facilities in Nigeria: implication for quality of maternal health care." This study was carried out in six hospitals and six comprehensive health centres. The data collected were essentially dependent on client's subjective evaluation of the antenatal services provided in those settings. The services evaluated based on clients responses were blood pressure, measurement, abdominal palpation, and detection of foetal heart rate. Other information elicited were receipt of health education; iron and folate supplement, and malaria prophylaxis; blood sample for haemoglobin or packed cell volume estimation; syphilis test; and whether urine samples were taken for proteinuria and bacteria; but there was no information concerning tetanus toxoid injections. All the facilities were grossly deficient. Ibeh (2009) carried out a case study in Anambra State, Nigeria. The study elicited client's utilization of facilities using a semi-structured interview only.

2.8 THEORETICAL FRAMEWORK

A theoretical framework consists of concepts, together with their definitions and reference to relevant scholarly works. The theoretical framework must demonstrate an understanding of theories and concepts that are relevant to the topic of a research paper and relate to the broader areas of knowledge being considered (Swanson, & Harris, 2013). The theoretical framework is most often not something readily found within the literature. One must review course readings and pertinent research studies for theories and analytical models that are relevant to the research problem being investigated. The selection of a theory should depend on its appropriateness, ease of application, and explanatory power.

According to Swanson and Harris (2013), the theoretical framework strengthens the study in the following ways: An explicit statement of theoretical assumptions permits the reader to evaluate them critically. In addition, the theoretical framework connects the researcher to existing knowledge. Guided by a relevant theory, you are given a basis for your hypotheses and choice of research methods. Besides, articulating the theoretical assumptions of a research study forces you to address questions of why and how. It permits you to intellectually transit from simply describing a phenomenon you have observed to generalizing about various aspects of that phenomenon. Then, a theory helps you identify the limits to those generalizations. Again, a theoretical framework specifies which key variables influence a phenomenon of interest and highlights the need to examine how those key variables might differ and under what circumstances.

2.8.1 Models of quality of care

Various models of quality of care have been developed and each proponent of the models viewed quality differently. The most popular ones are the Donabedian's model (1980) and the

Bruce model (1990) (Choudhry, 2005). The Bruce's model was developed from the Donabedian's model (Choudhry, 2005). Bruce (1990) took the lead in an attempt to synthesize ideas and findings from previous research on barriers to contraceptive use, client-provider interactions and approaches to family planning. Bruce proposed that several care programmes in family planning. These programmes have six distinct features, namely: (i) choice of methods; (ii) information given to clients; (iii) technical competence; (iv) interpersonal relations; (v) follow up or continuity mechanism; (vi) appropriate constellation of services. The above enumerated features are very critical to clients' experience. The framework centres on the experience of those who had access to services.

Other frameworks on quality of care have been developed based on Bruce's framework. Notable among them are the International Planned Parenthood Federation (IPPF) framework, the Pathogenesis (PATHO) framework, the Information Complexity-based (ICOMP) framework (a framework that can be used to refine the information criteria that use only the number of parameters of quality) and the UNFPA framework (a strategic framework for the prevention of HIV infection in infants in Europe) (Sodani, 2006). The IPPF framework is "clients' right and providers' need." The framework in itself is multidimensional and it identifies ten rights of clients and ten needs of providers. The ten rights of clients are information, access, choice, safety, privacy, confidentiality, dignity, comfort, continuity, and opinion. On the other hand, the needs of providers are training, infrastructure, guidance, respect, feedback, information, supplies, back-up, encouragement, and self-expression.

The PAHO framework was designed to evaluate the quality of care in women's reproductive health in Latin America and the Caribbean. The framework identifies nine distinct but interrelated elements: accessibility and availability; acceptability; technical competence; essential supplies, equipment and medication; client-provider interaction; information and counselling for clients; choice of methods (in case of family planning); comprehensiveness of

care and linkages to other reproductive health (RH) services; and continuity of care and follow-up. The ordering of the nine elements follows women's progression through the service delivery system (Sodani, 2006).

The ICOMP framework has just three dimensions. They are users' perspectives, service perspectives (providers' perspectives inclusive), and technological perspectives. The UNFPA framework is more recent than the others. It comprises nine elements that define quality of RH at the programme level. The nine elements consist of the following: access to services; service environment; client-provider interaction; informed decision-making; equipment and supplies; professional standards and technical competence; continuity of care; integration of services; and women's participation in management. Although the Bruce's framework is the only one which has been widely accepted globally in the family planning field (Sodani, 2006), the Donabedian's framework being all-encompassing and flexible, is considered more suitable for this study. Table 2-1 below compares the Donabedian's and Bruce's models of quality service.

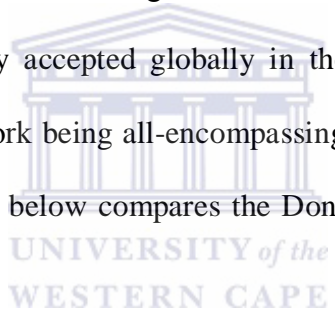


Table 2-1: Comparison of Donabedian's model and Bruce's model (Sodani, 2006)

MODELS	SEQUENCE OF FLOW	COMPONENTS	ELEMENTS	
DONABEDIAN'S	First	Structure	Physical structure, facilities, equipment	
			Organizational form	
			Administrative structure	
			Staff structure/qualifications	
			Fiscal health	
	Second	Process	Diagnosis	
			Treatment	
			Surgery	
			Consultation/referral	
Coordination & continuity				

MODELS	SEQUENCE OF FLOW	COMPONENTS	ELEMENTS	
	Third	Outcomes	Health outcomes Mortality Complications Satisfaction	
BRUCE'S	First	Programme Effort	Policy/Political support	
			Resources allocated	
				Programme management/structure
	Second		Unit of service received	Choice of methods
				Information given to clients
				Technical competence
				Interpersonal relations
				Follow-up/continuity mechanisms
				Appropriate array of services
	Third		Impacts	Client knowledge
				Client satisfaction
				Client health
Acceptance/Continuation				

2.8.2 Donabedian's model of quality (1980)

Avedis Donabedian was a physician and health services researcher at the University of Michigan. He developed the original model in 1966 (Murray & Frenk, 2000). In 1966, Avedis Donabedian first described the three elements of the Donabedian's model in his article titled "Evaluating the Quality of Medical Care." In this health services research, he identified the three dimensions that can be utilized to assess quality of care (structure, process, and outcome) that would later become the core divisions of the Donabedian's model (Donabedian, 2005). "Evaluating the Quality of Medical Care" became one of the most

frequently cited public health-related articles of the 20th century, and the Donabedian's model gained widespread acceptance.

Donabedian (1980) defines, in his book titled *The Definition of Quality and Approaches to its Assessment, volume 1: Explorations in Quality Assessment and Monitoring* structure, process, and outcome. He claims that these categories should not be mistaken for attributes of quality, but rather they are the classifications for the types of information that can be obtained in order to infer whether the quality of care is poor, fair, or good (Murray & Frenk, 2000). This provided a more in-depth description of the structure - process - outcome paradigm. In addition, he states that, in order to make inferences about quality, there needs to be an established relationship between the three categories and that this relationship between categories is a probability rather than a certainty.

The Donabedian's model of quality was used to guide this study. The reason for subscribing to using this model is because it has served as foundation for other models of quality. Besides, the three concepts the model addresses are critical to the scope of this study. This model consists of three vital concepts namely: structure, process and outcome. The three concepts are related to delivery of health care to clients. The model views health care service delivery within a continuum of service. The first concept structure is fulfilled through a process with the aim of achieving an outcome. The structure consists of physical structures, facilities, equipment, organization form, administrative structure, staff structure/qualifications and fiscal health. The concept of process refers to diagnosis, treatment, surgery, consultation, referral, coordination and continuity of care. The outcome is measured by health outcomes, mortality, complications and client's satisfaction (Figure 2-1).

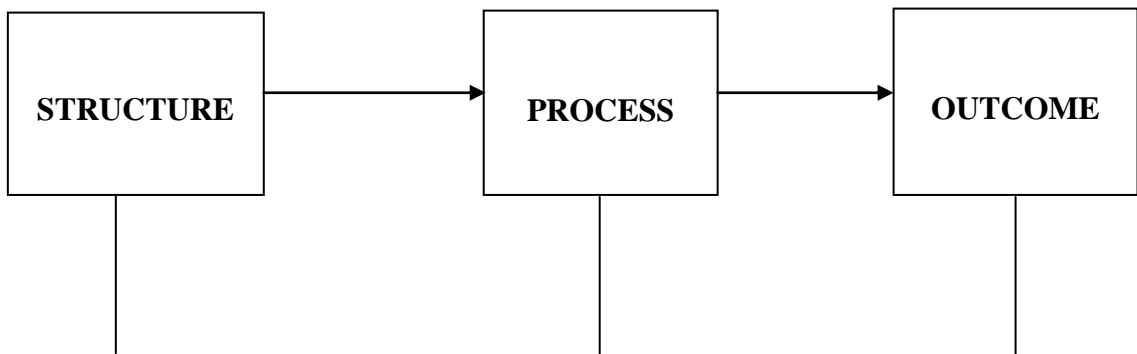


Figure 2-1: Donabedian's Model of Quality (1980)

The model adequately captures the three concepts (structure, process and outcome) that this study addresses. It is simple and easy to adapt; its easy adaptability probably informed the development of other models of quality. All the frameworks listed above are rooted in the Donabedian's model.

Actually, Bruce (1990) did a good work by coming up with a framework but he only made effort to synthesize ideas and findings from previous research on barriers to contraceptive use, client-provider interactions, and user's perspective approach to family planning. The six elements (choice of methods, information given to clients, technical competence, interpersonal relations, follow-up or community mechanism and appropriate constellation of services) that together constitute quality care do not clearly and adequately capture the scope of this study.

The other notable frameworks in the list above grew out of the Bruce's model. Basically, they all address the research problem they intend to guide but do not fit into this study for their narrow scope. The adapted version of the Donabedian Health Service Quality Model was employed to guide the study. The model has three basic concepts that are critical to achieving expected desired outcomes (Figure 2-1).

The Donabedian's Conceptual Model aims at providing a framework for examination of health services and evaluation of quality of care (McDonald, Sundaram, Bravata, Lewis, Lin, Kraft, Owens, 2007). Thus, information about quality of care can be drawn from three identified dimensions: "structure," "process," and "outcomes" (Donabedian, 1988, cited by Frenk, 2000). Structure describes the context in which care is delivered, including hospital buildings, staff, financing, and equipment. Process denotes the transactions between patients and providers throughout the delivery of health care. Outcomes refer to the effects of health care on the health status of patients and populations (Donabedian, 1988).

2.8.2.1 Dimensions of Care within the Model

The Donabedian's model is often represented by a chain of three boxes containing structure, process, and outcome connected by unidirectional arrows. The boxes represent three types of information that may be elicited (Murray & Frenk, 2000).

Structure: Structure includes all the elements that affect the context in which care is delivered. This includes the physical facility, equipment/instruments, and human resources, as well as organizational characteristics, such as staff training and payment methods. These elements control how providers and patients in a health care system act and are measures of the average quality of care within a facility or system. Structure is often easy to observe and measure and it may be the upstream cause of problems identified in process (Murray & Frenk, 2000).

Process: Process is the sum of all actions that make up health care. These commonly include diagnosis, treatment, preventive care, and patient education but may be expanded to include actions taken by the patients or their families. Processes can be classified as technical processes, how care is delivered, or interpersonal processes, which all encompass the manner in which care is delivered (Donabedian, 2005). The measurement of process is nearly

equivalent to the measurement of quality of care because process contains all acts of health care delivery (Murray & Frenk, 2000). Information about process can be obtained from medical records, interviews with patients and practitioners, or direct observations of health care visits.

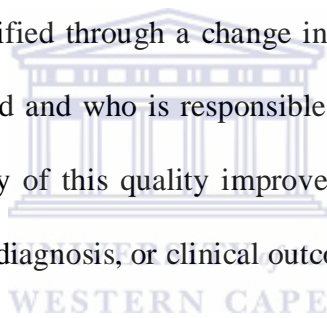
Outcome: Outcome contains all the effects of health care on patients or populations, including changes to health status, behaviour, or knowledge as well as patient satisfaction and health-related quality of life. Outcomes are sometimes seen as the most important indicators of quality because improving patient health status is the primary goal of health care. However, accurately measuring outcomes that can be attributed exclusively to health care is very difficult (Donabedian, 1980). Drawing connections between process and outcomes often requires large sample populations, adjustments by case mix, and long-term follow-ups, as outcomes may take considerable time to become observable (Donabedian, 1980).

Although it is widely recognized and applied in many health care related fields, the Donabedian's model was developed to assess quality of care in clinical practice (Murray & Frenk, 2000). The model does not have an implicit definition of quality care so that it can be applied to problems of broad or narrow scope (Donabedian, 1980). Each of the three domains has advantages and disadvantages that require researchers to draw connections between them in order to create a chain of causation that is conceptually useful for understanding systems as well as designing experiments and interventions (Donabedian, 1980).

2.8.2.2 Previous applications of the Donabedian's model in health system

The Donabedian's model of quality of care was developed in such a way that makes it flexible enough to be applied by researchers in diverse health care settings and all the various levels within a delivery system. The framework can be used to modify the first two dimensions (concepts) within a health care delivery unit, namely structures and processes,

such as a small group practice or ambulatory care centre, to improve patient flow or information exchange. For instance, health administrators in a small physician practice may be interested in improving their treatment coordination process through enhanced communication of laboratory results from the laboratory scientist to the provider in an effort to streamline patient care. The process for information exchange, in this case the transfer of lab results to the attending physician, depends on the structure for receiving and interpreting results. The structure could involve an electronic health record (EHR) that a laboratorian fills out with lab results for use by the physician to complete a diagnosis. To improve this process, a health care administrator may look at the structure and decide to purchase an information technology (IT) solution of pop-up alerts for actionable lab results to incorporate into the EHR. The process could be modified through a change in standard protocol of determining how and when an alert is released and who is responsible for each step in the process. The outcomes to evaluate the efficacy of this quality improvement (QI) solution might include patient satisfaction, timeliness of diagnosis, or clinical outcomes (McDonald et al., 2007).



In addition to examining quality within a health care delivery unit, the Donabedian's model is applicable to the structure and process for treating certain diseases and conditions with the aim of improving the quality of chronic disease management. For example, systemic lupus erythematosus (SLE) is a condition with significant morbidity and mortality and substantial disparities in outcomes among rheumatic diseases. The propensity for SLE care to be fragmented and poorly coordinated, as well as evidence that health care system factors associated with improved SLE outcomes are modifiable, point to an opportunity for process improvement through changes in preventive care, monitoring, and effective self-care. A researcher may develop evidence within these areas to analyse the relationship between structure and process to outcomes in SLE care for the purposes of finding solutions to improve outcomes. An analysis of SLE care structure may reveal an association between

access to care and financing and quality outcomes. An analysis of process may look at hospital and physician specialty in SLE care and how it relates to SLE mortality in hospitals, or the effect on outcomes by including additional QI indicators to the diagnosis and treatment of SLE. To assess these changes in structure and process, evidence garnered from changes in mortality, disease damage, and health-related quality of life would be used to validate structure-process changes (Lawson & Yazdany, 2012).

Owing to its flexibility, the Donabedian's model can also be applied to a large health system to measure overall quality and align improvement work across a hospital, group practice or the large integrated health system to improve quality and outcomes for a population. In 2007, the US Institute for Healthcare Improvement proposed "whole system measures" that address structure, process, and outcomes of care (Brien & Ghali, 2008). These indicators supply health care leaders with data to evaluate the organization's performance in order to design strategic quality improvement (QI) planning. The indicators are limited to thirteen non-disease-specific measures that provide system-level indications of quality, applicable to both inpatient and outpatient settings and across the continuum of care. In addition to informing the QI plan, these measures can be used to evaluate the quality of the system's care over time, how it performs relative to stated strategic planning goals, and how it performs compared to similar organizations (Martin, Nelson, Lloyd, & Nolan, 2007).

Owing to its flexibility and applicability, the model was applied to this study, which focused on quality of maternity services at the PHC level. Thus, the structure, the process and the outcome components include items/elements common to all other health care disciplines that have been studied using Donabedian's model and items/elements that are maternity-, midwifery-, and obstetrics-specific.

2.8.2.3 Researchers' Critique of the Donabedian's model of quality care framework

The Donabedian's model continues to serve as a touchstone framework in health services research, but its potential limitations have been suggested by some researchers, and, in some cases, adaptations of the model have been proposed. The sequential progression from structure to process to outcome has been described by some as too linear of a framework (Mitchell, Ferketich, & Jennings, 1998) and consequently has a limited utility for recognizing how the three domains influence and interact with one another (Carayon, Hundt, Karsh, Gurses, Alvarado, Smith, & Brenna, 2006).

The model has also been criticized for failing to incorporate antecedent characteristics (for example patient characteristics, environmental factors) which are important precursors to evaluating quality care (Coyle, & Battles, 1999). These factors are vital to fully understanding the true effectiveness of new strategies or modifications within the care process (Coyle, & Battles, 1999). Patient factors include genetics, socio-demographics, health habits, beliefs and attitudes, and preferences. Environmental factors include the patients' cultural, social, political, personal, and physical characteristics, as well as factors related to the health profession itself (Coyle, & Battles, 1999).

2.8.3 Applicability of Donabedian's model to the current study

In this study, the structure represents the characteristics of the midwives, nurse-midwives, medical officers of health (MOHs), other health workers, infrastructures and other facilities. It describes whether there are well-trained qualified health professionals, appropriate infrastructures, and health facilities, as well as well-maintained medical records and good mechanisms for communication among clinicians. For example: Is the sphygmomanometer

and equipment to detect foetal heart sounds up to date and maintained properly? Are the nurse-midwives and medical doctors well-trained and board certified?

Donabedian's model, as explained by Clancy (2003), shows that, if the structure is solid, we can concern ourselves with the process of maternity care. Concern for process suggests that quality is determined not just by having the right people and facilities available, but also by having the right things done in the right way. Process includes questions like: Were the women given the necessary care? Was the child delivery undertaken skilfully by trained qualified nurse/midwife? The third dimension, outcome, reflects the outcome (end result) of care. Did women have safe delivery? What was the attrition rate between ANC registration/attendance and child delivery? What was the outcome status of women and newborns referred to higher level of care? Were morbidity and mortality rates reduced as much as they could have been, given what we know is scientifically possible? We need to be able to measure the outcomes of care so that we know which types of care really help patients and so that we can look to instances of poor outcome for opportunities for improvement. Together, these components are the foundation of providing care that is consistently safe, timely, effective, efficient, equitable, and patient-centred (Erickson, et al., 2003)

2.8.4 Adaptation of the Donabedian's model of quality to the study

The Donabedian's model of quality care was adapted for this study. The three concepts described by the model apply to this study. The adapted version of the model is clearly explained below.

2.8.4.1 Components and elements of the adapted version of the quality of care model

The outline of items listed under each component was based on Donabedian's description and definitions of the individual component. In addition, views of proponents of other related models and other related health service quality studies informed the inclusion of the various items in the list below (Figure 2-2) (Donabedian, 1980; Bruce, 1990; Choughry, 2005).



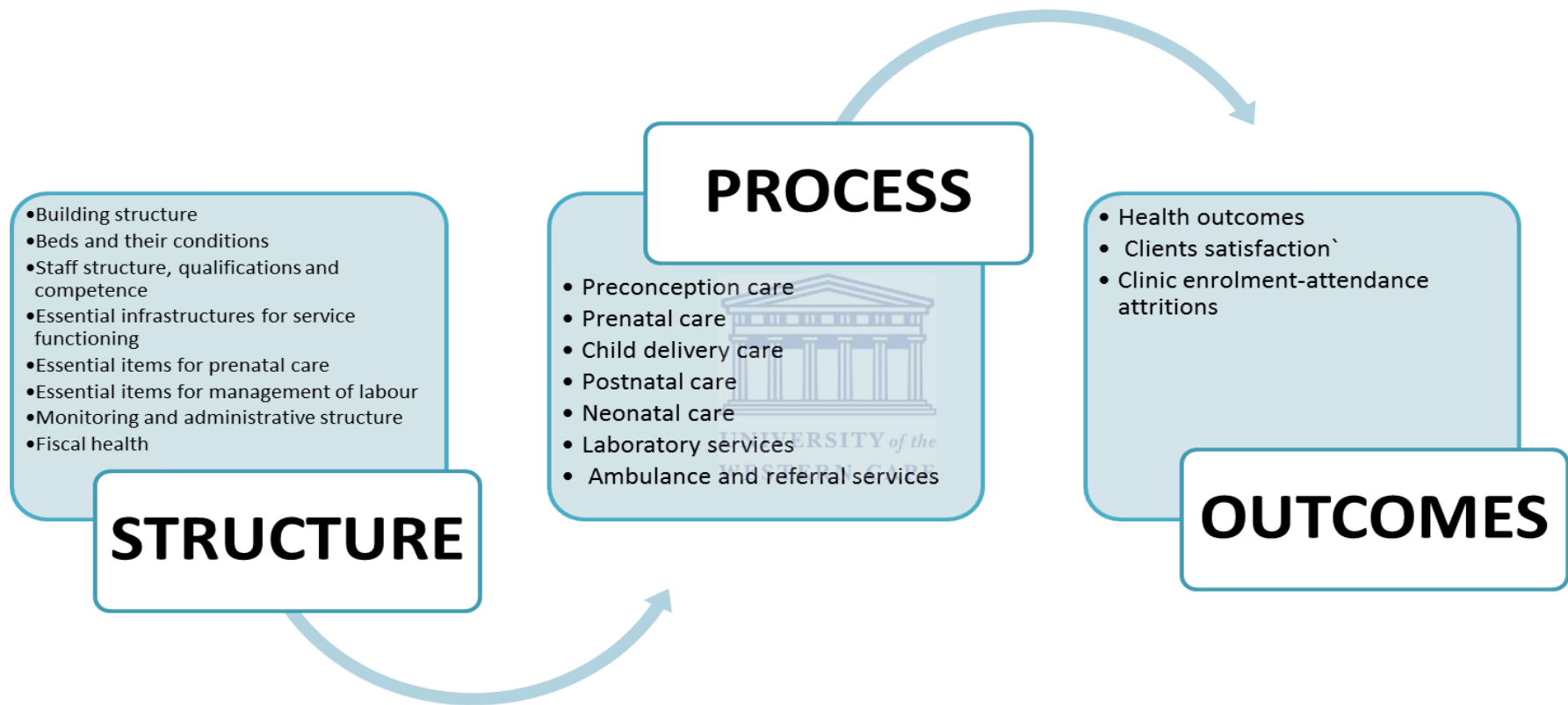


Figure 2-2: Adapted Donabedian's model of quality care

2.8.4.2 Explanation of the adapted version of the Donabedian quality of care model

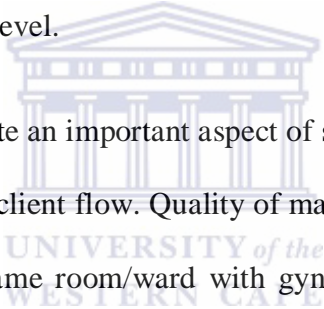
Since the three components (that is structure, process and outcomes) of the Donabedian model of quality of care framework was studied in the selected primary health care facilities in all the five local government areas, the aspects that contribute to quality of care under each of the components are described below. The description of each component was done in consonance with the ‘Assessment tool for quality of hospital care for mothers and new-born babies’ by WHO (2010).

The structure

This consists of aspects that make up the structure of maternity care facilities within the primary health care centre. The first is building structure: For proper assessment of a building structure of a primary health care (PHC) facility that is purposed to provide maternity services, the following vital aspect must be considered: (i) physical appearance, (ii) environment and hygiene, (iii) spaces and number of wards/rooms/offices (Murray & Frenk, 2000; Donabedian, 2005).

The physical appearance of a building shows whether it is old or modern, while the environment and hygiene reveal the environment of the location of such a building and the cleanliness of the environment. In ancient cities like Ibadan, where this study was conducted, it is not impossible to find some PHC facilities within the slums where environmental pollution and noise pollution are common (Aluko & Oluwatosin, 2012). Besides, the various units of the PHC facility should be appropriate for and conducive for the purposes they are designed to serve. The building structure meant to provide maternity services at the primary level ought to have separate wards/rooms for reception, general outpatient unit, consulting room(s), antenatal clinic, antenatal ward, labour ward, delivery room(s), and lying ward. In

addition, there should be provision for male and female wards to admit any other patients with minor ailments for observation. Other rooms that can serve as offices, launch or resting room for health workers are equally of great benefit. In general, the building structure should be spacious enough and the room capacity should be commensurate to clients' flow. It is grossly inappropriate to keep pregnant women standing or staying outside a health facility. Treating women with dignity is very vital to 'respectful maternity care' (Windau-Melmer, 2013). Health facilities that are within malaria-endemic regions should be provided with long-lasting insecticide treated bed nets in order to minimise hospital-acquired infections (Aluko & Oluwatosin, 2012). The above conditions that contribute to the structure are to be considered in establishing a standard in granting approval to building designed to provide maternity services at the primary level.



Beds and their conditions constitute an important aspect of structure. The number of available beds ought to be proportionate to client flow. Quality of maternity care is compromised when obstetric cases are admitted in same room/ward with gynaecological cases. The quality of maternity care becomes worse if when obstetric cases are lumped up with other ill patients in the same room/ward. These conditions put mothers and their new-borns at great risk of being infected with diseases. The condition of the available beds has the potential of the affecting quality of care being rendered to clients (Cronk, & Flint, 1989). Despite the existence of modern technologies, it is not unlikely that most primary health care facilities are equipped with obsolete hospital beds, examination couches, and delivery beds that cannot be manoeuvred or manipulated to suite desired therapeutic positions and postures (Cronk, & Flint, 1989). Therefore, this study was designed to assess the above variables through observation using a structured checklist.

Staff structure, their qualifications and competences are another vital aspect of structure considered in this study. In dealing with staff structure, their qualifications and competences, four areas are critical. They are (i) staff categories and qualifications, (ii) staff-patient ratio, (iii) staff skills and competence, and (iv) staff workload and satisfaction. In Nigeria, health workers at the PHC include doctors, nurse-midwives, community health extension workers (CHEWs), health assistants (HAs), laboratory technicians, pharmacy technician, record officers and cleaners. These health workers can be classified into three: skilled, semi-skilled and unskilled. The doctors who are usually the medical officer of health, and the nurse-midwives are the skilled workers, while the remaining health workers in the list are semi-skilled, excluding the cleaners, who are usually unskilled. These aspects of staff structure impact significantly on quality of care as far as maternity services are concerned. Besides, the ratio of population of the available health workers to that of client population (staff-patients ratio) and staff workload are other factors capable of influencing quality of care. Staff skills and competences, which are products of academic and professional qualifications, cannot be ignored when dealing with the issue of quality care in health care system. Some of the variables described above are interrelated in some ways. For instance, the staff-patient ratio has a link with staff workload and both are connected with staff job satisfaction.

Another aspect of structure that has serious implication for quality is 'essential infrastructures' for service functioning. For effective running of a PHC, particularly where maternity services are to be rendered, the following items are very critical: (i) generator for regular power supply, particularly in most developing countries, where power supply is not constant; (ii) water supply, Which is an integral aspect of maintaining asepsis in health facilities; (iii) staff quarters avail health workers, particularly those that are skilful in monitoring labour and conducting child delivery, opportunity of providing appropriate and consistent services at all times, even at night; (iv) telephones/radio calls/mobile phones,

which are useful for calling for help, thus enhancing effective referral and follow-up of clients; (v) ambulance with complete resuscitation gadgets. Obstetric emergency situations most of the times are sudden and therefore are least anticipated by birth attendants. Transporting emergency cases in any vehicle other than well-equipped ambulances may not make much difference from delayed referral, as little could be done by an accompanying health worker in such situations. In this study, all the items under the essential infrastructure were observed in the various study settings.

Prenatal care has been viewed as important component of safe motherhood, because it has been proven to improve maternal and neonatal health. There are essential items for prenatal care that must be put in place in facilities. The essential items for prenatal care consist of (i) examination couches, (ii) physical examination equipment/instruments, (iii) voluntary counselling and treatment of HIV/AIDs facilities, and (iv) information and communication-dissemination media. The availability of these items promotes effective assessment of risks and well-being of both mothers and their new-borns.

The essential items for management of labour are relevant to quality care services and assurance of safe motherhood. Thus, centres designed to provide obstetric services should be supplied with basic items, antibiotics, uterotonic medications, anticonvulsant medications, assisted vaginal delivery equipment/instruments, equipment/instruments for removal of retained products of conception, episiotomy and repair, resuscitation equipment and anaesthesia, neonatal supplies and pain management supplies. From the experience of the researcher, all the essential items are to be in the midwife's easy reach during management of labour and childbirth. The situation where the birth attendants will be searching for instruments or medications when emergency ensues does not promote quality care. For instance, to be searching for oxytocin injection when a baby is born, while waiting for

placental separation and expulsion, is never a good practice and does not demonstrate proficiency.

Monitoring and administrative structure are crucial in the delivery of quality maternity care to women. The availability of monitoring of quality of services that are rendered in health facilities cannot be undermined. In order to ensure quality care delivery in all PHC facilities, the following are very critical: (i) setting of standards for operation of maternity facilities, (ii) registration of new health care facilities, and (iii) regular inspection of facilities to ensure compliance with set standards. If all these are not put in place, various substandard services will be going on in facilities. This aspect was considered during this study.

Still under the domain of structure, the fiscal health, which comprises system of funding, sources of funds and allocation of funds, is very crucial in health care delivery. This adapted framework incorporates this element into its concept. The reason is that, underfunding has been reported to influence staff-patient ratio, staff remuneration, job satisfaction, availability of equipment/instruments, staff workload, and so on. Consequently, all the aforementioned variables contribute each and collectively to quality of care in health facilities, including facilities where maternity care services are being rendered.

The process

In the Donabedian's description of the second component of his model, the process consists of preconception care, prenatal care, child delivery care, postnatal care, neonatal care, laboratory services, as well as ambulance and referral services.

Preconception care offers prospective mothers opportunity to access preconception counselling, relevant health information and health education that could help them to make informed decisions on issues concerning their reproductive health, including pregnancy and childbirth. Thus, preconception care prepares prospective mothers for safe motherhood and

respectful maternity in the nearest future. Since it is capable of increasing women's level of awareness and knowledge of birth preparedness and complication readiness, it contributes greatly to quality maternity care services. Ordinarily, preconception care should be integrated into maternity services so that singles and newly married women could have access to the service prior to conception. This framework was adapted to accommodate the preconception care. The study settings were assessed for availability of preconception care, whether or not the service is integrated.

Prenatal care is the care given to a pregnant woman from the period of first visit till childbirth. It is important in evaluating whether the facilities are operating focused antenatal care or not. The types of services that are being rendered to women, the availability and functionality of equipment/instruments necessary to render the services in the facilities are crucial to quality of care. The availability and functionality of equipment are capable of determining effectiveness of antenatal procedures, such as abdominal palpation and auscultation of foetal heart sounds.

Another variable of interest under process is 'child delivery care'. Child delivery care comprises management of labour. Management of labour includes management of first, second, third and even fourth stages of labour. Practices that have been proven to be effective in yielding favourable outcomes are considered crucial to quality. Thus, practices that minimise the risk of haemorrhage before, during or after childbirth contribute greatly to quality care. Consequently, such practices improve neonatal and women health as well. In addition, postnatal care, which includes both immediate postpartum and puerperium, is the care given to a newly delivered mother to prevent or manage complications that are associated with pregnancy and childbirth. One critical aspect of postnatal care is infection prevention to reduce the risk of developing puerperal sepsis. Postnatal family planning forms

part of postnatal care in some health facilities. Sixth week postnatal, mothers are to be followed up or given appointment for postnatal clinic visit. During the visit, physical examinations, such as abdominal palpation, clinical breast examination, pap smears, and measurement of blood pressure should be carried out on the visiting women. This framework was adapted to guide analysis of the process to ensure whether the service is integrated or segmented.

Neonatal care is the care rendered to a new-born from the time of birth till 28 days postnatal. New-born care commences with airway clearance after the delivery of the head before initial respiration. The effective suctioning of the new-born airway before the delivery of the chest prevents inhalation of mucous and amniotic fluids and thus prevents the risk of birth asphyxia. The ideal practice is to place the new-born on the mother's abdomen while she is supported with hands by the mother. This practice has been proven to foster mother-child bonding. Another clinical practice that is aimed at fostering bonding is nursing the new-borns on the same bed with their mothers. In such health facilities, the use of baby cots is discouraged. These practices depict whether or not the facility is a baby-friendly hospital/clinic. Other clinical practices that are very critical to new-born care include care of umbilical cord stump, bathing, skin care and initiation of breastfeeding. This adapted version of the Donabedian's model taken into consideration under its concept of process.

Another relevant variable of interest considered under process is laboratory services. This includes services such as urinalysis, haemoglobin and haematocrit levels, ABO grouping, Rhesus factor, and screening for sexually transmitted infections (STIs). Availability, accessibility and affordability of these laboratory services are critical to safe motherhood, respectful maternity and pregnancy outcomes. The services afford the health workers knowledge of the health status of mothers and their foetuses before labour commences. The

framework was designed to ascertain whether or not the laboratory services are integrated or fragmented.

Since ambulance and referral services are crucial to PHC facilities, the availability of the services requires rigorous enquiry. Therefore, information as to whether or not the health facilities have these essential services needs to be investigated because they relate to quality of care. There are certain obstetric emergencies that may require immediate referral and transportation of clients to a higher level of care. Providing any vehicle, either commercial or private, other than ambulance that is adequately equipped with resuscitation gadgets is still far from the ideal. Therefore, all the selected study settings were assessed with regard to whether or not these facilities are present.

The outcome

In this current study, the variables of interest that are considered under ‘the outcome’ are health outcomes, clients’ satisfaction, and clinic enrolment-attendance attritions. The health outcomes that are relevant to maternity services and peculiar to PHC system are number of maternal referral, number of neonatal referral, number of maternal death, number of neonatal death as well as discharge against medical advice (DAMA). Clients’ satisfaction is another variable of interest to be evaluated under outcome. This manifests in the form of clients’ assessment of the facilities in terms of its capacity, conduciveness and hygiene. In addition, clients’ direct confession of whether or not they are satisfied with the services they are receiving in the facilities of their choice is a direct outcome measure of health care services. Besides, willingness of clients to recommend the facilities where they received antenatal or child delivery care or both to other fellow women relate to outcome measure.

An indirect way of outcome measure that is relevant to primary maternity care is enrolment-attendance attrition. The difference between the population of pregnant women who enrol for

antenatal care and the population of pregnant women who deliver their babies in a health facility is a measure of outcome. The difference between the population of women who come for child welfare service and the population of prenatal or newly delivered mothers is an outcome measure of services in facilities. This adapted version of the Donabedian's framework takes into consideration the above-mentioned parameters of outcome measures as they point to quality of care in the facilities.

The detailed explanation of the adapted version of the Donabedian's model of framework of quality care has been presented in a logical manner in this chapter. The new version of the framework was used to guide this study. All the research tools were designed based on this new version of the Donabedian's model of quality care.

2.9 SUMMARY OF CHAPTER

This chapter presents an overview of quality maternity services and various aspects of the concept of quality and maternity services. Factors capable of compromising quality in health care system are reviewed from the literature. Besides, the chapter reviews previous related studies and the theoretical framework that employed to guide the study. The chapter equally illustrates the application of the Donabedian's model of quality care to the study.

CHAPTER THREE

3 METHODOLOGY

3.1 INTRODUCTION

This chapter presents the methods and materials utilized for the study. The chapter first describes the study setting. It also captures the study design and presents the two phases of the study in a sequential order. The process, materials and methods of the conduct of the first phase is presented first. This is followed by the process of conduct of the second phase.

3.2 STUDY SETTING

This study was done in two distinct phases in Ibadan, Nigeria. Ibadan is one of the ancient cities in the south-western part of the country. Ibadan is the largest city in the West African sub-region. The city became popular as a result of the three major factors. One, it was the capital city of the old Western Region in Nigeria during the colonial era. Two, it became the location of the first university (University of Ibadan) and the first teaching hospital (University College Hospital). Three, the first tallest story building that is popularly referred to as ‘Cocoa House’ was sited within the city. The city is densely populated with an estimated population of about 2 million; most of the population live in slums and high-density areas (Aluko & Oluwatosin, 2008).

Ibadan has different levels of health care facilities, such as primary health care (PHC) centres, general hospitals, a teaching (tertiary) hospital, mission hospitals and private hospitals. There are five local government areas (LGAs) in the city of Ibadan and they have varying numbers of PHC facilities each. The PHC facilities are classified into three levels: the dispensary/health posts where minor ailments and injuries are treated on outpatient basis; the PHC facilities where maternity services (prenatal care, child delivery care, postnatal care,

child immunization and family planning services) are provided. Another PHC level care is the comprehensive health centres where sick people are treated both on outpatient and inpatient basis. The distribution of viable PHC facilities that were designed to render maternity services across the five LGAs is as follows: Ibadan South-West = 2, Ibadan North-West = 5, Ibadan North-East = 5, Ibadan North = 4, and Ibadan South-East = 5. Thus, the total number of PHC viable to render maternity services in the five LGAs is 21. The total average monthly client flow for maternity services in all the 21 PHC facilities is 13,437. The average total of health care workers who attend to pregnant women and women in labour is five per facility. Each LGA has only one medical officer of health to oversee all levels of PHC in the LGA and one head per facility. Figure 3-1 shows the location of Ibadan the study setting within the map of Nigeria.





Figure 3-1: Map of Nigeria showing the location of Ibadan

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3.3 THE STUDY DESIGN

This study purely utilized a theory-generating research (TGR) design, which involves identifying themes and categories that emanate from the data (McKenna & Slevin 2011). The researcher proposes concepts generated from data and, if the evidence supports them, theoretical proposition. Therefore, it was conducted in two distinct phases as described by McKenna and Slevin, (2011). The two phases had five steps of model-generating process. The first phase focused on analysis of quality of the existing maternity services in PHC facilities (situation analysis). Two steps that are involved in the first phase include: step 1 - Focusing discussion and conclusion data on the theoretical model; step 2 – Identifying theme and categories emanated from data. The second phase focused on ‘model development’, which has three steps as follow: step 3: Developing statements or propositions that propose

how two or more concepts are related; step 4: Diagramming - putting the concepts and propositions into diagrammatic form; step 5: Validating Model by PHC Programme Experts. The first phase (situation analysis) of the study employed the embedded mixed-methods research (MMR) approach, while the second phase (model development) adopted the process of model development described by McKenna & Slevin, (2011) and Chinn & Kramer, (2014).

3.4 FIRST PHASE - ANALYSIS OF QUALITY OF SERVICES

The first phase (situation analysis) utilized the embedded MMR approach. The first two steps of the TGR design, which was employed for the entire study, formed part of the first phase. MMR studies the quantitative and qualitative strands, which run either concurrently or sequentially, depending on the research aims and questions (van Griensven, Moore & Hall, 2014). Apart from the embedded MMR which was adopted for this current study, there are other three major types of MMR designs. They are exploratory, explanatory, and triangulation designs (De Vos, Delport, Fouché, & Strydom, 2011; van Griensven et al., 2014). Each of the designs is described in detail in this chapter.

Various authors (Creswell & Clark, 2007; Bergman, 2008; Teddlie & Tashakkori, 2009) favoured the use of the mixed-methods research approach as a result of its values. The approach enables the investigators to simultaneously address a range of confirmatory and explanatory questions with both the quantitative and qualitative approaches and, thus, enable them to verify and generate a model in the same study (Creswell & Clark, 2007; Bergman, 2008; Teddlie & Tashakkori 2009). The method provides strengths that offset the weaknesses of both quantitative and qualitative research and, thus, has the potential of providing stronger inference. Besides, the mixed-methods research provides opportunity for divergent views and perspectives, thereby making researchers alert to the possibility that issues are more

multifaceted than they might have initially supposed. Furthermore, the mixed-methods research is ‘practical,’ as it allows the researchers freedom to use all methods possible to address a research problem as well as combine inductive and deductive reasoning processes. In addition, the methods eliminate different kinds of bias, explain the true nature of a phenomenon under investigation and prove various forms of validity or quality criteria. Although the mixed-methods research has cost and time implications, it is appropriate for this study, because it could reveal the true nature of the content and quality of maternity services in the selected facilities since elimination of different kinds of bias is removed, while both deductive and inductive inference are possible (De Vos et al., 2011).

According to De Vos et al., (2011), the choice of research design when dealing with the mixed-methods approach relates to three major decisions: The first is the *timing* or sequence of the use of collected data. Therefore, the mixed-methods design is classified as either sequential or concurrent. Sequential timing occurs when the researcher implements the methods in two distinct phases (that is collecting and analysing) one type of data before using the other type. Concurrent timing occurs when the researcher implements both quantitative and qualitative methods during a single phase of a study at the same time. The second is the relative *weight* of the quantitative and the qualitative approaches. Two possible weighting options exist: (a) equal weight to both quantitative and qualitative methods in such a manner that both play equal, vital roles in addressing the research problem; (b) unequal weight where one method (either quantitative or qualitative) will have a greater emphasis within the study than the other one (either quantitative or qualitative). The third approach is *mixing* the two datasets. That is, how the quantitative and the qualitative datasets will be merged, embedded or connected.

