ASSESSMENT OF POSTNATAL CARE SERVICES IN SELECTED HEALTH CARE FACILITIES IN ABEOKUTA METROPOLIS, OGUN STATE, SOUTHWEST NIGERIA.

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ABSTRACT

High quality maternal care should be a continuum that spans from the pre-pregnancy to the postpartum period. Postnatal care is an important link in the continuum of care for the mother and child. Postnatal period is a vulnerable time because most maternal deaths occur during this period, yet postnatal care is very poor and inadequate in Nigeria. Ogun State has the second highest maternal mortality ratio in southwest Nigeria. Analysis of the State maternal deaths surveillance data revealed that most deaths occurred postpartum. Therefore, this study assessed the quality of PNC and identified barriers to the delivery of quality PNC services in the State.

A facility based crossectional study was conducted between January and April 2018 among 420 postpartum women and 142 midwives using multistage sampling technique. The study was conducted in Abeokuta, Ogun State, Southwest Nigeria. We used the "WHO frame work for assessing quality of maternal health services" which assessed several attributes of maternal health service delivery to determine the structure, process, and outcome components of quality of care. WHO adapted facility checklist was used to assess the adequacy of postnatal infrastructures in the HFs. A pre-tested semi-structured questionnaire was used to assess the knowledge and practices of midwives towards maternal PNC services. A pre-tested semi-structured interviewer administered questionnaire was also used to asses women satisfaction towards postnatal care services offered.

SPSS version 20 software was used to analyze findings, associations between variables and other factors were tested using Chi-square at α-level of 0.05.

The midwives were female with mean age (SD) of 44.3 (8.9) years. The mean age (SD) of women assessing PNC was 29.5 (5.4) years. Two hundred and sixty-eight (64%) of the respondents were Christians while One hundred and fifty-one (35%) were Muslims. Only one of the HFs had adequate PNC structure. Sixty three (44.6%) midwives had good knowledge on PNC while 101 (71%) had good practices. Three hundred and fifty (85.8%) postpartum women were satisfied with PNC services offered while 250 (62.5%) postpartum women were dissatisfied with the cost of PNC. No factor was significantly associated with midwives knowledge on PNC and client satisfaction of services rendered.

In conclusion, structures for providing postnatal care services were inadequate. The midwives had poor knowledge of postpartum care. The women assessing postnatal care were satisfied with

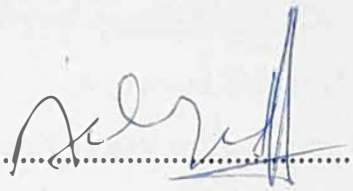
the services received. We recommended refresher training for midwives; HFs should be adequately equipped with postnatal care infrastructures and integration of post natal care into the existing health insurance package in the State.

Key Words: Quality, Satisfaction, Midwives, Knowledge

Word count: 412

CERTIFICATION

I certify that this project was carried out under my supervision by Sanni Salimat Bola of the Department of Epidemiology and Medical Statistics, Faculty of Public Health, College of Medicine, University of Ibadan.



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My profound gratitude goes to my husband and friend Dr Sanni Afeez for being supportive. I sincerely appreciate my parents, children and siblings for their love and support.

DEDICATION

This work is dedicated to Almighty Allah, the Lord of the universe.

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CHAPTER ONE

Introduction

1.1 Background

Globally, approximately 830 women die every day from preventable causes related to pregnancy and childbirth (WHO, 2015). Most of these deaths are preventable and are seen in low income settings (WHO, 2016). High quality maternal care is a continuum that spans from the pre-pregnancy to the postpartum period in which women and health providers are partners in health care provision.

The maternal survival and well-being depends on the care received during pregnancy, delivery and the postnatal period. The postnatal period refers to the period from one hour after the delivery of the placenta and continues until 6 weeks (42 days). Lack of a defined postnatal care package contributes to the discontinuity between maternal and child health programs. Post Natal Care (PNC) reaches fewer women, less than half of women receive a postnatal care visit within 2 days of childbirth (Lawn et al, 2014). Only thirteen percent of sub-Saharan women who delivered at home received PNC within 2 days of birth (WHO, 2013.) Postnatal care coverage in Nigeria was 38%. (NPC/ICF, 2014).

The WHO guidelines on PNC address timing, numbers and place of postnatal contacts. The critical maternal health outcome is maternal morbidity (including haemorrhage, infections, anaemia and depression). The guideline recommended regular assessment of vaginal bleeding, uterine contraction and other vital signs within the first 24 hours of delivery. Maternal postnatal care visit is three times within 6 weeks of delivery (3 days, 10 days, and 6 weeks post-delivery) at home or in the health facility. All women are expected be counseled on family planning, general hygiene especially hand washing, nutrition and safer sex. Iron and folic acid should be given to mothers for at least for three months but provided low evidence for routine use of antibiotic postpartum. The guideline also recommended the promotion of women centered maternity care where women are treated with dignity, respect. The family, community, outreach and facility-based care are the essential postnatal health service delivery modes. Postnatal care

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interventions that focused on the identification and management of women's health problems also have shown to improve physiological and psychological health.

The quality of maternal health care is a profound factor that impacts on the delivery of continuum of care among women in most of the sub-Sahara African countries. WHO vision defines quality of care as the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care needs to be safe, effective, timely, efficient, equitable, and people-centered. There are three dimensions in the assessment of quality of care which are structure, process and outcome. Structure includes physical environment, cleanliness and availability of adequate human resources, medicines and supplies. Process refers to interpersonal behavior of providers, privacy, promptness of care, cognitive care (post-natal counseling and health education), perception of provider's competency, and preference for providers. Outcome is the health and survival status of the mother (WHO, 2014)

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1.2 Problem Statements

Nigeria contributes 2.5% to the world's population (UN, 2016) but contributes 10% the World's maternal deaths (UNFPA, 2016). Postnatal care is very poor and inadequate in Nigeria with coverage of 38% (NPC/ICF, 2014) yet this is a vulnerable time because most maternal deaths occur during this period. The consequence of poor postnatal care services is increasing maternal and neonatal morbidity and mortality.