3.4.1 Justification for MMR approach

Mixed-Methods Research (MMR) was adopted for this study for the following reasons as noted by De Vos et al., (2011): One, MMR enables researchers to address a range of confirmatory and explanatory questions with both the quantitative and qualitative approaches simultaneously; Two, it provides strengths that offset the weaknesses of both strands (quantitative and qualitative) of the research and, thus, has the potential of providing stronger inference. Three, it provides opportunity for divergent views and perspectives, thereby making researchers to be aware of the fact that issues are more multifaceted than they may think. Four, MMR, being 'practical,' allows the researchers freedom to use all methods possible to address a research problem as well as combining inductive and deductive reasoning processes. Five, it eliminates different kinds of bias, explains the true nature of a phenomenon under investigation and proves various forms of validity or quality criteria. In this study, the approach provided a more complete and deeper understanding of the subject under investigation, which has greater scope than all previous related studies.

The embedded MMR design was employed for this study in line with definition and explanation of mixed-methods by Creswell & Clark (2007: 6 - 9), as it involves integrating quantitative (surveys) and qualitative (FGDs + in-depth interviews) data collection and analysis into a single study. The collection of data from both strands was done concurrently with the qualitative data supporting that of the quantitative (De Vos et al., 2011; Van Griensven et al., 2014). The researcher embedded the qualitative data sets within the dominant quantitative phenomenological design (Creswell & Clark, 2007). In this study, the data mixing was at the stage of analysis and interpretation. This was so done in accordance with the existing literature (Creswell & Clark, 2007; De Vos et al., 2011; Van Griensven et al., 2014). In this study, the interpretation and discussion of the entire embedded MMR involved combining, connecting or integrating both quantitative and qualitative findings.

Chapter six of this report, the interpretation of the data was discussed by way of mixing as the qualitative research findings were subsumed or incorporated into the quantitative.

3.4.2 Justification for the embedded MMR approach

For this study, embedded MMR was adopted in consonance with the criteria outlined by Creswell & Clark (2007), cited by De Vos et al. (2011). The criteria are as follows: In this study the greater priority was QUANTITATIVE strand of the MMR, while the qualitative datasets provide supportive, secondary role in this same single study. Also, the collection of both the QUANTITATIVE and the qualitative sets were done simultaneously. Then, in congruence with the pragmatic philosophy, the choice of the embedded MMR approach was premised on the belief that the QUANTITATIVE datasets were not sufficient (that is different questions need to be answered and that each type of question requires different types of data (Creswell & Clark, 2007, cited by De Vos et al., 2011).

The mixed-methods research design was used for the first phase, which focused on collection and analysis of both quantitative and qualitative elements of the data that were generated from the facilities within the selected local government areas.

As mentioned in the early part of this chapter, four major types of mixed-methods research design are very prominent in the literature (De Vos et al., 2011). They include exploratory mixed-methods design, explanatory mixed-methods design, triangulation mixed-methods design, and embedded mixed-methods design. The exploratory mixed-methods design is used when an investigator first needs to explore a phenomenon using qualitative data before attempting to measure or test it quantitatively (De Vos et al., 2011). Similarly, explanatory mixed-methods design is in two phases. However, collection and analysis of quantitative data is followed by the collection and analysis of qualitative data. The overall purpose of this design is that the later (qualitative data) helps to explain or build upon the results of the

former (quantitative data). The triangulation mixed-methods design is a concurrent one-phase design which is most well-known and popular of the four types of mixed-methods design. Both quantitative and qualitative methods are used during the same time frame with equal weight to best understand the phenomenon of interest. The two types of data are collected and analyzed concurrently but separately in order to compare and contrast findings generated from each so as to see the extent to which they do or do not agree with each other (Creswell & Clark, 2007). Under the embedded mixed-methods design, one data set provides a supportive, secondary role in a study based primarily on the other data type.

The premise for the choice of embedded mixed-methods research design is the fact that a single dataset (either quantitative or qualitative) alone would not be sufficient for this kind of study. Therefore, the data that were collected with structured questionnaires and checklist were supported by the data collected from FGDs and IDIs. In addition, different research questions were answered in this study and each required different types of data. This stance is supported by Creswell & Clark 2007: 67). This design was suitable and appropriate for this study, because the investigator needed to embed qualitative data within the dominant quantitative survey design by collecting qualitative data through FGDs and IDIs with different categories of participants in order to follow-up on the results of the surveys (questionnaires and checklists). This design was advantageous in that the investigator was able to base the study on a well-known and established design, while collection of the two types of data was done concurrently (Ivankova, Creswell, & Clark, 2007)

3.4.3 Quantitative strand

This section explains the sampling techniques, sample size determination, participants' selection modalities, inclusion and exclusion criteria of the quantitative strand of the study. The quantitative strand of this study was done among three distinct populations, namely: the

PHC-based maternity centres, clients (postnatal women) and health workers to address the first four stated objectives.

3.4.3.1 Population and Sampling

The populations targeted for the quantitative strand of the study were 21 PHC-based maternity facilities across the selected LGAs, 13,437 postnatal women (clients) attending child welfare clinics of the selected PHC centres and 540 health workers of each PHC centres. The target populations were sourced from the record provided by PHC authorities.

3.4.3.1.1 Sample size and sampling procedure

The sample size for the surveys was based on the Stoker's (1985) table titled 'sampling in the quantitative paradigm'. This was because it was found to be empirical and easy to adapt for survey studies (Strydom 2011). The percentage sample recommended for ranges of population were used for selection of appropriate sample size for PHC centres, clients and caregivers (Table 3-1).

The study utilized a multistage sampling technique: the entire five LGAs and the entire 21 PHC-based maternity centres across the five LGAs were selected purposively. Therefore, only PHC centres that were designed to run maternity services were studied purposively. A systematic random sampling technique was utilized to recruit **755** postnatal women (clients) and **130** health workers from estimated populations of **13,437** and **540**, respectively. The attendance records and duty rosters served as sample frames for the postnatal women and the health workers, respectively. The sample intervals were calculated for each of the populations using the statistical formula: $K = N/n$. Where K = Sample interval; N = Total population in the sample frame; n = sample size. Sample frame of each PHC centres were used to compute sample interval.

Inclusion criteria:

Clients: These were women whose babies were within 0 and 42 days or 6 weeks after childbirth, who attended child welfare/immunization clinics and were willing to participate in the study. The women with new-born (aged between 0 and 42 days) were included in this study in order to capture the range of services they were exposed to from pregnancy till puerperium. This period is very critical to midwifery and obstetric practice. Most of the women will still be able to remember nearly all their experiences within the six weeks of childbirth. The choice of using women who bring their new-borns to child welfare/immunization clinic was based on the fact that women who use either formal maternity centres or alternative birthing centres patronize child welfare/immunization centres after child delivery.

Health workers: These included all categories of caregivers, such as nurse/midwives, community health officers (CHOs), community health extension workers (CHEWS) and health assistants (HAS) who regularly performed physical examinations on antenatal women and attended to women during labour and childbirth.

Exclusion criteria:

Clients: Women who were either not willing or too ill following childbirth were excluded from the study.

Health workers: Health workers who performed just supportive roles (such as pharmacy technicians, medical record officers, laboratory technicians and cleaners) were excluded from the study.

Table 3-1: Sample size determination for quantitative data

Respondents	Total population	N	A	n + A	References
PHC centres across the five LGAs	21	100% of N (21) = 21	-	21	Stoker (1985) cited by Strydom 2011
Clients	13,437	4.5% of N (13,437) = 604	25% of 604 = 151	755	Stoker (1985) cited by Strydom 2011
Healthcare Workers	540	n = 20% of 540 = 108	20% of n = 22	108 + 22 = 130	Stoker (1985) cited by Strydom 2011

KEY: N = Estimated study population, n = Estimated sample size, A = Attrition

3.4.3.2 Research instruments

The following research instruments were used to collect quantitative data from the subjects/participants: observation checklist for PHC-based maternity centres and questionnaires for clients and health workers. The observation checklist and the two of questionnaires were developed from the existing literature (Hulton, Mathews & Stones, 2000) and researcher's clinical experience. The choice of each of the data collection instruments was based on their relevance to this study with critical appraisal of their merits and demerits, as found in the literature (Hulton et al., 2000:15).

3.4.3.2.1 Observation checklist

Data from general inspection of facilities, environment, equipment and instruments and non-participant observation of conduct of antenatal care and childbirth in the selected facilities were collected using a structured checklist developed from the related literature (Fawole, Adekanle, & Hunyinbo, 2010; Taylor, & Nies, 2013), the midwifery procedure manual used as guide for the training of student midwives of schools of nursing, the researcher's professional experience and intellectual contributions of PHC experts. The checklist has six sections, namely: general assessment of facility; vital indicators, available services,

infrastructure, essential items for management of labour and antenatal clinic services. Photographs of aspects of the facilities that describe the situation and condition of facilities were taken to complement memory and facilitate accurate reporting. Such photographs were taken in such a way that the identity of the facility remained confidential. Therefore, inscriptions and images showing the identity of facilities, such as names and addresses, were not taken at all or blurred from the pictures.

3.4.3.2.2 The questionnaires

Two different questionnaires were developed by the researcher. The clients' questionnaire was structured to elicit information from postnatal women, being the service users. The health workers' questionnaire was designed to elicit information from the health workers, being the caregivers working in each of the selected PHC-based maternity facilities (Appendix XI Observation Checklist).

- **Clients' questionnaire**

The clients' questionnaire, designed for postnatal women, sought to measure users' perception and level of satisfaction with maternity services received during pregnancy and childbirth. The clients' questionnaire was designed by the researcher in line with WHO (2010) 'Assessment tool for quality of hospital care for mothers and new-born babies' to elicit information in the following areas: Section A - Socio-demographic data such as age, marital status, highest level of education, and occupation. Section B - Obstetrics history which includes the gravidarity (number of pregnancies), parity (number of childbirth), number of miscarriages and induced abortions. Section C - Participants' experience at the service centre. This section focuses on attitudes of health workers, supports and clients' satisfaction (Appendix IX Clients' Questionnaire).

Health care workers' questionnaire

The health care workers' questionnaire, which was designed for health workers (caregivers), measured the competence, experience and behaviours of the service providers. This research instrument elicited information from two areas: Section A – Bio-data and Section B – Perceptions and antenatal, labour and child delivery practice. Likert scale was used to measure perception (Appendix X Health Workers' Questionnaire).

3.4.3.3 Validity and reliability of the instruments

The face validity and content validity of the two sets of questionnaires and the developed checklist were ensured by comparing their items with the existing related literature and the research objectives/questions. In addition, a copy of each questionnaire was made available to the researcher's supervisor, and another research expert, a professor who was working with the CENTALS Scholarship, University of the Western Cape in the field of health research and medical statistics for review and critiquing. Necessary suggested corrections were made following the rigorous academic review. For example, response options to some question items were modified, while some question items that appeared ambiguous were rephrased based on experts' superior suggestions. The MOH in one of the LGAs vet the questionnaires and provided useful suggestions that contributed to the designing of the questionnaire.

The client's questionnaire was translated into the local language (Yoruba) by Centre for Excellent Research, Data Analysis, Consultancy and Training (CERDACT) for the postnatal women who could not speak or read English, using back-to-back translation. Subsequently, the two sets of questionnaires were tested on a homogenous group of women in Akinyele Local Government Area using test-retest reliability. The questionnaire was corrected and edited subject to the outcome of the test-retest to improve its reliability. Reliability of a research instrument is its "ability to create reproducible results." It deals with consistency of

measurement instruments. The reliability coefficient of the survey instruments was established before the actual study and they were as follows: client' questionnaire, caregivers' questionnaire and the checklist (Cronbach's alpha = 0.85, 0.86 and 0.95, respectively).

3.4.3.4 Data collection and analysis

This section describes the mode of data collection and analysis of the quantitative strand of the study. The reasoning strategies for the findings were based on the research methods and nature of the collected data. The quantitative strand of the embedded MMR approach measured the first four objectives of the study (objectives 1 to 4). Table 3-2 illustrates the data collection and analysis of the quantitative strand of the embedded MMR approach.

3.4.3.4.1 Objective 1: Description of infrastructures, equipment, instruments and medications



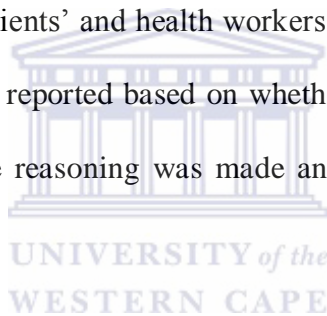
The PHC-based maternity facilities were studied. The 21 facilities were selected purposively. The data were collected with the aid of a structured observation checklist. The data were either ordinal or ratio scale. The collected data were analysed with Statistical Package of Social Sciences (SPSS) – version 21. Question item number 1 on the observation checklist which sought to assess the '*Condition of the facility and its environment*' was analysed thus: The building of each PHC facility and its environment was assessed on a 4-point rating scale. Thus, the building infrastructure with the environment was categorised into four :

- i. Dirty, old building without good waste management facilities = 1 point
- ii. Fairly clean, old building without good waste management facilities = 2 points
- iii. Fairly clean, modern building with waste management facilities = 3 points
- iv. Clean, modern building with adequate waste management facilities = 4 points

Frequencies/percentages were done and reported in tables. Deductive reasoning was made and reported in chapter four (Table 3-2).

3.4.3.4.2 Objective 2: Analysis of degree to which services are timely, appropriate and consistent with current professional knowledge

The Facilities, postnatal women and health workers were studied. In addition to the purposive selection of the PHC facilities, which was based on availability of maternity services, the health workers and the postnatal women were recruited through the systematic random sampling method; the duty roster and attendance record in each facility served as the sample frame for participants' selection. Data were collected from the postnatal women and the health workers, with structured clients' and health workers' questionnaires, respectively. The data collected were analyzed and reported based on whether the data were nominal, ordinal, interval or ratio scale. Deductive reasoning was made and reported in chapter four (Table 3-2).



3.4.3.4.3 Objective 3: Analysis of investigation of the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights

To measure the objective 3 stated above, the facilities and the postnatal women were studied. The selection of both population samples was purposive and systematic randomized, respectively. Moreover, observation checklist and clients' questionnaire were employed for data collection, correspondingly. The collected data were analyzed and reported based on whether the data were nominal, ordinal, interval or ratio scale. Deductive reasoning was made and reported in chapter four (Table 3-2).

**3.4.3.4.4 Objective 4: Measure clients' return rates for services in the facilities
within the last six months**

To measure objective 4, observation checklist was used to collect the records of antenatal booking (registration), labour, child delivery and immunization retrospectively for a period of six months prior to data collection. The Inferential statistics were done to compare the mean populations of antenatal attendance with that of child delivery. The mean population of child delivery was compared with that of child immunization (Table 3-2).



Table 3-2: Collection and analysis of the quantitative data

Specific Objectives	Methodology		Reasoning strategy
	Data collection	Data analysis	
1. Description of infrastructures, equipment, instruments and medications.	<u>Population</u> <ul style="list-style-type: none"> • Facilities <u>Sampling</u> <ul style="list-style-type: none"> • Purposive <u>Method of data collection</u> <ul style="list-style-type: none"> • Observation checklist 	1. Ordinal level – ranking e.g. condition of facilities and instruments 2. Ratio level – actual value, e.g. Number of equipment and instruments, number of nurses	Deductive reasoning
2. Analysis of degree to which services are timely, appropriate and consistent with current professional knowledge	<u>Population</u> <ul style="list-style-type: none"> • Facilities • Caregivers • Postnatal women <u>Sampling</u> <ul style="list-style-type: none"> • Systematic random – caregiver’s survey • Systematic random – client’s survey <u>Method of data collection</u> <ul style="list-style-type: none"> • Structured questionnaires 	1. Nominal level – categorization e.g. gender, marital status, religion. 2. Ordinal level – ranking e.g. condition of facilities and instruments. 3. Interval level – Attitude scale. 4. Ratio level – actual value e.g. number of nurses, CHEWs	Deductive reasoning

Specific Objectives	Methodology		Reasoning strategy
	Data collection	Data analysis	
3. Investigation of degree to which services are timely, appropriate and consistent with current professional knowledge.	<u>Population</u> <ul style="list-style-type: none"> • Facilities • Postnatal women <u>Sampling</u> <ul style="list-style-type: none"> • Multistage sampling • Simple random – postnatal women <u>Method of data collection</u> <ul style="list-style-type: none"> • Observation checklists • Structured questionnaires 	1. Nominal level – categorization, e.g. ANC type, gender, marital status, religion 2. Ordinal level – ranking e.g. condition of facilities and instruments 3. Interval level – Attitude scale 4. Ratio level – actual value, e.g. number of nurses, CHEWs	Deductive reasoning
4. Measure clients’ return rate for maternity-related services within the last six months	<u>Population</u> <ul style="list-style-type: none"> • Facilities <u>Sampling</u> Purposive sampling <u>Method of data collection</u> Observation checklist	1. Interval level – Attitude scale 2. Ratio level – actual value e.g. number of ANC attendance or childbirths	Deductive reasoning

3.4.4 Qualitative strand

This section explains the sampling techniques, sample size determination, participants' selection modalities, inclusion and exclusion criteria for the qualitative strand of the study.

The qualitative strand of this study was done among two distinct populations, namely: the postnatal women (clients) and Medical Officers of Health (MOHs) and Head of facilities. The MOHs are medical doctors with minimum of Master of Public Health (MPH) degree in addition to the initial Bachelor of Medicine and Surgery (MBBS). The head of facilities are Nurse/Midwives who are in the cadre of Chief Nursing Officer (CNO) in the LGA service. The MOHs and the heads of facilities play administrative and supervisory functions in the PHC under their respective LGAs.

3.4.4.1 Population and Sampling

The populations targeted for the qualitative strand of the current study were 13,437 postnatal women attending child welfare clinics of the selected PHC centres and the 5 MOHs + 5 heads of facilities per LGA. There was only one MOH per LGA and one head of facility per LGA. The willing postnatal women were recruited conveniently for the FGD sections, while the MOHs and heads of facilities were purposively selected for IDI sections.

3.4.4.1.1 Sample size and sampling procedure

The participants for the qualitative strand of this study were selected by non-probability sampling methods: the postnatal women who demonstrated willingness to participate were recruited for FGD sessions conveniently. The FGD sessions were held during the immunization clinic days. Each FGD session was held in a separate room. The population of participants per FGD session ranged between 8 and 12. All the 5 MOHs (1 from each LGA) together with 5 heads of facilities (1 from each LGA) were purposively selected for IDI sessions. The participants for IDIs were purposively selected (Table 3-3). However, one of

the MOHs in one of the LGAs was not available and, therefore, could not participate in the study.

Table 3-3: Sampling for Qualitative data

Respondents	Tools	FGDs or IDIs/ LGA	No of sessions	No of FGD or IDI participants	Sampling method
Clients	FGDs	1	5	10/FGD Total = 50	Purposive
MOHs + Heads of facilities	IDIs	1 – 2	12	11 - (1 unavailable)	Purposive

Inclusion criteria:

FGD participants: these were women whose babies were within 0 and 42 days or 6 weeks after childbirth, who attended child welfare/immunization clinics and were willing to participate in the study. The women with new-born ages between 0 and 42 were included in this study in order to capture the range of services they were exposed to from pregnancy till puerperium. This period is very critical to midwifery and obstetric practice. Most women will still be able to remember nearly all their experiences within the six weeks of childbirth. The choice of women who bring their new-borns to child welfare/immunization clinic was based on the fact that women who use either formal maternity centres or alternative birthing centres patronize child welfare/immunization centres after child delivery.

IDI participants: These include medical doctors who were holding the position of a MOH and/or nurses/midwives who had risen to the position of a Chief Nursing Officer, the most senior in her respective LGA and serving as head of facilities for that LGA. Also, when a head of facilities was not available, he/she was allowed to delegate any subordinate not below the rank of a Principal Nursing Officer, which also is an administrative position among nurses/midwives.

Exclusion criteria:

FGD participants: Women who were either not willing or too ill following childbirth were excluded from the study.

IDI participants: Health workers who performed just supportive roles (such as pharmacy technicians, medical record officers, laboratory technicians and cleaners) were excluded from the study.

3.4.4.2 Research instruments

FGD and IDI were employed as instruments of data collection for the qualitative strand of this study. Two separate lists of unstructured questions were prepared for the FGD and IDI sessions to serve as FGD and IDI guides. The lists of the unstructured question items were informed by Hulton, Mathews & Stones (2000) and the researcher's clinical experience. Interview guides were designed for the FGDs and IDIs. The choice of each of the data collection instruments was made based on its relevance to this study with critical appraisal of their merits and demerits, as found in Hulton et al., (2000).

3.4.4.2.1 Focus Group Discussions (FGDs)

One FGD session per LGA was conducted among willing postnatal women selected conveniently. In all the settings, women who volunteered to participate in the discussion were conveniently recruited. A semi-structured guide designed by the researcher in consonance with the reviewed literature was used to facilitate the discussion (Appendix XII FGD Guide) while the researcher served as the facilitator.

The FGDs were held in rooms assigned by the Head of the Facilities. To allow freedom of speech among the participants, none of the staff of the facilities were allowed into the rooms where the discussions were held. Each FGD session lasted between 30 and 45 minutes. In

addition to the use of audiotape and writing, the FGD sessions were either photographed or videotaped subject to the permission of the participants. The three recording media were used to complement one another in order to prevent loss of relevant information and to aid accurate transcription. Only the researcher and his supervisors had access to them. They were stored in a folder and kept under lock and key in a cabinet. All were destroyed after using them for transcription and report writing. During the interview, a research assistant with legible handwriting was made to write both questions and participants' responses. The responses of the participants were translated from indigenous language to English using back-to-back translation.

3.4.4.2.2 In-depth Interviews (IDIs)

In-depth interviews (IDIs) were conducted to elicit relevant information from Medical Officers of Health (MOHs) in the five LGAs and few heads of the selected facilities, who occupied administrative positions using unstructured interview. The information elicited from the IDI participants included: Their role and views on issues (i.) Service provision in the PHC facilities, (ii.) Quality of care rendered to women in PHC facilities, (iii.) Quality of care rendered to new-borns in their respective facilities, (iv.) competence and skills of health workers attending to women during pregnancy/childbirth, (v.) patient-staff ratio in PHC facilities (Appendix XIII IDI Guide).

3.4.4.3 Data collection and analysis

The tables below summarise the mode of collection and analysis of the qualitative data. The reasoning strategies for the finding were based on the research methods and the nature of the collected data. This section describes the data collected and analysed to measure the objectives. The specific objectives measured were 2, 3 and 4

3.4.4.3.1 . Objective 2: Analysis of degree to which services are timely, appropriate and satisfactory

3.4.4.3.2 Objective 3: Analysis of investigation of the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights

For objectives 2 and 3, administrative staff (heads of facilities and/or their deputies and MOHs) and postnatal women were recruited for the IDIs and FGDs. The two groups were selected purposively and conveniently, respectively. Note-taking and audio-recording were employed for IDIs, while video-recording was included in some FGD sessions with permission. Reading of the interviews and field notes, and transcription of the tape-recorded interviews were done immediately. Thematic coding of data and formation of detailed coding were performed. Descriptive reporting was done and statements were quoted directly where necessary. The foregoing was used to make inductive reasoning, which is reported in chapter five (Table 3-4).

Table 3-4: Data collection and analysis: Qualitative data

Specific Objectives	Methodology		Reasoning Strategy
	Data collection	Data analysis	
2. Analysis of degree to which services are timely, appropriate and satisfactory.	<p><u>Population</u></p> <ul style="list-style-type: none"> • Administrative staff • Postnatal women <p><u>Sampling</u></p> <ul style="list-style-type: none"> • Purposive - IDIs • Convenient - FGDs <p><u>Method of data collection</u></p> <ul style="list-style-type: none"> • IDIs :- note taking and tape recording • FGDs:- note taking + tape & video recording (if allowed) 	<p><u>FGDs & IDIs</u></p> <p>a. Reading of the interviews and field notes + immediate transcription of the tape-recorded interviews</p> <p>b. Thematic coding of data and formation of detailed coding were performed</p> <p>c. Descriptive reporting + verbatim statements where necessary.</p>	Inductive reasoning
3. Investigation of degree to which services are timely, appropriate and consistent with current professional knowledge	<p><u>Population</u></p> <ul style="list-style-type: none"> • Administrative staff • Postnatal women <p><u>Sampling</u></p> <ul style="list-style-type: none"> • Purposive - IDIs • Purposive - FGDs <p><u>Method of data collection</u></p> <ul style="list-style-type: none"> • IDIs : note taking and tape recording • FGDs: note taking + tape & video recording (if allowed). 	<p><u>FGDs & IDIs</u></p> <p>a. Reading of the interviews and field notes + immediate transcription of the tape-recorded interviews</p> <p>b. Thematic coding of data and formation of detailed coding were performed</p> <p>c. Descriptive reporting + verbatim statements where necessary.</p>	Inductive reasoning

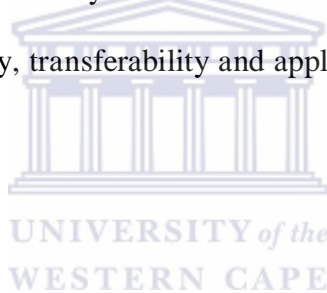
Specific Objectives	Methodology		Reasoning Strategy
	Data collection	Data analysis	
4. Description of outcomes of services within the last six months	<u>Population</u> <ul style="list-style-type: none"> • Administrative staff • Postnatal women <u>Sampling</u> Purposive sampling <u>Method of data collection</u> <ul style="list-style-type: none"> • IDIs :- note taking and tape recording • FGDs:- note-taking + tape- & video-recording (if allowed) 	<u>FGDs & IDIs</u> <ol style="list-style-type: none"> a. Reading of the interviews and field notes + immediate transcription of the tape recorded interviews b. Thematic coding of data and formation of detailed coding were performed c. Descriptive reporting + verbatim statement where necessary. 	Inductive reasoning



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3.4.4.4 Trustworthiness

The trustworthiness of research is highly dependent on the academic rigour that has been applied during its course. It speaks volume of the quality of the resultant findings from the research project. According to Polit and Hungler (1997), cited in Rolfe (2006) and Creswell (2014), one must first ensure the quality and accuracy of data as well as the research process in order to guarantee quality of results of a research project. In qualitative research, this is done by establishing trustworthiness of data and analysis. Trustworthiness in qualitative research is achieved by establishing adherence to a number of criteria during data collection and analysis to ensure truth value, applicability, consistency and neutrality of the findings. The trustworthiness of the current study was established with particular reference to four criteria – credibility, dependability, transferability and applicability (Lincoln and Guba 1985; Klopper & Knobloch, 2010).



3.4.4.4.1 Credibility

Credibility deals with the level at which the data in a study can be considered as true. If this is going to be ensured, the researcher must include some activities that will strengthen confidence in the truth of the data for the purpose of achieving high level of credibility (Polit & Hungler, 1997, cited in Rolfe 2006; Klopper & Knobloch, 2010). There are quite a number of strategies that can be used to ensure credibility. These include prolonged engagement, triangulation, debriefing and member checking (Polit & Hungler, 1997, cited in Rolfe, (2006); Klopper & Knobloch, 2010). The activities that increase the probability that credible findings are produced to ensure truth-value are prolonged engagement, persistent observation, referential adequacy and stakeholders and expert review were ensured in this study.

3.4.4.4.2 Dependability

Dependability means the constancy or permanency of data over time. Klopper & Knobloch, (2010) assert that the measures used to ensure credibility have an indirect impact on the dependability of the research findings. In this study, dependability was achieved through an inquiry audit; reviewers played the role of auditor by examining the documentation of critical incidents through presentations and interviews to ensure that the findings, interpretations and recommendations were supported by data. In addition, various discussions with the supervisors on the processes of data collection and data analysis to ensure continuous scrutiny of the data as well as the processes applied for collection, analysis and reporting.

3.4.4.4.3 Transferability

Transferability in qualitative research is related to the degree to which the findings can be used in another setting (Polit & Hungler, 1997, cited in Rolfe, 2006). Transferability was attained through thick description of research methodology: sufficiently detailed descriptions of data were collected in context and reported. The researcher also attempted to provide a thick description of the process followed in this study, and this has the potential of facilitating duplication, and hence transferability. Klopper & Knobloch, (2010) include data saturation as one of the strategies that enhance transferability. This was applied in the study, as the data were collected until saturation was reached and no new information was being obtained from the participants. Purposive sampling, which allowed the collection of data from varied groups of participants, was used to maximise the range of specific information that could be obtained from and about the context, by purposely selecting locations and participants that differed from one another.

3.4.4.4 Confirmability

Confirmability refers to how neutral the data are, with focus on the characteristics of the data and whether another person would come to the same conclusion (Polit & Hungler, 1997; Klopper & Knobloch, 2010). Inquiry audit and triangulation are some of the strategies used to ensure confirmability. In this study, confirmability was tested through the involvement of experienced and erudite supervisors who, as independent reviewers, critiqued the proposal and the entire thesis and attested to the evidence of academic rigour that was given to the study. The participants of first phase were fully involved in the second phase.

3.5 SECOND PHASE – MODEL DEVELOPMENT

The second phase of this study focused on model development meant to improve quality of primary level maternity services. This second phase was the end-product of the entire TGR design (McKenna & Slevin, 2011). For the purpose of clarity, the TGR design has two phases (first and second phase) and five steps (steps 1 to 5). The first phase which focused on situation analysis of the existing PHC centres has two steps, namely: step 1 – Focusing discussion and conclusion data on the theoretical model

Step 2 – Identifying theme and categories emanating from the data.

In other words, the first two steps stated above formed part of the first phase of the study, which employed embedded MMR approach. The last three steps (steps 3 to 5) of the TGR design were undertaken at the second phase, which focused on model development. The concepts from the findings and the discussion of the first phase served as building blocks for proposition statements and model (McKenna & Slevin, 2011). Below are the last three steps undertaken during the second phase of this study (Figure 3.2):

Step 3: Developing statements or propositions that propose how two or more concepts are related.

Step 4: Diagramming – putting the concepts and propositions into diagrammatic form

Step 5: Validating model by PHC programme experts

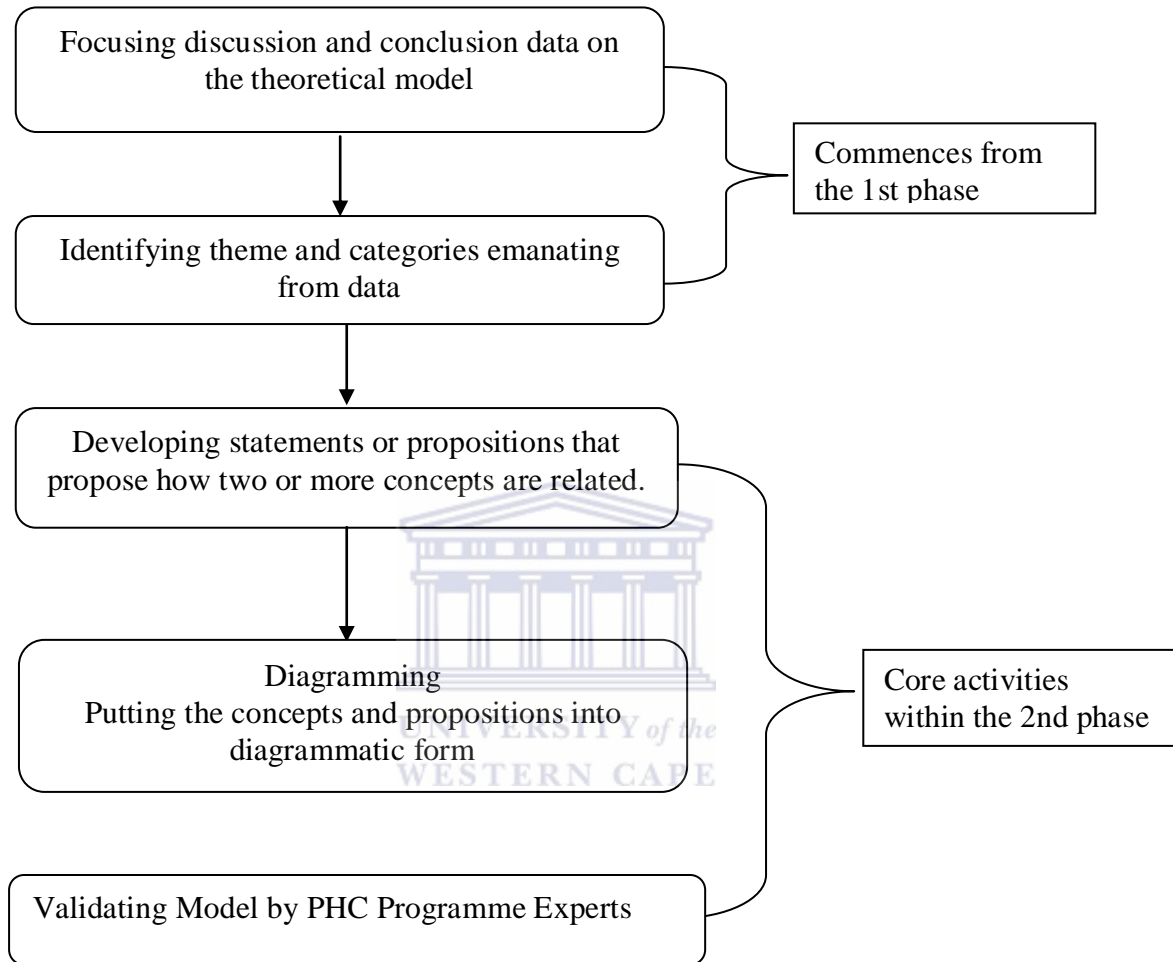


Figure 3-2: Process of model development

The study setting was entered with an open mind in order to see new relationships between phenomena while attempting to generate a model from the study, as recommended by McKenna & Slevin (2011), cited in Chinn & Cramer (2014).

3.5.1 Step 1: Focusing discussion and conclusion data on the theoretical model

Chapter six of this report, involving the TGR design, addresses the above-stated step 1. Chapter six presents the discussion and conclusion of the findings of both quantitative and qualitative strands of the embedded MMR. The mixing or convergence of the two strands was reserved for chapter six. The discussion and the conclusion focused on the proposed model; the concepts and themes that serve as building blocks for the proposed model are expected to emanate from the findings of the first phase (McKenna & Slevin, 2011; Chinn & Kramer, 2014). The concepts and themes were classified into categories in consonance with the components of the Donabedian's model.

3.5.2 Step 2: Identifying concepts, themes and categories emanating from the data

Following the discussion and conclusion of the first phase of the study, the concepts were clustered to form major themes and categories, as described by Chinn & Kramer (2004), cited by McKenna & Slevin (2011). Subsequently, in a tabular format, the concepts, the themes/categories needed for step 3, which is concerned with stating proposition statement, were described. The first column contains the categories, while the second column describes clusters of concepts and phenomena that address the participants. The third column quality criteria that the study participants expect in PHC facilities were designed to provide maternity care for women and their new-borns.

3.5.3 Step 3: Developing statements or propositions that propose how two or more concepts are related.

In step 3, the identified proposition statements were in two interrelated categories (Slevin & McKenna, 2011):

- i. Intra-component proposition statements.
- ii. Inter-component proposition statements.

The Intra-component propositions: are statements that state relatedness or link between two or more concepts of the same component of the quality model, for example when two different concepts under the same component are linked together in a proposition statement. .

The Inter-component proposition statements: are statements that link two or more concepts belonging to different components of the quality model in an interrelated manner. For example, when a statement links up a concept under the structure to another concept under a different component, for instance process or outcome, it is referred to as inter-component proposition statement.

3.5.4 Step 4: Diagramming: Putting the concepts and propositions into diagrammatic form

The prepositions in step 3 were put into diagram, as described by McKenna and Slevin (2011) and Chinn and Kramer (2014). The concepts/themes/categories were clustered together under each of the components of the Donabedian's model, namely: structure, process and outcomes. The interrelationship and interactions among the three components of the Donabedian's model is retained in this new model, because it was confirmed in this study empirically. In addition, all suggestions and amendments that were pointed out by the experts were incorporated into the model to improve it. Within this model's diagram, the existence of a relationship is denoted by an unbroken line. For connecting concepts, an arrowhead at one

end indicates an asymmetrical relationship, while an arrowhead at both ends indicates a symmetrical relationship (McKenna & Slevin 2011).

3.5.5 Step 5: Validating Model by PHC Programme Experts

This stage of model development dealt with validation and verification of the model. The process of model confirmation and validation described by Chinn and Kramer (2014) was adopted for this stage.

3.5.5.1 Setting

The offices of the participants were used for confirmation and validation of the model. That is the places of work within the respective LGAs where the MOHs and the heads of facilities belong to.

3.5.5.2 Population and sampling

A total of seven (7) participants, who were involved and skilful in the operation of PHC services, including maternity, participated in the confirmation/validation process. A medical doctor in one of the five LGAs holding the position of MOH had died few months after the conduct of the first phase of the study but before the commencement of the validation. Another Chief Nursing Officer who was a head of a facility was not available for the confirmation and validation of the model though she participated in the first phase of the study. These were responsible for the recorded attrition at the stage of validation of the second phase. Since nine (9) participants participated in the IDIs during the first phase and two of them could not participate in the validation stage of the model development, the respondent rate was 78%. Similar to the first phase of the study, voluntary purposive sampling was used in selecting the PHC programme experts for the validation stage of the model development. The MOHs and the heads of facilities, who participated in the model

validation, were selected because their administrative and decision-making roles in PHC organization. In addition, they occupy the apex of the organogram of PHC system.

3.5.5.3 Instrument

For the purpose of validation of the developed model, a semi-structured questionnaire was developed based on the features and the components of the newly developed model were sent to experts for responses. Detailed description and the sketched diagram of the model was sent for the experts to study and acquire sufficient knowledge to make significant contributions to the model. In addition, the mobile phone numbers of the experts were collected to enhance easy access to them for the purpose of clarifying issues on their responses.

3.5.5.4 Data collection

Prior to data collection, the experts were contacted on their personal mobile phones to inform them of the researcher's intention to involve them in the stage of model validation. Copies of the semi-structured questionnaires were administered by two research assistants.

3.5.5.5 Data analysis

The data collected were analyzed with the aid of SPSS version 23. Both descriptive and inferential statistics were run; the results are presented in chapter 7. The results are shown in both texts and tables.

3.6 ETHICAL CONSIDERATIONS

All related ethical issues were addressed during the conduct of this study (Miller, Birch, Mauthner & Jessop, 2012). Ethics clearance was obtained from the Faculty Higher Degree Committees, then by the UWC Senate Research Committee; the registration number is 13/10/23. Subsequently, the proposal was also submitted with the evidence of approval from

the Faculty and the Senate of University of the Western Cape to Oyo State Ethical Committee, Nigeria to secure ethical clearance to use facilities in its LGAs for the conduct of the research. Letters of permission were written to the Chairmen of the five LGAs to secure entrance into their facilities. Prior to the commencement of data collection, informed consent was obtained from each participant.

Copies of the participant information sheet (PIS) were made available to all the participants. The purpose and the process of the study were explained clearly to the women, caregivers, MOHs and heads of facilities. During the conduct of the research, the following ethical principles regarding each participant were respected:

Autonomy: The purpose of the research and the extent to which the participants were involved in the research were explained to all the participants. Written informed consent was obtained from willing participants before their participation in the study. Their participation was made voluntary. No one was deceived or coerced to participate in the study. Besides, withdrawal from the study at any stage was allowed without any form of discrimination or deprivation.

Confidentiality and Anonymity: Information provided by the participants was made confidential. Thus, participants' names were not required while completing or filling the questionnaires. Copies of the FGD confidentiality binding form were made available to all participants to sign. The identities of the FGD and IDI participants were not disclosed during report writing and article publication. Audiotape- and/or videotape-recordings during FGDs were done only on permission. The purpose of these recording media was to help the researcher to remember all useful information that might be lost if only writing was used for documentation. Participants were protected through the principle of anonymity. Similarly, the names of the facilities under study were not disclosed. In addition, photographs of aspects of

a facility that described the situation and condition of that facility were taken to complement memory and facilitate accurate reporting. Such photographs were taken in such a way that the identity of the facility remained unknown to any other person. Therefore, inscriptions and images showing the identities of facilities, such as names and addresses, were not taken or were blurred from the pictures. Only the researcher and his supervisors have access to them. Audiotapes and videotapes remained under lock and key for analysis and were destroyed after use.

Beneficence: The findings of this study and the resultant model that will be designed will inform policies and programmes that will focus on improving the health of women and their neonates.

Non-maleficence: This study did not employ any invasive procedure and the identities of the facilities. Each participant was protected from physical harm and unnecessary psychological trauma or embarrassment. In case any participant experiences discomfort support was arranged to manage the situation. No one reported and harm, discomfort was experience by any of the participants during the period of data collection. Question items in the questionnaires were structured in such a way that protected the culture of the participants. Participants were not forced to respond to any question they might not be comfortable with. Audiotapes/Photographs/Videotapes of the participants were used for transcription and report writing only. Only the researcher and his supervisors had access to them. They were kept under lock and key. They will be destroyed after the research process and publications.

3.7 SUMMARY OF CHAPTER

This chapter presents the methods and materials utilized for the study. The study, which adopted the ‘theory-generating research’ design, was conducted in two phases. The first phase of the study, which focused on situation analysis of the existing maternity services at primary health care facilities, employed the embedded mixed-methods approach for data collection, analysis and interpretation. The tools used for both quantitative and qualitative strands of the methods were clearly described. The second phase of the study followed the step-by-step (process) of theory design described by McKenna and Slevin (2008) and Chinn and Kramer (2014). Ethical considerations as well as academic rigour as applied in this study were discussed in a clear and concise manner.



CHAPTER 4

4 FINDINGS OF THE QUANTITATIVE STRAND

4.1 INTRODUCTION

The results of the quantitative surveys (observation checklist, clients' and caregivers' questionnaires) are reported in this chapter and they provide information for the first four objectives of this study (i.e. objectives 1 to 4). Apart from the initial description of the socio-demographic characteristics of the study participants (clients and health workers), the results are presented in line with three components of the Donabedian's model, namely: structure, process and outcome. The reported research findings are described in text, tables and charts. Under each component of the Donabedian's model, results of the quantitative strand of the study are reported first, followed by the results of the qualitative aspect in chapter five; chapter 6 presents the mixed results.

4.2 GENERAL DESCRIPTION OF THE STUDY POPULATION

The study population described in this chapter comprised PHC facilities, clients (postnatal women) and health workers.

4.2.1 Description of the PHC facilities

A total of 21 primary health care centres were assessed with structured checklist. These facilities were unevenly spread across the five local government areas within Ibadan. Only facilities that provided maternity care to women were surveyed. The facilities providing maternity services to women varied in number from one local government area to another. In Ibadan South-West for example, only two PHC centres have viable maternity care services.

4.2.2 Client-participants

The data collected from the participants cover their socio-demographic characteristics and obstetric history.

4.2.2.1 Socio-demographic variables

Out of the 755 copies of the questionnaire administered, 730 were retrieved and analyzed. Hence, the response rate was 96.7%. The postnatal women's age ranged from 15 to 44 years; the mean age was 28.28 ± 5.3 (standard deviation). A total of 432 (59.2%) of the women had minimum of senior secondary school education, while 220 (65.7%) of the women were self-employed. Two-hundred and forty-eight (74.0%) and 67 (20.0%) of the women were residing in high-density areas and slums within Ibadan (Table 4-1). Christianity and Islam were the dominant religion of the people; 471 (50.8%) were Muslims, with 359 (49.2%) reporting being Christians. Besides, 67 (9.2%) of the women were unemployed. Those who claimed to be employed engaged in petty trading with poor income benefit.

4.2.2.2 Obstetric characteristics of the client-participants

None of the women accessed preconception care prior to their immediate past pregnancies. However, 676 (92.6%) of them received antenatal care under the existing traditional model of ANC with multiple clinic visits during their immediate past pregnancies. Out of the 730 participants, 672 (92.1%) were married and were staying with their partners, while the remaining were single or not living with partners. Among the women studied, 258 (35.3%) came to the PHC facilities with their first babies, the remaining had had other babies. Figure 4-1 shows the parity of the participants: the grand multiparae were 33 (4.5%), while 442 (60.5%) of the women had between one and two living children (Figure 4-2).

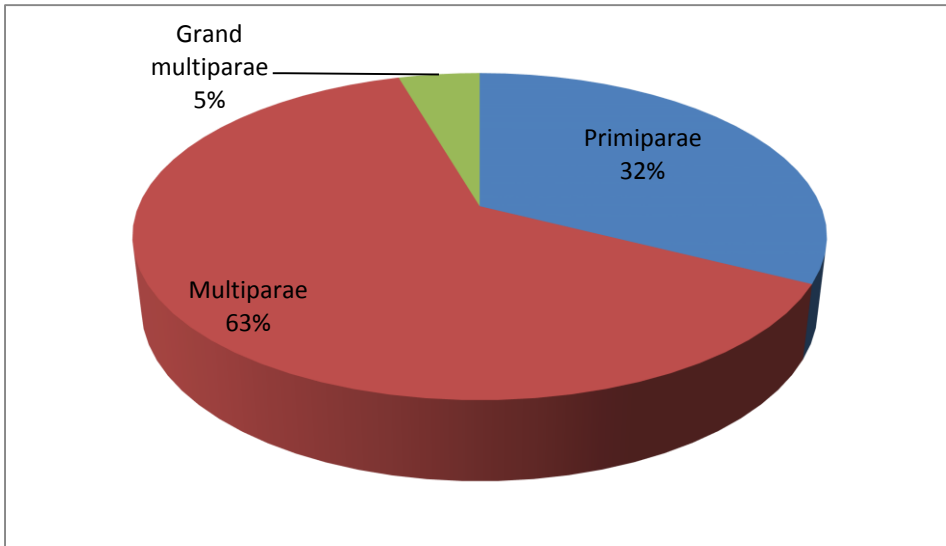


Figure 4-1: Parity of the client-participants

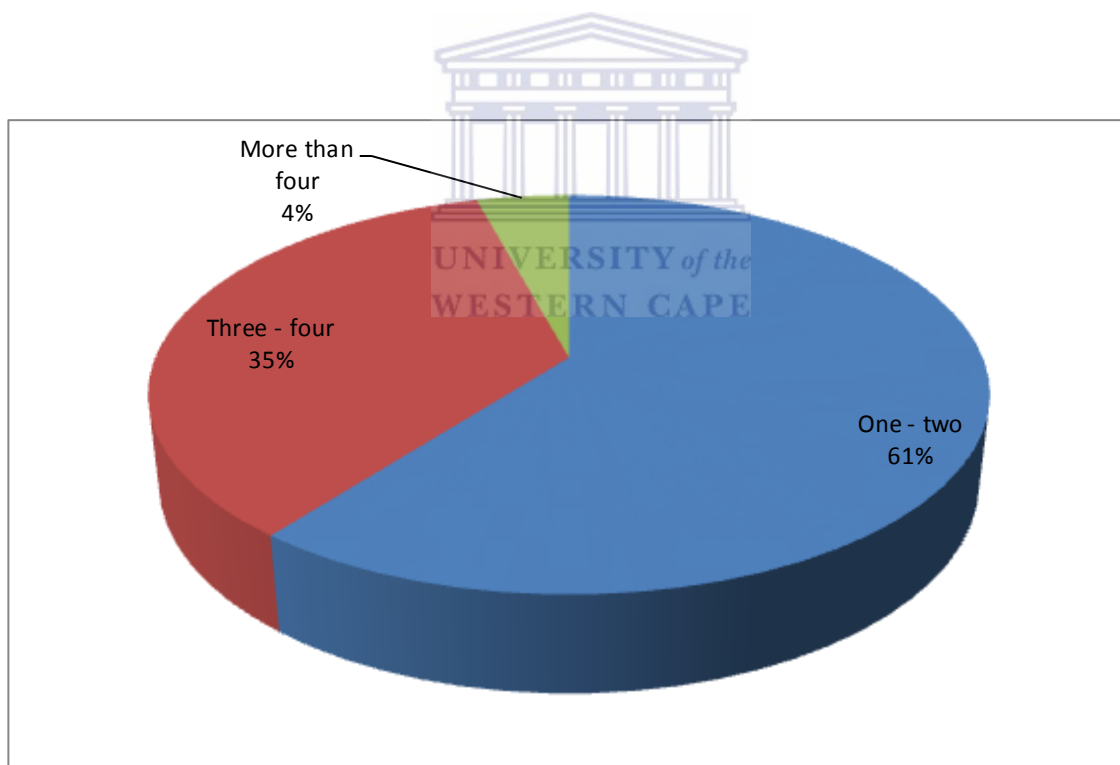


Figure 4-2: Participants' number of living children

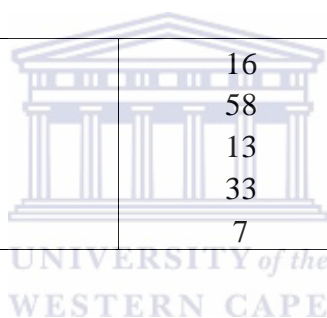
4.2.3 Health worker-participants

Out of the 135 copies of the questionnaire administered 127 were retrieved and analyzed. The remaining eight were not returned because the participants were not available to submit for being on one kind of leave of absence (holidays). Hence, the response rate was 94.1%. The categories of health workers recruited to participate in this study included mainly nurse/midwives –26.0%, community health officers (CHOs) –10.2%, community health extension workers (CHEWs) –45.7% and health assistants (HAs) –12.6%. However, few others (5.5%) who were laboratory technicians and record officers were recruited into the study because they met the criteria of attending to prenatal women and women in labour.

The age of the health workers in the PHC facilities ranged between 20 and 58; the mean age \pm standard deviation was 41 ± 10 years. Health workers aged 51-58 were 22.8 %, while the remaining were 50 years and below (Table 4-1). The mean duration of professional practice of the participants was 16 ± 9 years. The health workers who had worked between 21 and 33 years were 44 (34.6 %). A total of 33 (26.0 %) were professional nurses, the remaining were semi-skilled workers, such as community extension workers (CHEWs) and health assistants (HAs). Those labelled as ‘others’ in this study included laboratory technicians, record officers and pharmacy technicians who attended to prenatal women and women in labour in some of the PHC facilities (Table 4-1).

Table 4-1: Socio-demographic variables of the PHC health workers (N = 127)

Socio-demographic variables	N	%
Age groups		
20 – 30 years	25	19.7
31 - 40 years	33	26.0
41 - 50 years	40	31.5
51 - 58 years	29	22.8
Duration in specialty		
1 - 10 years	43	33.9
11 - 20 years	40	31.5
21 - 33 years	44	34.6
Marital status		
Single	14	11.0
Married	111	87.4
Divorced	1	0.8
Widowed	1	0.8
Profession		
Health Assistants	16	12.6
CHEWs	58	45.7
CHOs	13	10.2
Nurses/Midwives	33	26.0
Others	7	5.5



4.2.4 Conditions of PHC facilities

The findings of the analysis of the data set collected with the observation checklist are presented in relation to the set objectives and in consonance with the components of the Donabedian’s model of quality health care.

4.2.4.1 Structure-related findings

The findings of the analysis of the data set collected with the observation checklist are presented in relation to the set objectives and in consonance with the components of the Donabedian’s model of quality health care. Thus, the situation of the building infrastructure, equipment, instruments and medications were described below.

4.2.4.1.1 Objective 1: Description of infrastructures, equipment, instruments and medications.

- **Condition of building infrastructure and their environments**

A total of 21 primary health care facilities were assessed across five local government areas with pre-tested structured checklists. The PHC facilities were classified mainly into four categories (Table 4-2). The conditions and the environments of the buildings of 4 (19%) of the facilities were observed to be very bad, requiring complete reconstruction and supply of colour-coded waste containers to ensure infection control and prevention. The condition of the toilets and bathrooms in most of the facilities across the five LGAs was very poor.

Table 4-2: Condition of PHC facilities and their environments

Condition of Facilities and Environment	Frequency	%
Category 1	4	19.0
Category 2	5	23.8
Category 3	10	47.6
Category 4	2	9.5
Total	21	100.0

KEY

Category 1: Very bad, required complete reconstruction; without supply of colour-coded waste containers

Category 2: Bad, required major renovation; without supply of colour-coded waste containers

Category 3: Fairly good, required minor renovation; with supply of colour-coded labelled waste containers

Category 4: Good enough, required no renovation; supply of colour-coded or labelled waste containers

- **Condition of beds and their accessories**

Six (28.6%) of the facilities had most of their beds in good shape, while four (19.0%) had less than one-quarter of their beds requiring minor repair (Table 4-3). In all the facilities, other clients were usually admitted in the same room where gynaecological and obstetric clients were being admitted.

Table 4-3: Condition of beds available in the studied facilities

Conditions of beds in PHC facilities	Frequency (%)
Almost all were bad, obsolete and needed replacement	5 (23.8)
More than 1/4 of beds needed major repair or replacement	6 (28.6)
Less than 1/4 of beds needed minor repair	4 (19.0)
Most were in good shape	6 (28.6)
Total	21 (100.0)



- **Description of availability of infrastructure in PHC facilities**

The description of availability of infrastructure in the PHC facilities still met the first objective of this study. All the buildings were properly wired for the purpose of electricity supply from the public mains. However, none of the PHC facilities enjoyed regular supply of electricity, while 60% of them no longer received electric supply at all because their electricity bills were not settled by the funding local governments. All the facilities used either rechargeable lamps or hurricane lanterns as alternative sources of light to attend to women during labour and childbirth at night. Out of the 21 PHC facilities assessed, 33.3% had no generator. Table 4-4 shows conditions of the generators available to the facilities as alternative source of light. Similarly, 23.8% of the facilities had functioning and adequate (enough to serve the client and staff populations and carry out necessary procedures) water sources. The water sources were either wells or boreholes. The staff and clients in those

facilities with either no or inadequate or faulty water sources used to fetch water from neighbouring residential houses and/or compounds. None of the facilities was provided with either telephone or mobile phone as means of communication. Similarly, none of the facilities had any ambulance with resuscitation gadgets and there was no staff quarters in any of the facilities. Five items (electricity, water supply, staff quarters; means of communication and ambulances) which constitute infrastructure were scored on a rating scale of 0 – 3. Thus, not available = 0; available but faulty = 1; available but inadequate (not having minimum required number) = 2; available, functioning and adequate = 3. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 15 points. This brought the expected standard for infrastructure to 15 points. When the infrastructures were assessed, rated and compared with the expected standard, they were found to be below the expected standard. This was of statistical significance; p-value < 0.05 (Table 4-5).

Table 4-4: Availability of essential infrastructures in PHC facilities

Generator	Frequency	%
Not available	7	33.3
Available but faulty	2	9.5
Available but inadequate	3	14.3
Available, functioning & adequate	9	42.9
Total	21	100.0
Water source		
Not available	7	33.3
Available but faulty	4	19.0
Available but inadequate	5	23.8
Available, functioning & adequate	5	23.8
Total	21	100.0

KEY:

Adequate: Enough to serve patient population & staff population

Inadequate: Not enough to serve patient & staff population.

Table 4-5: Difference between infrastructures and expected standard (= 15)

One-Sample Statistics					
	N	Mean	Std. Deviation	Std. Error Mean	T-statistic (P-value)
Infrastructures	21	3.05	1.658	0.362	33.043 (0.001)

All the PHC facilities were assessed for availability of essential items that were needed for management of labour. In all the facilities, 4.8% had adequate infection prevention practices and culture. Fifteen item categories such as items required for universal precaution, sterilization and instruments, which constitute essential items were scored on a rating scale of 0 – 2. Thus, none available = 0; inadequate (not having minimum required number) = 1; adequate (having at least minimum required number) = 2. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 30 points. This brought the expected standard for infrastructure to 30 points. All other essential items were either inadequate or not available at all (Table 4-6).

Furthermore, the basic items needed for rendering prenatal and child delivery care were equally assessed, rated and compared against the expected standard. Seventeen item categories, which constitute basic items such as items required for maternity care during pregnancy, labour and childbirth such as cotton wool, gauze, delivery forceps, foetal stethoscope, delivery couches and others were scored on a rating scale of 0 – 2. Thus, none available = 0; inadequate (not having minimum required number) = 1; adequate (having at least minimum required number) = 2. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 34 points. This brought the expected standard for infrastructure to 34 points. Only cotton wool/gauze was observed to be adequate in supply in

all the facilities but none of the facilities had partograph for labour monitoring, doppler/sonicaid for foetal heart sound monitoring and Stenle's pack for normal delivery.

Table 4-7 presents the availability of basic items across the facilities. Both the essential and basic items were observed to be far below the expected standard (30). These also were statistically significant; p-value < 0.05 (Table 4-8).

Table 4-6: Availability of essential items for management of labour

Essential Items	None available	Inadequate	Adequate
	N (%)	N (%)	N (%)
Infection prevention	-	20 (95.2)	1 (4.8)
Running taps	13 (61.9)	5 (23.8)	3 (14.3)
Liquid soap	5 (23.8)	15 (71.4)	1 (4.8)
Antiseptics	1 (4.8)	19 (90.5)	1(4.8)
Sterile gloves	-	20 (95.2)	1 (4.8)
Non-sterile gloves	1 (4.8)	19 (90.5)	1(4.8)
Non-sterile protective clothing	17 (81.0)	4 (19.0)	-
Decontamination containers	17 (81.0)	4 (19.0)	-
JIK, bleach or bleaching powder	-	1 (4.8)	20 (95.2)
Prepared disinfection solution	11 (52.4)	6 (28.6)	4 (19.0)
Puncture-proof sharp boxes	-	-	21 (100.0)
Regular trash bins	-	17 (81.0)	4 (19.0)
Covered contaminated waste bins	11 (52.4)	8 (38.1)	2 (9.5)
Mayor's stands or equivalent	21 (100.0)	-	-
Functioning sterile	9 (42.9)	11 (52.4)	1 (4.8)

Table 4-7: Availability of basic items for prenatal and child delivery care

Basic Items	None available	Inadequate	Adequate
	N (%)	N (%)	N (%)
Blood pressure apparatus, cuff & stethoscope	1 (4.8)	12 (57.1)	8 (38.1)
Partograph for monitoring labour	21 (100.0)	-	-
Placenta dishes	2 (9.5)	19 (90.5)	-
Instrument tray	-	21 (100.0)	-
Kidney dishes/receivers	-	19 (90.5)	2 (9.5)
Gallipots	-	20 (95.2)	1(4.8)
Bowls	-	21 (100.0)	-
Cotton wool, gauze	-	-	21 (100.0)
Plasma expanders (e.g. Normal saline) & IV sets	12 (57.1)	5 (23.8)	4 (19.0)
Syringes & needles, 2ml, 5ml, 10ml, 20ml	-	3 (14.3)	18 (85.7)
Delivery couches	1 (4.8)	20 (95.2)	-
Doppler/sonicaid	21 (100.0)	-	-
Foetal stethoscopes	-	19 (90.5)	2 (9.5)
Cocker's forceps	10 (47.6)	11 (52.4)	-
Stenle's pack for normal delivery	21 (100.0)	-	-

KEY

Adequate: Minimum expected number (which is 30 points).

Inadequate: Less than minimum expected number.

The availability of essential medications needed to provide maternity care was assessed. Ten groups item medications used for women during pregnancy, labour and childbirth such as antibiotics, antihypertensive, sedative, oxytocic injections and tablets were scored on a rating scale of 0 – 2. Thus, none available = 0; inadequate (not having minimum required number) = 1; adequate (having at least minimum required number) = 2. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 20 points. This brought the expected standard for infrastructure to 20 points. They were inadequate across all the

facilities. Medications such as uterotonic agents, anticonvulsants and antibiotics were either inadequate or unavailable in some facilities. The available essential medications were insufficient. This finding was of statistical significance; $p\text{-value} < 0.05$ (Table 4-8).

Similarly, nineteen items required for obstetric emergencies and other assisted vaginal deliveries were assessed and scored on a rating scale of 0 – 2. Thus, none available = 0; inadequate (not having minimum required number) = 1; adequate (having at least minimum required number) = 2. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 38 points. This brought the expected standard for infrastructure to 38 points. When the score obtained was compared with the expected standard (which is 38 points), it was inadequate. This finding is significant statistically; $p\text{-value} < 0.05$ (Table 4-8).

Similarly, fifteen groups items needed for maternal and new-born resuscitation and other necessary new-born supplies were scored on a rating scale of 0 – 2. Thus, none available = 0; inadequate (not having minimum required number) = 1; adequate (having at least minimum required number) = 2. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 30 points. This brought the expected standard for infrastructure to 30 points. These items needed for maternal and new-born resuscitation and other necessary new-born supplies were inadequate in all the facilities. This was similarly statistically significant; $p\text{-value} < 0.05$ (Table 4-8).

In addition, eight items and pain-relieving medications commonly used in pregnancy, labour and childbirth were scored on a rating scale of 0 – 2. Thus, none available = 0; inadequate (not having minimum required number) = 1; adequate (having at least minimum required number) = 2. Therefore, the minimum obtainable score is 0, while the maximum obtainable score is 16 points. This brought the expected standard for infrastructure to 16 points. The pain management modalities when assessed for adequacy revealed that they were inadequate. The

difference between the pain management rating across all the PHC facilities and the expected standard (16 points) was significant; p -value < 0.05 (Table 4-8). On the overall, level of inadequacy was observed in the rating of the items needed for delivery of maternity care services from the prenatal to the postnatal period. The inadequacy of overall item rating in comparison with the expected standards was statistically significant; p -value < 0.05 (Table 4-8).

Table 4-8: Availability of required resources expected standards across the PHC facilities

Variables	One-Sample Statistics					
	N	Expected standard	Mean scores	Std. Deviation	Std. Error Mean	T-Statistics (p-value)
Essential items	21	30	12.76	2.663	0.581	-29.666 (0.000)
Basic items	21	34	16.05	1.717	0.375	-47.918 (0.000)
Essential medications	21	20	7.14	2.780	0.607	-34.381 (0.000)
Instruments for assisted vaginal delivery & removal of retained products of conception	21	38	14.14	2.762	0.603	-39.583 (0.000)
Resuscitation & New-born supplies	21	30	4.29	0.717	0.156	-164.317 (0.000)
Pain management	21	16	7.62	1.830	0.399	-20.991 (0.001)

4.2.5 Health workers' contribution to maternity service

The survey conducted among the caregivers revealed the quality status of elements of process of maternity services at the PHC centres studied.

4.2.5.1 Process-related findings

The analysis and results are presented in relation to the set objectives of the study. The findings in this section describe the process component of the PHC facilities. The described components are timely of attending to clients, health workers' attitudes, and competence.

4.2.5.1.1 Objective 2: Analysis of degree to which services are timely, appropriate and consistent with current professional knowledge

Out of 127 health workers studied, 64.6 % claimed to have heard of the 'safe motherhood' concept but 10.2 % had idea of its components. The participants were required to list maximum of four components of safe motherhood initiative. Each component carried one point. Thus, the maximum obtainable score was 4. The participants' score ranged between 0 and 3 points; their mean score \pm standard deviation was 0.45 ± 0.7 . The scores of the participants were further classified thus: 0 = No idea, 1 = little idea, 2-3 = good idea. Participants who had no idea about the concept were 66.9 %, while those who had good idea were 8.7 % (Figure 4-3).

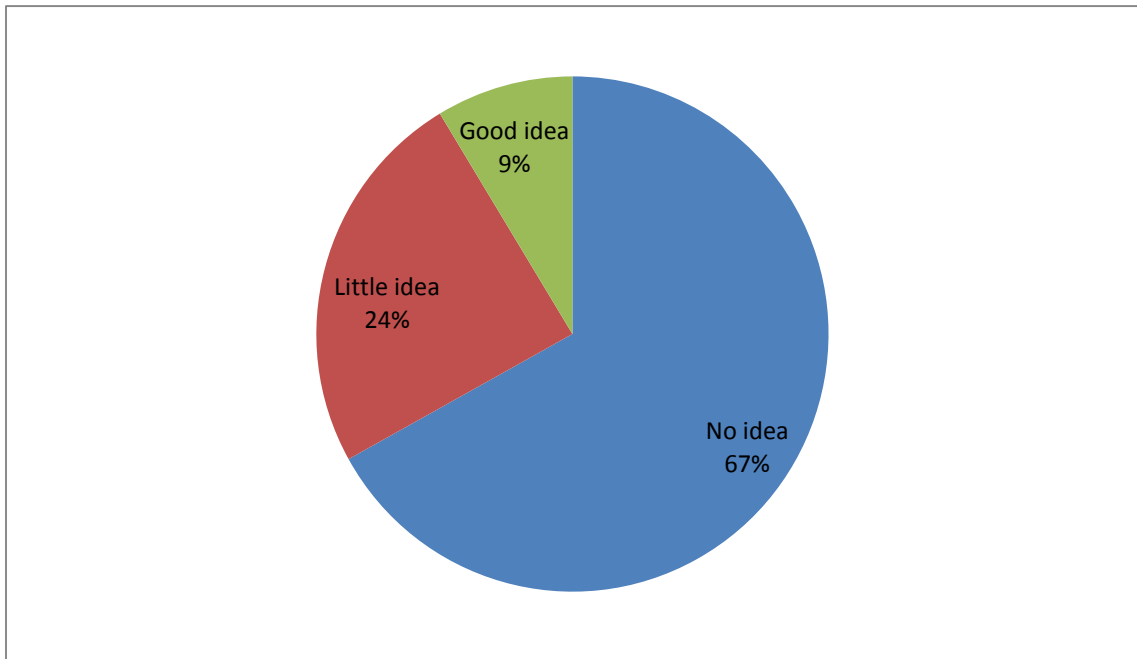


Figure 4-3: Participants' scores on test of idea on 'Safe Motherhood' concept

In addition, 76.4 % of the health workers claimed that Focused Antenatal Care was being practised in their respective PHC facilities, but the remaining participants declared that orthodox antenatal care, otherwise known as traditional antenatal model, was still being practised. A total of 115 (90.6%) of them had been attending to women in labour, while 7 (5.5%) did not disclose whether or not they had been taking child delivery in their facilities. Besides, 67.7 % said that at least one woman they attended to during child delivery sustained vaginal laceration at one time or the other. Out of 86 (67.7%) who had witnessed at least a case of vaginal laceration, 69.8 % claimed to repair the vaginal trauma by themselves, while 30.2 % had to wait for another health worker, either a CHEW or a CHO or a nurse/midwife or a medical doctor for surgical repair (Figure 4-4). Similarly, a total of 92 (72.4%) of the health workers had performed deliberate surgical cutting on vaginal muscles of women in labour (episiotomy), while the remaining had never attempted it on any woman. Out of these

92 participants, 67.4 % had attempted repair of the episiotomy but the remaining had to wait for other health workers to assist them in carrying out the repair (Figure 4-5).

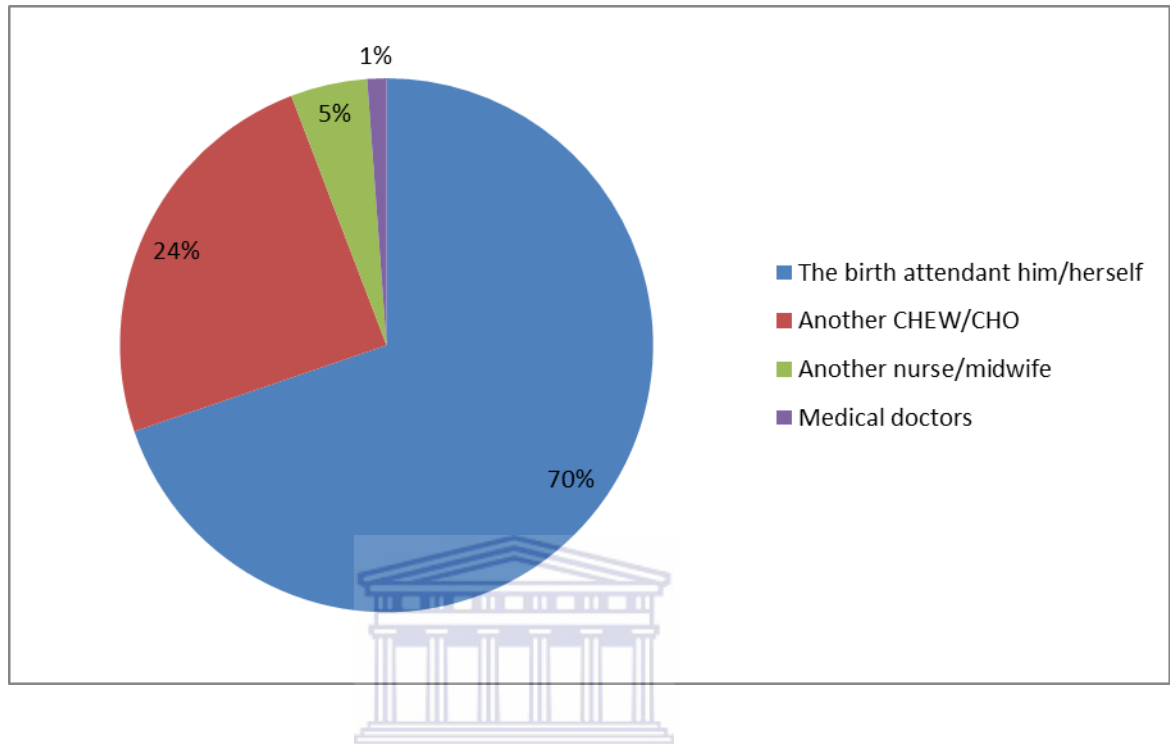


Figure 4-4: Categories of health workers who repaired vaginal laceration in the PHC facilities

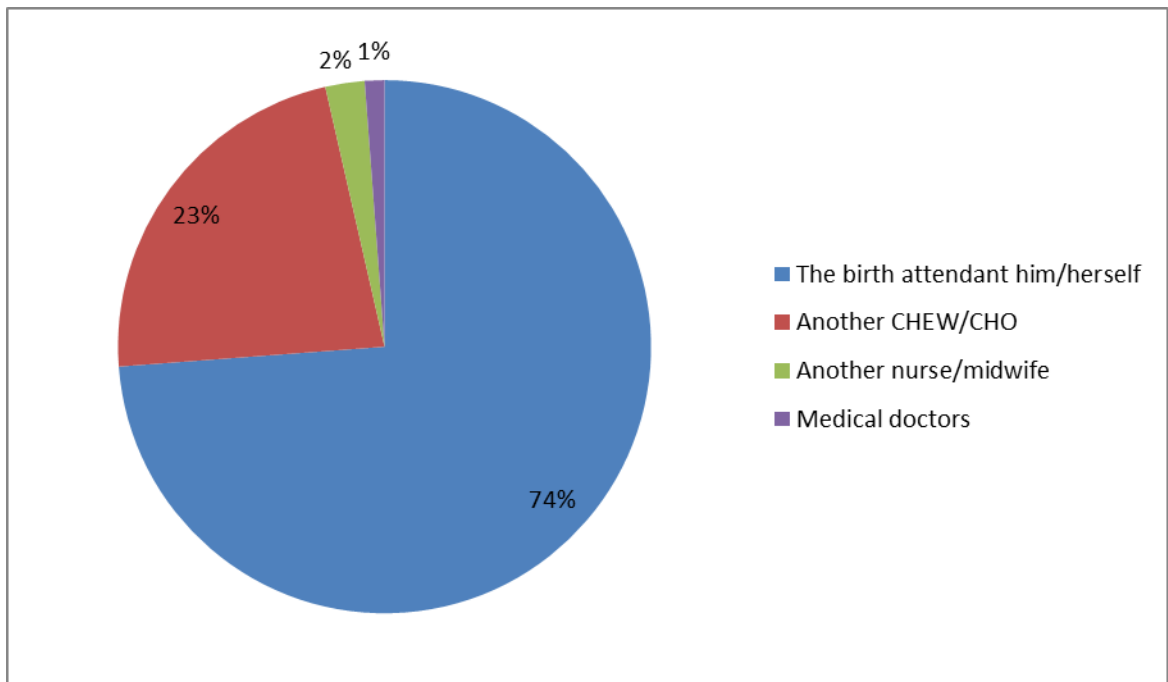


Figure 4-5: Categories of health workers who repaired episiotomy in the PHC facilities

The health workers were required to state the steps they usually took when helping women who were bleeding after childbirth. A maximum of six steps were required. Nine (7.1%) of the participants were able to list six necessary steps (actions) that a birth attendant must take to help a woman who experienced bleeding after childbirth. Some of the participants who were able to list certain actions that could be considered appropriate for arrest of bleeding did not list in a sequential order. The responses of the participants were scored, with 6 points being the maximum obtainable score. In the rating, participants were categorized thus: 0 = No idea, 1-2 = some idea, 3-6 = Good idea. A total of 63 participants (49.6%) had no idea of the necessary steps to take in order to help women who bleed after childbirth (Figure 4-6).

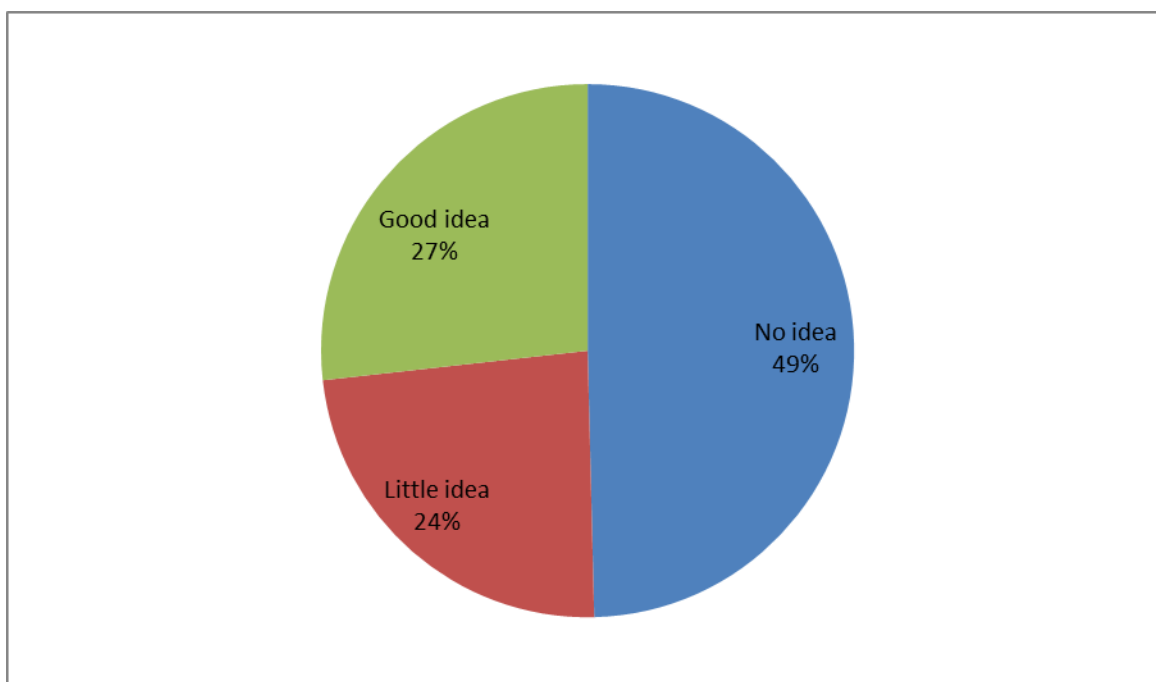
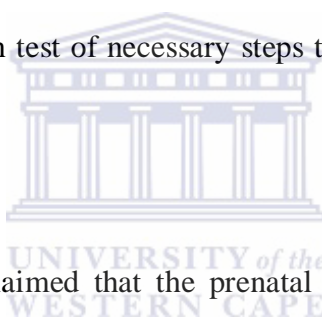


Figure 4-6: Participants' scores on test of necessary steps to take in helping women bleeding after childbirth



Out of the participants, 52 % claimed that the prenatal care provided to women in their facilities was very effective but 40.2 % affirmed that it was not effective. Figure 4-7 shows the various views of the participants about the effectiveness of the prenatal care services rendered to women in the PHC facilities across the five local government areas.

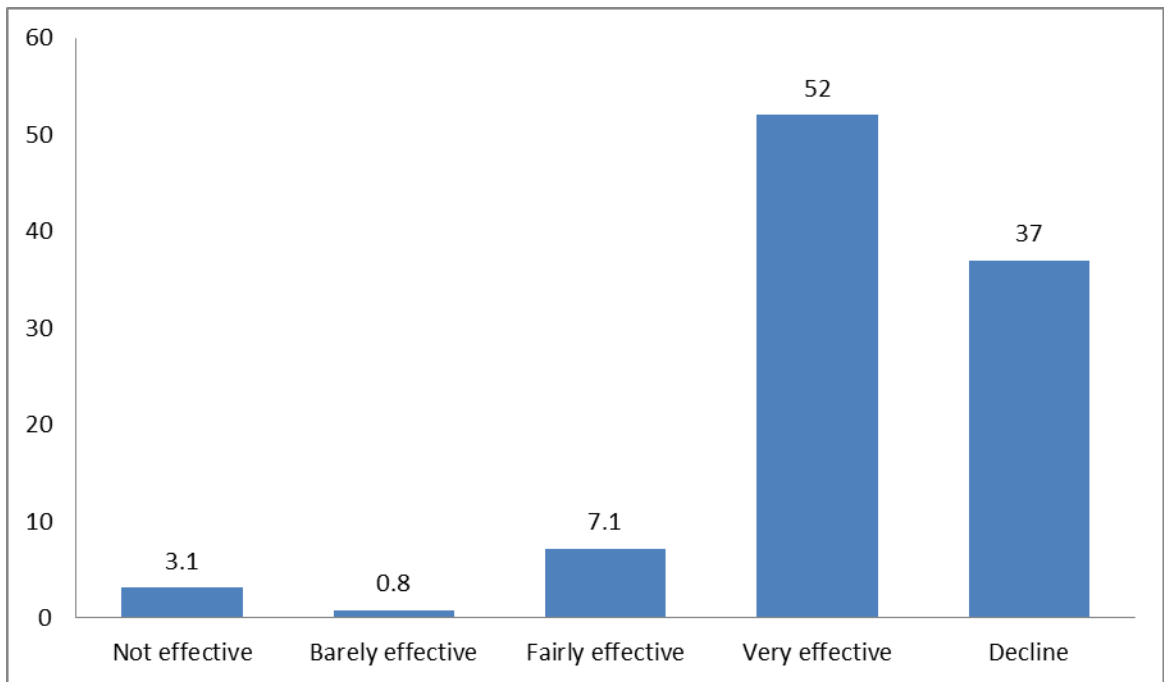


Figure 4-7: Participants' views of effectiveness of prenatal care in their facilities

The health workers in the PHC facilities determined the categories of significant others that would be allowed into labour ward when attending to women in labour. A total of 81.9 % of the participants would allow husbands of women in labour into the labour room in their facilities. Figure 4-8 shows the categories of people the health workers would allow into the labour room during childbirth.

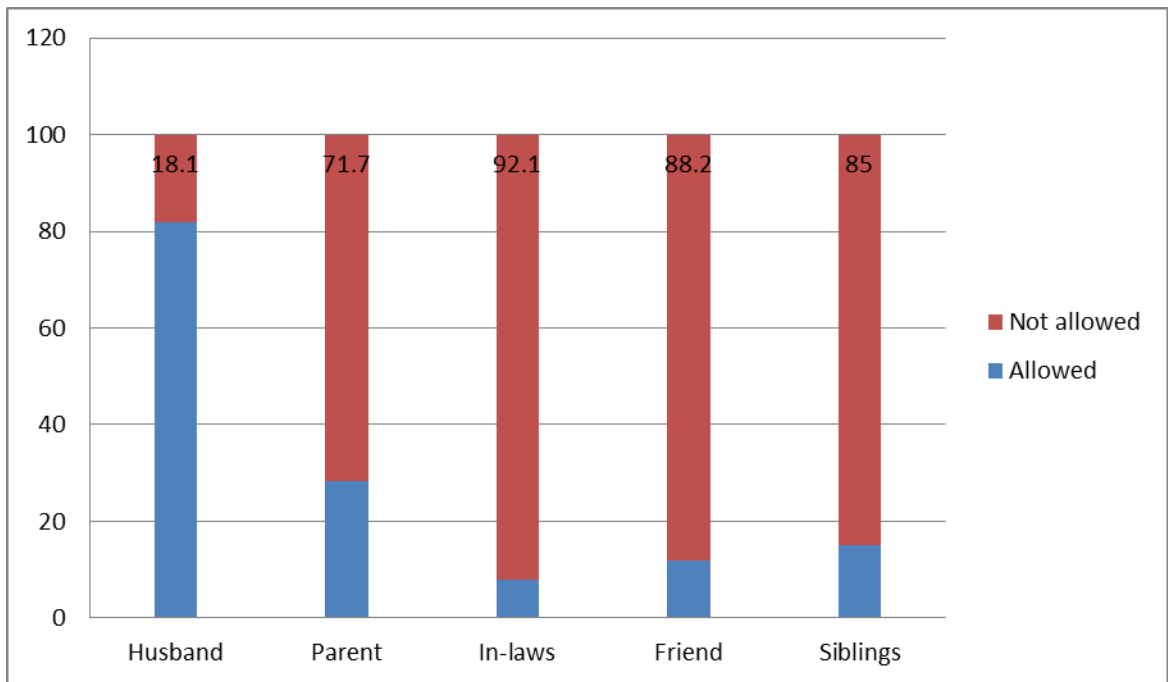


Figure 4-8: Categories of people health workers would allow into the delivery room

None of the health workers used partograph for monitoring progress of labour in any of the health facilities. Various reasons were reported for non-use of partograph for monitoring the progress of labour in the health facilities. Unavailability of partograph sheet/form topped the list (71.7%) of the reasons reported in this study. Besides, 26.0 % of the participants said they were not trained in the use of partograph for monitoring labour progress (Figure 4-9).