Postnatal care is regarded as one of the most important maternal healthcare services which is critical to the health and survival of the mother. Although Nigeria has developed an Integrated Maternal, Newborn and Child Health Strategy (IMNCH, 2007), which addresses early PNC. It has been established by WHO that complications following childbirth are more common and aggravated by poor healthcare, resources and social attitudes towards medical care especially in developing countries.

Traditionally, the strategies to reduce maternal and neonatal mortality have focused on pregnancy and delivery periods with minimal attention given to postnatal period. Mothers and their newborn babies are at highest risk of dying during the early neonatal period, especially in the first 24 hours following birth and over the first seven days after delivery. For some life-threatening maternal and newborn conditions, effective postnatal care is either given in the first few hours and days, or it will happen too late. The earlier these clinical conditions are detected, the more effectively they can be managed for better outcomes. Unfortunately, most of these interventions are highly time-dependent in order to be effective. (Alere et al, 2015)

There are many studies on the utilization of maternal health services such as antenatal care and skilled delivery at birth, studies on PNC are limited. Studies on PNC in Nigeria have assessed utilization of services (Takai et al, 2015; Adamu, 2011; Alere et al, 2015) while studies on system component is lacking. Yet, serious complications which account for two thirds of all maternal deaths occur during the postnatal period.

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1.3 Justification

Postnatal care is one of the most important maternal health-care services not only for prevention of impairment and disabilities but also for reduction of maternal mortality. Since most maternal deaths occur during delivery and the postpartum period, this means this is the most critical period for mother and child survival with most complications occurring in the first two days. The most common fatal complications are postpartum hemorrhage, sepsis, complication of unsafe abortion, prolonged or obstructed labour and eclampsia (WHO, 2015).

In 2014, WHO recommended that a mother and her newborn child should receive postnatal care within 24 hours of the birth and then at least on day three after the birth, in the second week after the birth and six weeks after the birth. Therefore, there is need to follow this recommendation and also ensure implementation of routine postnatal care contained in the WHO guideline in order to reduce maternal morbidity and mortality. Lack of postnatal care may result in impairments and disabilities or death as well as missed opportunities to promote healthy behaviors affecting women (Ashford, 2012.).

It is important to assess maternal satisfaction of health care because such identified information can be significant in suggesting long-term maternal health care interventions benefitting different women assessing health facility at different levels and can even be replicated to other community health maternal health interventions as far as quality of maternal health care service delivery is concerned. Also, Studies on postnatal care have focused on utilization of postnatal care, studies on system component and quality of PNC care is lacking. (Khanal et al, 2014)

The analysis of Ogun State 2015/2016 Maternal and Perinatal Death Surveillance and Response (MPDSR) revealed that most maternal deaths (56.8%) occurred at the postnatal period, (Ogun State Primary Health Care Board, 2016). This suggests that majority of the maternal deaths could have been avoided if more women have access to the appropriate postnatal care since mothers and children are most vulnerable to ill health or death immediately after delivery. It is therefore important to reduce the menace of maternal mortality in the State holistically. In achieving this, it is needful to assess PNC services as a continuity of maternal health care in the State. This baseline assessment will identify areas of needs in postnatal care services in the State, to inform programmatic interventions and policy formulation.

1.4 Research Questions

1. Is there adequate infrastructure for postnatal care services in Ogun State?

2. What is the quality of postnatal care offered to mothers in the State?

3. What are the factors affecting the quality of postnatal care offered to mothers in the State?

1.5 Broad Objective

To assess the facilities of PNC services in Ogun State and the quality of postnatal care offered to mothers in the State

Specific objectives

1. To assess the adequacy of facilities in place for PNC services in Ogun State
2. To assess the knowledge of health care providers on PNC services
3. To assess the quality of PNC offered to mothers in the State
4. To determine the factors influencing the quality of PNC services offered to mothers

CHAPTER TWO

Literature Review

2.1 Maternal mortality overview

Maternal mortality as defined by the World Health Organization (W.H.O) is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration & site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes.

Globally, about 303,000 women die annually from complications during pregnancy, childbirth, or postpartum period. As at 2015, nearly all of these deaths occur in developing countries, most especially the African region (Alkema et al., 2016). These trends over the past decades had been considered unacceptable and remain a problem of public health importance. Nigeria has maternal mortality rates of 814/100,000 (W.H.O 2015). Nigeria accounts for 1 in 9 maternal deaths worldwide (UNFPA, 2016) Nigeria contributes about 14% of the global burden of maternal deaths with about 33,000 Nigerian women dying annually from pregnancy-related causes. Postpartum haemorrhage is the highest cause of maternal mortality accounting for 23% of cases. (W.H.O, 2008) 99% of all maternal deaths occur in developing countries .Maternal mortality is higher in women living in rural areas and among poorer communities. Each year an estimated 289 000 women die worldwide from complications related to pregnancy, childbirth or the postnatal period (W.H.O, UNICEF, UNFPA, 2014) and up to two thirds of such maternal deaths occur after delivery.

.2.2 Maternal mortality: Ogun State Context

The current estimated population of the state derived from projections based on a 3.3% annual growth rate projection was 6,084,327, with 3,078,669 males and 3,005,657 females. There has been a notable rise in the population and especially that of women and by extension Women of Reproductive Age (WRA), rising to an estimated 1,366,207. Maternal mortality of 179/100000 live births, total fertility rate of 5.5% (NDHS 2013), wanted fertility rate of 4.6 (NDHS, 2013), Contraceptive prevalence rate of 26%, Unmet need for family planning is 23.4%, percentage of people not using PNC services 26% (NDHS 2013) Percentage of women that deliver in public

Health facility is 30.7%, in private health facility is 44% while 23.4% of women deliver at home (NDHS 2013). Unfortunately, the health care service delivery system has not developed to the level of responding adequately to the health and medical care needs of Women of Reproductive Age and their children – antenatal, delivery and post natal and child survival services.. For instance, Maternal Mortality Ratio is 179 per 100,000 live births for maternal health mortality ratio and Infant Mortality Ratio, Perinatal Mortality Ratio and Under-5 Mortality Ratio are 69/1000, 21/1000 and 27/1000 live births respectively. Contraceptive prevalence rate for modern methods is 21.5% while it is 26% for all methods. Though most deliveries take place at health facilities (30.7% public and 44% private), the percentage of TBA/Home delivery is still significant (24.8%) and in most situations bad cases are often referred from this source to health facilities too late.