In this study, there was no evidence of available obstetric guidelines to guide health workers' decision during obstetric emergencies. This observation was confirmed by the 82.7 % of the participants. None of the 22 (8.7%) participants who claimed the existence of obstetric guidelines in their facilities could mention at least one of such guidelines. Moreover, 91.3 % of the health workers had not been trained in Life-Saving Scheme (LSS) and post-abortions care (PAC). The eleven (8.7%) participants who claimed that they were trained in LSS and PAC could not mention at least one out of the components of LSS.

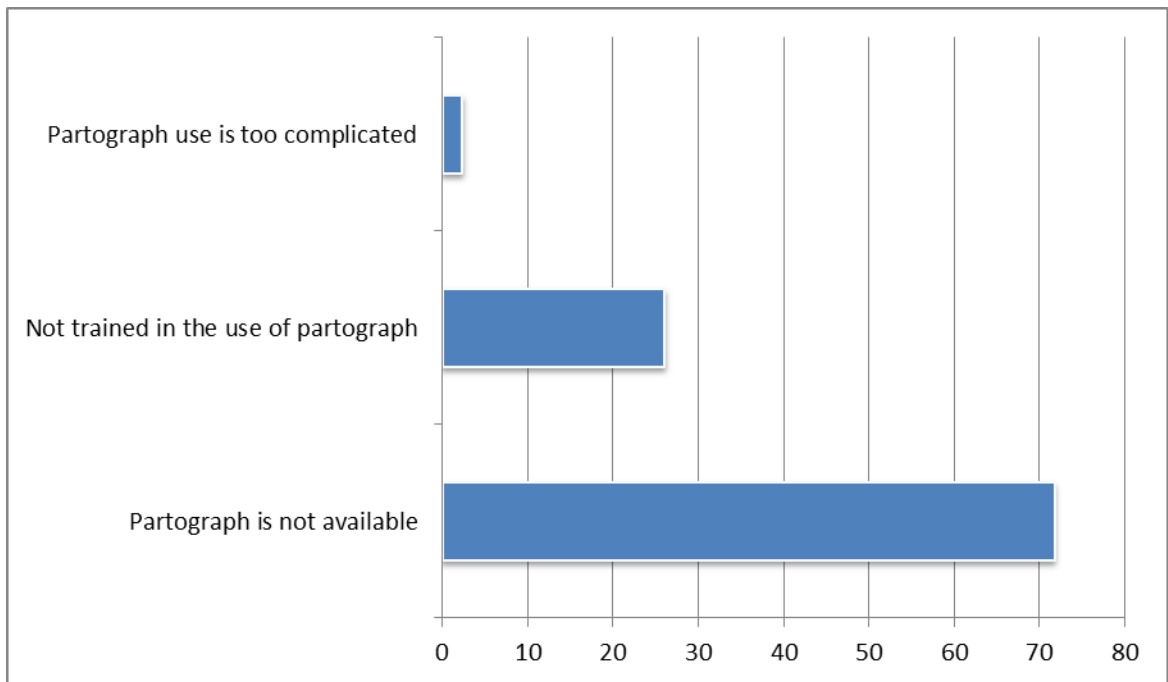


Figure 4-9: Factors responsible for non-use of partograph in the PHC facilities

Various risky practices among the health workers while attending to women in labour and during child delivery process were recorded in this study. These risky practices include:

- i. Applying pressure on the abdomen of the women in labour to facilitate quick delivery.
- ii. Administration of intravenous oxytocic agent (syntocinon) while babies were still in uterus.
- iii. Beating of women in labour to forcefully gain their co-operation.
- iv. Shouting on and bullying women in labour to separate their thighs for vaginal examination and childbirth.

Table 4-9 shows the risky practices of health workers while attending to women in labour and during childbirth.

Table 4-9: Risky practices by health workers to speed up second stage of labour

Risky practices	Practiced n (%)	Not practiced n (%)	Total N (%)
Applying abdominal pressure	42 (33.1)	85 (66.9)	127 (100)
Giving of IV oxytocin bolus	24 (18.9)	103 (81.1)	127 (100)
Asking client to bear down with each contraction without cervical dilatation	77 (60.6)	50 (39.4)	127 (100)
Beating client to gain her cooperation	12 (9.4)	115 (90.6)	127 (100)
Forcing client to keep her thighs separated	36 (28.3)	91 (71.7)	127 (100)
Gaining client's cooperation by explanation	93 (73.2)	34 (26.8)	127 (100)
Inviting a relation to scold the client	53 (41.7)	74 (58.3)	127 (100)

Among the participants, 57.5 % claimed that they could perform manual removal in cases of retained placenta. Eleven % did not know what to do when a woman had retained placenta (Table 4-10). Seventy-two (56.7%) of the participants had not been trained on how to perform manual removal of retained placenta or retained products of conception. Table 4-11 shows various actions, which the participants usually undertook when postpartum bleeding occurred. Similarly, 18.9% of the health workers did not know what to do to help women with postpartum haemorrhage (bleeding). Figure 4-10 shows the services that health worker performed in the PHC facilities.

Table 4-10: Actions performed by health workers to help women with retained placenta

Actions performed by health workers	N	%
Manual removal	73	57.5
Send and wait for the doctor	7	5.5
Referral to a higher level of care	36	28.3
Don't know what to do	11	8.7
Total	127	100.0

Table 4-11: Actions taken by the health workers to help women with postpartum bleeding

HW actions to mitigate postpartum bleeding	N	%
Packing of vagina with sanitary pad	47	37.0
Send and wait for the doctor	2	1.6
Referral to a higher level of care	36	28.3
Setting of IV infusion followed by referral	18	14.2
Don't know what to do	24	18.9
Total	127	100.0

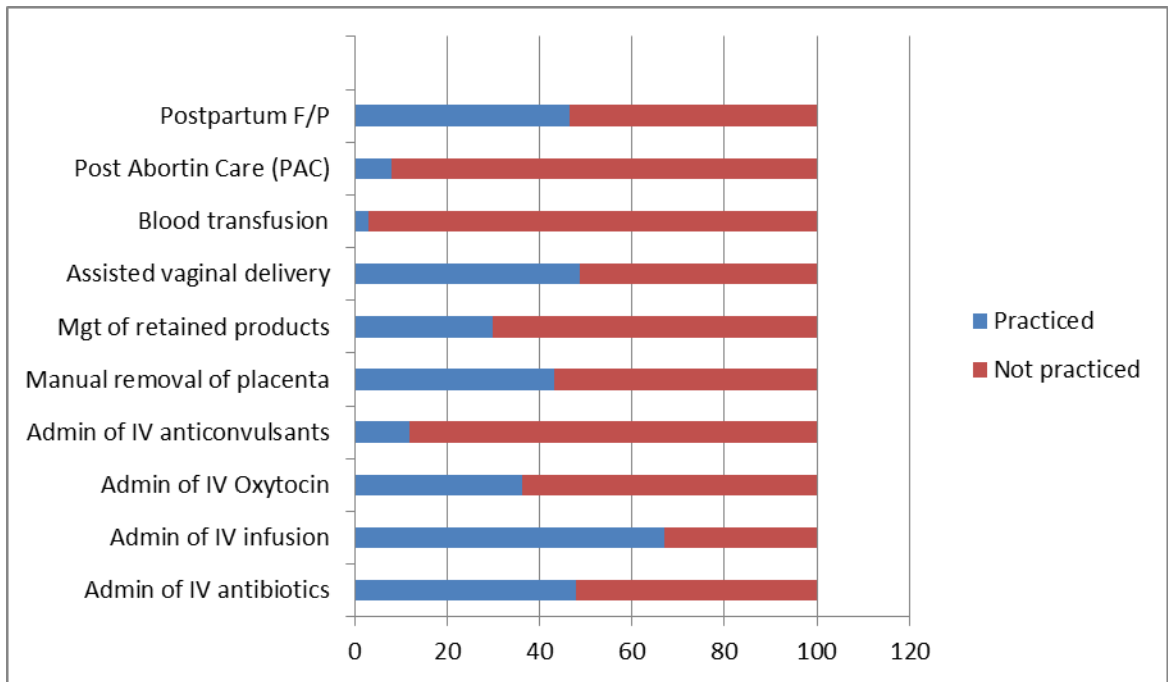


Figure 4-10: Procedures adopted by the health workers in the PHC facilities during postpartum haemorrhage

The next Figure 4-11 reveals that diagnosis of STIs, blood sample for haemoglobin/PCV and urine test for proteins and bacteriuria were least given attention to during antenatal clinic visits.

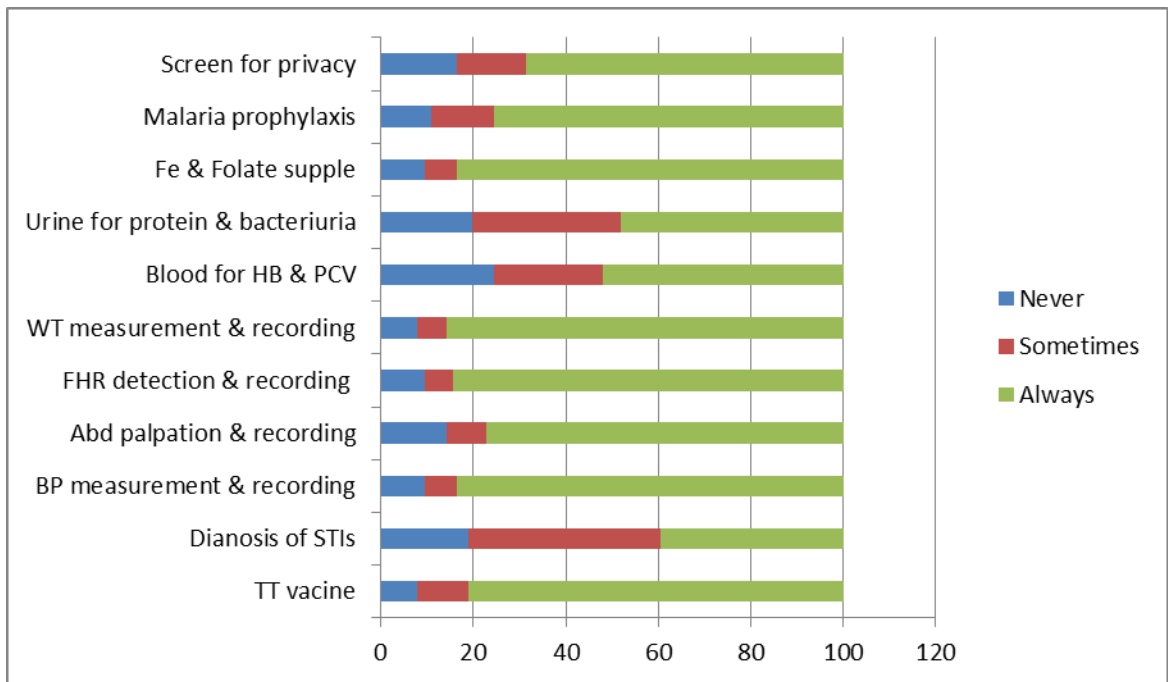


Figure 4-11: Actions taken on prenatal women during clinic visits in the facilities

Although none of the PHC facilities operated clinic for postnatal care services, women who had complaints were attended to whenever they reported to the facilities. Routine postnatal assessments were never done for women by the health workers. However, the care rendered to women who voluntarily reported and were attended to during the postnatal period was considered as postnatal service by 70.9% of the health workers. A total of 74.0% of the health workers attested to the fact that the serum bilirubin of babies that were born in their health facilities was not monitored. The various services expected to be provided in each of the facilities were either fragmented or integrated or not available at all (Figure 4-12). Antenatal services were provided in a fragmented manner in all the facilities.

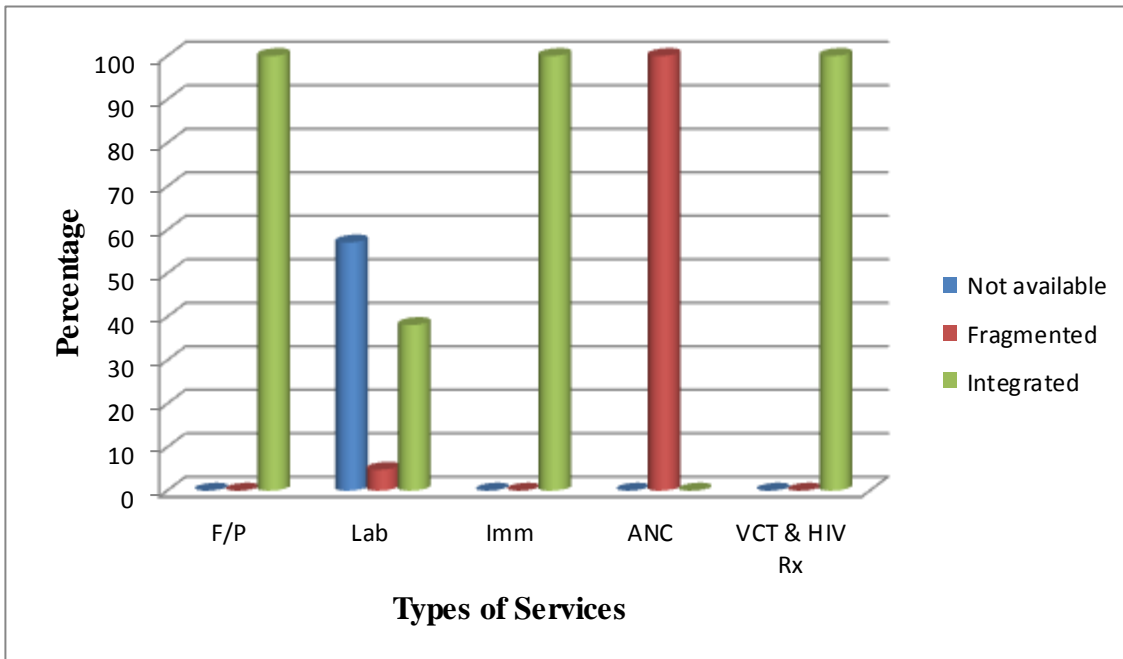


Figure 4-12: Status of provided services at the PHC facilities

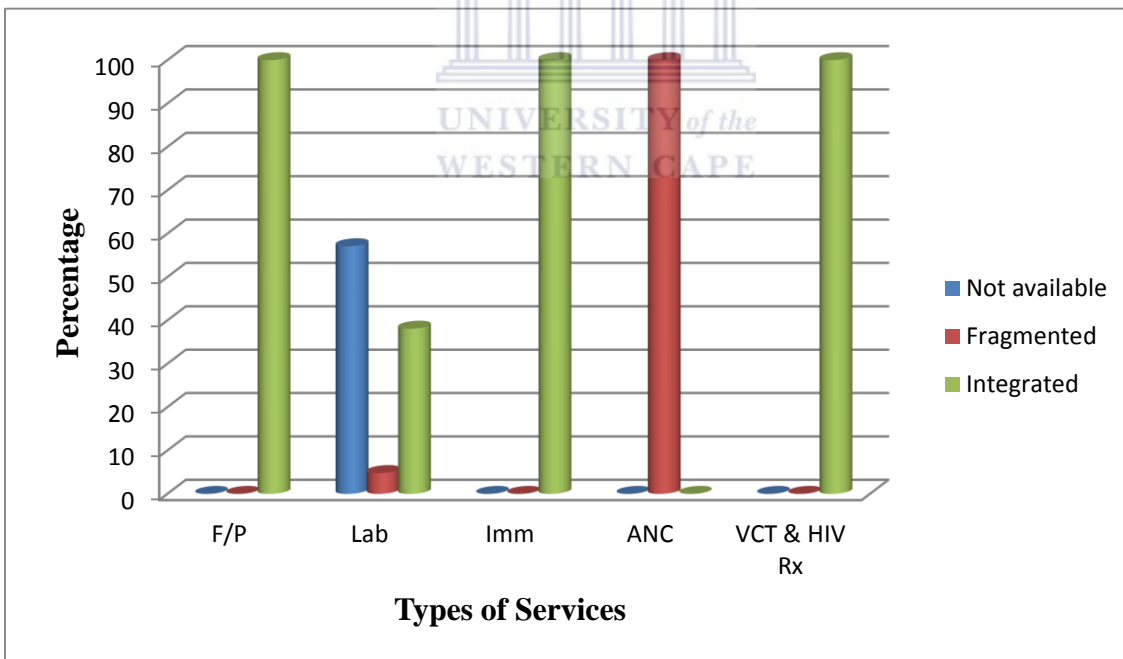


Figure 4-12: Status of provided services at the PHC facilities

KEY: **F/P** – Family planning; **Lab** – Laboratory; **Imm** – Immunization; **ANC** – Antenatal care; **VCT/HIV** – Voluntary Counselling and Treatment/HIV screening; **Fragmented** – Cannot be accessed daily (i.e. provided on specific clinic days); **Integrated** – Can be accessed daily (i.e. No reserved for a specific clinic day of the week)

4.2.6 Assessment of quality of maternity services by participants

The survey conducted among the postnatal women, using the clients' questionnaire revealed the quality status of elements of outcomes of maternity services at the PHC centres where the study was conducted. The results are presented in the subsections below.

4.2.6.1 Outcome-related findings

The analysis and results in this section are presented in relation to the objectives of the study. The findings in the section describe the outcome component of the PHC facilities.

4.2.6.1.1 Objective 3: Analysis of investigation of the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights

Out of the 730 women studied, 676 (92.6%) [approximately 93%] received prenatal care. The reasons given by the remaining 54 (7.4%) [approximately 7%] are listed in Table 4-12, and include lack of accessibility (3.7%) and the women's dislike of the services (1%) among others. Table 4-13 shows the various health care facilities where the 676 received prenatal care, and they were mainly PHC centres (27.3%), State/Federal hospitals (22.9%), with about 19.9% accessing Private hospitals/clinics. Out of the 676 who received prenatal care, 153 (22.6%) registered in two facilities for prenatal care (Figure 4-13).

Table 4-12: Reasons given by the participants for non-use of prenatal care

Reasons for non-use of prenatal services	N (%)
Lack of accessibility	27 (3.7)
Dislike for service provision	7 (1.0)
Too expensive	6 (0.8)
Incompetent health workers	4 (0.5)
Financial constraint	6 (0.8)
The pregnancy was unwanted	4 (0.5)
Prenatal service users	676 (92.6)
Total	730 (100.0)

Table 4-13: Health care facilities where participants received prenatal care

Facilities	N (%)
Traditional Birth Attendant centre	15 (2.0)
Faith-based clinics	78 (10.7)
Private hospitals/clinics	145 (19.9)
PHC centre	199 (27.3)
Formal mission hospitals	72 (9.9)
State/Federal hospitals	167 (22.9)
Non-user of prenatal service	54 (7.4) [approx. 7%]
Total	730 (100.0)

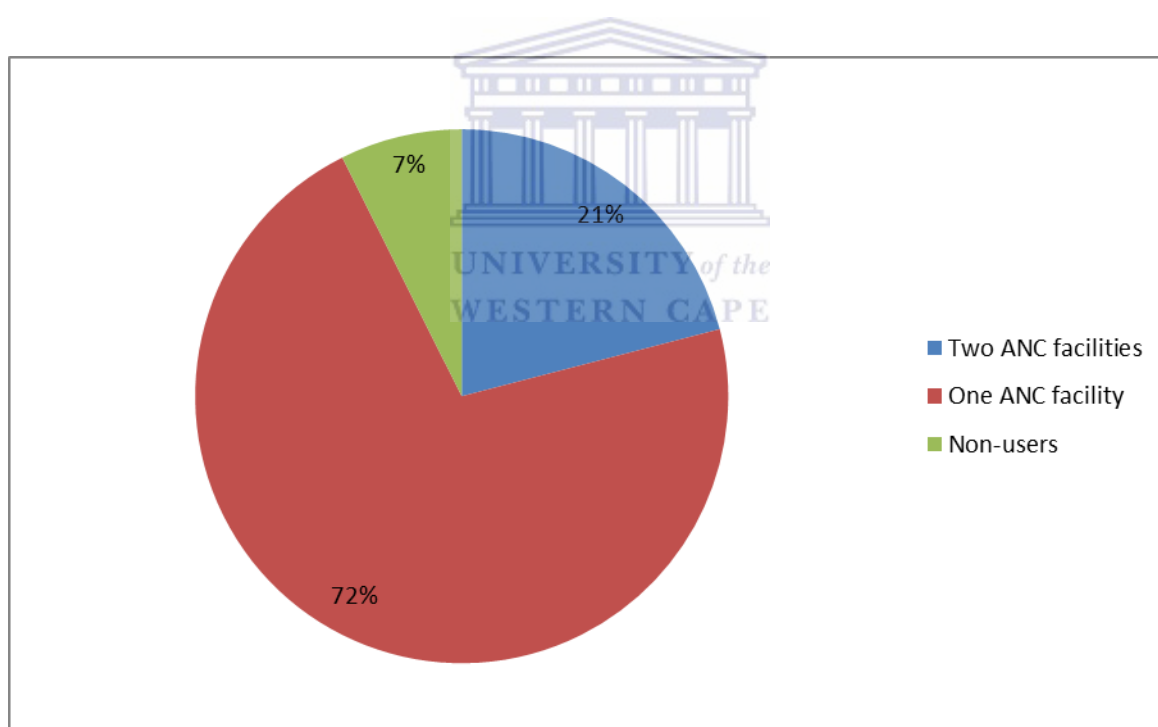


Figure 4-13: Number of facilities used for prenatal care by the participants

Various reasons were given for receiving prenatal care in more than one facility. They include the following: distance, cost, attitude of health workers, unavailability of 24-hour services in some centres, spiritual care in the faith-based centres, and fear of developing

complications. Furthermore, the participants delivered their babies in various health care facilities, as shown in Table 4-14.

Among the 278 women in category A (women who received prenatal care in the studied PHC settings), 72 (25.9%) actually delivered their babies in other places. In addition, 118 (42.4%) of the 206 women who delivered in the PHC facilities would prefer to recommend other facilities to other women. In contrast, among the 452 women in category B (women who did not receive prenatal care in the studied PHC settings), 191 (42.3%) delivered their babies in the facility where they received prenatal care but 84 (18.6%) delivered their babies in other centres different from the original facilities. While comparing between their place of child delivery and the studied PHC facilities (where they were receiving child immunization as at the time of data collection), 115 (25.4%) would like to recommend their choice of place of childbirth to other women instead of the studied facilities (where they were receiving child immunization).

Among the women in category A, 118 (60.5%) would recommend places of their last child delivery, while 115 (40.1%) of the women in category B would recommend places of their last child delivery to other women. Similarly, 77 (39.5%) of the women in category A would recommend the place of their recent child delivery to other women, while 172 (59.9%) of the women in category B would recommend the place of their recent child delivery to other women (Table 4-14). Figure 4-14 and Figure 4-15 show future choice of place of child delivery among category A and B, respectively, while Table 4-15 presents the factors that influenced the women's choice of place of birth.

Table 4-14: Places of child delivery that could be recommended to other women by the participants

Category of women	Category A N (%)	Category B N (%)
Place of previous child delivery	118 (60.5%)	115 (40.1%)
Place of recent child delivery	77 (39.5%)	172 (59.9%)
Total	195 (100.0)	287 (100.0)

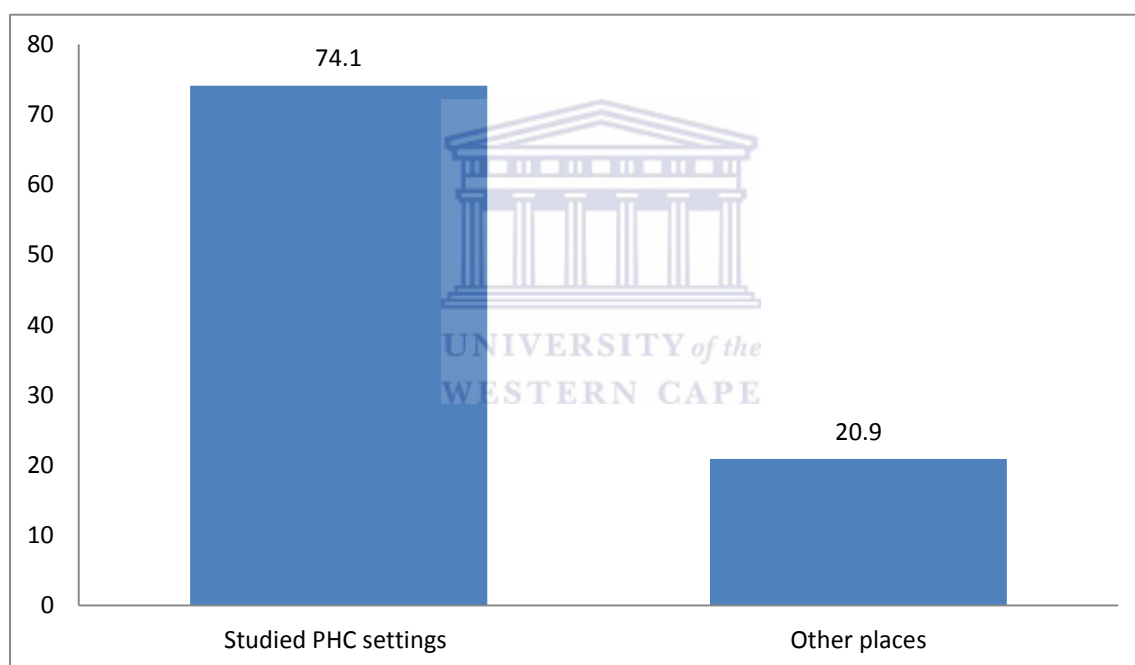


Figure 4-14: Choice of place of child delivery among the women in category A

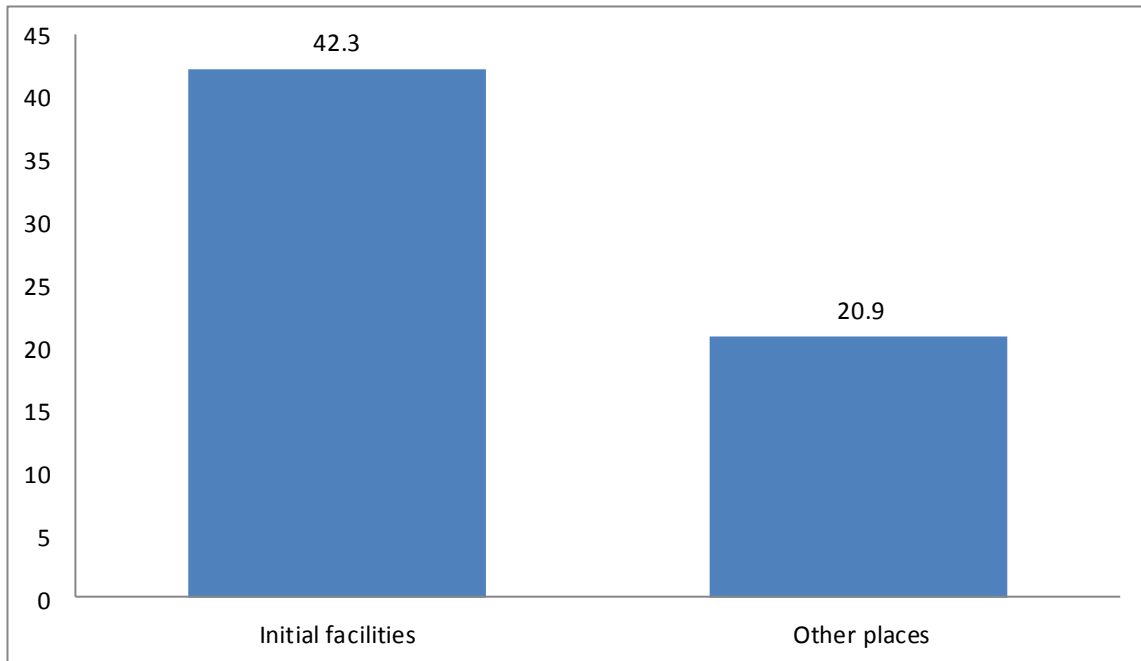


Figure 4-15: Choice of place of child delivery among the women in category B

Table 4-15: Factors influencing choice of place of child delivery among category 'A' participants

Reasons for choices of places of delivery	N (%)	N (%)
The facility is nearer.	64 (23.0)	109 (24.1)
The services in that facility are better.	112 (40.3)	34 (7.5)
The services there are less expensive.	21 (7.6)	21 (4.6)
The health workers there are more competent.	60 (21.6)	25 (5.5)
Less delivery materials are demanded.	35 (12.6)	15 (3.3)
I didn't care because the pregnancy was unwanted.	9 (3.2)	10 (2.2)
The health workers are more friendly and respectful.	64 (23.0)	47 (10.4)
The health workers take care of my concern more seriously.	80 (28.8)	37 (8.2)
Total	445 (100.0)	298 (100.0)

The women who delivered their babies in other health care facilities other than the studied facilities but brought their babies to the latter for immunization compared the two facilities using a five-point scale. The six aspects of the facilities that were scored using the five-point scale include: environmental hygiene, labour wards, toilets, bathrooms, building appearance and staff attitude. In the rating, the women considered status of the other facilities where they delivered their babies better than the places where they were accessing immunization services (that is the PHC facilities under study). This was found to be statistically significant (Table 4-16).

Table 4-16: Quality rating of PHC facilities that were studied versus participants' place of childbirth

Paired Samples Statistics					
	Mean	N	Std. Deviation	Std. Error Mean	T-statistic (P-value)
Place of delivery	21.8938	452	6.69893	.31509	-8.319
Place of vaccine (PHC under study)	18.9735	452	6.02355	.28332	(0.000)

Similarly, the PHC facilities that were studied (places where 278 women accessed prenatal and child delivery care but used by all the participants for child immunization) were rated less than other health care facilities (places where 452 women delivered their babies). This was found to be statistically significant (Table 4-17).

Table 4-17: Difference in quality rating between the PHC facilities under study (place utilized by 278 participants) and other health care facilities used by 452 participants

		Group Statistics				
	Facility type	N	Mean	Std. Deviation	Std. Error Mean	T-statistic (P-value)
Facility rating	Other health care facilities	452	1.89	6.699	0.315	-1.769
	PHC under study	278	2.72	4.959	0.297	(0.077)

4.2.6.1.2 Objective 4: Measure clients' return rates for maternity-related services within the last six months

There was a significant difference between the mean attendance population of women using antenatal services and that of women returning to the PHC centres for child delivery; p-value < 0.05 (Table 4-18). This implies that the women who returned to the PHC centres for child delivery service were fewer in number than women who actually booked for antenatal care in the same centres. Similarly, there was a significant difference between the mean attendance population of women using immunization services and that of women using child delivery services; p-value < 0.05 (Table 4-18). This implies that women who utilize other women from different birthing centres converged on the PHC centres for child immunization.

Table 4-18: Difference between BCG immunization, antenatal cases versus delivery cases in PHC facilities

Paired Samples Statistics						
		Mean	N	Std. Deviation	Std. Error Mean	T-statistic (P-value)
Pair 1	Antenatal women	141.86	21	104.996	22.912	5.950 (0.001)
	Delivery	65.38	21	63.332	13.820	
Pair 2	Babies immunized with BCG	254.62	21	139.835	30.514	8.061 (0.001)
	Delivery	65.38	21	63.332	13.820	

4.3 SUMMARY OF CHAPTER

This chapter presents the findings of the quantitative strand of the study. The chapter begins with the general description of the study participants – the socio-demographic and obstetric characteristics of the clients (service users) and the socio-demographic characteristics of the health workers of the PHC facilities. The findings of the analysis of the structure component accurately fit into the first objective (that is to describe the status of infrastructures, equipment, instruments and medications available for provision of maternity care to women and new-borns in the selected facilities) of the study. In meeting the objective, the chapter describes the condition of infrastructures, equipment, instruments and medications. Furthermore, the chapter presents how the second objective (to investigate the degree to which the services rendered in the facilities are timely, appropriate and consistent with current professional knowledge), through the analysis of the process component. Lastly, the chapter provides information on the analysis of the third component – outcomes, which addresses the fourth objective (that is to describe the outcome of services rendered in the facilities at least six months prior to data collection) of the study. The results of the quality analysis of the various aspects of PHC facilities as they relate to maternity services are represented using text, figures (charts) and tables.

CHAPTER 5

5 FINDINGS OF THE QUALITATIVE STRAND

5.1 INTRODUCTION

This chapter captures the results of the qualitative part of this study. In addition to the initial description of the socio-demographic characteristics of the study participants (clients and health workers) the results are presented in line with three components of the Donabedian's model, namely: structure, process and outcome. Both focus group discussions (FGDs) and in-depth interviews (IDIs) were conducted to elicit detailed information on maternity care services that are being rendered to mothers and their babies in the local government areas. The FGDs were conducted among mothers who brought their babies to the PHC facilities across the five selected local government areas. At least one FGD session was organized in each of the LGAs. Similarly, the IDIs were conducted for MOHs and heads of facilities, at least one IDI per LGA. The reported research findings are described in texts with direct quotes of participants' responses.

5.2 GENERAL DESCRIPTION OF THE FGD and IDI PARTICIPANTS

This section describes the FGD and IDI participants. Both FGDs and IDIs were conducted to elicit detailed information on maternity care services that were rendered to mothers and their babies in the sampled local government areas as at the time of data collection. The FGDs were conducted among mothers who brought their babies to the PHC facilities across the five selected local government areas. The postnatal women's age ranged from 15 to 44 years; the mean age was 28.28 ± 5.3 (standard deviation). This is similar to the reported age of participants in chapter four, because the FGD participants were selected from the population that participated in the quantitative survey. At least one FGD session was organized in each

of the LGAs. Participants in each FGD session ranged between 8 and 12 (Please, see Table 5-1 Table 2-1). The MOHs and the heads of facilities of each LGA were recruited for IDIs (Table 5-2). The MOHs are medical doctors with minimum of Master of Public Health (MPH) degree in addition to the initial Bachelor of Medicine and Surgery (MBBS) degree. The heads of facilities were registered nurse-midwives (RN/RM) with additional Diploma certificate in Community Officers Course Programme and they had risen to the position of a Chief Nursing Officer (CNO). The CNO performs administrative and supervisory roles in the PHC centres. A particular MOH and one head of facility could not be interviewed throughout the data collection period because they were on vacation (official annual leave). However, one participant was interviewed in each LGA in order to ensure representativeness in the five LGAs. In order to have a clear understanding of the situation of things regarding the PHC facilities and services, particularly those relevant to maternity care, the reports in this chapter are supported with direct quotes from the participants.

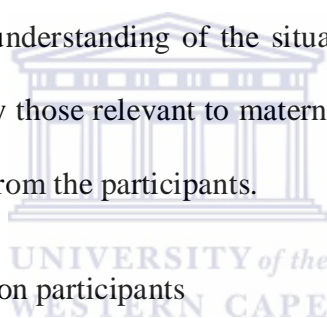


Table 5-1: Focus Group Discussion participants

Local Government Areas	Client population	%
Ibadan North	12	23.1
Ibadan North-West	12	23.1
Ibadan North-East	8	15.4
Ibadan South-West	10	19.2
Ibadan South-East	10	19.2
Total	52	100.0

Table 5-2: In-depth Interview (IDI) participants

Local Government Areas	Medical Officers of Health	Heads of Facilities	Total
Ibadan North	1	2	3
Ibadan North-West	1	1	2
Ibadan North-East	1	1	2
Ibadan South-West	AB	1	1
Ibadan South-East	1	AB	1
Total population	4	5	9

AB – Absent (i.e. could not be reached for the interview as at the time of data collection)

5.3 Results of data analysis from FGDs and IDIs

This section presents the report of the FGD and IDI sessions. The section describes the PHC infrastructures, equipment/instruments and staff capacity that were more relevant to provision of maternity care than any other services at the PHC level. From the responses of the participants, various expressions showing dissatisfaction with the entire operation of PHC system were used and some were supported by direct quotes. Therefore, the outcomes component actually appeared either directly and indirectly in this section, thereby meeting the third objective of this study (that is to investigate the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights). This seems inevitable since it is always difficult if not impossible for the participants to describe the condition or situation of things (either the structure or the process as in this study) without expressing their feelings about the phenomena or situations they attempt to describe or comment on. In this study, the expressions of feelings and views are more of factors of the outcome component, while the description of the phenomena or situations may come under either structure. Therefore, to present the findings that meet the third objective (that is to investigate the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights), the outcome component will be integrated within the other two components (the structure and the process).

5.3.1 Structure-related findings

The results of the analysis of the qualitative strand of the study using FGDs and IDIs are reported in this section in relation to the specific objectives in consonance with the components of the Donabedian's model of quality health care.

5.3.1.1 Objective 1: Description of infrastructure (facilities), equipment, instruments and medications

Objective one as stated above addressed the description of infrastructure, equipment and medications.

- **Infrastructure**

The infrastructure includes the condition and structure of building, facilities such as toilets and bathrooms in the PHC centres.

- Condition and structure of the PHC buildings

The condition of the buildings focuses on the building type, general appearance, size and environmental condition of the entire buildings and their surroundings. The findings revealed that the FGD participants abhorred the poor condition of the infrastructure of most of the facilities. Many of the PHC facilities were described by the participants in various ways but in a coherent manner. For instance, both the FGD and IDI participants commented on the unacceptable condition of the building structure of the PHC centre, where they were receiving and rendering maternity services. They condemned the type of building in terms of their sizes, cleanliness and working conditions of actual systems. For instance, a postnatal woman in one of the FGD sessions derided both the size and the location of the PHC building thus:

“Here is too small. We used to sit outside when we come here. No enough space. The building structures were sited within residential areas with environmental pollution, such as sewage drainage and solid waste pollution. Please, help us tell the government to build a better place for us.”

In the same vein, a Chief Nursing Officer who was heading a PHC facility lamented the condition of the building and its location thus:

“This place is not conducive, because the location is within residential area. There is a shop there. Early in the morning,

they can tune their sound system to the highest level. Even the environment is nothing to write home about and there is no space. We don't have enough space! We don't have enough space!"

The condition of PHC buildings – their sizes, location and environment – had not been without its inherent challenges. One of those challenges was the fact that most of the buildings used for PHC had no adequate capacity to accommodate the patient population seeking care there. A particular MOH in one of the LGAs viewed the inadequate building space that characterised most of the centres as problematic:

“...we have a problem here! We have people coming from em...Ona-Ara, em...Egbeda, Lagelu Local Government Areas. It's putting a lot of em...pressure on the facilities that we have here. And they cannot be turned back because they are still our people, irrespective of where they come from.”

This implies that the number of PHC facilities is not enough, with service users crossing from their respective resident LGAs to seek health care services in another LGA in large number.

- *The condition of toilets and bathrooms*

Although the toilet facilities in most of the centres were water closet type, most of the toilets were in bad condition –too dirty; having faulty flushing system, and obsolete, with lack of running taps. The water tank for the toilets had no lids. Probably, this might have been responsible for non-use of maternity services at PHC level. For example, during the FGD discussion, it was observed that not all women who initiated ANC in the PHC facilities returned there to have their babies delivered. In a particular facility, only two women out of eight participants had their child delivery there but all of them were seen at the child welfare clinic for child immunization. The same woman who derided the size and the location of the PHC building further expressed her displeasure over the poor condition of the toilets and bathrooms in the facility where she had her baby:

“When I delivered my baby here, there was no place for me to have my bath, even nobody would like to sit on their toilet. It is too dirty! Their bed pans are too dirty and no patient would like to use them.”

- **Equipment and instruments**

- Hospital equipment and instruments

IDIs with the above-mentioned stakeholders revealed that there was gross inadequacy of equipment and instruments in almost all the PHC facilities. The health workers, particularly the nurse-midwives who were heads of facilities expressed their displeasure over the persistent inadequacy of hospital equipment and instruments needed to practise quality nursing care. For instance, when a Chief Nursing Officer (CNO) was describing the facility she was heading, she said:

“Hm hm m.....in the local government, things are not the way they should be. Like in this place now, we have just one delivery set. Peradventure, we have two, three or four deliveries, what are we going to do? And these things have to be sterilized before you use them for another patient.”

- Partograph for monitoring of labour

From the IDIs, unavailability of partograph necessary for the monitoring of labour was disclosed by a CNO. She expressed her dissatisfaction with the situation where women in labour were being attended to without the use of partograph. During the interview she expressed her reaction in two direct quotes reported below:

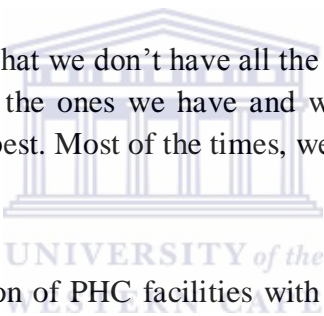
“Hm hm...well.... to some extent; let me put it that way, because that in some cases that you know what to do, like this eh... partograph. We know how to use it, but we don't have the form. I can say, if I should lay my hand upon one, I don't mind doing the photocopy; so.....we do what we can do.

Em...m...well...we have the equipment to some extent but some are...ah..ah...; look at the foam (she pointed to the

mattresses – already torn in the lying ward), you know, they are not normal in an hospital like this.”

- **Implication of inadequate or non-availability of equipment and instruments**

As a result of inadequacy or unavailability of equipment and instruments to work with, the health workers resorted into what can be described as ‘management’ and improvisation as much as possible. All the heads that were interviewed described the extent to which health workers go to meet patient health care needs despite the gross inadequacy or scarcity of equipment/instruments. ‘Improvisation’ became the general and common phenomenon with all the heads. This was reported in the direct quotes credited to two different heads of PHC facilities during interview:



“I told you before that we don’t have all the instruments but we are making use of the ones we have and we are improvising. We are trying our best. Most of the times, we improvise.”

In view of the deplorable condition of PHC facilities with particular reference to equipment and instruments, one was not really sure whether each local government authority was doing anything to improve the situation on ground. The MOH in each of the LGAs acknowledged the deplorable state of equipment and instrument supplies in the PHC facilities and how this affected the quality of services rendered, but each was too careful not to indict the local government. The non-verbal communication of each of the medical doctors gave credence to this. For instance, a medical doctor in charge of PHC in a LGA responded to one of the questions posed to him in a diplomatic manner thus:

“Well, I will say we, we have identified em, the, the the, the inadequate em, equipment and we have tried as much as possible to bring it to the notice of the Local Government authority. Em..., they’re, they’re working on it, but..., you know

the democratic processes that are involved will not, will not make it em..., so easy for the money to be released for the procurement of such equipment. So we're, we're aware of this, though, we know that it will surely affect the quality of the services. But, what do we do? ...since we can't take money from our own pockets.”

5.3.1.2 Objective 2: Investigation of the degree to which the services rendered in the facilities are timely, appropriate and consistent with current professional knowledge;

- **Staff capacity**

In this study, staff capacity refers to the population of staff working in the PHC centres in relation to the rate of client flow. In addition, staff capacity describes the ratio of qualified nurse-midwives population to that of other categories of health workers in the PHC centres. Therefore, staff capacity addresses all the parameters indicated in the second objectives, namely: timeliness, appropriateness and consistency of services rendered to clients

- **Health workers/client ratio**

In order to explore how one medical doctor can effectively cover all the PHC centres in his/her LGA, this question was posed to them: “How many of you have seen a medical doctor since you've been coming to this clinic?” In the form of non-verbal communication, one out of the twelve responded by raising hand. The staff/patient ratio in all the PHC facilities was described as one of the barriers to provision of quality maternity care to mothers and their new-borns. The serious persistent shortage of health workers across all the PHC centres was mocked by a Chief Nursing Officer during the interview. Her mocking statement reads thus:

“Ha...ha...ha...ha... (She laughed) you know normally, eh....medically, it should be one nurse to three clients or patients but that is not operating in the government. It may be a nurse ha-ha...ah (she laughed) to forty patients, ha...ha...ha...ha... (she laughed). The adequacy is not there..., there's no way you will do the roster, and it's just only one

person that you would put on afternoon. And that afternoon, minor ailments will come, those on daily injections will come, then you may have labour cases. So, it is when these people (unskilled health workers) join us, despite the fact they are not paid, I just have to plead with them that they cannot be on morning shift only. That is when they agreed to work in the afternoon.”

- **Nurse-midwives/other health workers ratio**

Furthermore, the responses from the interviews revealed that in all the facilities studied, the reported staff shortage affected the nurse/midwife category more than other category of health workers (that is the CHEWs and the HAs). In other words, the CHEWs and the HAs were more than the nurse and nurse-midwives put together. Therefore, they were seen by clients/patients as nurses. Most women could not differentiate other health workers from qualified nurse/midwives. The extreme shortage of nurse/midwives across all the facilities made the CHEWs and the HAs to perform the role and the functions of midwives in the facilities – a situation that became inevitable. The scenario credited to a CNO that follows below lends support to the above assertion:

“You know, we don’t have a choice, in cases when you know the right thing to do but there is nothing to make use of, then you use what you have. ‘Se’ (do) you understand? The conduct of child delivery is not part of their curriculum, they learn on duty as apprentices.”

She explained further why the situation had persisted:

“In some centres, they have just one nurse, and one nurse cannot be on morning, afternoon and night; it is not possible So, you make use of what you have.”

- **Staff recruitment and exit**

The interviews also showed that the problem of shortage of health workers, which cut across all the LGAs in Oyo State, Nigeria, was due to lack of regular staff recruitment in each of the LGA. The immediate next quote credited to an MOH supports the above statement:

“Yes, yes, you are quite right... but it is not limited to this local government area.... That is the picture in all the LGAs in the state. And the reason being that, there is em...embargo on employment at present by the state government. And still some people are getting out of service year in year out and they are not being replaced....”

In addition, why nurses/midwives were far less than other categories of health workers was linked to lack of regular recruitment exercises despite ongoing retirement, resignation, deformities or death of staff at one particular time or the other. A medical doctor in one of the LGAs painted the described situation thus:

“I wouldn’t know why that has been so, em... as I said here earlier, since I joined service, em... over 15 years ago, they’ve not recruited em... new nurses since that time. It’s not as if em... they recruited other cadres of health staff but more people like health assistants, they are climbing the ladder... So, they prefer, maybe because of their qualifications, their school certificate or something that they have... might not be good enough for them to enter school of nursing. So, most of these lower cadre staff, they go to school of hygiene to... for... em... for... health extension worker courses. So that’s why you find more of them around, em..., more of the CHEWs and CHOs cadre around. But, since they have not really recruited, I wouldn’t know what it was before we joined the service. But, when we joined the service, the ratio of nurses to other cadres has always been too low.”

When she was probed further on whether or not she realized the effects of the unfavourable state of manpower in the LGA where she served, she replied in the affirmative thus:

“Yeah! Yeah! It can affect and we, we, we have been advocating to... for them to be recruited... We have been getting good response, because recently a letter was sent from the Local Government Service Commission. They want to know the number of nurses, though other cadres were included too... May be they are planning to recruit more, I don’t know, but I feel it’s a, it’s a right decision....”

During the IDI sessions, the shortage of manpower, which had become a usual phenomenon in all primary level of health care in all the five LGAs, was attributed to lack of regular recruitment exercises. In one of the LGAs a MOH narrated her experience since she joined the service of the LGA many years back. She explained further that such situation was beyond the level of a career officer like her. Her statement is quoted below:

“Well... em... so many things are responsible. One, em... I can't remember the last time any recruitment was made at this level and em... people retire every now and then. This year, I have about three or four of members of my staff that retired and there have been no replacement for them and even besides that, people are being redeployed to other local governments because of the mass posting that took place late last year. Some people felt this place is too far from their place of residence. So, they have been clamouring for reposting and some of them were posted to other local governments. So, so many factors are responsible but, what do you do? It's beyond ... though we have been pressing them (the government), we are pressurizing them (the government) to get us more staff. We are hopeful that em... they would respond to our call.”

- **Explanation of staff/client ratio disproportion across PHC facilities**

The findings of the this study showed that no LGA has more than one medical doctor who occupied the position of the Medical Officer of Health (MOH) in his/her respective LGA. The MOH combined clinical consultations and administrative functions, the latter being more dominant than the former. However, all the MOHs concerned viewed the situation as inadequate when compared with the different levels of facilities and numbers of client population each was to serve. For example, when one of the medical doctors was asked about the number of doctors available in his local government area, she replied: “Just one.” In order to confirm the answer he gave, she was quizzed further: Are you the only one? She replied

affirmatively, “Yes!” Her response surprised the researcher and he probed further: “Don’t you think you need other medical doctors to assist you?” To this question she replied thus:

“...we need! If the Local Government Service Commission is willing to recruit more doctors... Okay? So, if they are willing to recruit more. There’s nothing em..., there’s nothing bad in having two, three doctors in the Local Government. It will make the job em...easier.”

The same medical doctor’s further explanation on the issue of staffing goes thus:

“Now, when you look at the population of a local government of about 400,000 people; this LG happened be one of the most populous, the densest LGA in Ibadan and ditto for Oyo State or let me just say Oyo State as a whole. Look at that ratio... one doctor... you understand? I understand there are private and other public health facilities. People come from all over..., from not necessarily from... this LGA em... so, prorating it... generally, there is...you know... a wide gap...you know..., in human resource and it is a big challenge. You can almost say a doctor to about 100,000 populations. So now, come to the other one, presently as it...em.. I have about 23 nurses right; I have em...20 CHOs, I have em...39 CHEWs, I have 6 JCHEWs, I have 22 HAs, I have em...3 medical laboratory personnel, 2 pharmacy technicians. So, when you look at this spread..., this spread...then, you know... to 14 facilities, How, how em...do you share that to large number of health facilities. So, manpower is really a serious challenge on our hand. I only, I only, I only want to see this challenge improved upon.

He added that:

In type 3 facilities...once they offer 24 hour service at least minimum of 5 nurses are to be in that level of facility. Minimum! Minimum! To run three shifts: morning, afternoon, night. Now, if we are saying 23 nurse/midwives..., now, 6 of my facilities fall under type 3 facilities. All right! Now, when you multiply, you say, 5 times 6. That comes to about minimum of about 30 nurse/midwives. They are to be at that level alone...at that level.... That is not to say that the other ones, ha... ha...ha...ha...; the other ones must still have. I’m not even talking about the comprehensive that must have at least minimum of 8, because of the volume of the work there, Now,

if we then saying in the ...local government as a whole we have 23 nurse/midwives. This will give you the insight that really will have a serious challenge, because the minimum of 5 in type III facility –that is the minimum package as far as human resources is concerned; going by the minimum requirements as stipulated by the National Primary Health Development Agency.”

Another important role of the LGA is funding. In this study the LGAs were identified as the major funder of PHC. However, other international agencies were said to be supporting certain aspects of PHC programmes. This report was captured from the response of a participant during one of the IDI sessions:

“...but... the local government funds it, though we...,we...,we...receive support from em...multilateral, bilateral agencies like UNICEF, WHO, USAID and some other ones. We receive support from them... It’s solely funded by the local government.”

- **Implication of shortage of manpower and lack of staff recruitment**
- Job stress and burn-out

The IDIs revealed how shortage of manpower in the respective PHC centres affected the few health workers working in the PHC centres. The next narration, which describes how the shortage of manpower can affect the existing health workers who are working in the PHC, was by a CNO (head of the facility):

“We have shortage of manpower. Ah! That is number one! Number one! Number one! As you see now, I’m sick. Ah...a...a! There is no way; I can’t rest at home, because there’s only one person on duty this morning and we used to be busy here. I have to manage myself. As you see me now, I’m having serious pain. I used to be here before 8:00 o’ clock every day, but.....today, I couldn’t get up. But when I heard that we have delivery cases (referring to the twin delivery with retained second twin for more than an hour), I have to get up, dress up and come to the clinic.”

- Client waiting time

The shortage of health workers was implicated for prolonged waiting time during either antenatal or child welfare clinic visits. Similarly, the observable smaller proportion of nurse-midwives compared with the proportion of other health workers, such as CHOs, CHEWs and HAs, was viewed as unacceptable by all the MOHs and heads of facilities. The MOHs by virtue of their administrative positions, expressed the efforts they had made so far to get the government to rise up to the challenge of staff/patient ratio disproportion in the PHC facilities. For instance, one of the MOHs, while answering questions from the interviewer on his effort so far, in a high-pitch tone, asserted that:

“...it’s not adequate and we have been advocating for the employment of nurses, nurse/midwives to take care of the centres where we run maternity services...”

- **Challenges facing PHC-based maternity centres**

The interviews further revealed that the shortage of staff has implication for the operation of the different levels of PHC facilities. Despite the supposed three distinctive levels of PHC facilities to be in operation, each of the facilities in the five LGAs were commonly referred to and inscribed as ‘Primary Health Care Centre.’ An IDI with two of the MOHs revealed that there were three levels of PHC facilities, namely: the health posts/clinics (dispensaries), primary health care centres and comprehensive health centres. They told the interviewer that only the last two (that is, primary health care centres and comprehensive health centres) provide maternity care services. However, each of the facilities studied were inscribed as ‘Primary Health Care Centre’. Thus, no centre was designated as ‘Comprehensive Health Centre’ in all the five local government areas. The other levels of PHC were not included in this study, because maternity services were not being provided there. Below is the explanation credited to one of the medical doctors in an LGA:

“...while the primary health facilities, which are closest to the people at the grassroots, are under the control of the local government. So now, at the primary care level, we have em...some health facilities where we run maternity care service as well and we have some where would just run out-patients’ clinics. That is why at the grassroots level; at the primary level, we have em...different types of health facilities; we have comprehensive health facilities that have primary health care person, then we have health clinics; health posts. So, where you have comprehensive health facilities, you are supposed to have maternity and child health is taken care of. In this local government, at least we have some that fall into that category. Some (not all); at least, we have up to five or six.”

5.3.2 Process-related findings

The section describes the elements of the process in the current study. The elements that emerged in the course of this study were staff training and competence, and staff attributes.

5.3.2.1 Objectives 2 & 3: Analysis of degree to which services are timely, appropriate and consistent with current professional knowledge; degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights

- **Status of staff training and competence**

The interviews revealed that the gross shortage of nurse/midwives in the PHC systems led to the situation where CHEWs, HAs and CHOs who were not trained in the art and science of midwifery practice to be attending to pregnant women during their respective clinic visits and women in labour. All the IDI participants stressed the fact that the CHEWs and HAs were not trained to attend to women in labour to undertake their child delivery. One of the MOHs confirmed the statement credited to a CNO earlier in this chapter [that is “...The conduct of child delivery is not part of their (CHEWs’ and HAs’) curriculum, they (the CHEWs and the HAs) learn on duty as apprentices.”] by saying that the nurse-midwives in PHC facilities

trained CHEWs and HAs on how to attend to prenatal women and how to undertake child delivery for women in labour in the form of informal ‘master-apprentice’ relationship. His claim is presented below:

“Some of these so called CHEWs and CHOs were initially trained by nurses. And as time goes on, because they have grown in number now, they wanted to take up the jobs of nurses... But those that are knowledgeable about this have been in the forefront of preventing that. They are actually supposed to...to.o.o... (*he stammered*) you know, stay more in the community, whereas the nurses are supposed to be in the maternity centres....”

During the IDI session, it was brought to the notice of one of the MOHs that the CHEWs and HAs used to attempt complicated deliveries, such as multiple pregnancies. On hearing this, the MOH expressed his displeasure with the development in a low-pitch tone thus:

“Well..., ideally, where there are no nurses and midwives, such deliveries (multiple pregnancy delivery) should not even be taken by any other, em...you know...any other health workers. It shouldn’t be! It shouldn’t be! Multiple pregnancies... should be...you know taken care of or the delivery of em...should be handled by a skilled health worker; be it a doctor or a nurse/midwife that has been properly trained”.

The competency of CHEWs, HAs and non-midwife CHOs was observed to be posing challenges to the heads and MOHs in PHC system. From the responses given by the latter category of health professionals, the former group ought to play supportive roles as allied health professionals. During the IDI session involving an MOH, he discussed at length as follows:

“...yes, I, I, ask, ask... then secondly...though when they are..., if they are trained em...I mean, you know?, we have, we have the ratio of nurses to the other cadre is so low. Understand? By, by, by, by reason of their training, nurses know how to use partograph, though some of them must have forgotten about it

since they're not, they're, it's not being used as in the teaching hospital. But, some other cadres, they have never been exposed to such a thing. So, you have to train them. You have to supervise them to make sure that they are doing, they are using it well for the purpose for which it's supposed to be used. But, because for now, there's no such training... and there is even some, some form of em...,well, I won't, I won't ... there's a form of em..., em..., em... What will I call it? Like... I feel, I don't know, I feel that way, that some nurses won't, won't, won't, won't want them to be exposed to such a thing because they are not sure of how they will use it at the end of the day... they might not get the nitty-gritty of what it's all about. So, instead of using it to kill more patients, why not, why, why introduce it to them? ...You understand? So, some, so they are sceptical about training them. You know? There's, there's lifesaving schemes which ... most nurses have gone through such training. We doctors we have gone through expanded life-saving schemes. We are thinking of modifying the life-saving scheme for the other cadres too. But, that has been, you know, there's been some..., yes, controversial issues... on it.”

The participants recognized early antenatal booking and visits as an antidote to the above-mentioned problems. They were able to appreciate hospital or clinic visit as the best option available to a woman who might develop any of the pregnancy-related problems. One of the participants in one of the FGD sections said:

“A woman who develops any of the problems, for instance pregnancy induced hypertension would benefit from the expert care of a specialist.”

During one of the FGD sessions, the ability to recognise an experienced and competent health professional was demonstrated in the participants' responses. The participants expressed the relevance of this quality of a health professional in the provision of quality care to patients. One of the women in the group averred that:

“A midwife who is experienced and skilled could manage some complications even when there is no doctor.”

When members of the group were further questioned to confirm whether or not they were able to recognize '*experienced and skilled*' midwives, they unanimously responded in the affirmative: "Yes, we recognized them" To buttress the chorus answer they gave earlier, one of them said:

"For instance, when I began to experience signs of labour, I came to this centre. The first person who attended to me examined my vagina and said 'your cervix is 'so and so cm'. Another person who came in said something different from the first person. Then, I considered it critically by saying in myself (if two tailors were to measure the length of a piece of cloth, both of them ought to get equal measurement); that is why I said who know those who are skilled."

To strengthen her point, she narrated thus:

"If two birth attendants were to perform vaginal examination on a woman in labour and the first came up with 2 cm as her finding, while the second came up with 6cm as her finding, then about few hours after the vaginal examination, the woman delivered her baby. Definitely, the one who got 6 cm as her finding was correct (accurate) she knew better than the other."

- **Inappropriate attitudes of health workers**

The various attitudes of health workers that did not portray them as professionals were described and condemned by participants. The negative attitude of health workers was condemned by some members of an FGD. In one of the facilities used by a member of a group, it was reported that health workers usually kept women who came for regular clinic waiting for a long time before attending to them. While narrating the unacceptable attitude of the health workers, she said:

"See, we have been here since morning, nobody is answering us. If it were other centres, they will use the waiting time to talk to us on health issues that affect us and our babies. But here, we are just sitting down and nobody is attending to us."

Another attitude of the health workers reported by the participants was the use of verbal assault on clients and disrespectful behaviours towards them. While the good attitude of some health workers were appreciated and commended, the attitude of nagging, bullying and use of abusive statements on clients were severely condemned by the participants. For instance, a woman narrated her ordeal when she was having labour pain and she decided to go to the PHC facility where she booked for prenatal care:

“When labour started, I came to this place. I was instructed by someone to go upstairs. When I reached upstairs, they demanded from my pair of surgical gloves. Then, I told them, my load is at home and I don’t have money with me here. Please look for gloves for me I will pay for it later. They said, ‘no! Go and bring gloves, otherwise, we will not attend to you’. I had to go down and a fellow pregnant woman gave me money and I gave the money to them. Then they examined me and told me no problem. ‘Go back home. Labour is not ready yet.’ I came back the next day. I was told the same thing. They did not take me serious. Therefore, I had to go to a birth attendant in our area, where I was attended to and I delivered my baby there. That is why I did not come back to deliver here.”

While trying to enumerate various barriers (poverty, inability of the partners to give financial support, influence of in-laws in matters regarding the woman’s reproductive health, commencement of labour pain at night, lack of social supports and negative attitude of health workers) that are capable of keeping women away from formal health care facilities, a woman described a scenario that portrays the negative attitude of health workers thus:

“I have heard a woman who said, ‘I cannot go to so and so centre because the health workers are not behaving well to patients, whenever you get there, they abuse patients (verbal abuse).”

She further said:

“If the health workers usually nag their patients people would not like to come there, they will be discouraged.”

However, the participants were of the view that qualified nurse-midwives in some of the PHC facilities demonstrated better attitudes towards their patients than other categories of health workers. The group viewed negative attitude of health workers as one of the barriers to utilization of care in formal health facilities. The quote from member of a group below supports this claim:

“A woman told me to come to this centre based on information that patients are well cared for here. When I came here, I confirmed it. The two mummies (referring to the chief nursing officer and the principal nursing officer) here are good. They always joke with us. They also pray for us. They counsel and advise us. And God is answering their prayers for us.”

Another member of the same group corroborated what the former said concerning one of the PHC facilities:

“Let me add this. They are trying before God and man. Yes, they are trying; especially their matrons (referring to the CNO and the PNO) they are trying.”

- **Unprofessional practices of health workers**

Some participants in the FGDs alleged that items that were demanded from mothers were usually shared among health workers on duty. Most of these items were not actually used for the clients either during pregnancy or childbirth. A woman declared in a low-pitch tone:

“All these things they use to collect from us, they use to share them among themselves. In fact, they use to resell them to clients.”

Besides, it was observed that none of the women knew the names of the health workers who attended to them during antenatal clinic visits, labour and childbirth. The confession of the

women was that none of the health workers ever told them their names throughout their encounter with them. However, the participants in one of the FGDs pointed out some forms of negligence of duty they had experienced from the health workers. They acknowledged the fact that such practices are capable of keeping women away from health facilities to seek alternatives elsewhere. During the discussion, it was reported by all the members of the group that procedures, such as measurement of weight of the new-born, inspection of the new-born immediately after delivery and postpartum assessment of women were not performed in a particular PHC facility. A participant decried this negligence of duty by saying.

“Here, they don’t use to inspect the eyes of the women who have just delivered to detect whether they have sufficient blood. They don’t inspect the tongues of the new-born to detect tongue-tie. They don’t measure the weight of the new-born. When I delivered my baby, I expected them to weigh my baby, but my baby was not weighed.”

Hardly had the woman concluded her statement when the other members of the group corroborated the above statement with this chorused response: ‘Yes! They don’t weigh babies.’ Other statements that support the appalling practice are captured below:

“Yes! They don’t weigh babies; they said their weighing machine is faulty. They don’t weigh babies! ...that was the reason they gave.”

- **Poor standard of infection control and prevention practice in PHC facilities**

Generally, infection prevention practices were below the expected standard in all the centres. The modes of sterilization included boiling of instruments, using cooking pot on kerosene stove, use of disinfectant, especially JIK (bleach) in water to soak instruments. During one of the IDI session, a CNO, who claimed to have a sterilizing machine in the store said:

“...well, it depends on what I want to sterilise. If it is these delivery instruments, we use stove; ...we use JIK; 1 in 6...if it is IUCDs (Intrauterine Contraceptive Devices), I do the same but if it these implants, I use sterilizer, we have in the store, so,

I bring it out to sterilize. So, I sterilize the cotton wool and the instruments....”

When she was further asked how she coped with the unstable electric power supply, she quickly replied:

“en.....when we have power supply... Now we use kerosene stove.”

- **Services provision in PHC facilities**

In nearly all the facilities, they tended to operate both Focused Antenatal Care and the orthodox (traditional) model of antenatal care. One CNO, while responding to the question:

“You talked about antenatal care. May I ask, ah ah ...what type of antenatal care do you operate here, traditional or focused?”

She quickly replied thus:

“It’s Focused Antenatal Care; it’s Focused Antenatal Care.”

Then, the interviewer posed another question to her:

“But we have been to some facilities and we discovered that there is a mix-up of the two. What do you operate here?”

She responded by saying:

“Here too there’s a mix-up of the two, because, if you want to practice the standard focused antenatal care. A patient, a pregnant woman, should come to the clinic only four times. And each visit should have a purpose. But you know most of our women here, if you give them a longer period, they will be complaining that it is too long o, ‘se’ (does it mean that) they will stay at home, they will not come to the clinic? So, we are not really practicing it the way it is supposed to be. We are not practicing it; we are mixing it with the traditional one.”

- **Demand for fees payment and collection of material items from clients**

The FGDs revealed that health care at PHC level was poorly funded. Although, the state government was operating a ‘free health’ policy, the women confessed that they were still paying for services in the form of registration, laboratory tests, child delivery and other

services/items. A statement to support the above report is captured in the quote credited to a woman during one of the FGD sessions:

“I paid ₦750:00 for registration; I paid ₦1,500:00 for delivery.”

Besides, women who participated in FGDs across the five Local Government Areas confirmed that health workers used to collect consumables and other items from pregnant women during antenatal clinics, labour and childbirth in all the PHC facilities. Some of the items/consumables routinely collected from each client in all the facilities were: pairs of surgical gloves, a bottle of ‘Dettol’ lotion, a bottle of JIK, a packet of razor blade, a gallon of kerosene for lamps and stoves.

- **The condition of security at the PHC facilities**

The IDIs revealed that adequate security was made for facilities that provided 24 hours’ services. A medical doctor confidently affirmed that:

“Except for some of these facilities em... em... that... are... most of our facilities....em... em... are provided with security... The Civil Defence people em... em... em... they give, you know, us their men to man facilities either in the day time or night. Em...except for these facilities eh...that have recently been commissioned. And we have informed the authority on the need to provide us with security in those...places.”

5.3.3 The role of governments in PHC system

The inadequacy of equipment/instruments was attributed to poor funding from the three levels of government in the country. All the participants of the IDIs acknowledged poor funding of PHC programme in Oyo State and Nigeria, at large, as the major cause of the problems, like sub-standard infrastructures, inadequate equipment/instruments, insufficient essential medications/consumables, inadequate staffing that are facing PHC programme. One of the MOHs, while responding to a question on staffing said:

“Well..., in view of the human resources challenge we have generally in Nigeria... so, presently in Oyo State, it’s still a growing health system as far as primary health is concerned... so, we have one Medical Officer of Health per LGA and that is the only medical doctor in the LGA.”

5.3.4 Monitoring system for standardization and quality control

The issue of poor infrastructural design which characterised most of the PHC facilities where maternity services were provided was mentioned to one of the MOH during one of the IDI sessions. The interviewer asked the MOH whether or not there was monitoring system in place to ensure standardization and quality control in the facilities. While responding to the question, the MOH said:

“No! We don’t really involve em...em...the ministry; it depends. What we do at the local government level is that, em...em... most of our health facilities are at the instance of the em...em... community. So, when they come like that...,em...we encourage them to actually get a parcel of land...big enough to construct a maternity centre. Even, most of em... the centre you might have gone to are...em...health posts/clinics. They are so small, because that was the em...the kind of land.... em.... the community was able to provide.”

Another MOH responded to the same question right in his office by saying:

“What we have is...the Technical Committee in the PHC department. The Technical Committee is em...actually to do that.... But often times, the community might em...even started... you know...em...the construction...before they inform us and by the time you now go there em to inspect it has reached an advanced stage. Ha..ha..ha..ha..! (he laughed)You can’t ask them to start pulling down...em...the structure again you know... So, you try as much as possible to look at the way of using whatever they have. That is one problem we have....but we have been telling them now...ha...ha...ha...(he laughed) that whenever they wanted to embark on construction of any health facilityor whatever....even, if it is the community that wants to do that, they should tell us... so that at

least, we would go there and give necessary assistance ...em...you know...in term of em...em...technical assistance.”

5.3.5 Various suggestions towards improvement of services

The concluding part of each of the interview session requested useful suggestions and recommendations from the participants. This section summarises the various suggestions given by the participants during both the FGD and IDI sessions. The suggestions are reported in relation to each component of the Donabedian’s model, while others that did not fit into the component of the old model were given separate themes.

5.3.5.1 Suggestions towards improvement of structure

The IDI participants gave various suggestions on how to solve the identifiable problems facing maternity services in PHC facilities. The suggestions given focus on various issues, which were raised by the participants during the interview. The aim of those suggestions is to providing solutions to all these issues.

- **Staff recruitment and programme funding**

One of the suggestions made was staff recruitment and proper funding of PHC programmes.

The MOH in one of the LGAs suggested putting a recruitment system in place:

“Let’s settle the one on manpower. Well there must be a system....of human resource recruitments... As staff are exiting, either through retirement or through posting or one way or the other or staff leaving.... I don’t want to use something that is too hard now okay? I don’t want to say death, we don’t pray for death. At least, it is a form of exiting. Okay? So, a system must be put in place to...oo.....replace the one that is gone. Okay? And that system must take care of recruitments. Human resource mapping must be done to know and determine how many em...nurse/midwives are actually needed...in a particular facility. How many? In a type III facility, which is the ideal number; the actual number needed at that level. So, once we are

able to settle that, then we begin to work on that from time to time to ensure that at least, there isn't any gap. And that can only be done... structurally by the government. We, I as an em...MOH can give a kind of administrative backing and technical backing to that. You understand? By reason of my own responsibility I can do that. So, a system must be put in place for recruitments and for training; em manpower development within the system. It's not just enough for manpower to come in. You must develop the manpower for quality service delivery, so that you can achieve your goal at the end."

The aspect of funding of PHC programme, including maternal, neonatal and child health care, which must not be ignored, was emphasized as a solution. During the interviews various alternative sources of funding of PHC programmes were mentioned. One of the suggestions goes thus:

"Well, but,... other ways apart from the Local Government is em..., if, if, if the revolving funds like the drug revolving fund is put in place, but unfortunately that in Oyo State... there is ... policy. So, it's not been making it easy for such substance to be, to be in place. But, if such thing is in place, well, you know fees are charged for services provided and when fees are charged, there will be a token of em..., a token of excess on it, or gain that we can use to do some things in the department in the health facility. That! You don't have to come to the local government. But since those ones are not in place, we have to depend solely on the local government for fund from the Local Government and when it's not coming forth; things will not just work well. So, for now, it's been solely from the local government, and when it's not forthcoming, things will not go the way it's supposed to go.

- **Meeting of the stakeholders**

Another MOH was of the view that career officers, like MOHs, could not do anything without involving the political class in all levels of government. Thus, he opined that:

"There is nothing that we (career officers) can do without the political class. To start with, the first thing to do is - we have to

convey a meeting or a summit involving the political...al...al...class. Be it the Local Government Chairman ..., the political class at State level including his Excellency, the Governor... And table before them the problems facing health care delivery, em...em...in the state.”

The suggestion made by a medical doctor in another LGA during one of the interview sessions agreed with the quoted one above. He too suggested a summit that would bring all stakeholders together to deliberate on how to put PHC programme, particularly maternity services at primary level, in proper shape by improving its quality:

“Yes! Those problems you have em... m... highlighted, they are not limited to the LG (Local Government) PHC (Primary Health Care) alone. They are faced at the state level also. But because these em... em... people are... not well informed about the goings in all these em...em...facilities. But when there is a summit, different stakeholders will be able to come and we will educate them on the minimum em... em... requirements at the different level of em... m... care. So, if we are able to do that... If I remember very well, it had been very long... we... em... em... had... em... em... something like this Council of Health in Oyo State... It is a bit difficult to practice at this level... because, most of the people that are... appointed or elected, they do not have em... em... much knowledge about... you know... health care delivery. And some of them are not even painstaking enough...you know... to be educated. But when you have a summit or I don't know... whatever name it's called...em.... it is going to achieve more.”

- **Disapproval of sub-standard building structures**

One of the MOHs who were interviewed was against granting approval to any structural building that falls short of the expected standard to run maternity services at PHC level. He said:

“...but if I'm actually to do it, I will make sure that any community that does not measure up to that standard will not be given health facility. Em... they can use the health facilities in nearby whatever...but provided they want something ideal, em...em...something of good quality... em... em... they must be

ready to provide a parcel of land on which the government can give them something of good quality.”

Most building infrastructures and the services rendered in most of the PHC facilities were found to be below standard and expectation. One wondered whether or not such facilities were planned before designing the building structure and commencement of service operation. This is because the PHC facilities where maternity services were provided were not spacious or commodious for the kind of services rendered in them. This raises the question of what and who is involved if a community is in dear need of a health facility. While responding to the above issue of concern, one of the doctors (an MOH) explained the process a community that is in need of a health facility should take to make their desire a reality. His explanation on the procedure is captured in the quote below:

“Hm...hm...well... thank you. In Primary Health Care, there is community participation... as a cardinal principle of PHC... and meaning to say em... we don't work alone. We work em... there is a committee in a place at the local government, which we called the 'World Health Development Committee'... the 'World Health Care Development Committee.' These em... committee members, they meet once a month, and em... there, they discuss issues about em...their needs as far as health issues are concerned... health issues are concerned... and em... if during the course of their meeting em... if I'm part of such meeting I can present that, you know, to them as an issue... but usually, if it is a thing of a facility being needed in a particular community, the community will be the one to bring up that challenge... and they would come to present their first need to my desk and I can begin to work on that with them. Mind you, The Chairman, the Local Government Chairman, is a product of the community and I can take these people to the Chairman. They will sit down at a round table. They would present their needs orally. They would present, and in paper and em... it would be given a teething and em... with that... you know, the council or the management can work on it... em... to begin to... you know, look at how they can help that community... you know, to construct such hospital for them but the community...most of the time will be... the one to

provide the land but the money to do that will come from, from, the local government and the manpower to work there....”

At times a building would be designed to provide specific services, like maternity care, by politicians who would notify the MOH and/or the local government chairman after the completion of such building project. This idea was narrated by a medical doctor in response to a question that was posed to him: ‘Are the health workers informed whenever a building project is going to be constructed for health facility?’ He argued thus:

“Oh! Thank you very much. You know that is one of the rubbish in our system. Usually a health facility must have been completed even... before em... em... MOH knows of it. It is one of the serious rubbish now in our system. Whereas a medical officer of health in US must certify a, a building within England before such building is constructed. You understand? The implication of such building must be factored before construction you understand? But in Nigeria, somebody will just, you know, and don’t even give a dime about whether MOH is even aware of anything. And by the time you know it’s near completion; they’ll say there is a health facility that is em... ongoing somewhere. You understand? Em... to really say we are being carried along, hm..., that most of the time is not there, because being carried along will take you to contribute into this plan. You understand? The design; how you want it to be. How many beds, you understand? What is...? You know the positioning; the shape; where this should be; and where that should be? You understand? So, we would not be factored into that, even not to talk of even the ministry. The ministry... they are not informed! You understand? It is only when the facility must have been completed and em... the MOH and em... the health workers are now informed! That is when they would say there is a facility ready for... so and so. It is a serious problem! Why? Because the construction of facility, you know is being politicized; it’s being politicized.”

- **24-hour service within conducive building with adequate security**

Only very few of the PHC facilities that were designed to provide maternity services were not rendering a 24-hour service. The MOHs who participated in the IDIs were asked whether or not there was provision for security in all PHC facilities, particularly at night. The response of the MOHs confirmed that not all the PHC facilities providing a 24-hour service were

provided with necessary security for staff and clients. The response of one of the MOHs in presented below:

“Thank you. You know, it still boils down to the same issue of manpower challenge. You see, em...security! To some, they have security but not all the facilities have security men.”

Another area to which solutions were suggested is the problem of building infrastructures, meant for service provision to improve women’s health and that of their new-borns. One of the suggested solutions was given by one of the MOHs:

“Not all; not all of them, but... the infrastructure! The infrastructure! Now the infrastructure; I mean, the design of such facilities! It must be em... commodious enough to take all the six elements of our service delivery. Like I told you; those components: maternal care, child care, health education, prevention of communicable diseases. So, when I mention prevention and treatment of communicable diseases, meaning to say that there have to be a separate ward where somebody with an infectious ailment, when he or she presents, where we can take him, hospitalized and treated at that level... So, if the design of a facility doesn’t take care of these areas, then we have limited productivity; you, you, have reduced the productivity at such level. You understand? That is why the em... em... the area of design of a facility must be properly looked into; must be considered before you do it. Okay?”

One of the MOHs expressed her desire to repair, renovate the dilapidated building infrastructure in her LGA if she were in a position to do so. Besides, she was of the view that the PHC facilities required adequate furniture. She said:

“Well, first of all, there are, there are, there are, there are, there are different ways to go about, there are different ways I will like to go about it. First of all, though I, I, I still have substantial number of health, em... staff in place, but, I believe if those, if those ones are equipped, they should still be able for now to provide quality services. So, one, most of the facilities they’re dilapidating. I will want them to be renovated, renovated, then, equipped, furniture ...they are supposed to be furniture, and monthly, impress should be provided to the heads

of the facilities to run the facilities, so that we don't have to wait till things go bad before we put, em... before we do any repairs.”

- **Sustainable supply of basic and essential items/ medications**

The inadequate supply of essential medications for quality maternity services was equally addressed. A system that is capable of ensuring sustainable drug supply alongside internal supervisory system was suggested:

“... Again, medications! Medications! You see, there must be a ...a...a... sustainable system of providing medications at primary health care level. Our medications are not sufficient. Grossly! In fact! Grossly inadequate, because the funding is also very, very, poor! In a situation you have this large population of about 400,000 people within just 350,000 naira being provided for the procurement of medications. Please how much will that do? How much will that do? Okay? When you and I know that there are some medications that cost well over a thousand naira... You see that now? That aspect has to be taken care of. Then, manpower development! Manpower development! There is a need, for us to put in place an internal supervisory system. We must be... or for you to supervise you need to ... the resources to you understand? You need a lot of things to, to, o go to the field to supervise; you need the knowledge, you need the materials; you need the vehicle; you need the logistics. Generally, you need to do that; Okay?”

5.3.5.2 Suggestions towards improvement of process

Various suggestions and recommendations that addressed the raised issues under the component process are captured in this session in a concise manner. Some of them are supported with direct quotes from the participants.

- **Staff training**

A useful suggestion from the IDIs participants was on training of staff for capacity building. Training of health workers was recommended to be done on a regular basis. One of the MOHs said that he seldom called for resource persons to come to his LGA to train the health

workers in PHC facilities. While responding to a question on the issue of training, he argued thus:

“Em... training, you see..., there is a need, you know..., to organize... I do that you know, at my level here. Companies! I will call on them sometimes you say will you sponsor this for us and I will invite you know, resource persons, may be colleagues or senior colleagues from UCH (University College Hospital). Please, will you come? You know em... to give us a lecture on so so area. We use it with projector, I mean with audio visual so we train and there is a need to do this from time to time. For training and retraining because the aspect of training is very, very, crucial when you talk of satisfaction, when you talk of quality of services that is going to be provided; Okay?”

- **Monitoring and supervision**

First, conscious monitoring of attitudes of the health workers was recommended by IDI participants. The issue of monitoring of staff's attitudes was viewed as very vital to quality service provision in primary level facilities. An MOH of a LGA recognized that a loose or poorly controlled system usually leads to certain unbecoming attitudes on the part of some health workers. While answering questions during one of the IDI sessions, he declared:

“...the attitude of the health workers, you know, we must, you know em... keep moni...em... monitoring, you see, about the attitude, because attitudinal problem really can be there in a system that is considered, you know, that one may regard as, as, em... unchecked or poorly controlled, you see or loose system..., one tends to see more rottenness in such system. So the aspect of discipline, monitoring, you know, supervision, em... giving task and assigning responsibilities and seeing to it that job is being performed is, these are very, very keen.”

Another medical doctor desired that health workers should be given orientation on what quality care entails in relation to their attitude to work and to their clients. She expressed her view thus:

“...then, thereafter, em..., the health staff will now have to be re-oriented, re-oriented as per what quality services are; especially, especially in our personal communication so that their attitudes to, to clients or patients would change; and if there are any identifiable areas concerning their skills, then, they can do skill acquisition workshop so that they’ll have to improve their skills in the provision of services that I feel that they are lacking. So, those are the ways for now that I think em....”

5.4 SUMMARY OF CHAPTER

Chapter five presents the findings of the qualitative strand of the study. The postnatal women’s age ranged from 15 to 44 years; the mean age was 28.28 ± 5.3 (standard deviation). The study revealed that most postnatal women expressed their dissatisfaction with kind of services given to them. The buildings used for most PHC services were described as being too small when compared with the rate of client flow. Some PHC locations were said to be in environmental polluted areas. Participants were reluctant to use the toilets because of their poor condition. Some participants could not have their bath after childbirth until they got home. In addition, the FGD and IDI participants condemned the lack and inadequacy of equipment and instruments.

The ratio of staff capacity to client flow and that of nurse-midwife to other health workers were viewed by participants as disproportionate. Lack of regular system of staff recruitment was implicated for shortage of manpower in all the PHC centres. The identified shortage of staff, particularly, the nurse-midwives was said to cause stress to the small population of health workers, prolong client waiting time and the involvement of CHEWs, HAs and CHOs in antenatal and labour care. The study further confirmed that CHEWs, HAs and CHOs were not trained primarily for pregnancy and childbirth care. This was inevitable because the outcome component actually appeared either directly and indirectly while elements of either the structure or the process were being discussed by the participants. Thus, analysis of the

structure and the process actually met the third objective of this study (that is to investigate the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights). The third objective actually focuses on the provision of respectful maternity care (RMC) to women during pregnancy, labour, childbirth and puerperium.