2.3 The causes of maternal mortality

Direct obstetric deaths: result from obstetric complications of the pregnancy state (pregnancy, labor and the puerperium), from interventions, omissions, incorrect treatment, or from a chain of events resulting from any of the above. Examples of direct causes: postpartum bleeding (15%), complications from unsafe abortion (15%), hypertensive disorders of pregnancy (10%), postpartum infections (8%) obstructed labour (6%) blood clots (3%) and pre-existing conditions

Indirect obstetric deaths: 20% of maternal death and result from previous existing disease or disease that developed during pregnancy not due to direct obstetric causes but aggravated by physiologic effects of pregnancy example cardiovascular diseases (W.H.O, 2004).

Late Maternal Deaths: Death of a woman from direct or indirect obstetric causes, more than 42 days, but less than 1 year after termination of pregnancy (W.H.O, 2004).

Non-medical factors associated with maternal death

Low status of women, Low education, Low income/poverty, Harmful Traditional Practices, Cultural norms, Poor nutrition in childhood, adolescence and adulthood Ignorance and illiteracy, Religious beliefs that act as barrier to utilization of available health services

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2.4 Maternal and Perinatal Death Surveillance and Response (MPDSR)

This is a qualitative, in-depth investigation into the causes of and circumstances surrounding maternal and perinatal deaths which occur in health care facilities. The overall goal of MPDSR is to eliminate preventable maternal mortality by obtaining and using information on each perinatal and maternal death to guide public health actions and monitor their impact. By doing MPDSR review, it is possible to obtain critical evidence of where the main problems lie and detailed information on various factors in the community and at all levels of the health system that need to be addressed to reduce maternal deaths. It therefore enables this information to be used to respond with actions that will prevent future deaths with the ultimate goal of eliminating all preventable maternal deaths. (WHO, 2016)

Majority of the contributory factors to MM are preventable and may differ from region to region and culture to culture. MPDSR would assist countries to study the underlined contributory factors to their own trend of mortality such as poverty and low socio-economic status of women in most developing countries. Reviews are needed to develop policies for reducing maternal mortality ratios by increasing the quality of prenatal and obstetric care and for determining trends over a period of time. The magnitude of maternal mortality will therefore be more appreciated if there are periodic reviews of the various causes.

The above recommendation is in line with the 2013 National Council on Health (NCH) resolution mandating all States to implement MPDSR. The initiative is geared towards conducting qualitative assessment of the causes of maternal and perinatal deaths for evidence-based decisions to prevent recoccurrences of such preventable deaths MPDSR started as Maternal Death Review (MDR) in Ogun State in year 2009 with a survey which showed that death occur more at the community rather than the Primary Health care level. The survey informed the pilot in four LGAs. The result of this pilot underscored the need to institute MPDSR process along the levels of care ie community to Primary Health care to Secondary and tertiary Health facilities. Analysis of 2015/2016 Maternal and Perinatal Death Surveillance and Response (MPDSR) data in selected health facilities in Ogun State revealed that most maternal deaths (56.8%) occurred at puerperium (Ogun SPHDB 2017)

2.5 Postnatal Period and maternal health outcome

Continuum of care has the potential to improve maternal, newborn, and child health (MNCH) by ensuring care for mothers and children. Postnatal care services are a fundamental element of the continuum of essential obstetric care – which also includes antenatal care and skilled birth attendance – that decreases maternal and neonatal morbidity and mortality in low- and middle-income countries (Gabrysch S, Campbell OM) The purpose of maternal postnatal care is to support the physical and emotional recovery of the mother Compared with other maternal and infant health services, (Fort AL,2012) coverage for postnatal care tends to be relatively poor. Increasing such coverage has been highlighted as a priority. High quality maternal care should be a continuum that spans from the pre-pregnancy to the postpartum period and in which women and health providers are partners in the care provision Continuity as a component of quality of care ensures that maternal health services are available whenever needed. More than 80 % of maternal deaths can be prevented if pregnant women access health care services during pregnancy, delivery and postpartum period

The postnatal period, according to the World Health Organization refers to the period from one hour after the delivery of the placenta and continues until 6 weeks (42 days) after delivery. The critical maternal health outcomes with regards to maternal postnatal care include haemorrhage, infections, anaemia and depression. Community outreach and facility-based care are the essential postnatal health service delivery modes. The postnatal period is a critical transitional time for a woman and her newborn physiologically, emotionally, and socially. It was recommended that mothers should receive postnatal care at the facilities at least 24hours after birth. (W.H.O, 2013) and at least three additional postnatal care visit are recommended at 48-72 hours after delivery, 7-17 days and at 6 weeks post-delivery. If birth is in a health facility, mothers and newborns should receive postnatal care in the facility for at least 24 hours after birth. If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth Home visit should be conducted within one week of delivery. Regular assessment of vaginal bleeding, uterine contraction and other vital signs within the first 24 hours of delivery are also recommended. Urine voids is to be documented within 6 hours of delivery. Postnatal care is three times (3 days, 10 days, and 6 weeks post-delivery) at home or in the health facility. Assessment of general wellbeing is to be continued at each visit while breastfeeding progress is assessed. The guideline

also stipulated that women should be asked about resolution of mild transitory postpartum depression. All women should be counseled on family, general hygiene especially handwashing nutrition and safer sex. Iron and folic acid should be given to mothers for at least for three months. The guideline provides low evidence for routine use of antibiotic postpartum. Antibiotic use by women with vaginal delivery is recommended when they have third or fourth degree perineal tears. Women who lost their baby should be given additional support. In order to ensure comprehensive, postnatal care, it is imperative to characterize the current quality of service delivery in the realms of postpartum care and to better understand the gaps in completeness of care in accordance with the World Health Organization (WHO) recommended guidelines. (WHO, 2014)

2.6 Adequacy of Postnatal Care Facilities

The health personnel, the infrastructures, drugs, and equipment may not be in adequate proportion with the catchment population (Obionu, 2007)

An evaluation of Primary health care system in 10 LGAs in Katsina, Oyo showed that performance of health system depend to large extent on adequacy of health of health infrastructure, Several studies (Debono and Travaglia 2009, Chow and Mayer 2009) have attributed high maternal mortality to inadequate equipment and manpower.