Moreover, the two concepts, namely: the system of monitoring/supervision and the system funding, were reported in this chapter. The relevance of the two concepts and the role of the government were discussed to a saturation point by the study participants. Detailed discussion of the two concepts is reserved for chapter six. More importantly, various solutions that aimed at improving the various aspects of the PHC services with particular reference to maternity care suggested by the respective study participants were reported in this chapter. These included improving the structure, the process, and consequently, the outcomes. The establishment of a system of funding in the form of Primary Health Care Board, and a system of monitoring/supervision was topmost in the suggestions from the study participants.

CHAPTER 6

6 DISCUSSION OF FINDINGS OF QUANTITATIVE AND QUALITATIVE

6.1 INTRODUCTION

This chapter presents the overall findings of the study in a unified writing style. Since the study utilized the embedded MMR approach for data collection, the findings from both the quantitative and the qualitative parts of the study are discussed in this chapter in a comprehensive and complementary manner. In other words, the data collected with the aid of both qualitative (FGDs and IDIs) and quantitative instruments (Clients' questionnaire, providers' questionnaire and checklist) are merged because of their interrelated and, thus, complementary nature, so that a comprehensive picture of the maternity services operated in PHC facilities could be brought into the limelight (Table 6-1). The chapter is presented in four sections alongside sections on socio-demographic characteristics of the study participants in accordance with the components of the Donabedian's model used to guide this study. While the first section is devoted to discussion of the socio-demographic variables of the study participants, the second section discusses the **structure**: conditions of infrastructures, equipment, instruments and medications available for provision of maternity care to women and new-borns in the selected facilities. Section three explains the **process**: degree of timeliness, appropriateness and consistency of the maternity services in the facilities. Section four deals with the **outcome**: degree of satisfaction of service provision to the women and outcome of services rendered in the facilities at least six months prior to data collection.

This discussion brings out the various concepts and themes that are related to quality of care affecting the PHC maternity service. Thus, the concepts and themes that emanated from the last session of chapter six.

Table 6-1: Summary of findings of the first phase

Objectives	Phases	Design	Methods of Data Collection	Instruments	Data Analysis	Where results can be found
Obj. 1: Description of infrastructures, equipment, instruments and medications	First	MMR	Quantitative	Checklist	Descriptive (Freq. & %); Inferential (T-T-test)	Chap 4: Sect 4.2.4.1.1; <input type="checkbox"/>
			Qualitative	FGDs + IDIs	Transcription, thematic coding & report writing	Ch 5: Sec 5.2.11 to 52.15
Obj. 2: Analysis of degree to which services are timely, appropriate and consistent with current professional knowledge	First	MMR	Quantitative	Clients & Health workers questionnaires	Descriptive (Freq. & %); Inferential (T-T-test)	Ch 4: Sec 4.2.5.1.1
			Qualitative	FGDs + IDIs	Transcription, thematic coding & report writing	Ch 5: Sec 5.3.11 to 5.3.1.9
Obj. 3: Investigation of the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights.	First	MMR	Quantitative	Clients & Health Workers Questionnaire	Descriptive (Freq. & %); Inferential (T-T-test)	Ch 4: Sec 4.4.1.1;
			Qualitative	FGDs + IDIs	Transcription, thematic coding & report writing	Ch 5: Sec 5.3.11 to 5.3.1.9
Obj. 4: Description of outcomes services within the last six months	First	MMR	Quantitative	Checklist	Descriptive (Freq. & %); Inferential (T-T-test)	Ch 4: Sec 4.4.1.2
Obj. 5: Developing a model for primary level maternity services.	Second	TGR	Situation analysis from First phase	Empirical data from the first phase	Validation by Experts Descriptive (Freq. & %) or validation	Ch 7: Sec 7.1 to 7.7

6.1.1 Socio-demographics of the postnatal women

Overall, the majority of the client-participants (postnatal women) were mature women of childbearing age, between 20 and 34 years; the mean age was 28 years. The FGD participants were conveniently recruited from the same facilities used for client survey. These participants were not necessarily involved in the survey because of timeline between the survey and the FGD sessions. Most previous studies conducted with either pregnant women or nursing mothers as participants had reported similar findings (Oluwatosin, Aluko & Onibokun 2011; Aluko & Oluwatosin 2012). Members of this age group are usually considered to be physically and physiologically mature to procreate with less associated obstetric risks. The teenage mothers among the participants were fewer than 3 percent. This might be due to the fact that most teenage mothers are not likely to get necessary social supports from significant others and thus they seldom utilize formal health care facilities (Oluwatosin, Aluko & Onibokun 2011; Aluko & Oluwatosin 2012). Besides, teenage pregnancy is usually discouraged in the settings where the study was conducted, because it is expected that girls within the teens should be devoted to building their academic careers for actualization of a fulfilled future (Adeyinka, Oladimeji, Adekanbi, Adeyinka, Falope, & Aimakhu, 2010; Oluwatosin, Aluko & Onibokun 2011). According to Aluko & Oluwatosin (2012), teenage pregnancy within the same study setting was 0.9%. Although giving birth at an advanced age is not usually considered as a serious issue in South-Western Nigeria, because of the associated risk factors. The increasing risk associated with pregnancy and childbirth is already evidence-based (Oluwatosin, Aluko & Onibokun 2011; Aluko & Oluwatosin 2012). Similarly, the larger population (92.1%) who were married and living with their partners is a common trend in Nigeria (Aluko & Oluwatosin 2012). Single parenthood has social stigma in almost all parts of Nigeria, unlike some other nations. For instance, it is against the societal norm in Nigeria, particularly in the south-western part for either a widow or a divorced or a

separated woman to carry pregnancy except she had evidently become pregnant before the demise, divorce or separation from her partner, respectively. The study conducted among women in rural Tanzania reported a similar finding (Kruk, Mbaruku, McCord, Moran, Rockers, & Galea, (2009).

Furthermore, it was observed that less than 20 percent of the women had lower than secondary school education. This agrees with the study conducted by Aluko & Oluwatosin (2012) among postnatal women where 19.7% of the women had less than senior secondary education. This is quite a good development, as this showed that more Nigerian women are becoming educated. This positive development is capable of improving the health behaviour of the women. However, the issue of girl-child education still requires reinforcement by stakeholders. In addition, the majority (83.8%) of the women claimed to be employed. However, the employment status observed in the study may not necessarily translate into financial empowerment, particularly with those who were self-employed and those who worked with private institutions. Most often, the self-employed engage in petty trading and small-scale businesses that are not sufficient enough to cater for their nutritional and social needs (Aluko & Oluwatosin, 2012). The participants were either Christians or Muslims. The two religions are competitively predominant in Ibadan.

Most of the women were either primiparae (mothers who had given birth once) – 32% – or multiparae (mothers who had given birth more than once) –63%). Similarly, those who had between one and four children were in the majority. This health behaviour conforms to the modern family planning advocacy and practice in Nigeria, as against what it used to be in some past decades.

6.1.2 Socio-demographics of the health workers

The mean age of the health workers who participated in the study was 41 years \pm 10 SD. More than half of the health workers were within age 51 to 58 years. In reference to age, the implication of the above is that over 20 percent of them would have reached the retirement age (which is 65 years) according to the Nigerian civil service rules in the next 14 years. Not less than 30 percent of them would retire in the next 24 years. Therefore, if no recruitment of workers takes place within these periods, the size of the manpower needed to provide care in PHC facilities would fall drastically and this may further worsen the reported deplorable state of quality of maternity services at the primary level.

The findings from the IDIs agreed with the above. One of the MOHs who were interviewed said that, since she joined service over 15 years ago, staff recruitment had not been done in her local government. This confirmed the genuineness of the plea made by another MOH of a local government area, who said a recruitment system should be put in place to address the problem of staff leaving service without replacement. Similarly, over one-third of the health workers had worked in the local government facilities for a minimum of 21 years. According to the Nigerian civil service rule, members of staff are retired from civil service when they have worked for 35 years (Briggs, 2007; Bayo, 2012). By implication, more than one-third of the workers would have retired in the next 14 years. This presupposes that if no staff recruitment takes place within this period, more than one-third of the health workers would have left the service. Thus, the quality of health care services, including the maternity care at PHC, would likely be grossly compromised (Jeffers, Bognanno & Bartlett, 1971; Berk, Bernstein & Taylor, 1983).

In addition, nearly 90 percent of the health workers were married. This has its own implication for availability of manpower for service provision in the PHC facilities. The

health workers were mostly women and since about one-quarter of them were within the reproductive age, not all them would always be available, as they would be going on maternity leave. This factor has the potential of scaling down the size of the manpower from time to time.

Overall, only 26 percent of the health workers were nurse-midwives. This population of nurse-midwives is too few compared with the clients patronage (Nyango, Mutihir, Laabes, Kigbu, & Buba, 2014), Other health workers who happened to be formally trained to attend to pregnant women or women in labour (semi-skilled) but who usually attended to prenatal women and women in labour were relatively far more in number than the nurse-midwives. This disproportionate staff structure could be implicated for the undertaking of complicated child delivery by non-nurses/midwives as observed in one of the PHC facilities during data collection (Nyango et al., 2014). By extension, this could be one of the reasons for the increased rate of pregnancy-related complications that were usually blamed on PHC facilities by health professionals in other higher levels of health facilities (Adegoke & Van Den Broek, 2009). Since this category of semi-skilled staff offer services that they were not formally trained for to pregnant women, women in labour and their babies, how accurate and reliable are the assessment they are to make on the clients to take prompt decisions and actions? How do they recognise risks in these clients? To find answers to these pertinent questions, this aspect may require further studies. However, their knowledge score in this current study exposed the limit of their skills in midwifery practice. Adegoke & Van Den Broek, (2009) stated that the unskilled may not be able to recognise, manage or refer complications during pregnancy, labour, childbirth and puerperium.

6.2 SITUATION ANALYSIS OF THE COMPONENTS OF MATERNITY SERVICES

This section discusses the situation analysis of maternity services rendered to clients at the PHC facilities within the entire five LGAs in Ibadan. The various components of the PHC services (the structure, the process and the outcomes) are explained in detail in this section.

6.3 STATUS OF THE STRUCTURE

This section discusses the merged findings of the data sets from quantitative and qualitative strands that come under the structure, namely: building infrastructure, equipment/instruments and medications.

6.3.1 Status of building infrastructure designated as PHC centres

The results of this study confirmed that most of the buildings used for PHC where maternity services were being provided were in deplorable conditions, with poor waste management facilities, uneven distributions, too small space capacities for patient population, requiring either complete reconstruction, or major or minor renovation. The conditions of the PHC building infrastructure with particular reference to those meant to provide maternity services described above are problems of major public health importance by WHO's criteria (WHO, 2010). Although the conditions of hospital buildings and other necessary in-built infrastructure were not reported in previous related studies, the reported conditions cannot be ignored in terms of service quality in health care systems. Availability of a good building, having enough waste management facilities, spacious enough to accommodate patient patronage and very conducive to guarantee patient comfort and limit the risk of cross-infection within clinical environment are criteria that must be met when location and construction of a health facility are considered. The statement made by the MOH in one of

the LGAs “*the PHC buildings actually required repair and renovation*” supports the need for complete construction, or major or minor renovation. However, it may be more appropriate to convert PHC facilities that lack enough space to dispensaries or health clinics. Besides, residential buildings that were converted to PHC centres, as observed during the data collection, could be reconstructed to fit exactly into the purpose of provision of maternity services.

The findings further suggest that the situation where other patients with other health problems are admitted in the same rooms or wards where gynaecological and obstetric patients are being cared for is inappropriate and should be discouraged. In order to prevent the possible cross-infection to the relatively healthy mothers and their babies, any building designed to operate as PHC centres, where the six components of primary health are to be practised, should be designed in such a way that gynaecological and obstetric patients are put in separate rooms or wards from other patients (Adesokan, 2010).

From the study it became clear that more than 90% of the beds in the PHC facilities were in poor conditions. None of the beds observed during the study could be adjusted or manipulated to suit therapeutic or patients’ desired postures. Weak patients could not be transferred in bed easily from one place to another within the same premises, because the beds were too old and had no wheels for mobility. The mattresses put on the locally fabricated metal beds were too dirty, torn and collapsed and no longer decent for human use. The poor conditions of those beds are capable of constituting serious discomfort to the mothers and their neonates. Admitting and caring for pregnant women, women in labour and postpartum women do not, in any way, portray adherence to respectful maternity care at all as prescribed by White Ribbon Alliance (Windau-Melmer, 2013). First, it is less dignifying; second, it does not contribute to client’s comfort; third, it is exposes the client-mothers and

their babies to risk of infection; four, it makes the respective environments lack aesthetic appearance expected of a health-promoting facility. Besides, proper positioning in labour and birth has been proven to reduce pain, analgesia use, and perineal trauma and enable more effective uterine contractions (Mayberry, Wood, Strange, Lee, Heisler, and Neilsen-Smith, 2000, cited by Adams & Bianchi, 2008). Women who are nursed in discomforting positions due to poor bed and bed accessories are likely to be denied of the above outlined benefits of proper positioning in labour.

Furthermore, the findings revealed that none of the facilities enjoyed regular supply of electricity, while close to two-thirds of the facilities no longer enjoyed electricity supply at all owing to the fact that their electricity bills were not paid by the funding local government areas. Consequently, in nearly all the facilities, rechargeable lamps and hurricane lanterns were used to attend to women in labour at night. In addition, one-third of the facilities had no electricity generating set. The condition described above is not good enough for facilities where child delivery services are undertaken. Such environment put both mothers and their expected babies at risk of serious complications, such as retained placental, bleeding, birth asphyxia and many others that may be obscure as a result of poor lighting system. According to Chang & Chen, (2004), cited by Adams & Bianchi, (2008), physical support and comfort, such as adjusting room temperature and lighting, enhance labour progress and increase satisfaction with the birth experience. In other words, creating a therapeutic milieu is capable of improving outcomes of pregnancy and labour, a situation that may be impracticable when electricity is lacking.

The results of the study also revealed that more than three-quarters of the facilities had functioning and adequate water sources. Most of the clients who delivered in the PHC facilities could not have their bath following child delivery. This unacceptable situation was

confirmed by members of the FGDs. Some women confessed they did not have their bath following child delivery throughout their stay in those facilities. This situation was further worsened by the reported dirty and faulty toilets and bathrooms in those facilities. Studies have shown that adequate and functioning water supplies guarantee infection control and prevention in health care facilities. Sufficient water supply makes the practice of hand washing, disinfection, sterilization of instruments/equipment and maintenance of other universal precautions possible in clinical settings, like labour rooms, where coming in contact with blood and other body fluids is inevitable. Besides, hhygienic new-born practices, including cord care, that are capable of preventing postnatal infections, which are a major cause of neonatal deaths (WHO, 2013) will become unrealistic in the absence of adequate water and other items required for universal precautions and aseptic techniques.

From the findings, it was noticed as well that none of the facilities was provided with either office telephones or mobile phones as means of communication. The study also confirmed that none of the facilities had a stand-by ambulance to facilitate quick referral and transportation of patients if any emergency ensued. Effective communication between clinicians is critical in the hospital environment. One of the most important reasons that patients are admitted to acute care facilities is to monitor for deterioration in their clinical condition and intervene (Institute of Medicine & Committee on Quality of Healthcare in America, 2001). Communication between clinicians is critical in providing high quality and safe patient care. Poor information sharing practices and miscommunication continue in clinical settings has been implicated for a major source of errors within healthcare (Wu, Tran, Lo, O’Leary, Morra,, Quan, & Perrier, 2012). Indeed, miscommunication is rated as one of the major preventable causes of all identified clinical errors (Joint Commission on Accreditation of Healthcare Organizations, & Joint Commission Accreditation Hospital, 2007), while communication problems were the most common cause of preventable disability

or death in a review of 14,000 hospital admissions (Wu, Tran, Lo, O’Leary, Morra, Quan, & Perrier, 2012). Moreover, lack of communication system would likely make it difficult for staff to communicate information on health issues of their patients to the local government doctor (MOH) and other superior colleagues for necessary quick actions/decisions.

6.3.2 Status of equipment/instruments in the PHC facilities

From the current study, gross inadequacy of basic items needed for safe conduct of prenatal and child delivery care in all the facilities across the five local government areas was observed and reported. All the facilities relied solely on foetal stethoscopes for monitoring of foetal heart sounds/rate. In spite of advancement in the use of modern technology globally, none of the facilities had doppler or sonicaid (portable electronic device for foetal heart sound detection and monitoring). Sets of equipment, such as oxygen cylinder and accessories, self-inflating bags, resuscitaires, airways needed for adult and new-born cardio-pulmonary resuscitation in case of birth asphyxia, were lacking. Providing quality intrapartum care and resuscitation is a vital opportunity to ensure a good start in life for all new-borns (Blencowe, Cousens, Mullany, Anne, Lee, Kerber et al., 2011). This would be compromised due to a lack of the necessary equipment in the facilities.

Similarly, the study discovered that items surgical gloves, aprons, disinfectants, sterilizers required for maintenance of universal precaution were insufficient (Garner & Hospital Infection Control Practices Advisory Committee, 1996). For instance, items such as antiseptic lotions, running taps, liquid wash, sterile gloves, regular trash bins and contaminated waste bins with covers were either very few or unavailable. The inspection of the facilities carried out during data collection confirmed the lack, as health workers were seen carrying out invasive procedures that required maximum level of sterility without paying attention to the required level of asepsis (sterility). The reported inadequate supply of the basic and essential

items was the justification health workers gave for collecting items such as antiseptic lotion, soap, surgical and unsterile gloves, including kerosene for lighting stoves and lanterns from patients.

The observations made in this study confirm that of Higgins, Wainright, Lu, & Carrico (2004) who recalled that the lack of access to emergency and surgical care in developing countries (including Nigeria) has been identified as a critical gap in the development of health systems. It should be noted that since the historic 1978 World Health Organization (WHO) conference at Alma Ata, primary health facilities have been prioritized as the main delivery mechanism for achieving good health outcomes. However, even experts in those fields have recognized the paucity of services for those afflicted with surgical conditions, calling surgery the ‘neglected stepchild of global public health’ (Farmer & Kim 2008).

Whether the competency, skills and the type of basic training the categories of health workers who attend to women during pregnancy, labour and postpartum influence their recognition of needs for the supply of basic and essential items in PHC should be verified empirically. The inadequacy or outright lack of some basic and essential items is likely responsible for the situation where procedures such as vaginal examination on a woman in labour and suturing of perineal laceration are performed without observance of aseptic techniques. However, the reasons for the apparent persistent lack and inadequacy of basic and essential supplies, such as sphygmomanometer, stethoscope, partograph, hospital dishes (gallipots, instrument trays, bowls, kidney dishes), delivery forceps, delivery couches, examination couches, doppler or sonicaid are either not available or inadequate in PHC facilities may require further study. It may not be possible to implicate the use of semi-skilled health staff in place of skilled health staff like nurse/midwives for the observed malpractices reported in this study. However, this study was able to establish that the non-adherence to aseptic techniques and universal

precautions in PHC facilities was due to either unavailability or inadequacy of sterilizing items, such as sterilizer, antiseptic lotion, sterile gloves and decontamination containers, as reported earlier in this study.

Although few of the health workers claimed to be trained in LSS and PAC, there was no LSS and PAC equipment and instruments to effectively carry out such, if situation should arrive. This development is not good enough for facilities providing maternity services. Generally, the instruments available for provision of maternity services (prenatal child delivery and postnatal care) were significantly fewer than the minimum expected number in all the facilities. This unacceptable situation of primary health care requires urgent attention from all stakeholders. This is because such unfavourable situation put the life of both mothers and their neonates at risk of serious maternal and neonatal complications, including morbidity and mortality. For example, none of the facilities had resuscitation and new-born supplies (for example oxygen cylinder and self-inflating bags) for resuscitation of clients. None of the facilities was provided with standby ambulance to facilitate immediate referral of patients to higher level of facilities. Ambulances were seen in the premises secretariats of LGAs.

6.3.3 Status of medications in the PHC facilities

The findings revealed that almost all the facilities were not rendering essential life-saving services, such as post-abortion care (PAC), blood transfusion, assisted vaginal delivery, administration of intravenous oxytocin and antibiotics, even at instances of emergencies, such as postpartum bleeding, cervical or severe perineal traumas. This confirms the wide gap between the health care system in Nigeria and other developed countries, like Canada. Canada operates three levels of health care, namely: levels I, II, and III, which are similar to the Nigerian primary, secondary and tertiary levels, respectively (Klein, Johnston, Christilaw, and Carty, 2002).

However, as Klein, Johnston, Christilaw, and Carty (2002) noted, Canada has a well-developed system of regionalization which allows all premature infants being delivered in a level III facility, and all women with severe preeclampsia giving birth in level II or III centres. On the other hand, in such a system, women at term and expecting an uncomplicated pregnancy and birth would be best served at level I or II facilities close to their homes, where they would have support from family and friends. In fact, the average-sized term baby does best in a level I or II facility. The difference is in this: even when transfer is required for operative birth, it is desirable that level I hospitals have caesarean section capability on site. This is a reason for the reported history of excellent outcomes for mothers and babies in Canada and elsewhere (Klein et al., 2002).

In the PHC facilities under study, basic instruments to undertake normal vaginal birth were grossly inadequate let alone having caesarean section instruments. This might have been responsible for obstetric emergencies usually being referred to a higher level of care in worsened conditions. For instance, a woman with postpartum bleeding will definitely benefit from intravenous infusion and intravenous oxytocin drip, while workers are instituting referral of the patient to a higher level of care. A qualified nurse-midwife or midwife is expected to be skilful enough to initiate intravenous line before referring a bleeding patient to a higher level of care. The fact that procedures such as measurement of blood pressure, measurement of weight/height, administration of Tetanus Toxoid vaccine were practised always in almost all the facilities is commendable. However, diagnosis of STIs, proteinuria and bacteriuria is to be improved on in all the facilities (McGregor, French, Parker, Draper et al., 1995; Duckitt & Harrington, 2005).

6.4 NATURE OF THE PROCESS OF MATERNITY CARE

The merged finding of the data sets from quantitative and qualitative strands that come under the process, namely: timeliness of services, appropriateness and consistency with standard, are discussed in this section.

6.4.1 Timeliness of services rendered to women and their new-borns in PHC facilities

From the study, it became clear that most services, including antenatal care, are provided in a fragmented manner. This implies that each PHC facility was operating antenatal clinics once or twice per week. This was likely to be responsible for overcrowding on clinic days, consequent prolonged client waiting time and why women keep standing inside and outside PHC buildings, while waiting to be attended to. Services such as antenatal, family planning, voluntary counselling/HIV screening, immunization, and postnatal care in PHC facilities are expected to be done in an integrated manner; that is, a situation clients can come to a facility for any of those services any day of the week, anytime of the day and he/she will be attended to without being turned back (WHO, 2006). If antenatal clinic is operated in an integrated manner (that is, daily) the patient load per clinic visit will be less and this will, in turn, reduce workload on health workers and subsequently reduce the waiting time for facility users (Ekman, Pathmanathan & Liljestrand, 2008).

6.4.2 Service appropriateness and consistency with the current professional knowledge

From the findings of the study, it was clear that the majority of the health workers did not demonstrate the level of competence and proficiency expected of professionals trained to undertake antenatal care and child delivery care. More than two-thirds of the health workers had no idea of the concept “Safe Motherhood,” while close to half of the health workers did

not know what to do to arrest postpartum bleeding if it occurred in their facilities. It was confirmed that over 90 percent of them were attending to pregnant women for clinical assessments and women in labour for childbirth and about 30 percent of the health worker were not proficient in perineal or episiotomy repair. More than 90 percent were not skilled in Life-Saving Scheme (LSS) and Post Abortion Care (PAC); about 40 percent could not perform manual removal of retained placenta – a situation that may lead to severe vaginal bleeding. This was because a majority of the health workers were neither nurse-midwives nor midwives and therefore had little or no idea of midwifery practice (Harvey, Blandón, McCaw-Binns, Sandino et al., 2007). All the heads of facilities and MOHs suggested that all the health workers who were neither midwives nor nurse-midwives were to go into the community for health promotion and illness prevention programmes. By virtue of their professional training/qualifications, CHEWs are for health outreaches, while the HAs are to provide supportive functions to the nurse/midwives. Again, providing quality intrapartum care and resuscitation is a vital opportunity to ensure a good start in life for all new-borns, and skilled birth attendants (midwives) hold the key to quality survival of every new-born (Blencowe, et al., 2011). Provision of external source of warmth, including skin-to-skin, enables normal transition from foetal life and reduces deaths from hypothermia and the midwives hold the key as well (Moore, Anderson, Bergman, Dowswell, 2007; Kumar, Shearer, Kumar, Darmstadt, 2009). Although basic new-born care (BNC) processes are simple, essential and implementable by everyone in every setting where births occur, resuscitation involves relatively more complex processes and the use of bag and mask equipment is generally restricted to skilled, trained birth attendants (nurses, midwives and doctors) (WHO, 2012). The shortage of midwives compared to other categories of PHC staff is likely to be responsible for ineffective outcome confirmed by the nearly half of health workers who affirmed that the prenatal services provided in their facilities were not

effective. Therefore, the disproportional ratio of the nurse-midwives to other categories of PHC staff should be looked into because it is apparent in this study that it contributed to the reported gross deficiencies.

In addition, the results of the study confirmed that women in labour were not monitored with partograph (a composite graphical record of maternal and foetal key data during labour; entered against time on a single sheet of paper. Relevant measurements include statistics such as cervical dilation, foetal heart rate, duration of labour and vital signs). Reasons given for non-use were unavailability of partograph and lack of skill to use it. It is expected that a nurse-midwife who is well trained in the use of partograph for monitoring of labour progress could afford to provide a copy by photocopying for each patient he/she is to attend to in labour, especially in situations where conventional patients' records are recorded inside exercise books owing to unavailability of medical record files. This is capable of causing wrong diagnosis, delay identification of risk of possible complications and inappropriate intervention (Orhue, Azike & Osemwenkha, 2012).

A situation where over 40 percent of health workers who attend to women in labour are not trained in LSS and PAC, not skilled enough to perform immediate removal of retained placenta could be detrimental to safe motherhood in the community. The level of proficiency of about 60 percent of the health workers, who claimed they could perform the life-saving procedure, irrespective of their qualification, was not evaluated in this study. However, their competence and proficiency are questionable since most of them were neither midwives nor nurse-midwives; this requires further study. This kind of situation, where the population of CHEWS, CHOs and HAs are far more than that of trained nurse-midwives was reported in the study done in Ogun State, Nigeria by Oladapo, Iyaniwura, and Sule-Odu, (2008).

The results of this study revealed another vital issue of clinical importance –lack of written guidelines for midwifery/obstetric practices to guide health workers’ decisions on special procedures and emergency interventions. Provision of written guidelines to guide a health worker in their midwifery and obstetric practices is strongly recommended in order ensure safe midwifery and obstetric practices in facilities, as this will reduce clinical errors to the barest minimum (Parsons & Griffiths, 2007). Wyatt, Paterson-Brown, Johanson, Altman et al. (1998) found that it improved practice a little but Parsons & Griffiths, 2007 observed that the use of guidelines has great benefits to midwifery practice, even in planned home child deliveries. A commonly accepted definition of a clinical practice guideline is “a systematically developed statement to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” (Kish, 2001). Guidelines are written to improve the quality of care, to improve the appropriateness of care, to improve cost-effectiveness, and to serve as educational tools (Centres for Disease Control, 1996).

Through the results of this study, it became obvious that mothers and their new-borns were not offered some very vital services, such as focused antenatal care (FANC) postnatal care and laboratory services (for example, haemoglobin, packed cell volume, neonatal serum bilirubin checks, screening for sexually transmitted infections). Such deprivation puts women and their babies at risk of serious complications during pregnancy, labour and postpartum. For instance, a situation where nearly three-quarter of the health workers confirmed that the serum bilirubin level of neonates born in their facilities was not monitored is not good enough and, therefore, should be discouraged. It is expected that neonatal care in any formal facilities with skilled health personnel, including PHC centres, ought to be better than informal centres in terms of delivering quality care that is evidence-based. However, it is a serious issue when a formal health facility cannot fulfil the expected role. For example, now that discharging healthy term new-borns from the hospital after delivery at increasingly

earlier postnatal ages has recently become a common practice for medical, social, and economic reasons, it has been shown that new-borns whose hospital stay is less than 72 hours are at a significantly greater risk for readmission for hyperbilirubinemia (a serious neonatal health problem characterised by jaundice capable of causing severe irreversible brain damage) than those whose stay is 72 hours or more (Kaplan, & Hammerman, 2005). Hyperbilirubinemia is the most commonly reported cause for readmission during the early neonatal period (Kaplan, & Hammerman, 2005).

Moreover, this study recognized situations of disrespectful treatments that women received from health workers during antenatal visits or labour. These treatments included denial of choice of position to assume during labour and childbirth, denying women right to choose who to stay with them in labour, enforcement of cooperation on women in labour by bullying, scolding, beating and mishandling. The findings described above were similar to the report of the study by Oladapo et al., (2008) in Sagamu, Nigeria, where approximately two-thirds of the women were unhappy about their involvement with decision-making with respect to birth planning and postpartum contraception. Over half of the respondents also recorded their displeasure on their inability to decide on the providers that attended to them.

In all these respects the public health care providers are often perceived as less attractive (Lindmarka, Heinz Berendesb & Olav Meirikc, 1998) because what women appreciate is rather the personal interest taken in their problems, privacy, continuity of care, and to be treated individually and with respect in friendly surroundings (Lindmarka et al., 1998). The health workers' practice of taking sole decision on whether or not patient's relations should be allowed into labour room and who should or should not stay with the women in labour is a gross violation of the women's right (Aluko 2015). According to Oladapo et al. (2008), health workers need education on patients' rights and choices and should be taught how to

involve women in the decision-making process concerning their own maternity care. This study did not identify the reasons for the health workers' restriction of patients' relative from labour room; however, it is not out of place if future studies could seek to identify the reasons.

6.5 DESCRIPTION OF OUTCOME OF MATERNITY CARE SERVICES

The results of the study confirmed that, out of the 730 women who participated in the study, about 90% received prenatal care and 22% registered in two different health facilities for prenatal care for various reasons such as proximity of the facilities to their residences, cost of care, attitude of health workers, unavailability of 24-hours services in some centres, spiritual care in the faith-based centres, and fear of developing complications that may not be properly handled in some facilities of their more preferred choices. Those who did not register for prenatal care gave similar reasons for their action. The findings agree with that of Onah, Ikeako, & Iloabachie (2006), where women gave reasons for their choice of place of prenatal care and childbirth. Although that a large population of the women who received prenatal care is a good development, it is important to look for a way of discouraging the 10 percent who declined prenatal care. Besides, antenatal registration in two different centres seemed to be a sign of indecision about the actual place of birth between the two alternatives. The reasons given by the Enugu women for choosing two places for prenatal care was similar to that of the women in this current study (Onah et al., 2006).

The findings equally revealed that the women rated the other places of childbirth higher than the PHC facilities under study. This implies that most of the women came primarily to the PHC setting for child immunization. This is because other places of childbirth, such as faith-based centres, TBA centres, and private hospitals do not usually offer immunization services.

Onah et al. (2006) reported increased use of prenatal care among Enugu women, in the south-eastern part of Nigeria.

From the findings, it was apparent that women exercised their legitimate rights in choosing facilities they wanted for either their prenatal or child delivery care. This expected behaviour calls for some considerations; because it has been argued that patients do not know what the professionally acceptable level of care is (Kaim-Caudle & Marsh 1975). For instance, in the study conducted by Ehiri, Oyo-Ita, Anyanwu, Meremikwu and Ikpeme (2005) among women in Calabar, south-southern part of Nigeria, many of the mothers in that study perceived the quality of care they received as satisfactory, while shortage of medications, lack of preparedness for emergencies and long waiting hours were common complaints. It is agreed that dissatisfaction is an indication that services delivered are lacking in some aspects (Weiss, & Rose, 1988; Rosenthal & Shannon, 1997; Edura Wan Rashid, & Kamaruzaman Jusoff, 2009). Besides, lack of medications and long waiting hours have been shown to contribute to poor utilization of services (Sauerborn, Nougara, & Diesfeld, 1989; Katung 2001). Therefore, all facilities providing maternity care are to be monitored for compliance with respective to the expected standard of care rendered to women.

The emphasis on facility-based care and emergency obstetric care from those concerned with maternal survival is understandable, but advocates of new-born and child survival have placed more emphasis on community-based strategies, with particular reference to the Alma-Ata declaration of 1978. In spite of this advocacy, no clear, consistent, and agreed strategy for integrated MNCH care at primary care level has emerged till date. Rather than discouraging women from receiving care from one facility or the other, improving maternity services in various facilities will likely yield a better outcome.

From the results of this study, it was observed that, among the 278 who received prenatal care in the PHC facilities under study, more than one-quarter eventually did not deliver there and more than 40 percent of those who delivered in the PHC facilities where prenatal care was received would not return to the same centres in subsequent pregnancies. Besides, these women would not be willing to recommend to other women the PHC centres where they delivered their current babies. Mpembeni, Killewo, Leshabari, Massawe, Jahn, Mushi, & Mwakipa,(2007) reported a similar finding in their study among Tanzanian mothers, where only 46.7% of the women who booked for antenatal care in health facilities returned for childbirth. However, since the current study is institution-based, it may not be possible to have reported accurately the percentage of home deliveries.

The study showed the results of the rating of the health facilities the women used for prenatal and child delivery care. The rating was done on a 5-point Likert scale. The aspects rated by the women included: environmental hygiene, labour ward, toilet, bathroom, building appearance and staff attitude. Other health care facilities were rated significantly higher than the PHC facilities under study by those who accessed prenatal and child delivery care in other health care facilities. The report of the rating further confirmed that most of the PHC facilities require complete overhaul in respect of the aspects considered in the rating (that is. environmental hygiene, labour ward, toilet, bathroom, building appearance and staff attitude).

In addition, the study revealed various expressions of dissatisfaction with different aspects of the maternity services by the women. Those aspects included the following: type of services, condition of building infrastructure, inadequate equipment and medications, attitudes and incompetence of the health workers. Regarding health workers' attitudes, a situation where health workers become fond of nagging, bullying and treating pregnant women and women in labour with disrespect is far from the minimum decorum expected from health workers. Such

attitudes led to situations where pregnant women stopped going to PHC facilities for clinic visits, because the health workers were not behaving well to them.

Apart from that, a situation where pregnant women or postnatal women found no place to sit for the period of waiting for lack space is dehumanising and tantamount to abuse of their right to respectful maternal care (Bowser & Hill, 2010). Every woman has the right to be treated with dignity and respect. No one can humiliate or verbally abuse a woman for any reason. Service providers must ensure that women are as comfortable as possible during procedures (Bowser, & Hill, 2010; Aluko, 2015). Similarly, it is very discomforting and less dignifying for a woman who has newly been delivered not to have a place she could empty her bowel, empty her bladder or take her bath despite the usual soiling from vaginal fluid/blood that commonly characterises labour and childbirth. The degree of dissatisfaction was expressed the FGD participants during data collection procedures. This unacceptable condition of most of the PHC facilities requires immediate intervention from the appropriate stakeholders. It is a form of denial of human right to dignifying health care because it makes them uncomfortable and, therefore must be discouraged (Bowser & Hill, 2010; Aluko, 2015). Moreover, health workers should be carried along during planning, designing and construction of health facilities, as suggested by one of the medical doctors during the interview. Besides, it may be more appropriate to use buildings that were originally designed for residential purpose but were later turned to health facilities for dispensaries or health posts only. More spacious pieces of land should be sought from the community whenever PHC facilities that are meant to provide maternity services are being considered. On the aspect of competence of health workers, patients become dissatisfied with any behaviour that depicts the health worker's incompetence. For example, in facilities where new-borns were not weighed, examined for abnormalities, including diagnoses of neonatal jaundice, the women

in this study viewed such as evidence of incompetence on the part of the health workers concerned.

The various evidences of patient dissatisfaction with the quality of maternity care services that were offered to them in the PHC facilities have been implicated for reduction in use and non-use of formal public health care facilities. A Tanzanian study by Mpembeni et al., (2007) reported a similar situation, where only 46.7% mothers returned to health care facilities for childbirth out of the 99.8% who registered for prenatal care; and out of these (46.7%), only 44.5% were attended to by skilled birth attendants. However, the Tanzanian study was purely a quantitative study, which employed structured questionnaire only for data collection. Thus, the kind of methods of data collection limits participants' explanation of health-seeking behaviours but the presence of an interviewer allows for complex questions to be explained, if necessary, to the interviewee (Phellas, Bloch & Seale, 2011).

The findings of this study again showed that the population of women who eventually delivered their babies in the studied PHC settings were significantly fewer than those who commenced antenatal care in the centres (Table 4-18). Similarly, the population of mothers who brought their babies for immunization was significantly more than mothers who actually delivered their babies at the PHC facilities (Table 4-18). This implies that women who utilize other health facilities for prenatal and/or childbirth converged on the PHC centres for child immunization. The significant disparities between the above data suggest that the PHC facilities require attention and intervention.

6.6 IDENTIFIABLE CONCEPTS IN THE STUDY

The phenomena that were identified from the data collected and analyzed in the first phase of this study are listed under categories using the Donabedian's model of quality care. The phenomena are presented in Table 6-2. These phenomena form the concepts that were related

together to developed the model in chapter seven of this report. Section 6.7 presents the list of identifiable concepts within the entire study, while Table 6-2 presents concepts captured by respective research tools (i.e. questionnaire, checklist FGD and IDI). In addition, the concepts from the study was categorised under the three components of Donabedian's model – structure-related concepts, process-related concepts and outcome-related concepts. Identification of concepts from the first phase of this study is an initial but crucial step in model development, because the step serves as prerequisite for the next one. The first two concepts – system of funding and system of monitoring/supervision were raised as unique issues critical to improvement of maternal and new-born health in the local government areas and in the country as a whole.

6.7 Other identifiable concepts within the entire study

1. Funds and funding system in PHC
2. System of monitoring and supervision
3. Respectful Maternity Care (RMC)
4. pregnancy was unwanted
5. Prenatal service users
6. TBA centre
7. Faith-based clinics
8. Private hospitals/clinics
9. PHC centre
10. Formal mission hospitals
11. State/Federal hospitals

Table 6-2: identifiable concepts in the study

DATA TYPE	STRUCTURE-RELATED CONCEPTS	PROCESS-RELATED CONCEPTS	OUTCOME-RELATED CONCEPTS	NEW IDENTIFIED CONCEPTS
Client survey	<ol style="list-style-type: none"> 1. Lack of accessibility to facilities 2. Incompetent health workers 3. Distance to facilities/cost of transportation 4. Building appearance <ul style="list-style-type: none"> • Environmental hygiene • Labour wards, • Toilets and bathrooms 	<ol style="list-style-type: none"> 1. Too expensive service and financial constraint 2. Non-availability of 24-hour service 3. Spiritual care in the faith-based centres 4. Respectful maternity care 	<ol style="list-style-type: none"> 1. Dislike for service provision 2. Users of more than one health facilities 3. Non-user of prenatal service 4. Fear of developing complications 5. Client satisfaction – recommendations – attitudes of health care givers 	
Health workers survey	<ol style="list-style-type: none"> 1. Few populations of qualified nurse-midwives 2. More numbers of health workers ageing or nearing retirement year 3. Domination of PHC centres with CHEWs and non-nurse CHOs 4. Lack of relevant knowledge of health workers – repair of tears, manual removal of retained placental 5. Absence of continuing education for staff development 	<ol style="list-style-type: none"> 1. Antenatal care model – traditional; <i>queried</i> modified FANC 2. Unskilled health workers & risky practices 3. Non-use of partograph to manage labour 4. Lack of written guidelines for midwifery practice 5. Unorganized and irregular postnatal clinic 6. Lack of neonatal wellbeing – bilirubin monitoring before discharge 7. Disrespect attitude of health workers 		

DATA TYPE	STRUCTURE-RELATED CONCEPTS	PROCESS-RELATED CONCEPTS	OUTCOME-RELATED CONCEPTS	NEW IDENTIFIED CONCEPTS
PHC facility survey	<ol style="list-style-type: none"> 1. Poor hygiene of facilities – environment, toilets, bathroom 2. Inadequate space – antenatal clinic, lying wards, labour ward, keeping ill patients in the same room with obstetric patients, 3. Site of building structures in noisy, unhygienic environment 4. Conditions of available beds and mattresses 5. Unavailability of laboratory facility 6. No regular functioning supply of electricity and electric generating set 7. Lack of sufficient portable water source 8. No means of communication – telephones, mobile phones 9. No ambulance with resuscitation gadgets 10. Inadequate Means of aseptic techniques 11. Availability of essential items for management of labour 12. Availability of basic items for prenatal and child delivery care 13. Availability of essential medications 	<ol style="list-style-type: none"> 1. Fragmented ANC services 2. Services being handled by semi-skilled health workers 3. Prolonged waiting time 4. Long standing of client in and out of PHC building 5. Competence of health workers 6. No organized recruitment exercise 7. One medical doctor/LGA 8. Conversion of residential apartments to maternity facilities 9. Training and retraining of health workers for skill acquisition 	<ol style="list-style-type: none"> 1. Ratio of delivery cases to child welfare cases 2. Ratio of prenatal attendees to childbirth attendees 	<ol style="list-style-type: none"> 3.
FGDs and IDIs		<ol style="list-style-type: none"> 1. Uncoordinated antenatal and maternity care practices 2. Non-use of partograph for labour monitoring 3. Attitudes of health workers 4. Timeliness of services rendered to women and 	<ol style="list-style-type: none"> 1. Prolonged waiting time 2. Preference for alternative birthing centres 3. Preference for home delivery 4. Refusal to have bath in the facility 5. Improvisation for every 	<ol style="list-style-type: none"> 1. System of funding 2. System of monitoring/supervision

DATA TYPE	STRUCTURE-RELATED CONCEPTS	PROCESS-RELATED CONCEPTS	OUTCOME-RELATED CONCEPTS	NEW IDENTIFIED CONCEPTS
		<p>their new-borns in PHC facilities</p> <p>5. Monitoring of services and supervision of health workers</p> <p>6. Uncoordinated antenatal and maternity care practices</p> <p>7. Incompetency of health workers</p>	<p>necessary items</p> <p>6. Praise and applauding well-behaved health workers</p>	



6.8 SUMMARY OF CHAPTER

Chapter six provides discussion of both quantitative and qualitative strands in an integrated and converging style. The findings from both strands of the study were mixed. In addition to the discussion of the socio-demographic variables of the respective participants, the discussion was treated under the three components of the Donabedian's quality of service model (that is the structure, the process and the outcomes) as in the previous chapters. The discussion was done in an elaborate clear style with literature support.