Each year an estimated 289 000 women die worldwide from complications related to pregnancy, childbirth or the postnatal period (W.H.O, UNICEF, UNFPA, 2014) and up to two thirds of such maternal deaths occur after delivery. Postnatal care services are a fundamental element of the continuum of essential obstetric care which decreases maternal and neonatal morbidity and mortality in low- and middle-income countries. Postnatal care has proved to be more cost-effective in decreasing maternal and neonatal mortality than antenatal care and intrapartum care (Darmstadt , et al, 2005) Postnatal care interventions that focused on the identification and management of women's health problems also have shown to improve physiological and psychological health (Xiong ,et al, 2006) Effective and cost-effective neonatal survival interventions have been identified and consensus has been reached to scale-up these interventions in health systems in low- and middle- income countries.

Rates of provision of skilled care are lower after childbirth when compared to rates before and during childbirth. Most maternal and infant deaths occur during this time. So, compared with other maternal and infant health services, coverage for postnatal care tends to be relatively poor. Increasing such coverage has been highlighted as a priority. The utilization of postnatal care is an effective means of providing a significant intervention to improve new-born survival (Baqui et al., 2009) Postnatal care is essential for the decline of post-partum hemorrhage which is a leading cause of maternal mortality in developing countries (Wang *et al,* 2011). While there are many studies on the utilization of maternal health services such as antenatal care and skilled delivery at birth, studies on PNC are limited studies in Nigeria have assessed utilization of PNC services (Adamu, 2011; Alere et al, 2015) while studies on system component is lacking. There are few data on early postnatal care specifically, but clearly many women do not receive optimal care. Many women who give birth in facilities are discharged within hours after childbirth without any indication where they can obtain further care or support.

Current models of postpartum care in developed countries originated in the beginning of the 20th century in response to the high maternal and neonatal mortality rates of the time. Postpartum care for the mother has conventionally focused on routine observation and examination of vaginal blood loss, uterine involution, blood pressure and body temperature. Guidance for health-care professionals on other postpartum practices has been limited (Demott K et al, 2006)

2.7 Quality of care

The existence of postnatal care services does not guarantee their utilization by mothers neither does utilization of postnatal care by women guarantees optimal output. The quality of care (QOC) seems to explain these differences. The assessment of quality must rest on a conceptual and operationalized definition of what the "quality of medical care" stated in a review of quality of care assessment on health interventions stated that review of the studies of quality shows a certain discouraging repetitiousness in basic concepts, approaches and methods. **Quality of care** is the degree to which health services for individual and population increase the likelihood of desired outcomes and are consistent with the current professional knowledge. Quality of care is a multi-dimensional concept. The Donabedian model is a conceptual model that provides a

framework for examining health services and evaluating quality of care. Donabedian identified three dimensions of the quality of care which are: Structure, Process and outcome. (Donabedian, 1988). **Structure** includes all of the factors that affect the context in which care is delivered. This includes the physical facility, equipment, and human resources". **"Process"** is the sum of action that makes up health care. These include diagnosis, treatment, preventive care, and patient education. Processes can be classified as technical processes, how care is delivered, or interpersonal processes, which all encompass the manner in which care is delivered. **Outcome** contains all the effects of healthcare on patients or populations, including changes to health status, behavior, or knowledge as well as patient satisfaction and health-related quality of life. Improving patient health is the goal of health care service, so the outcome component may be considered as the most important aspect of QoC. W.H.O vision defines quality of care as 'the extent to which health care services provided to individuals and patient populations improve desired health outcomes. In order to achieve this, health care needs to be safe, effective, timely, efficient, equitable, and people-centered, according to the W.H.O model, the structure is the health system, the process involves the Provision of care and experience of care. The outcome can be at individual level or facility level. Provision of care in this concept entails evidence based routine care and management of complications, actionable information system and functional referral system. The experience of care (client perspective) entails effective communication, respect and dignity and emotional support. Competent human resources and effective physical resources contribute to provision and experience of care. Obiagheli et al assessed the perception of pregnant women on quality of maternal care services rendered in Anambra, Southeast Nigeria. (Obiagheli et al)