Three new concepts (system of funding and system of monitoring/supervision) emanated from the study and PHC experts wanted the first two (system of funding and system of monitoring/supervision) to stand out when issues affecting the PHC is to be addressed. The third concept is the provision of respective maternity care (RMC) to women during antenatal, labour and childbirth.



CHAPTER 7

7 DEVELOPMENT OF A MODEL FOR PRIMARY LEVEL MATERNITY CARE

7.1 INTRODUCTION

This chapter discusses the second phase of this study (Model development). As earlier mentioned in chapter three, this phase is sometimes referred to as theory-generation, theory construction, theory design and theory building (McKenna and Slevin, 2011). This second phase takes its root from the results generated from the first-phase (situation analysis of primary level maternity services) (McKenna and Slevin, 2011; Chinn and Kramer, 2014). In this chapter, all themes and categories generated from the phase one of this study will be used for the proposed model development. Thus, the concepts from the results and discussions will serve as the building blocks for the proposition statements and theory (model), Step 1 of the model development formed part of phase one of the research. Next to it is step 2, which deals with identifying the phenomena of interest within the findings of study.

7.1.1 Step 2: Identifying concepts, themes and categories emanated from data

The tables below describes the concepts the theme/categories needed for step 3, which is concerned with stating proposition statement. The first column contains the categories, while the second column describes clusters of concepts and phenomena that address the participants. The third column describes the quality criteria that the study participants expect in PHC facilities designed to provide maternity care for women and their new-borns (Table 7-1; Table 7-2; Table 7-3).

Table 7-1: Describing step 2 of the TGR

THEMES/CATEGORIES	CONCEPT DEFINITIONS	EXPECTED CRITERIA	
BUILDING	A. Location i. Sites ii. Number of facility per population iii. Space	i. Nearness to users (no more than 20 minutes walking) ii. Accessibility to users (road/street) iii. Noise-free environment (vehicular or electronic gadget noises) iv. Solid/liquid waste-free Environment (No open drainage, and dumping sites around the building)	
	B. Architecture/Infrastructural designs <u>Exterior & Interior designs</u> <ul style="list-style-type: none"> - Reception - Out Patient Unit - Antenatal clinic Unit - Lying ward - Labour rooms - Family Planning Unit - VCT/HIV Screening - Separate Male & Female wards for clients with minor ailments 	i. Attractive (Admirable to client and client happy to return there) ii. Safe (clients are protected from physical and psychological harms) iii. Habitable (good enough for clients and staff to be without loss of dignity) iv. Reputable (that clients can boast of it) v. Easy recognition to users (Sign post with name of facility prominently displayed) vi. Conspicuous (Not hidden from prospective users) vii. Decent structural design viii. Conduciveness (comfortable for client even on admission) ix. Spacious – commodious and accommodate all service users and staff x. Unit plan allows for integrated services	
	C. Liquid/solid waste management facilities i. Toilets ii. Bathrooms iii. Water source(s)	i. Number of toilets/patient flow ii. Number of bathroom/patient ratio iii. Cleanliness iv. Adequate of water source(s) v. Safe water source(s)	
	BEDS & ACCESSORIES	A. Number of bed frame + mattresses per patient population	i. Number of bed frame/obstetric patient ratio ii. Number of bed frame/gynaecologic patient ratio iii. Number of bed frame/other patient with minor ailments iv. Number of water-proof mattress/ obstetric patient ratio v. Number of water-proof mattress/ gynaecologic patient ratio
		B. Number of bed linen/bed/day	i. Number of bed linens/patient ratio
		C. Condition/status bed materials	i. Bed with wheels

THEMES/CATEGORIES	CONCEPT DEFINITIONS	EXPECTED CRITERIA
		ii. Adjustable and detachable: <ul style="list-style-type: none"> - to suit therapeutic positions/patient comfort - to suit therapeutic height/patient comfort
BASIC/ESSENTIAL ITEMS	A. Essential infrastructures <ul style="list-style-type: none"> i. Alternative source of light (electric generating set) ii. Water supply iii. Staff quarters iv. Telephone/radio call/mobile phone v. Ambulance with resuscitation gadgets 	<u>Communication sharing gadgets</u> <ul style="list-style-type: none"> i. Available and functioning ii. Prepaid Close users Group (CUG)
	B. Essential items for management of labour <ul style="list-style-type: none"> i. items for infection prevention/control ii. Running water iii. Universal precaution items iv. Mayo stands v. Functioning sterilizers vi. Basic clinic items vii. Essential drug viii. Items for management of retained placenta, episiotomy & repair ix. Resuscitation & Anaesthesia items x. New-born supplies xi. Pain management supplies 	<u>Transportation facilities</u> <ul style="list-style-type: none"> i. Available with ambulance driver attached <ul style="list-style-type: none"> i. Available ii. Adequate iii. Sufficient number of items per patient flow iv. Functioning v. Availability of efficient and function alternatives, when spoilt or faulty
	A. Registered Nurse/midwives <ul style="list-style-type: none"> - Duly registered with the N&MCN - Update with current knowledge 	<ul style="list-style-type: none"> i. Number of Reg. Nurse/midwives to patient ratio ii. Competent/proficient in antenatal, delivery and postnatal care iii. Continuing education programmes for health workers
	B. Other Health Workers <ul style="list-style-type: none"> i. CHOs (without midwifery training) ii. CHEWs ii. HAs iii. Laboratory Technicians iv. Laboratory Scientists 	<ul style="list-style-type: none"> i. Number of CHEWs ,CHOs and HAs to patient ratio ii. Number of Laboratory Technicians & Scientists to patient ratio
	C. Staff recruitment & exiting <ul style="list-style-type: none"> i. Recruitment ii. Transfer of services 	<ul style="list-style-type: none"> i. A system to oversee mode, timing, frequencies of staff recruitment and staff exiting service.
STAFFING		

THEMES/CATEGORIES	CONCEPT DEFINITIONS	EXPECTED CRITERIA
	iii. Retirement/resignation iv. Disability and death	
FUNDING	A. Funding building infrastructures equipment and supplies i. Land for building ii. Building construction iii. Hospital equipment & instruments iv. Essential medications v. Supplies <u>POSSIBLE FUNDERS</u> - Governments (Federal, State & Local) - Endowment funders - Non-governmental organizations (NGOs) - Individual philanthropists - Revolving funds	i. Adequacy ii. Sustainability iii. Effectiveness iv. Efficacy
MONITORING & SUPERVISION	A. Standard Control & monitoring i. Setting standard for facility location ii. Approving building designs for facilities iii. Ensuring even distribution of facilities across LGAs iii. Maintenance of facility infrastructures and equipment B. Service supervision/monitoring i. Setting standard for midwifery practice ii. Inspection of facilities and service provision iii. Supervision of midwifery practice iv. Retraining of health workers for update of skills and knowledge	i. Efficient systems of standard monitoring/control ii. Setting criteria for accreditation of facilities for maternity service provision iii. Written guidelines and policy for locating facilities iv. Withdrawal of accreditation and closure of facility that are below the standard i. Efficient systems of supervision ii. Setting criteria for midwifery practice at PHC level iii. Regular inspection of facilities and practices of midwives and other health workers iv. Specification of job description of individual staff based on qualifications v. Supervision of health care practice vi. Sanctioning of erring staff based on degree of offences

Table 7-2: Process-related concepts

CLASSIFICATIONS	DEFINITIONS	EXPECTED CRITERIA
STAFF ATTRIBUTES	<p>A. Staff competence *Competence in:</p> <ul style="list-style-type: none"> i. administration antenatal, intrapartum & postpartum care ii. LSS iii. adult, child & neonatal resuscitation iv. episiotomy & repair v. use of partograph for management of labour vi. prenatal care vii. VCT/HIV screening viii. Family planning ix. infection prevention, control & universal precaution <hr/> <p>B. Staff attitudes</p> <ul style="list-style-type: none"> i. Respect for clients' rights to: <ul style="list-style-type: none"> - quality care - informed consent - privacy - prompt care - choice of care, treatment, place of childbirth etc. - health information - socio-psychological supports ii. Dignifying treatment of clients iii. involvement of clients & significant others in care iv. Service charges in line with rules & regulations guiding practice 	<ul style="list-style-type: none"> • Certification (certificated by a relevant body) • Proficient (skilful in professional practice) • Competence (qualified, knowledgeable, having ability) • Availability (obtainable to users).

Table 7-3: Outcome-related concepts

CLASSIFICATIONS	DEFINITIONS	EXPECTED CRITERIA
CLIENTS' SATISFACTION	<p>A. Expression of satisfaction</p> <ul style="list-style-type: none"> i. with care received from staff ii. treatment received from staff iii. respectfulness of service received iv. Timeliness v. Accessibility, availability and affordability of service vi. Competence and skills of staff. vii. preferential treatment for/against clients viii. Clients' preference for integrated spiritual care <p>B. Attrition ratio in population of service users</p> <ul style="list-style-type: none"> i. Antenatal care users/child delivery service users ratio ii. Child Welfare service users/child delivery service users ratio iii. Facility rating by clients/relations iv. Staff rating by clients/relations v. Willingness to recommend facility to prospective other users vi. Willingness to reuse facility another time <p>Magnitude of cost incurred for service use</p>	<ul style="list-style-type: none"> i. Expression of satisfaction ii. Attending to women with respectful manner iii. Handling women with dignity. iv. Prompt and timely care v. Making services accessible, available and affordable to women.



KEY:

CHEWs - Community Health Extension Workers

CHOs – Community Health Officers

HAs – Health Assistants

7.1.2 Step 3: Developing statements or propositions that propose how two or more concepts are related

The essence of the proposed model is to improve the quality of services that are provided for women and their new-borns in PHC-based maternity facilities in order to achieve improved women and neonatal health. The improved health of the women and their new-borns is the grand (summative) dependent variable of the current study. For purpose of clarity, the

researcher classifies the proposition statements into two interrelated categories. The two classes are:

- iii. Intra-component proposition statements.
- iv. Inter-component proposition statements.

The Intra-component propositions: are statements that state relatedness or link between two or more concepts of the same component of the quality model. For example, when two different concepts under the same component are linked together in a proposition statement, such statement is referred to as intra-component proposition (McKenna & Slevin, 2011; Chinn & Kramer, 2014).

The inter-component proposition statements: are statements that link together two or more concepts belonging to different components of the quality model in an interrelated manner. For example, when a statement links up a concept under the structure to another concept under a different component, for example process or outcome, it is referred to as inter-component proposition statement (McKenna & Slevin, 2011; Chinn & Kramer, 2014) (Table 7-4).

Table 7-4: Proposition statements towards model development

Concepts/themes/categories	Proposition statements
Client's satisfaction and recommendation of facilities/services	The possibility that a user (client) will recommend a facility/service to other potential users is dependent on the extent to which the facility, or service received is satisfactory to her.
Client's satisfaction and attrition in population of users of services	The possibility that a woman who book for antenatal care will return to deliver her baby/babies in the save.
Recommendation and attrition in population of service users	The possibility that there will increase or decrease in the use of a facility or service is

Concepts/themes/categories	Proposition statements
	dependent on the recommendation the users will pass on to other potential users.
Staff recruitment/exiting and staff-patient ratio	The rate of recruitment/exiting of staff influences the staff-patient ratio (manpower size). Thus, the higher the recruitment of staff the higher the staff-patient ratio; the higher the exiting (through death, retirement, transfer resignation, disability) the less the staff-patient ratio.
Building infrastructures and quality service	The better the infrastructural available in a facility the better the quality of service.
Building and patient's satisfaction	The more attractive, and descent a building infrastructure of a facility the better the level of patient satisfaction.
Choice of place of birth and patient antenatal experience.	The ANC experience of a patient is likely to influence the choice of birth place.
Staff's attitude and utilization of facility or service	The attitude of health caregiver has the possibility of influencing the utilization of the facility or service.
Respectful maternity care and patient's satisfaction	The practice of Respectful Maternity Care (RMC) in a facility will likely influence patient's satisfaction.
Funding (Remuneration) and staff-patient ratio	The extent to which a service is funded determines the status of staff-patient ratio.
Staff-patient ratio and workload and quality of care	There is a close association between staff-patient ratio and workload. Thus, the fewer the staff population the more the workload; consequently, the less the quality of care.
Staff-patient ratio (workload) and staff attitudes	Staff-patient ratio affects staff workload; staff workload consequently affects staff attitudes.
Staff attitude and respectful maternity care	Staff attitudes determine the possibility of administering respectful maternity care.

7.1.3 Step 4: Diagramming: Putting the concepts and propositions into a diagrammatic form

The prepositions in step 3 are put into a diagram, as described by McKenna & Slevin (2011) and Chinn & Kramer (2014). The concepts/theme/categories are clustered together under each of the components of the Donabedian's model, namely: structure, process and outcomes. The interrelationship and interactions among the three components of the Donabedian's model is retained in this new model, because it was confirmed in this current study empirically. In addition, the IDI participants, who were PHC experts and occupied administrative positions in their LGAs and facilities, identified two most prominent problems facing the effectiveness of PHC programmes. They are poor funding and lack of monitoring/supervision. This group of experts were of the view that a system of funding is needed for the effective implementation of PHC programmes, including maternity services. They anticipated a better and improved fund management if there is a system of funding that is independent of government influence and incursion. The second suggestion is a system of monitoring and supervision that will serve as a 'watchdog' for all the components of the new model to ensure effectiveness and efficiency of PHC-based maternity services. Therefore, the prescribed solutions to the two identifiable prominent problems are a system of funding and monitoring/supervision. In this new model, the two were made to be independent of the three components of the Donabedian's model. They are standing out as separate components that are capable of being driving forces for the effective and efficient implementation of the PHC programmes, particularly the maternity services.

Within this model diagram, the existence of a relationship is denoted by an unbroken line. For connecting concepts, an arrowhead at one end indicates an asymmetrical relationship, while an arrowhead at both ends indicates a symmetrical relationship (McKenna & Slevin

2011). Below is the sketch of the model developed from the current TGR design, which utilized the embedded MMR approach for its first phase and five steps for the model development (Figure 7-1).

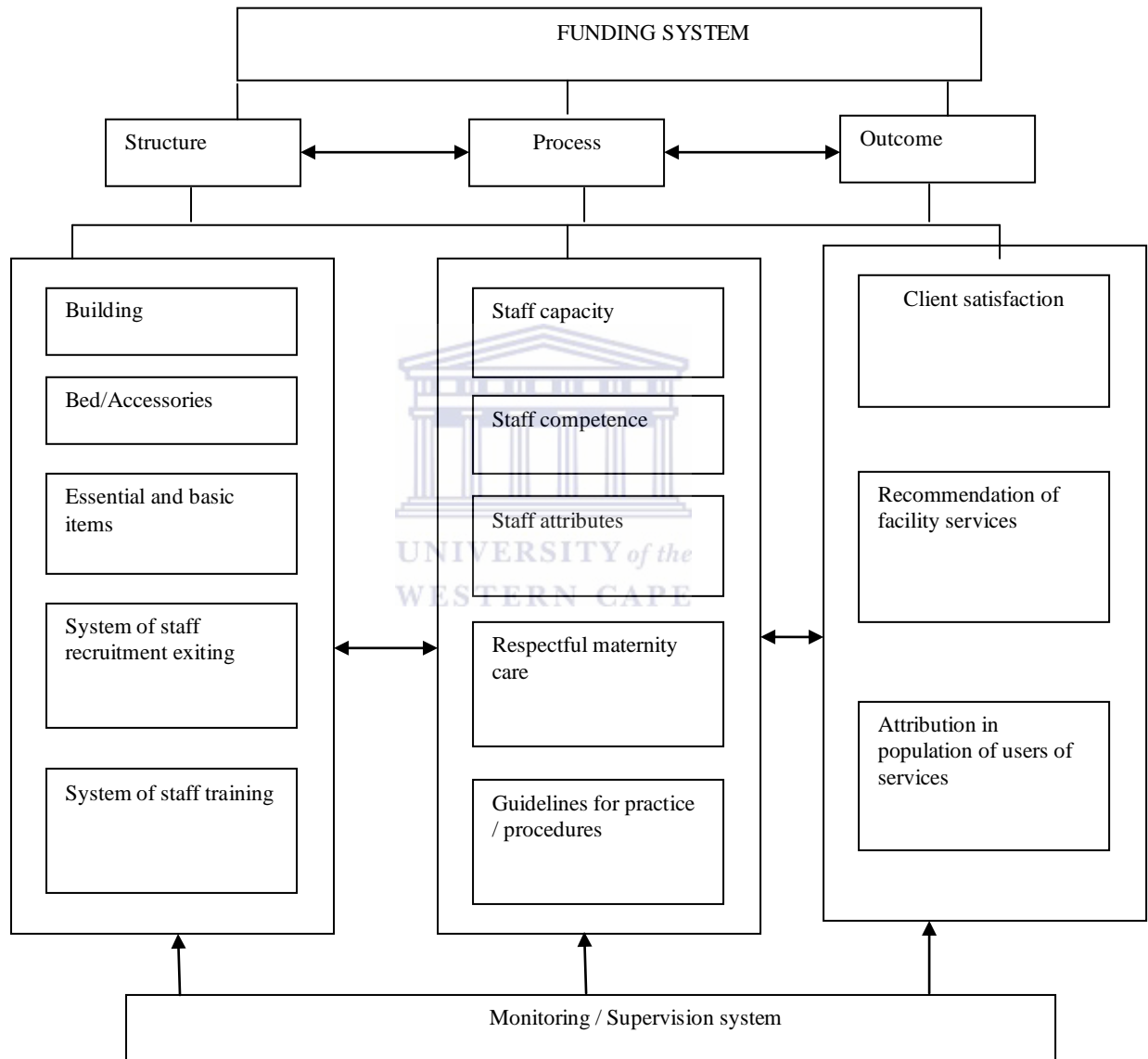


Figure 7-1: Diagram of the Quality Maternity Service Management (QMSM) Model

7.1.4 Step 5: Validating the Model by PHC Programme Experts

The newly developed model which the researcher referred to as *Quality Maternity Service Management (QMSM)* model and presented to PHC experts was validated based on criteria, namely its representation of reality, accuracy, appropriateness and applicability. The model was named as *Quality Maternity Service Management (QMSM)* model, because the study participants viewed two new components (a system of funding and a system of monitoring/supervisions) as management-related concepts. This art of labelling of developed model is in consonance with the guideline provided by McKenna & Slevin (2011), which stated that labelling of developed model should agree with the purpose of the model. The researcher shares this view as well. Chinn & Kramer (2014) argue that empirical knowledge can be authenticated through confirmation or validation. Theory-validating research has a very specific meaning and would imply specific methods to be used. Methods are designed to ascertain how accurately the theory depicts empirical phenomena and their relationships. Theoretic statements can be translated into questions and/or hypotheses. No one study can test the entirety of a theory (Chinn & Kramer, 2014). Theory-validating research usually considers a deductive approach.

The fifth objective of the study (to develop a validated model that will guide provision of quality maternity care in PHC facilities) was addressed in the second phase. The validation of the developed model was the last stage of the development process, as found in McKenna and Slevin (2011) and Chinn and Kramer (2014).

For the purpose of validation of the QMSM model; newly developed model, the model and its detailed description was sent to PHC programme experts with relevant knowledge of public health, maternal child and neonatal health and community midwifery practice, mostly people who actively participated in the first phase of the study. However, one of the MOHs

who participated actively in the first phase of the study had passed on before the validation stage commenced. Similarly, one of the heads of the facilities was not available as well to participate in the validation. Therefore, seven (7) out of the nine (9) PHC experts studied and read the description of the model. Two erudite scholars in the fields of health profession and education were painstaking in reviewing and critiquing the model. Their suggestions and recommendations added value to the model.

Jacobs-Kramer & Chinn, (1988) refer to this as the validation of empirical knowledge by noting and sharing convictions about the applicability of the model to the discipline, without formally testing these convictions using methods of research. The experts tested whether the model was adequate, accurate and represented reality for it to be assumed effective in achieving the goal if applied in midwifery practice. Table 7-5 shows the composition of the experts who participated in the validation process of the model.

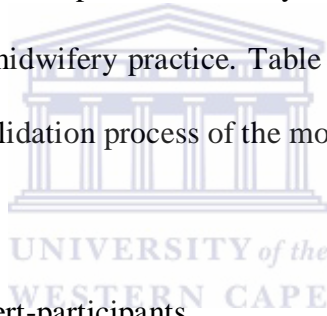


Table 7-5: Model Validation Expert-participants

Designations	Frequency	%
Doctor(MOH)	3	42.9
Chief Nursing Officer (Heads)	4	57.1
Total	7	100.0

The experts rated the model on four criteria (its representation of reality, accuracy, appropriateness and applicability) using a 5-point Likert scale. On the Likert scale, the obtainable score was 20. The maximum obtained score was 16, while the minimum obtained score was 9; the mean score was 14.3 (≈ 14). Initially, two (28.6%) of the participants rated the aspect of ‘Number of bed linens **Table 7-1** below mean score (i.e. < 14 points), while the remaining 5 (71.4%) rated the model above the mean score. Therefore, 71.4% of the experts accepted and confirmed the newly developed model as being valid. As a follow-up, the two

participants who rated the aspect of bed linen of the model below the mean score explained that they did so, because the types of bed linen such as bottom sheets, top sheets, draw sheets and blankets listed in **Table 7-1** were not available in their respective PHC centres. This implies that they actually rated their already existing facilities and not the new model. Therefore, in order to respect the views of the two participants, types of linens were removed from **Table 7-1**. Therefore, the concept of bed linen was left without classification into types. This was done since bed linens are placed for comfort of the clients and each facility or LGA can decide what guarantee clients' comfort. In other words, the researcher is of the view, that bed linens are not necessarily meant to be uniform because factors such as weather, climate may influence the type and numbers of bed linens to be used. However, the 71.4 % confirmation/validation of the new model is unanimously considered as 'good enough' by the PHC experts, scholars (research supervisors) and the researcher (Table 7-6). All the experts unanimously adopted the label '*Quality Maternity Service Management (QMSM)*' model for the newly developed model.

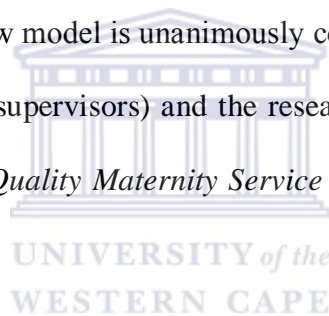


Table 7-6: Model rating by experts

Levels of scores	Frequency	%
Below mean(<14 points)	2	28.6
Mean & above (≥ points)	5	71.4
Total	7	100.0

Key:

Obtainable point = 20; Maximum point obtained = 16; Minimum point obtained = 9
 Mean point obtained = 14.3 (≈ 14)

7.2 DESCRIPTION OF THE QUALITY MATERNITY SERVICE MANAGEMENT (QMSM) MODEL

The model which finally emanated the step-by-step process of development (concept identification concept classification and proposition statement) identifies two different systems that were either unidentified or not conspicuous in other quality of service models such as the Bruce's and Donabedian's models of quality. The two systems are a system of funding and a system of monitoring/supervision. The IDI participants suggested the two systems which they expected to be independent of the influence of the local government.

7.2.1 A System of Funding

The participants observed that health care delivery in Nigeria is essentially politicized. Therefore, the fund coming from various sources (federal government, state government, local government, NGO, revolution fund, and so on) should be managed by a board. The board could be referred to as Primary Health Board. The board is to see to the judicious use of fund meant for primary health care services. The identifiable poor funding was linked with political will and inexplicable diversion of the small amount of fund meant for PHC to other areas of interest.

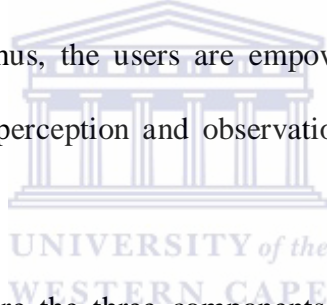
It was suggested that the Primary Health Care Board, if it is created, will be in custodian of the money meant for PHC and not the local government, which have diverse preoccupations. While the board should have a monitoring/supervision unit, the need for a separate system of monitoring/supervision to ensure quality assurance and control was identified.

7.2.2 A System of Monitoring/Supervision

The need for the establishment of a system of monitoring/supervision was identified by the IDI participants. This system is required to set standards for location, facilities, infrastructural design of building and its maintenance, supply of equipment/instruments, and basic and

essential items. Furthermore, the system has to set up standard of practice, job description for the various categories of health workers based on their qualification and competence. The system is to come up with guidelines (written) for practice of various services and procedures in order to ensure uniform standard of practice across PHC facilities.

Moreover, the system is to see to the inspection of facilities, evaluation of services alongside the respective outcomes. The system is to be tasked with the responsibility of accreditation of facilities based on pre-set criteria. In addition, all the elements under the process (staff strength, staff competence, staff attributes, respectful maternity care, client knowledge, and so on) are to be evaluated periodically. In addition, in order to involve the service users (patients and relatives) in the evaluation process, a system of feedback is to be placed at the disposal of the service users. Thus, the users are empowered with useful information to communicate their experiences, perception and observation about the facilities or services they have used.



The new model is able to capture the three components of the Donabedian's model (the structure, process and outcomes). The new model emanated from the analysis of quality of maternity services being provided to women at primary level. Therefore, some concepts that are peculiar to maternal neonatal child health, health came to the limelight. For instance, the concept of Respective Maternity Care (RMC) came to the fore. This new concept is a product of other elements under the process of the new model (that staff strength, staff competence, staff attributes and guidelines for practice/procedures. The new model generated from the current study has five components namely: the system of funding and the system of monitoring/supervision (these first two components are the new concepts, which emanated from the first phase of the current study), the structure, the process, and the outcomes (these three are present in that of Donabedian).

7.2.3 Elements of Structure

The elements of structure include building infrastructures, beds/accessories, essential and basic items/supplies, system of staff recruitment/exiting and system of staff training. These elements are fundamental to the start off of a PHC, including centres designed to operate maternity services. These elements can be described as ‘demand’ in an economist’s term. Minimum standards to measure and analyze their quality are required. This is because the vulnerable categories of women that are likely to use the facilities where they are demanded have rights to quality care and treatment.

The totality of these elements, which is referred to as ‘structure’ by Donabedian was captioned as ‘Program Effort’ by Bruce in his Model ‘Bruce’s Quality of Service Model’ (Choudhry, 2005). In Bruce’s model, policy/political support, resource allocated and programme management/structure is captioned as programme effort (Choudhry, 2005).

The current study isolates two other systems, which the participants referred to as a system of staff recruitment/exiting and a system of staff training as factors vital to quality of services. Since these other systems form elements of process in Donabedian’s model, they were classified as such. Therefore, the staff recruitment/exiting were retained as elements of process in the new model as well. The other factors captured by the study include architectural design and location of building that are meant for service delivery. Since this study reported the demand for rights of women and their neonates/children, the three broad components of the model must be characterized by ‘right’. For instance, the study participants who responded to the client’s questionnaires and FGDs had expectations for structure, process and outcome. This means that it is not enough to have structure, process and outcome; the three must meet the expectation of the customers (service users). Therefore, the new model prefers to refer to the structure as ‘Right Infrastructure’.

The significance of this new concept (right infrastructures) is that it will prevent the usual habit of just building any structure in just any place and later calling it PHC maternity care centre. Even, in a situation where a politician or any philanthropist desires to build a facility for PHC/maternity care; such a building should still be built to specification (spacious, conducive, free from environmental pollution, having facilities for antenatal clinics/wards, labour rooms, lying ward and postnatal clinic that are separate from where sick patients are attended to or admitted). This will prevent the idea of operating health facilities where rules of health and infection prevention are difficult to adhere to. Besides, the status of beds and accessories, such as bed linens, should all meet up with certain criteria. The supply of essential items and basic items should meet a set standard for all PHC facilities, particularly where maternity services are going to be provided.

The need for a system of staff recruitment/exiting was identified. A system of staff recruitment/exiting is needed in all PHC facilities, including centres where maternity services are provided. It is hoped that such system will address the problem of staff/patient ratio disequilibrium that characterizes Nigerian health care delivery, particularly the PHCs. As a result of the dynamic nature of health knowledge, the need for a system of staff training that will see to the updating of knowledge and skills of health workers was identified as well. In addition, right infrastructure (that is, that meet specification and standard) is essential to the delivery of quality care to clients.

7.2.4 Elements of Process

In this study, elements that were related to quality care and treatment of women included staff strength (staff-patient ratio), staff competence, staff attributes, respectful maternity care (RMC) and guidelines for practice/procedures. The study reported the need to address the problem of shortage of manpower in general and the shortage of skilled nurse-midwives

providing maternity services. The idea of engaging CHEWs/HAs to attend to antenatal women and women in labour and childbirth was condemned by FGD and IDI participants.

Moreover, extension of the midwifery service scheme, which is restricted to the Nigerian rural areas, to the PHC in urban centres, like Ibadan, was advocated. This idea has the potential of improving the staff strength (particularly midwives' population) working with PHCs. Furthermore, staff competence is a product of employing health workers for what they are trained for. The CHEWs are trained to disseminate health campaigns and information to communities. Their primary assignment as suggested by their nomenclature is to provide health extension services to people in the community. On the other hand, the midwives have been trained to attend to women during prenatal, natal and postnatal. It is incongruent to task the CHEWs/HAs with the professional roles of midwives.

Another element of the process component is staff attributes. The attributes manifest themselves in the form of attitudes, and ways of treating the clients and relatives. The attitude of health workers has been implicated for low utilization of health services in many studies (Oluwatosin et al., 2011). This element that relates to staff attitude was identified during the course of this study.

The RMC is the rights of all women of reproductive age. The RMC seeks that all the rights of women are respected. These include right of choice of birthing place, right to confidentiality and privacy and so on. In the PHC facilities where maternity services are being rendered, there should be written guidelines for practice/procedures for health workers to follow. For instance, it may be helpful to write step-by-step what a health worker must do to control postpartum haemorrhage. The elements in this component impact significantly on the next one – outcome, because what is done in 'process' and how it is done will determine what the 'outcome' such as clients' satisfaction and clients' return rate will be.

7.2.5 Elements of Outcome

The outcome elements include client satisfaction, recommendation of facility/services and attrition in population of users of services. The elements have interrelated characteristics. For instance, the knowledge of health issues as they affect individual/people will foster utilization of facilities/services. Depending on the kind of service received, the service users will either or be satisfied with the service or not. Consequently, the degree to which the user is satisfied will determine whether she is going to recommend the service/facility to other potential users. The later will subsequently influence the attrition rate in the population of users. Each of the elements under structure, process and outcome has a direct or indirect relationship with one another.

However the relationship between each pair of the component has two-way interrelatedness and thus link together with two-directional arrows. As it can be observed in the current study, the components influence one another. As earlier expressed, the three components (the structure, the process and the outcomes) are to be funded and monitored/supervised by an independent system of funding and a system of monitoring/supervision, respectively. Since the need for standardization has been identified and advocated across the three components, in this study, the structure on ground for maternity services must be right, the process too must be right while the third must be right. In the age of advocacy for Right Maternity Care (RMC), the 'right' ought to affect the three components as reported in this study.

7.3 MERITS OF THE QMSM MODEL

This study has added to stakeholders' understanding of quality health care, highlighting its complex nature. The study has direct implications for primary level health care service providers. They are encouraged to adequately fund, regularly monitor health care quality and

accordingly initiate continuous quality improvement programmes to maintain high levels of patient satisfaction. The findings can be used in the development of an instrument to measure quality of health care services, particularly maternity services. The findings have important implications for policy makers. Their support, in terms of providing necessary resources and establishing supportive rules and regulations is critical to the implementation of the designed model of quality maternity service management to achieve 2030 Sustainable Development Goals (SDGs) (Sachs, 2012).

7.4 SUMMARY OF CHAPTER

This study was conducted to develop a quality maternity service model. The new QMSM model was aimed at enhancing the quality of maternity care services rendered to women and their neonates at the primary-level health facilities with the aim of mitigating the persistent and unabated maternal and neonatal morbidities/mortality. The newly designed model would enhance the implementation and actualization of the United Nations Sustainable Development Goals (SDGs, 2030) in the sampled communities.

The development of the QMSM model was accomplished by the use of the TGR design, which has two distinct phases and five steps. The first two steps were part of the activities of the first phase which employed the embedded MMR approach. The last three steps were activities under the second phase. The climax of the steps is its validation by the PHC programme experts with two other academic scholars.

CHAPTER 8

8 CONCLUSION AND RECOMMENDATIONS

8.1 INTRODUCTION

This last chapter of the report presents the conclusion and recommendations of the current study, which was aimed at developing a model to improve the quality of primary level maternity care services in the LGAs of the state subsequent to the situation analysis of the PHC systems. The section first presents a brief outline of what is contained in each chapter of the report, and then follows the research questions that the study set out to answer. Final conclusions are provided, and recommendations are presented before concluding the whole report.

8.2 BRIEF REVIEW OF CHAPTERS

This study which aimed at developing a model to guide provision of quality maternity care services in PHC facilities sought to answer the research questions that bothered on the status of infrastructure, equipment, instruments and medications available for provision of maternity care to women and new-borns in the selected facilities; the degree to which the services rendered in the facilities are timely, appropriate and consistent with current professional knowledge; the degree to which services rendered in the facilities are satisfactory to the women and uphold their basic reproductive rights; the rates of clients' return for maternity-related services at least within six months prior to data collection; the proposed model be developed and validated to guide provision of quality maternity care in PHC facilities.

Therefore, aim and the set objectives of the study were fully achieved by as stated in chapter one of this report.

Chapter two reviewed relevant literature and theoretical model which guide the study from the start to conclusion, while chapter three presents the methods and materials which were adopted for the study. Chapter four and five presents the report of the quantitative and qualitative strands of the first phase of the study, respectively. The first phase is purely a situation analysis of the PHC-based maternity services in the selected study settings.

The findings of this study in chapter four and five have described and discussed the status of infrastructures, equipment, instruments and medications available in all the studied PHC facilities. The timeliness, the appropriateness of the maternity services rendered in the PHC facilities and their consistency with current professional knowledge were investigated and discussed as well. In addition, the degree to which the services in the facilities were satisfactory to the women and uphold their basic reproductive rights were investigated and discussed. Lastly, the outcome of services rendered in the facilities was described and appropriately discussed in the study. Chapter six discusses the study findings in a converging style, while chapter seven focuses on development of the new model (i.e. QMSM model), which aims at guiding the provision of quality maternity care to women and their new-borns.

8.3 RECOMMENDATIONS FOR POLICY AND FURTHER RESEARCH

The following recommendations are made based on the findings of this study. First, in an attempt to fix the deplorable and/or non-commodious building infrastructures, each LGA should ensure that such buildings are properly designed to accommodate the type of services they are meant to provide. The existing facilities that do not meet the required standard should be reconstructed to address the non-commodious nature of the type III facilities that are meant to provide maternity services or converted to type I or type II primary health facilities, which are meant to serve as dispensaries or health clinics, respectively. In addition, monitoring system should be put in place to ensure that building infrastructures are properly

planned, designed, approved by relevant authorities and constructed by expert engineers. Since building infrastructures would always be subjected to wear and tear as they age, good maintenance culture and practice must be put in place and enforced on regular basis. The absence of this has been responsible for the detestable and deplorable condition of building infrastructures, including toilet and bathroom facilities.

Second, the control and prevention of cross-infection is not likely to be possible in a health facility that lacks adequate good water source and without running taps, as reported in most of the facilities visited. Therefore, availability of properly constructed boreholes or deep wells should form part of the conditions for granting approval to any facility that is meant to provide health care services, particularly maternity services. This will enhance adequate conformity to the hand-washing practice among health workers and their clients in facilities.

Third, the health workers, even if they are well-skilled, will find it extremely difficult to render quality maternal and child care services that are appropriate and consistent with the current professional knowledge in an atmosphere where health workers do not have essential medications, necessary equipment and instruments at their disposal, particularly if obstetric emergencies should occur in facilities. Therefore, all facilities should be provided with the necessary equipment and instruments that are appropriate for the type of services they are designed to provide. Such items in the list above should form part of mandatory requirements for granting approval to facilities to operate the proposed type of facility. In addition, other necessary resuscitating and referral facilities, such as ambulances, oxygen and other resuscitating equipment are vital to facilities that attend to new-borns, gynaecological and obstetric cases.

Fourth, it is incongruent to expect quality services provision from health workers that are not formally trained for such service. Hence, engaging semi-skilled health workers, such as

CHEWs and HAs, in the midwifery practice they were not trained for is tantamount to rendering substandard care to the women and their new-borns that use such facilities. It is a violation of the women's rights to quality care. Based on the implications of the above observation, all type III and IV facilities, where maternity services are to be provided, should be staffed with at least the minimum number of nurse/midwives, while the other semi-skilled workers should be limited to the kind of services their training permits. Furthermore, training and retraining of health workers keep them abreast of current professional knowledge in their areas of specialties. It is capable of enhancing attitudinal changes among the health staff. This will consequently foster quality care provision that conforms to the global standard. By extension, the quality service will improve service use among women. Hence, training and retraining of health workers should form an integral part of service improvement by relevant authorities of the LGAs in Ibadan.

The shortage of manpower requires urgent attention from relevant authorities of each LGA. Regular recruitment system should be put in place by all local government authorities to ensure adequate and appropriate staffing of all types of primary health facilities. This will reduce the workload on staff and cut down patients' waiting time. Similarly, all facilities designed to operate maternity services should be provided with at least the minimum number of nurse-midwives, as found appropriate. Also, a situation where only one doctor, who is also tasked with mandatory supervisory and administrative assignments, is expected to be over all the health facilities in a LGA is counterproductive and equivalent to provision of substandard care to users of such facilities. This also is violation of rights of women to quality care. Therefore, more medical doctors should be employed to improve the quality of service delivery to women, their new-borns and other categories of patients.

Lastly, in order to combat the prolonged menace of poor funding that is currently facing PHC system in Ibadan and Nigeria, at large, a new system of funding has been recommended. Establishment of a Primary Health Board that will be tasked with the responsibility of funding the primary health system that are under LGAs has been suggested in this study. This new idea will allow all the financial allocation from the Federal Government to be transferred directly to the board instead of the local government's purse. This will prevent diversion of funds meant for PHC to other areas. In addition, the board will ensure regular staff recruitment, regular monitoring of facilities for quality maintenance of infrastructures, equipment and supplies.

8.4 CONTRIBUTIONS OF THE STUDY

This study has contributed to the knowledge base of nursing/midwifery, in general, the field of primary health care, community midwifery and midwifery nursing education. Also, the study contributes to the methodological body of knowledge with the various strategies that were implemented in the study.

8.4.1 Contribution to the body of nursing knowledge

In this study the main focus was to develop a model of to improve primary level maternity services in the selected LGAs. The process followed to achieve this aim has provided valuable resource in the form of framework for future researchers. A model was also developed; it highlighted how maternity services could be managed within the PHC system to achieve the deserved and desired quality. This was done with the contribution from PHC programme experts drawn from the selected five LGAs in Ibadan. The study is a tool at the disposal of policy-makers towards achieving the 2030 Sustainable Development Goals (SDGs) in the state and, by extension, in the entire country. Thus, the newly developed model

if adopted or adapted would serve as framework to guide maternity service provision for better outcomes.

A further advantage of the developed model is its ability to be modified for the integration of any other aspects of health care system that needs quality improvement and management. It also provides criteria and guidelines for the establishment of new PHC facilities and gives information on the need of systems of staff recruitment, funding monitoring and supervision towards quality assurance in health care system.