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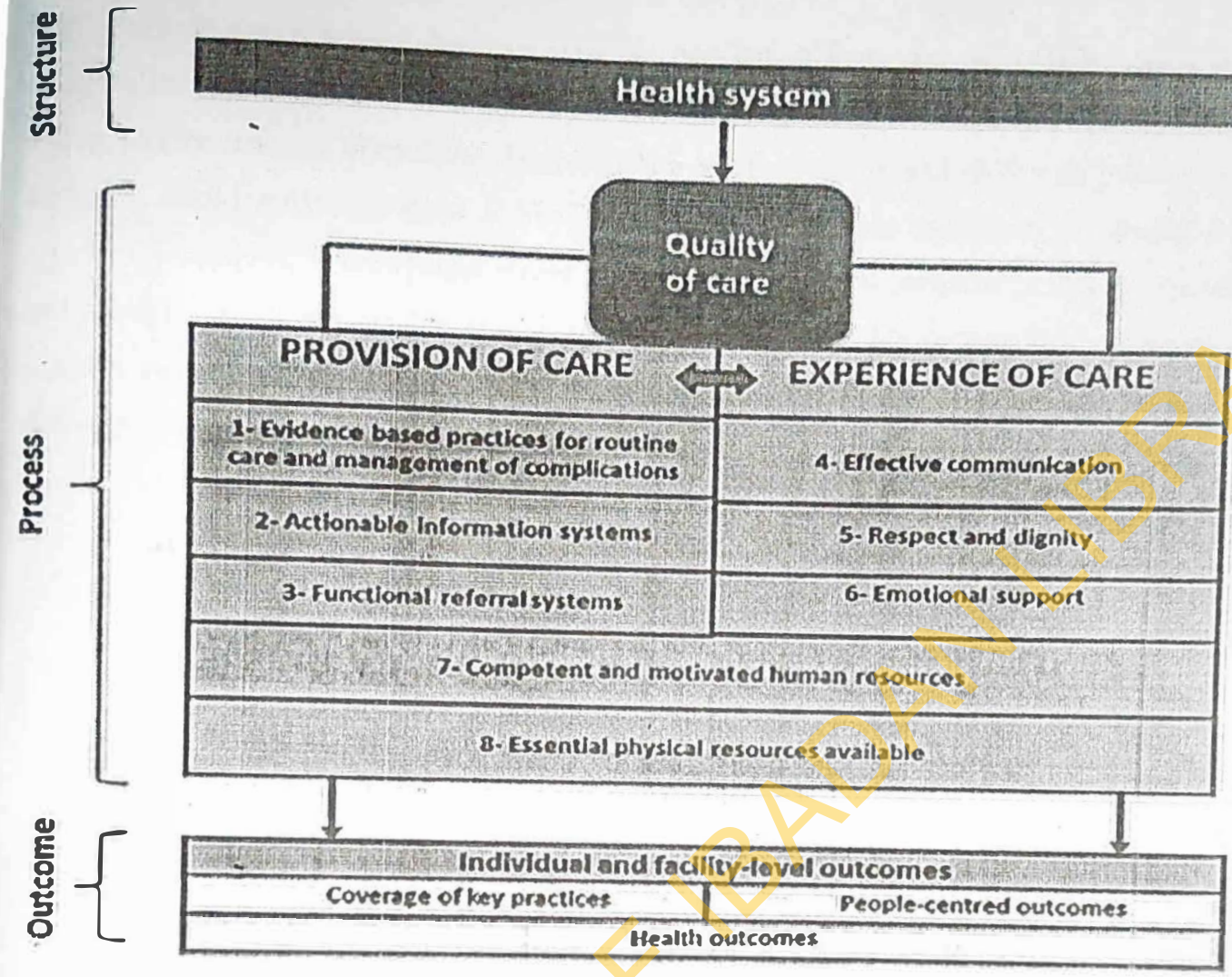

Figure 2.2 W.H.O Quality of Care Framework

2.8 Quality of Postnatal Care

The United Nations' fifth Millennium Development Goal (MDG) aimed to reduce maternal death rates by increasing the proportion of births conducted by skilled birth attendants. Low- and middle-income countries promoted the skilled attendance at birth strategy in order to reduce high maternal mortality rates. This will further enhance the facility antenatal and PNC structures. (UN 2015). The sub-Saharan Africa region was reported to have the highest number of maternal deaths. Increasing skilled birth attendance has being the key intervention strategy of improving maternal health. Whereas this was not matched with improvements in the quality of care available at health facilities. It was reported that this can be responsible for the slow decline in the provision of intrapartum and postnatal care in low- and middle-income countries and got the findings that Sociocultural barriers sometimes hindered mothers from receiving care in hospitals.

Staff shortage was a widely reported problem and led to increased workloads, which in turn compromised quality of care, Health workers had vague job descriptions, Inadequate pre-service and in-service training sometimes limited health workers' skills and ability to provide quality maternal care, Insufficient stock and/or lack of drugs sometimes influenced the quality of care provided to mothers, Where primary care workers in lower-level facilities lacked the knowledge and the skills to determine the need for referral, or were unable to provide emergency care, mothers could receive inadequate car. All these were identified as factors that influence the delivery of intrapartum and postpartum care. (WHO 2015)

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CHAPTER THREE

Methods

3.1 Study Area

This study was conducted in Abeokuta Ogun State, southwest Nigeria. Ogun State has a projected population of 5,328,326 (3.3% growth rate from 2006 census). The projected population for women of reproductive age group and pregnant women is 1,098,532 and 249,666 respectively (National Population Commission, 2006)

The State has 20 Local Government Areas with five health zones: Ijebu Ode, Abeokuta, Ota, Remo, and Ilaro. Ogun state operates a three-tier health care delivery services namely primary, secondary and tertiary with a total of 1584 health facilities disaggregated into 546 primary health centers (PHCs), 29 secondary facilities, three (3) tertiary facilities (1 State and 2 Federal) and 1006 registered private facilities (SMOH Malaria Control Operational Plan 2015). Public HFs Providing Family Planning Services are 433. Ante-Natal clinic (ANC) attendance is 89.9%, delivery at HFs is 63.8%, postnatal care utilization was 68% (NDHS 2013) and ratio of midwife to population was 8: 10,000 (Ogun State SHDP, 2010-1015). Total fertility rate is 5.4 and contraceptive Prevalence Rate was 26%. The State has a Maternal Mortality Ratio of 179/100,000 (NDHS, 2013)

This study was conducted in four secondary and three primary health facilities in Abeokuta. All except one were government owned. The health facilities included: State Hospital Ijaiye, Oba Ademola maternity hospital, Oke-Ilewo health centre, Keesi health centre Kugba health centre, Iberekodo health centre, Sacred Heart hospital and Olikoye Ransome Kuti memorial hospital. These health facilities are all located in Abeokuta south and Abeokuta North local government Areas. The women in these locations are predominantly traders, Yoruba ethnic group, Muslims and Christians. All the health facilities provide healthcare services including maternal and child

health services. These health services are provided by a team of doctors, pharmacists, nurses, midwives, community health extension workers (CHEWs), laboratory scientists and technicians.

3.2 Study Design

Crossectional Study.

3.3 Study Population

Midwives in selected in Ogun State

Women assessing PNC services in selected facilities in the State

The participants for this study were midwives in the selected health facilities (HFs) and women that delivered in this HFs who were also assessing maternal postnatal care services between January 17th and March 19th 2018

3.4 Sample size Determination

Minimum sample size of 271 midwives was calculated

$n = Z_\alpha^2 PQ / d^2$ *(Lwanga and Lemeshow 1991)*

Z_α is the standard normal deviate =1.96

- p = proportion of HFs with good PNC service 0.2 ((Chimtembo et al 2013).
- q = 1-p= 0.8
- d = desired level of precision = 0.05
- non-response rate = n(1/(1-f) and f =10%

Minimum sample size of 248 women assessing PNC services was calculated

$n = Z_\alpha^2 PQ / d^2$ *(Lwanga and Lemeshow 1991)*

- Z_α is the standard normal deviate =1.96
- p = proportion of women with satisfaction towards postnatal care service delivery was 0.88 (Creanga et al, 2017),
- q = 1-P = 0.2

– d = desired level of precision = 0.05

– non-response rate = n =(1/(1-f) and f =10%

3.5 Sampling Technique

Multistage sampling technique was used for this study.

Stage 1: Selection of LGA

Purposive selection of two LGAs: Abeokuta South and Abeokuta North

Stage 2: Selection of Health facilities

Four secondary HFs and three PHCS (offering maternal care services) in the selected LGAs. The hospitals have high volume of delivery in these zones and were therefore purposively selected

The HFs selected were: State Hospital Ijaiye, Oba Ademola maternity, Oke-IlewoPHC, Kecsi PHC and Kugba PHC, Sacred Heart hospital and Olikoye Ransome Kuti memorial hospital

Stage 3: Selection of study participants

Total sampling of all the midwives in the HFs selected. Mothers assessing PNC in selected facilities were recruited at the point of discharge from the facility. (Client exit interview). Mothers were recruited consecutively till a total of 420 respondents were interviewed.

3.6 Data Collection Methods

Trained midwives from the State ministry of health were used as data collectors. Two medical doctors were also used as supervisors and research assistants

3.6:1 Data collection Instrument

Maternal PNC component of "2013 W.H.O updated guideline/checklist on postnatal care" was used to asses health workers knowledge and practices on PNC. Facility checklist was administered to the head of the obstetrics and gynaecological unit and the midwives in charge og the postnatal wards. The checklist assessed the emergency drugs available, presence of resuscitating equipment's, laboratory services, blood donation services, family planning commodities.

Information was collected from the midwives via a semi- structured self-administered questionnaire. The questionnaire was pre-tested using forty three women assessing postnatal care services at two health facilities in Odeda LGA. Responses from the midwives were also elicited

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via a pretested self-administered semi structured questionnaire. This questionnaire was pretested among ten midwives from Odeda LGA. The questionnaire consisted of sections on sociodemographic characteristics of midwives, assessment of knowledge on PNC clinic schedules, management of postpartum emergencies immediate PNC care, counseling on nutrition, family planning and postpartum depression. Mothers were interviewed at the point of discharge from the HFs after delivery and at the postnatal clinic. All mothers assessing PNC services within the period of the survey and who gave consent were recruited, until a total of 420 women were recruited. Only mothers that delivered in the HFs assessed. Midwives in selected HFs providing maternal care during the time of study were assessed. Women assessing PNC service in HF selected although delivered in another which is captured in this study.

3.6.2. Client Exit interview

The client exit interview was done via a pretested interviewer administered questionnaire to PNC clinic attendees and at the point of discharge after delivery. The interview asses' mother's level of satisfaction using questions (Likert grading 1-5) under Health care, HCW communication, HCW attitude, and Environment.

3.6.3 Inclusion criteria

Midwives in selected HFs providing maternal care during the time of study

Women assessing PNC service in HF selected although delivered in another which is captured in this study

3.6.4 Exclusion Criteria

Women assessing PNC services in a facility selected for this research but delivered in Private facility or from traditional birth attendants

3.7 Data Analysis

The questionnaire was identified by facility ID, serial number. Data entry was done by the principal investigator and research assistants using SPSS version 20 software for final cleaning/editing and analysis. Preliminary frequencies were run to check for completeness. Data was backed up by saving it in different folders in the computer and also on a removable flash disk drive.

The quality of PNC offered was assessed using W.H.O Quality of Care Framework for maternal and newborn child. This framework examined the quality of maternal health care using the three dimensions of quality of care. These dimensions are: **Structures, Process and outcome.** Structure includes infection prevention facilities, family planning commodities, blood donation services clinical transfusion services, laboratory equipment, apron, anti-shock garments, oxygen concentrator and health care waste management. Process entails evidence based practices for the PNC care, functional referral system, Effective communication, respect and dignity. The outcome entails client's experience of care evidenced by the satisfaction level. The adequacy of facilities in place for PNC was assessed using the W.H. O guideline and also adapted from previous studies (Chimtembo et al 2013). The total score of HFs PNC infrastructures was obtained. The 75th percentile was derived and facilities with total infrastructure score below 50th percentile were rated as having "inadequate PNC structural facilities", those with PNC infrastructure score between 50th and 75th percentile were rated as having "fairly adequate PNC facility" structure and those facilities that had scores above the 75th percentile were rated as having "adequate PNC structures"

Responses were elicited from the midwives using a semistructuerd self-administered pretested questionnaire. The questionnaire has three sections. Section A assessed sociodemographic variables, section B was on knowledge of midwives on PNC and section C addressed issues on midwives PNC practices. Knowledge on PNC was assessed through a three point likert scale and scores allocated as follows: "Yes", "No" and "I don't know". Correct response scored one while a wrong answer scored zero. The overall score for PNC knowledge assessment was added up for each respondent across all 25 questions. The mean score of knowledge of HCWs on PNC was computed and HCWs that scored below the mean were rated to have "poor knowledge on PNC" while HCWs that obtained scores higher than the mean score were rated as having "good knowledge of PNC". Section C has questions assessing midwives practice of PNC which was assessed through a five point likert scale of routine PNC practices and scores allocated as follows: "Always" = 5, "Most times" = 4, "Sometimes" = 3, "Rarely" = 2 and " Never" = 1 The overall practice score was calculated by adding up the scores for each respondent across all 15 questions. The total practice score was computed and the 75th percentile score derived. The HCWs that had their total practice score below the 75th percentile was categorized as having

"poor practice" while those that had their total practice score above 75th percentile was categorized as having "good practices".