8.4.2 Methodological contribution

The study used the Donabedian's quality of health service model as theoretical framework to guide this study. The entire study adopted the theory-generating research (TGR) method. The embedded MMR approach was employed for the conduct of the first phase. Process of model development, as described by Chinn and Kramer (2014), was meticulously followed in the situation analysis of the PHC facilities. The embedded MMR which involved using quantitative and qualitative methods in one single study for data collection and analysis, was employed for the study.

Besides, different research tools were used for data collection. Due process described by McKenna and Slevin (2011), Chinn and Kramer (2014) was followed to design the new model. This was a new data collection method in the environment where the researcher was based, and this has enriched the researcher's experience in trying out a new technique. In addition, it has enlightened the nurse/midwife educators, who could identify the benefit of the technique in research. Furthermore, the continued participation and involvement of the some nurse educator and clinician both at the university and clinical settings where the research

was conducted provided an opportunity for collaboration amongst staff, thereby setting the stage for further collaboration among colleagues.

8.5 IMPLICATIONS FOR FURTHER RESEARCH

The developed quality of maternity service model was accomplished in this study. The new model can be pilot-tested, implemented and evaluated repeatedly by interested researchers. This will richly contribute to the body of knowledge in nursing/midwifery practice and education. It will certainly inform health policy as well. A larger theory-testing research (TTR) to validate the quality maternity service model using larger population will provide insight on how the model can be adapted and adopted by the various health care systems in Nigeria.

8.6 LIMITATIONS OF THE STUDY

There were some limitations encountered in the course of this study. First, during the conduct of the IDIs, one of the medical doctors who had agreed to participate in the interview could not be reached due to the strike action embarked upon by the members of the Nigerian Medical Association (NMA), which involved all the doctors working with the local government areas. This was the reason for selecting two participants from each LGA, because it was anticipated that if one participant could not be reached for any reason, the second participant from the same LGA would be able to provide needed information in respect of the PHC programme in their local government. Second, some health workers who were on either annual or study or maternity leave could not be accessed to participate in the study. Lastly, only PHC facilities providing maternity services that are considered as 'viable' by management of the LGAs were used for this study. Other facilities that were not designed for maternity services and those that had no regular gynaecological and obstetric patients were excluded based on the recommendations of the LGAs.

In addition, one MOH in one of the five LGAs who actively took part in the first phase of the study had died before the process of model validation commenced and thus could not participate in the second phase. However, one head of facility from the same LGA was able to represent the LGA. In addition, the observational checklist focused on assessment of infrastructure, equipment, instrument, and medications but was not designed to evaluate health workers' competency and proficiency in clinical assessment and management of women during pregnancy, labour, and puerperium. Also, the developed model was validated by few experts drawn from the selected LGAs. Therefore, the model may require validation by larger population.

8.7 CONCLUSION

As discovered in the study, significant percentage of the women who received prenatal care in the PHC facilities did not return there for child delivery. Similarly, many women who received prenatal care and delivered their babies in the PHC facilities would prefer to receive prenatal child delivery care in subsequent pregnancies in other facilities. Moreover, the population of women who registered for prenatal care in more than one place was quite large, while those who utilized faith-based health care facilities did so to access spiritual care and it might be very difficult to influence them to do otherwise. Besides, the deplorable and non-commodious building infrastructures of the PHC facilities were described and discussed. The quality rating of the PHC facilities was significantly less than that of other health facilities in this study. Therefore, renovation of existing structures and construction of new ones to meet appropriate demands of service type of each facility are recommended. In addition, all other dimensions contributing to good quality of maternity care services in all other facilities should be evaluated, restructured and monitored for attainment of acceptable level of quality. Regular staff recruitment and funding systems have been recommended to tackle the existing shortage of manpower and poor funding of PHC system.

A newly model '*Quality Maternity Service Management (QMSM) Model*' was developed on the basis of the reported research findings. From the findings of the study, the need for a model to guide the operation of maternity care services at PHC level became conspicuous and inevitable. Based on the successful validation of the new QMSM model, it is apparent that its adoption and implementation will improve women's and new-borns' health in the LGAs and in the entire country at large. Therefore, the QMSM model is strongly recommended for randomized trial studies and subsequent full implementation in all the LGAs in Nigeria.

8.8 SUMMARY OF CHAPTER

This chapter the recommendations that focus on policy and further researches are presented. The recommendations were based on the study findings and they includes: fixing of the deplorable condition of the building infrastructure used for maternity centres, provision of necessary facilities for infection prevention and control, provision of adequate essential and basic equipment and instruments including those necessary for obstetric emergencies. In addition, training and retraining of health workers, particularly, the nurse-midwives for skill acquisition and competence were also suggested. Most importantly, establishment of a system of funding and a system of monitoring/supervision were strongly stressed in this chapter. Lastly, the implementation of the new model to improve the health of the women and the new-borns was strongly recommended. The model can also be subjected to randomized trial studies for the purpose of evaluating its efficacy in maternity care centres. Furthermore, the contribution of the current study to existing body of knowledge nursing, midwifery, obstetrics and methods presented in this chapter as well. The limitation of the study in terms of logistics and methods was outlined in the chapter.

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APPENDICES

Appendix I Ethics clearance – Senate Research Committee, UWC



OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT

06 February 2014

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:
Mr JO Aluko (Institute for Social Development)

Research Project:	Quality of service analysis towards development of a model for primary level maternity care in Ibadan, Nigeria
Registration no:	13/10/23

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of this study.

A handwritten signature in black ink, appearing to read 'Patricia Josias'.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*

Appendix II Ethics Approval – Research Ethical Review Committee, Oyo State

TELEGRAMS.....

TELEPHONE.....



MINISTRY OF HEALTH
 DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION
 PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA

Your Ref. No.
 All communications should be addressed to
 the Honorable Commissioners quoting
 Our Ref. No. AD/DP/479/596

31st March 2014

The Principal Investigator,
 Department of Research Development,
 Faculty of Community and Health Sciences,
 University of the Western Cape,
 South Africa.



Attention: Alhaji Jor UNIVERSITY of the

Ethical Approval for the Implementation of Your Research Proposal in Oyo State

This acknowledges the receipt of the corrected version of your Research Proposal titled: "Quality of Services Analysis Towards Development of a Model for Primary Level Maternity Care in Ibadan, Nigeria."

2. The committee has noted your compliance with all the ethical concerns raised in the initial review of the proposal. In the light of this, I am pleased to convey to you the approval of committee for the implementation of the Research Proposal in Oyo State, Nigeria.
3. Please note that the committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of the findings as this will help in policy making in the health sector.
4. *Wishing you the best.*



Sola Akintayo (Dr)
 Director, Planning, Research & Statistics
 Secretary, Oyo State Research Ethical Review Committee

Appendix III Letter of Permission Ibadan North LGA



IBADAN NORTH LOCAL GOVERNMENT

DEPARTMENT OF PRIMARY HEALTH CARE

Local Government Secretariat

P.M.B. 45, Agodi Gate, Ibadan. Tel: 8106801, 8106802



Your Ref: _____

Our Ref: _____

23-04-2014

Date: _____

Mr Aluko Joel Ojo
Doctoral Research Student
School of Nursing
University of the Western Cape
South Africa

Dear Mr Aluko,

REQUEST TO CONDUCT RESEARCH STUDY IN IBADAN NORTH LOCAL GOVERNMENT

This is to convey the approval of the management to you on your request to conduct a research study on the quality of service analysis towards development of a model for primary level maternity care in Ibadan, where Ibadan North Local Government is involved. It is therefore our pleasure to see such work which touches on quality of service, and hope to have a feedback on it in the fullness of time.

Please, present a copy of this letter to the Heads of facilities at Idi-Ogungun; Basorun; Agbowo; Barika and Sango Primary health care centres; while we wish you the best of luck in your endeavours.

Yours sincerely,

MEDICAL OFFICER OF HEALTH
Ibadan North Local Government
Agodi, Oyo State.

Famakin M
23/04/14
Dr Famakin. M
PMOH/PHC Director
Ibadan North Local Government
Agodi-Gate

Appendix IV Letter of Permission Ibadan North-East LGA



IBADAN NORTH EAST LOCAL GOVERNMENT

PRIMARY HEALTH CARE

P. M. B. 5211
IWO ROAD
IBADAN

Your Ref:

Our Ref:

.....20.....

22nd April, 14

TO WHOM IT MAY CONCERN

Please the bearers are from University of the Western Cape, they want to carry out research on "Quality of Service analysis towards development of a model for Primary level maternity care in Ibadan, Nigeria"

They have been given permission to go on with the maternity centres in Ibadan North East Local Government by Primary Health Care Co-ordinator.

Thanks.

Yours faithfully,

ILESANMI F.O.

MCH

Ibadan North East Local Government.

M.C.H/FP COORDINATOR

I. B. N. E. L. GOVT

IBADAN

Appendix V Letter of Permission Ibadan South-West LGA



IBADAN SOUTH WEST LOCAL GOVERNMENT

PRIMARY HEALTH CARE DEPARTMENT

TEL: 2315981

MKO Abiola Way,
Oluyole Estate,
P.M.B. 5204,
Ibadan.

Your Ref

Our Ref:20.....

The Principal Investigator,
Department of Research Development
Faculty of Community & Health Services,
University of the Western Cape,
South Africa.

ATTENTION: ALUKO JOEL

RE:PERMISSION FOR DATA COLLECTION

This is to confirm that your request letter on the above stated subject has been considered and approval granted accordingly for the collection of the required data for the stated research work.

Please note that the student is expected to give a copy of the research project to the department as a form of feedback on the exercise for possible evidence based policy frame-work.

Thanks and best of luck.

Yours faithfully,

MEDICAL OFFICER OF HEALTH / PHCC
Ibadan South West Local Government

DR. ADEDOYIN K. A.

Medical Officer of Health

Ibadan South West Local Government.

Appendix VI Letter of Permission Ibadan South- East LGA

IBADAN SOUTH - EAST LOCAL GOVERNMENT Primary Health Care Dept.

Your Ref.....

Our Ref.....



MAPO HILL,
IBADAN
TEL. 02-2412452
22nd April, 2014.

Date.....

The Principal Investigator,
Department of Research Development,
Faculty of Community and Health Sciences,
University of the Western Cape,
South Africa.

ATTENTION: ALUKO JOEL




TO WHOM IT MAY CONCERN

Please the bearer is from University of the Western Cape. He wants to carry out research on "Quality of Service analysis towards development of a model for primary level maternity care in Ibadan, Nigeria."

He has been given permission to go on with the research in maternity centres in Ibadan South-East Local Government by the Primary Health Care Coordinator.

Thanks,

Yours faithfully,


Mrs F. A. ADEYEMI
M.C.H./F.P Coordinator
Ibadan South-East Local
Government

Appendix VII Informed consent – Client

CONSENT FORM

Project Title: QUALITY OF SERVICE ANALYSIS TOWARDS DEVELOPMENT OF A MODEL FOR PRIMARY LEVEL MATERNITY CARE IN IBADAN, NIGERIA.

What is this study about?

This is a research project being conducted by **ALUKO JOEL OJO**, a postgraduate student of University of the Western Cape to know the quality of service given to childbearing women during pregnancy, labour, childbirth and after childbirth. We are inviting you to participate in this research project because you are a user of Maternity Service in the Primary Health Care (PHC) facility. The purpose of this research project is to analyse the quality of the maternity services available to women and their neonates at PHC level. The information that would be gathered will be used to design a model capable of guiding institutional and government policies on women's and neonatal health. The broad aim is to bring down the unacceptable high maternal and neonatal mortality/morbidity rate to a bearable minimum.

What will I be asked to do if I agree to participate?

You will be asked to respond to question items in the questionnaire and/or participate in an interactive group discussion, which will involve 6 to 10 women who have just given birth in a group. The filling of the questionnaire will last about 10 minutes, while discussion session will last 20 to 30 minutes. You are expected to respond to the question items contained in the questionnaire, which basically require you to say something about your experience with the PHC facility you used during pregnancy, labour, during and after childbirth. Your responses will be used to analyse the facility and maternity services for the purpose of improvement in future.

Would my participation in this study be kept confidential?

We will do our best to keep your personal information confidential. To help protect your confidentiality, your name and name of the facility you are going to talk about will not be required. Members of staff of facilities will be excluded from group discussions meant for postnatal women.

This research project involves making *audiotapes/videotapes/photographs* of you, if you are participating in FGDs. The purpose of these recording media is to help the researcher to remember all useful information that may be lost, if only writing which may be very slow sometimes is used for documentation. Only the researcher and research Supervisor will have access to them. They will be stored in a folder and kept under lock and key in a cabinet. All will be destroyed after using them for transcription and report writing.

Audiotapes and videotapes will not be play for any other person apart from the researcher who will use it for transcription and reporting.

If we write a report or article about this research project, your identity will be protected to the maximum extent possible.

In accordance with legal requirements and/or professional standards, we will disclose to the appropriate individuals and/or authorities information that comes to our attention concerning potential harm to you or others.

What are the risks of this research?

There is no apparent risk associated with this research apart from your participation, which will take between 10 and 30 minutes from you. No invasive procedure will be introduced into this study. Your participation is voluntary and you have the right to withdraw from the research if you so wish. You have nothing to lose if you decide to withdraw or not to participate again. Also, if you do not feel comfortable in answering any of the questions will not be forced to respond to such questions. The audiotapes and videotapes that will be taken will not be shown to any person. Only the researcher and the supervisor will have access to the tapes. They will be destroyed as soon as the research process is over.

What are the benefits of this research?

This research is not designed to help you immediately, but the results may help the investigator learn more about services rendered to women and their babies with aim of providing a model that will guide institutional and government policies on women' health. We hope that, in the future, you and other people may benefit from this study through improved infrastructures and maternal services at PHC level.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by **Mr ALUKO, Joel Ojo**, a Doctoral student of the School of Nursing at the University of the Western Cape. If you have any questions about the research study itself, please contact **Mr ALUKO, Joel Ojo** at: University College Hospital; GSM: 08060633244; E-mail: joelforfavour@hotmail.com.

Thanks for your anticipated cooperation.

Consent: Now that the study has been well explained to me and I have full understanding of the content of the study process, I hereby agree to take part in the study. I understand my participation is voluntary and that I may decide to withdraw from the study at any time if I so wish.

.....

.....

Participant's Sign & Date

Investigator's Sign & Date

Appendix VIII Informed consent – Health Workers

INFORMED CONSENT- CARE PROVIDERS

Dear Respondent,

My name is **ALUKO Joel Ojo**, a postgraduate student of the School of Nursing, Faculty of Community and Health Sciences, University of the Western Cape, South Africa. I am carrying out an academic research in partial fulfilment of the requirements for the award of Doctor of Philosophy (Ph.D) in Nursing. I shall be interviewing health care providers working in maternity centres at local government level in Ibadan with the aim of finding out about their views, challenges and experiences on the care being rendered to women and their babies during their pregnancy and childbirth in primary maternity centres.

I will need to ask you some sensitive questions which you may need to take a deep breath before answering. All information you are going to provide at this interview will be kept very confidential. Therefore, you are not required to write your name on the form that I shall give to you to fill so that your name will never be used in connection with any information you give. The information you and other people give will be used by government and other relevant agencies to help find solution to problems militating against effective maternity care delivery in maternity centres at primary level. Also, the information will be used for academic purpose.

You are free to refuse to participate in this interview and you have the right to withdraw at any time if you choose to. We will greatly appreciate your help in responding to the questions and taking part in the study.
Thanks for your anticipated cooperation.

Consent: Now that the study has been well explained to me and I have full understanding of the content of the study process, I hereby agree to take part in the study. I understand my participation is voluntary and that I may decide to withdraw from the study at any time if I so wish.



2nd June 2014

.....
Participant's Sign & Date

.....
Investigator's Sign & Date

Appendix IX Clients' Questionnaire

CLIENTS' QUESTIONNAIRE

Facility:

Section A: Socio-demographic data

Please complete by ticking (✓) the correct option or filling in the gaps as appropriate.

1. Age (as at last birthday) [] years.
2. Marital status: i. Single []; ii. Married [], iii. Separated [], iv. Divorced [], v. Widow/widower []
3. Highest level of Education: i. Informal education [], ii. Primary [], iii. Secondary [], iv. Post-secondary [], v. Tertiary []
4. Religion: i. Christianity [], ii. Islam [], iii. Other [] specify:
5. Occupation: i. Unemployed [], ii. Student/NYSC member [], iv. Self-employed [], v. Civil servant [], vi. Private company employment []

Section B: Obstetrics history:

1. Is this your first birth? (i) Yes [], (ii) No []
2. If yes, was the delivery normal? (i) Yes [], (ii) No []
3. How many times have you been pregnant? times
4. How many times have you given birth? times
5. How many babies are you blessed with?babies
6. Did you receive antenatal care during your last pregnancy in any facility?
i. Yes [] ii. No []
7. If 'No' why?
i. The facility here is not close by [], ii. I don't like the services at the nearest facility [],
iii. The nearest facility is too expensive [],
iv. The Health Workers are not competent [], v. I am not financially buoyant []
vi. The pregnancy was just a mistake []
8. If 'Yes' where did you book for antenatal care during the last pregnancy?
i. Not applicable [], ii. TBA centre [], iii. Faith-based Mission Home []
iv. Private Clinic/Hospital [], v. Another PHC centre [], vi. This PHC facility []
vii. Mission Hospital [], viii. State/Federal Hospital []
9. Did you book for antenatal care in any other facility apart from here?
i. Yes [], ii. No []
10. If 'Yes' give a major reason for booking in more than one facility:
.....
11. Did you give birth to your last baby in this facility? i. Yes [], ii. No []
12. If 'No' where did you give birth to your last baby?
i. Home [], ii. TBA centre [], iii. Faith-based Mission Home [],
iv. Private Clinic/Hospital [], v. Another PHC centre [], vi. Mission Hospital []
vii. State/Federal Hospital []
13. Between this Health facility and where you delivered your baby, which of them will you recommend to another woman? i. Where I delivered my baby [], ii. This facility I come for immunization []

14. Give reasons for your choice in 13 above. **You can tick more than one :**
- i. The facility is close by than here [], ii. I like the services in that facility [],
 - iii. The facility there is less expensive [],
 - iv. The Health Workers there are more competent [],
 - v. The Health Workers don't demand too much materials []
 - vi. The pregnancy was just a mistake []
 - vii. The Health Workers treat patient in a friendly and respectful manner than here []
 - viii. The Health Workers take care of my concern very seriously []
 - ix. Other reasons [] please specify:

15. If you get pregnant in future, which of the facilities will you still return for antenatal and delivery care?

- i. Where I delivered this baby [], ii. This facility I come for immunization []

16. Give reasons for your choice in 15 above. **You can tick more than one :**

- i. The facility is close by than here [], ii. I like the services in that facility [],
- iii. The facility there is less expensive [],
- iv. The Health Workers there are more competent [],
- v. The Health Workers don't demand too much materials []
- vi. The pregnancy was just a mistake []
- vii. The Health Workers treat patient in a friendly and respectful manner than here []
- viii. The Health Workers take care of my concern very seriously []
- ix. Other reasons [] Please specify:

17. Why do you come here for child immunization and not where you received antenatal care or delivered your baby?

- i. No immunization service [], ii. Immunization service is too expensive []

Section C: Attitudes of Health Care Workers in the facility

Key: 0 = Poor, 1 = Fair, 2 = Good, 3 = Very Good, 4 = Excellent

Q. Use the above key to describe your experience or what people say about the attitude of Health Workers in this facility:

S/N	How will you describe the attitude of the Health Care Providers?	0	1	2	3	4
1.	Concern shown by Doctor to your complaints					
2.	Attention, concern and care of Doctor to patients					
3.	Availability of Doctors to attend to patient's condition in the facility					
4.	Information given by doctors to patients or their relations					
5.	Coordination and teamwork among all health workers who provided care					
6.	Attention, concern and care of other Health Workers to patients					
7.	Competence and skill of health worker(s) who attended to you during childbirth					
8.	Health workers' response to your calls during childbirth					
9.	Information given by Nurses and other Health workers to patients or their relations					

Section D: Participants' experience at the service centre

1. How many times were you examined vaginally during labour? : times

S/N	Possible Items	Yes	No	Not sure
2.	Did health workers ask your consent for vaginal examinations?			
3.	Did health workers ask your consent for other procedures?			
4.	Were you examined in presence of other non-health workers?			
5.	Could you adopt the positions you wished when you were about pushing out the baby (i.e. second stage of labour)?			
6.	Was another woman in labour in the same room with you while you were about to deliver your baby?			
7.	Did you feel comfortable in the room where you delivered your baby?			
8.	Did the Health Workers cared to tell you their names when attending to you during antenatal visits, labour and delivery?			
9.	Do you know the name of your medical doctor?			
10.	Was there a friend or family member in the room with you during labour and delivery?			
11.	Was this person all the time with you during vaginal examinations and other procedures?			

Pain Management during labour

12. How would you describe your labour pain? i. Mild [], ii. Moderate [] iii. Severe []

13. What pain relief method did you use? i. None [], ii. Oral Pain medication [],
iii. Pain Medication Injection [], iv. Epidural Anaesthesia [],
v. others [] specify:

14. How effective was the pain relief method you used? i. Not effective []
ii. Fairly effective [], iii. Very effective []

15. How did you give birth? i. Spontaneous vaginal delivery [], ii. Forceps Assisted []
iii. Vacuum Assisted [], iv. Caesarean section []

16. Who took the delivery of your baby? i. Companions [] ii. Health Attendant [],
iii. CHO/CHEWs [], vi. Nurse/Midwife/Nurse-Midwife []vii. Medical Doctor []
viii. Others [] specify:

17. Did you sustain any trauma to the vagina during childbirth? i. Yes [], ii. No []

18. If 'Yes', what type of trauma did you sustain to your vagina during childbirth?

i. Deliberate cut (an episiotomy) [], ii. Spontaneous tear []

19. Did you receive adequate support from the Health Workers during labour and childbirth?

i. Yes [], ii. No []

20. Were you asked to stay in bed with your legs hanged up? i. Yes [], ii. No []

21. Did any person press your womb from the abdomen during labour o help baby come out on time?

i. Yes [], ii. No []

22. Were you given any injection immediately after child delivery? i. Yes [], ii. No []

23. Do you know the indication for the injection given to you? i. Yes [], ii. No []

24. Was the umbilical cord immediately cut after childbirth? i. Yes [], ii. No []

25. Was your baby in skin to skin contact immediately after delivery? i. Yes [], ii. No []

26. Did they weigh the baby immediately after delivery and before skin to skin contact?

i. Yes [], ii. No []

27. Was your baby in same room with you for almost entire time you were in hospital?

i. Yes [], ii. No []

28. Is your baby healthy after birth? i. Yes [], ii. No []

29. If 'Yes' were you separated from your baby just after birth? i. Yes [], ii. No []
 30. Do you feel strongly attached to the baby? i. Yes [], ii. No []

Psychological support

Questions 31 – 39: What was your experience with the caregiver during labour & childbirth?

S/N		Yes	No	Not sure
31.	Was any Health Worker present at your side as much as possible			
32.	Explained labour progress			
33.	Encouraged and helped into comfortable positions			
34.	Encouraged and helped with walking			
35.	Encouraged and helped into an upright position			
36.	Offered you oral fluids and food			
37.	Kept you clean and dry			
38.	Provided you a warm bath after childbirth			
39.	Taught you relaxation techniques and Breathing techniques			
40.	Massaged your back during labour or childbirth			
	Maternity stay			
41.	Was the baby examined in your presence?			
42.	Did you receive enough help from staff with the baby care?			
43.	Did staff help you to attend to the baby he/she cried?			
44.	Did staff ask you if you had abnormal vaginal bleeding?			
45.	Did you have a possibility to take a bath in the facility?			
46.	Have you had a chance to meet health worker privately since you arrived here?			
	SATISFACTION AND PSYCHOLOGICAL IMPACT			
47.	Do you feel happy with maternity experiences you received here?			
48.	Did you feel you find staff support you needed during antenatal, labour and childbirth?			
49.	Do you remember continuously some moment you felt very frightened when you are with the Health Workers?			
50.	Did your maternity staff make you feel inadequate sometime?			

51. On a scale of 0 to 5, how will you rate this facility and where you delivered your baby?

0 = Very Poor, 1 = Poor, 2 = Fair, 3 = Good, 4 = Very Good, 5 = Excellent

S/N	Aspects of facilities	This facility					
		0	1	2	3	4	5
a.	Environment Hygiene						
b.	Labour ward						
c.	Toilet facility						
d.	Building appearance						
e.	Staff attitudes						
f.	Bathroom facility						

Appendix X Health Workers' Questionnaire

HEALTH CARE WORKER'S QUESTIONNAIRE

Facility:

Section A: Bio-data

1. Age as at last birthday years.
2. Marital status: i. Single [], ii. Married [], iii. Divorced [],
iv. Separated [] v. Widowed []
3. Profession (please specify):
4. Designation:
5. Number of years since basic qualification: years
6. Number of years in the practice of present specialty: years

Section B: Perceptions and practice

7. (a.) Have you heard of the term 'Safe motherhood'? i. Yes [], No []
7. (b.) If yes, list the major components of safe motherhood
 - i.
 - ii.
 - iii.
 - iv.
8. What type of antenatal is in operation in your health facility?
 - i. Orthodox ANC [], ii. Focused ANC []
9. Have you been taking child delivery in this facility? i. Yes [], ii. No []
10. Has any woman you attended to during childbirth sustained vaginal laceration?
 - i. Yes [], ii. No []
11. If 'yes', who repaired the vaginal laceration? i. I myself [], ii. Another CHEW/CHO [],
iii. Another Nurse [], iv. Doctor []
12. Have you ever given episiotomy to a woman during childbirth? i. Yes [], ii. No []
13. If 'yes', who repaired the episiotomy? i. I myself [], ii. Another CHEW/CHO [],
iii. Another Nurse [], iv. Doctor []
14. Outline the steps you usually take when helping women who bleed after childbirth?
 - i.
 - ii.
 - iii.
 - iv.
 - v.
 - vi.
15. How effective is prenatal (antenatal) care in predicting pregnancy related complications and death in your health facility? i. Not effective [], ii. Barely effective [], iii. Fairly effective [],
iv. Very effective []
16. Would you allow any of the relatives or friends of pregnant women in the delivery room on the client's request?

S/N	Relations	Yes	No
a.	Husband		
b.	Parents		
c.	In-laws		
d.	Friends		
e.	Siblings		

17. Do you routinely use the partograph in monitoring the progress of labour?
 - i. Yes [] ii. No []
18. If 'No', why not?
 - i. Partograph is not available [], ii. Not trained in the use of the partograph []
 - iii. Use of the partograph is complicated [], iv. Use of the partograph is not necessary []
 - v. Others [] please specify:

- 19 Are there obstetric protocols or guidelines in your facility to guide your decisions during obstetric emergencies? i. Yes [] ii. No []
- 20 If Yes, to 15, list some of the ones you have
 i. ii.

 iii.iv.

- 21 Have you been trained in LSS? i. Yes [] ii. No []
- 22 If Yes, to 21, list the component topics/skills learn during the LSS training.
 i. ii.
 iii. iv.
 v. vi.
- 23 Which of the following helps do you render to a woman in labour to assist her push the baby out without delay during the second stage of labour? (**You can tick more than one**).
 i. Apply abdominal pressure [], ii. Give intravenous Oxytocin by push [],
 iii. Ask the woman to bear down with each contraction [] iv. Others [] specify:
- 24 What do you do to help a woman who does not open her thighs properly when the head of the baby is near crowning? (**You can tick more than one**). i. Beat the woman for not co-operating [],
 ii. Ask available person(s) around to forcefully separate her thighs for easy passage of the baby [],
 iii. Begin right away to explain to her why she must open her thighs [],
 iv. Invite the relation(s) to the room to speak to her []
- 25 What do you do to help a woman with a retained placental following childbirth?
 i. Perform manual removal [], ii. Send and wait for a doctor [],
 iii. Refer the woman to a higher health facility []
- 26 Have you been trained on how to perform manual removal of retained placental?
 i. Yes [], ii. No []
- 27 What do you do to help a woman who is bleeding after childbirth?
 i. Pack the vaginal with pad [], ii. Send and wait for a doctor [],
 iii. Refer the woman to a higher health facility [],
 iv. Set I.V. infusion and transfer her out [],
- 28 Do you perform any of the following procedure/services in your facility in the last three months?

S/N	Procedures/Services	Yes	No
a.	Administration of intravenous antibiotics		
b.	Administration of intravenous infusion		
c.	Administration of intravenous oxytocics		
d.	Administration of intravenous anticonvulsants		
e.	Manual removal of placental		
f.	Removal of retained products of conception		
g.	Assisted vaginal delivery		
h.	Blood transfusion		
i.	Caesarean section		
j.	Post-abortion care		
k.	Postpartum family planning		

Section C: Antenatal clinic services

Key: 0 = Never, 1 = Sometimes, 2 = Always

How often do you perform the following procedures for your clients?

S/N	Procedures	0	1	2
1.	Tetanus Toxoid immunization			
2.	STD diagnosis and treatment			
3.	Blood pressure measurement and Recording			
4.	Abdominal palpation and Recording			
5.	Foetal heart rate detection and recording			
6.	Weight measurement and recording			
7.	Blood samples for haemoglobin or PCV			
8.	Urine samples for proteinuria and bacteriuria			
9.	Distribution of iron and folic acid supplements			
10.	Distribution of malaria prophylaxis			
11.	Screens are used to ensure privacy during physical examination			

12. In your health facility, do you care to monitor serum bilirubin of new-borns?

i. Yes [], ii. No []

13. Do you routinely give postnatal care to a woman after childbirth? i. Yes [], ii. No []



Appendix XI Observation Checklist

OBSERVATION CHECKLIST FOR FACILITY ASSESSMENT

Section A: General assessment of facility

1. Name of facility:
2. Condition of the facility & environment:
 - i. Dirty, old building without good waste management facilities []
 - ii. Fairly clean, old building without good waste management facilities []
 - iii. Fairly clean, modern building with waste management facilities []
 - iv. Clean, modern building with adequate waste management facilities []
3. Number of beds to obstetric client ratio:
4. Number of beds to gynaecology client ratio:
5. What is the condition of the beds?
 - i. Almost/ all are bad, obsolete and need replacement []
 - ii. More than ¼ of beds need major repair or replacement []
 - iii. Less than ¼ of beds need minor repair []
 - iv. Most are in good shape []
6. Interior condition: i. Not commodious [], ii. Commodious []
7. Interior design of building:
 - i. Not appropriate for PHC centre []
 - ii. Appropriate for PHC centre []
8. Are obstetric and gynaecologic clients in separate room from other female in-patients? Yes [] No []

Section B: Vital indicators

S/N	Cases seen in the last 3 months	Total Number	Remarks
1.	Preconception women		
2.	Antenatal women		
3.	Delivery		
4.	Postnatal women		
5.	Babies immunized with BCG		
6.	Maternal deaths		
7.	Neonatal deaths		
8.	Stillbirths		
9.	Birth asphyxia		
10.	Antenatal referral		
11.	Intrapartum referral		
12.	Postnatum referral		
13.	Neonatal referral		

Section C: Available services provided at the facility

S/N	Type of service	NATURE OF THE SERVICE		
		Not Available	Fragmented	Integrated
1.	Family planning service			
2.	Laboratory service			
3.	Immunization service			
4.	Antenatal care service			
5.	Voluntary Counselling & treatment for HIV			

Section D: Infrastructure

Key: X = Expected quantity, 0 = None available, 1 = Available but faulty, 2 = Available but inadequate, 3 = Available, functioning and adequate

S/N	Essential Infrastructures	X	0	1	2	3
1.	Generator to ensure constant power supply	2				
2.	Water supply e.g. deep well + water storage, borehole + water storage	1				
3.	Staff quarters	1				
4.	Telephone/radio call/mobile phone	3				
5.	Ambulance with resuscitation gadgets	1				

Section E: Essential items for management of labour

Key for Remarks: X = Expected quantity, 0 = None available, 1 = Inadequate, 2 =

Adequate

S/N	Essential items for management of labour	X	0	1	2
1.	Infection prevention				
2.	Running water				
3.	Liquid Soap				
4.	Antiseptics				
5.	Sterile gloves				
6.	Non-sterile gloves				
7.	Non sterile protective clothing e.g. aprons, mackintoshes				
8.	Decontamination container				
9.	JIK, bleach or bleaching powder				
10.	Prepared disinfection solution				
11.	Puncture-proof sharp boxes				
12.	Regular trash bins				
13.	Covered contaminated waste bin				
14.	Mayo stands (or equivalent for establishing sterile tray/field)				
15.	Functioning sterilizer				
	Basic items				

S/N	Essential items for management of labour	X	0	1	2
16.	BP cuff and stethoscope				
17.	Partograph for labour monitoring				
18.	Kidney basin, placenta dish				
19.	Instrument tray				
20.	Kidney dishes/receivers				
21.	Gallipots				
22.	Bowls				
23.	Cotton wool, gauze				
24.	Plasma expanders (e.g. Normal Saline) and IV set				
25.	Disposable syringes & needles 2mls				
26.	Disposable syringes & needles 5mls				
27.	Disposable syringes & needles 10mls				
28.	Delivery couches				
29.	Doppler/Sonicaid				
30.	Fetal stethoscope				
31.	Cocker's forceps				
32.	Stenle's pack for normal delivery				
	Antibiotics				
33.	Ampicillin				
34.	Gentamycin				
35.	Metronidazole				
	Uterotonic medications				
36.	Injectable oxytocin (syntocinon)				
37.	Injectable Ergometrine maleate				
38.	Misoprostol tablets				
	Anticonvulsants				
39.	Magnesium Sulphate				
40.	Calcium gluconate				
41.	Diazepam (Valium)				
42.	Injectable antihypertensives e.g. Hydralaxin, Labetol, Nifedipine				
	Assisted vaginal delivery				
43.	Vacuum extractor (Ventouse)				
44.	Delivery forceps				
	Removal of retained products of conception, Episiotomy & repair				
45.	Manual Vacuum Aspiration (Mva), Syringes and cannulas				
46.	Dilators, curettes				
47.	Sim' vaginal speculum				
48.	Cusco vaginal speculum				
49.	Tenaculum/ Vulselum				
50.	Uterine sound				
51.	Light – adjustable, shadowless				
52.	Episiotomy scissors				
53.	Round bodied needles				
54.	Surgical Scissors				

S/N	Essential items for management of labour	X	0	1	2
55.	Sponge holding forceps				
56.	Needle holding forceps				
57.	Tooth dissecting forceps				
58.	Plain dissecting forceps				
59.	Cutting edged needles				
60.	Catgut (plain) sutures				
61.	Catgut (Chromic) sutures				
	Resuscitation & Anaesthesia				
62.	Local anaesthesia (Lignocaine)				
63.	Oxygen cylinders, key, masks, tubing				
64.	Ambu-bags				
65.	Oral airways				
	New-born supplies				
66.	Clean, dry towel				
67.	Clean bulb syringe				
68.	Self-inflating bag (Ambu-bag)				
69.	Heating lamp for neonates				
70.	Incubators				
71.	Oxygen cylinder, mask or nasal prongs				
72.	Functioning suction in delivery				
73.	Cord scissors				
74.	Cord clamp/ ties				
75.	Artery forceps				
76.	Injection vitamin K				
	Pain Management supplies				
77.	Oral analgesics				
78.	Parenteral analgesics				
79.	Parenteral narcotics – Pethidine, morphine				
80.	Pentazocine				
81.	Disposable gloves				
82.	Disposable syringes & needles 2mls				
83.	Disposable syringes & needles 5mls				
84.	Disposable syringes & needles 10mls – 20mls				

Antenatal clinic services

Key:0 = Never, 1 = Sometimes, 2 = Always/As appropriate

Q: How often do you perform the following procedures for your clients in this facility?

S/N		0	1	2
1.	Tetanus toxoid immunization			
2.	STD diagnosis and treatment			
3.	Blood pressure measurement and Recording			
4.	Abdominal palpation and Recording			
5.	Foetal heart rate detection and recording			
6.	Weight measurement and recording			
7.	Blood samples for haemoglobin or PCV			
8.	Urine samples for proteinuria and bacteriuria			

9.	Distribution of iron and folate supplements			
10.	Distribution of malaria prophylaxis			
11.	Screens are used to ensure privacy during physical examination			



Appendix XII FGD Guide

FOCUSED GROUP DISCUSSION GUIDE

DISCUSSION QUESTIONS

A. Recognizing obstetric complications

1. What are some of the things that can go wrong when a woman gives birth?
 Probes: Are these problems dangerous to the woman?
2. How do you know when the problem has become serious?
 [Repeat for each of the complications mentioned.]

B. Obtaining care for obstetric complications

3. What should be done if a woman experiences one of these problems?
 Probes: Who can help her? [in the community]

 Where would she be taken first?
4. What are the problems involved in taking her to seek care?
 Probes: How would she be transported?

 Where would she get the money?

C. Perception of the maternity facility

5. What have you heard about the maternity [give facility name]?
6. Do women get good care there?
 Probes: Is the place equipped to handle care of women and their babies during pregnancy, delivery and after child birth?
7. Has the care improved at this maternity in recent years?
8. What are some reasons to go there?
9. What are some reasons not to go there?
10. Where else might you go/take a woman who has a problem?
11. Are there other health facilities in the area where you might take a woman who has a problem?
12. What are the costs involved in going to the maternity facility?
 Probes: How would the family obtain the money for this? What would be done if they cannot get the money?
13. What do people say about the staff at this place?
14. What do people say about the cleanliness and environment of this place?
15. Can you recommend this facility for other women for care?

D. Decision-making concerning obstetric care

16. Who makes the decision to seek help for a woman if she experiences a problem in childbirth?
 Probes: Who are the alternative decision-makers (e.g., if husband is not at home)?
17. Who is consulted about such decision?
18. What factors influence the decision-making about going to a maternity facility?

Probes: Is it money? Is it transport? Is it gender of the doctor? Risk that woman or baby will die? Which of these makes it more likely that you will go? Which factors make it less likely that you will go?



Appendix XIII IDI Guide

INDEPTH INTERVIEW (IDIs) GUIDE

INTERVIEW QUESTIONS

A. General

1. What is your designation?
2. What is your role and duty in this facility?
3. What can you say about the following:
 - i. Service provision in this facility?
 - ii. Quality of care rendered to women in this facility?
 - iii. Quality of care rendered to new-borns in this facility?
 - iv. Competence and skill of staff attending to women during ANC and childbirth?
 - v. Patient-staff ratio in this facility
4. Are you satisfied with the nature of care given to women and their new-borns in this place?
5. Do you operate focused antenatal care (FANC) in this facility? If 'no' what are responsible for not adopting FANC in your facility.
6. Do you have all essential equipment and supplies required for service provision?
7. Do you request certain materials from women who use this facility?
8. If 'no' what are the reasons for the deficiencies?
9. In your own view, do you think the birth attendants are competent to attend to women in labour?
10. What are your suggestion for improvement of services and the facilities?

B. Additional Questions for MOH Only

11. What does it takes to be a Medical Officers of Health?
12. What can you say about the maternity services that are rendered to women in all the PHC facilities in your Local Government Area?
13. What do you know is responsible for shortage of health workers affecting all health facilities in your Local Government Area?
14. Besides, what do you have to say about the fewer number of qualified nurse/midwives compare to other categories of health workers such as CHEWs and HAs in your facilities?
15. How many medical doctors do you have in your Local Government Area?

16. Don't you think that the PHC facilities in urban centres like Ibadan could benefit from the 'Midwifery Service Scheme' put in place by the Federal Government to serve the rural communities?
17. Do you think the semi-skilled health workers such as the CHEWs and the HAs can cope effectively with complicated delivery in case it occurs in any of the facilities?
18. What does it take to set up a PHC facility for a community? Can you tell me the process involved?
19. What role do the Federal and State Ministries of Health play in PHC system?
20. How many PHC facilities do you have in the Local Government Area?
21. How many of the facilities are meant to provide maternity care services?
22. In your own view, are these facilities adequate for the communities in entire Local Government Area?
23. What security arrangement do you have in place for the PHC facilities, particularly those ones providing 24 hour services?
24. In your own opinion, how can PHC facilities be better funded?



Appendix XIV Photographs of PHC Building facilities



I: toilet

II: Bathroom

A: Samples of toilet and bathroom condition in a maternity centre



B: Samples of beds used on wards in the maternity centre



C: Sample of examination couch in the maternity centre





D: Sample of delivery beds with rusted metal part in the maternity centre



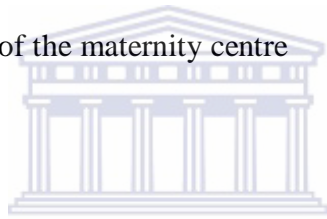
E: Samples of trolleys covered with rust in the maternity centre



F: Non-functioning suctioning machines in the maternity centre



H: Laboratory unit of one of the maternity centre



I: Non-coded Waste disposal materials in one of the PHC maternity centre



J: Electric generating set one of the PHC maternity centre



K: Stove, cooking pot and plastic pail for boiling of instruments



L: Sample of unsterilized forceps in bowl inside labour room