Reponses were elicited from the mothers using a semi-structured, pre-tested, interviewer-administered questionnaire. The section s entails socio-demographic characteristics, assessing mother's level of satisfaction using questions (Likert grading 1-5) under Health care, HCW communication, HCW attitude, and Environment. Mother's satisfaction towards PNC was assessed through a five point likert scale and scores was allocated as follows: "Completely satisfied" = 5, "Satisfied" = 4, "Neutral" = 3, "Dissatisfied" = 2 and "Completely dissatisfied" = 1. The overall satisfaction score was calculated by adding up the scores for each respondent across all 28 questions. Aggregate scores for satisfaction was computed and clients with satisfaction score above the 75th percentile were rated as being satisfied with PNC service rendered while those with aggregate score lower than that of 75th percentile was rated as being dissatisfied with care provided.

3.7:2 Variables of Concern

The dependent variables with respect to provider's services were "good knowledge" or "poor knowledge" of PNC services, "good" or "poor" practices on PNC. **The independent variables** included the years of practice, highest professional qualification and whether or not the midwife had a refresher course on PNC in the last three years. **The dependent variables** with respect to the client included "Satisfied" or "not satisfied" with the PNC care offered. **The independent** variables are mainly the socio-demographic, obstetric and intra-partum factors specific for mothers assessing PNC care. **The overall outcome of interest** is "good quality of PNC or "poor quality of PNC" The association between the socio-demographic and other factors affecting quality of PNC services rendered was assessed using the chi-square (X) test, and the level of statistical significance was set at $P \leq 0.05$.

3.7.3 **Descriptive analysis:** This was done and results presented as frequencies, proportions, percentages and mean (x) and depicted in tables and figures. Standard deviation was used to determine how the responses of the respondents vary.

3.7.4 **Bivariate analysis:** The dependent and independent variables were dichotomized and Chi-square test was performed. This was done between knowledge of HCW on PNC, Practices of HCW on PNC (dependent variables) and socio-demographic e.g. Age, Highest professional

qualification, years in service, one at a time as independent variables. Also, between Mothers level of satisfaction (dependent variable) with their socio-demographic and obstetric history. Their odds ratios (OR) at 95% confidence intervals (CI) and p-values were equally obtained. The findings at this stage were used to identify important associations (at 5% level of significance).

3.8 Ethical Considerations

3.8.1 Ethical Clearance

Ethical clearance was obtained from Ogun State Ethical Review Committee, in January 2018

3.8.2 Confidentiality

Each respondent was assured of confidentiality, no specific identifier for respondents in the questionnaire. The data was properly stored in a computer that is password protected and the data is for the purpose of this research

3.8.4 Voluntariness/ Right to decline

Consent was obtained from each participant with details of what the study intends to achieve was properly communicated to the respondents

It was also communicated to the respondents that they have the right to decline or withdraw their participation at any time during the data collection.

3.8.5 Beneficence

The respondents were the care givers and the recipient of health care. This study will provide baseline information on PNC services to guide the relevant stakeholders in designing intervention that will improve their PNC needs.

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Chapter Four

Results

The demographic characteristics of midwives and women assessing postnatal care who participated in this study were summarized in Table 4.1.1 and 4.1.2 respectively.

4.1.1 Socio-demographic characteristics of Midwives

Total sampling of 142 Midwives in the selected HFs of which 142 returned the questionnaire making a response rate of 100%. Mean (SD) age of midwives was 44.3 (8.9) years and all the midwives were female. (Table 4.1:1) Five (5.4%) were within the 21-30 years age category, 33 (35.5%) were within 31-40 years, 27 (29.0%) were within 41-50 years and 28 (30.1%) were within 51-60 years. Seventy-eight (55.7%) of the respondents had their highest qualification as nurse midwife, 50 (35.7%) had BSc nursing, 2(1.4%) had masters in nursing and 4(2.9%) had master's in Public health. One hundred and three (72.5%) were from secondary HFs, while the others were from Primary HFs. Thirty-three (23.9) have they're of practice in the range 1-10 years, 54 (39.1) have their years practice range 11-20 years, 32(23.2) have their years of practice in the range 21-30 years and 19(13.8) have practiced for more than 30 years

Table 4:1.1 Sociodemographic Characteristics of midwives in Selected health facilities in Abeokuta Ogun State, March, 2018 (N=142)

Variables	Frequency	Percentage
Age(Years)		
21-30	5	5.4
31-40	33	35.5
41-50	27	29.0
51-60	28	30.1
Highest Professional Qualification		
Nurse/midwife	78	55.7
B.Sc. Nursing	50	35.7
Others	12	8.6
Years of Practice		
1-10	33	23.9
11-20	54	39.1
21-30	32	23.2
>30	19	13.8
Sex		
Female	142	100

**Others: Master's degree in nursing, Master's degree in Public health

4.1.2 Sociodemographic Characteristics of Mothers assessing postnatal services in Abeokuta, Ogun State

Four hundred and twenty- women seeking PNC care participated in this study. Their mean (SD) age was 29.5 (5.4) years. Two hundred and sixty-eight (64%) of the respondents were Christians while One hundred and fifty-one (35%) were Muslims. Three hundred and ninety-four (94%) of the participants had at least secondary education. The occupation of the respondents, predominantly were: trading 172 (41%), artisans 99 (23.6%) and civil servants 95 (22.7%). The clients were predominantly Yoruba ethnic group

Table 4.1.2 Sociodemographic Characteristics of women assessing Postnatal Care services in selected health facilities in Abeokuta, March, 2018

Variables	Frequency (N= 420)	Percentage (%)
Age (Years)		
15-19	8	1.9
20-24	60	14.8
25-29	143	35.5
30-34	114	28.3
35-39	56	13.9
40-44	20	4.9
45-49	2	0.5
Religion		
Islam	151	36.0
Christianity	268	64.0
Educational Level		
Primary	21	5.0
Secondary	202	48.4
Tertiary	192	46.0
Post graduate	2	0.5
Occupation		
Civil servants	31	7.4
Artisans	95	22.7
Trader	99	23.6
Housewife	172	41.1
Unemployed	22	5.0

4.2 Structural attributes of quality

4.2 Maternal Postnatal Care Services rendered in selected Health Facilities

4.2.1 Adequacy of PNC services:

Most HFs had fairly adequate PNC facilities (Figure 4.1.2). Only one HF had adequate PNC facility

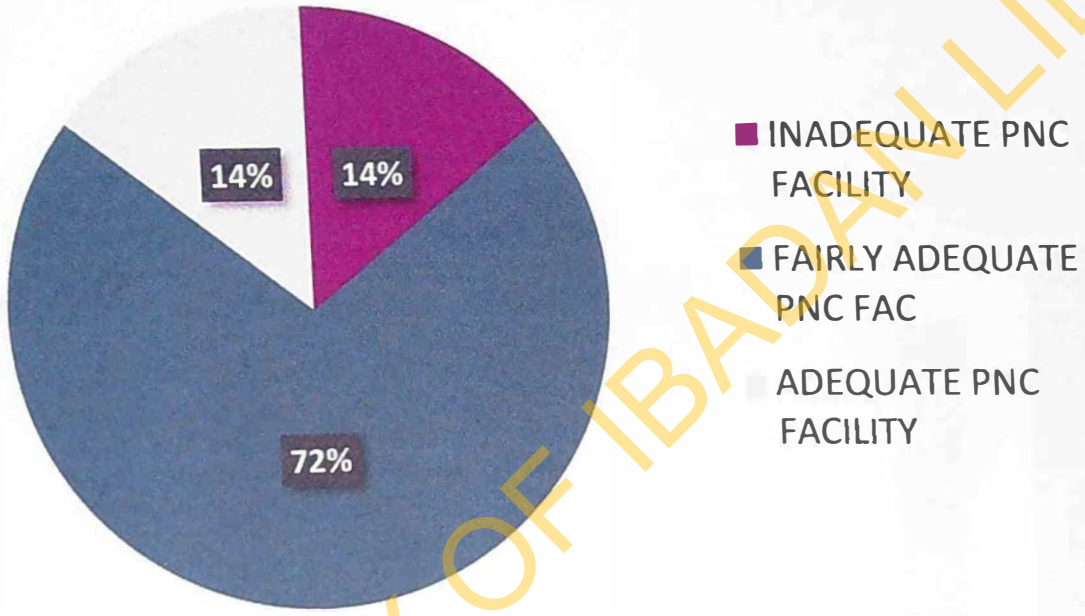

Figure 4.1.1 Adequacy of PNC Facilities in selected health care facilities in Ogun State, March 2018

.2 Structural attributes of quality

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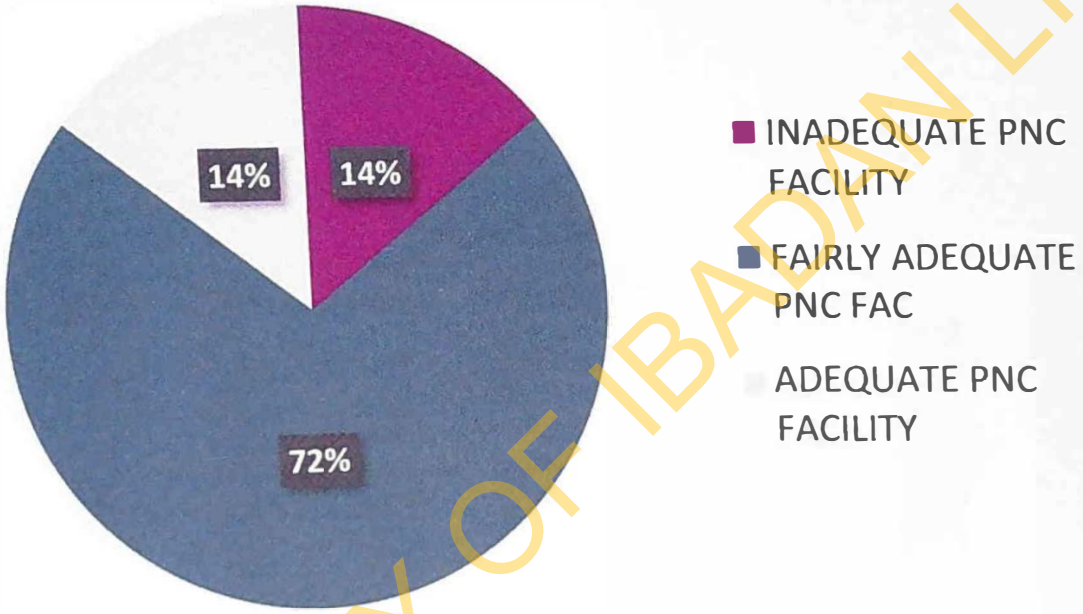

Figure 4.1.1 Adequacy of PNC Facilities in selected health care facilities in Ogun State, March 2018

Availability of Postnatal care facilities in selected Health care facilities in Ogun State, 2018

Maternal postnatal care services includes family planning services, blood donation services, waste disposal system. Family planning services, syringes, laboratory services, apron, and waste disposal system are available in 80% of facilities. (Figure 4.2.2). Anti-shock garments are rarely available (30%).

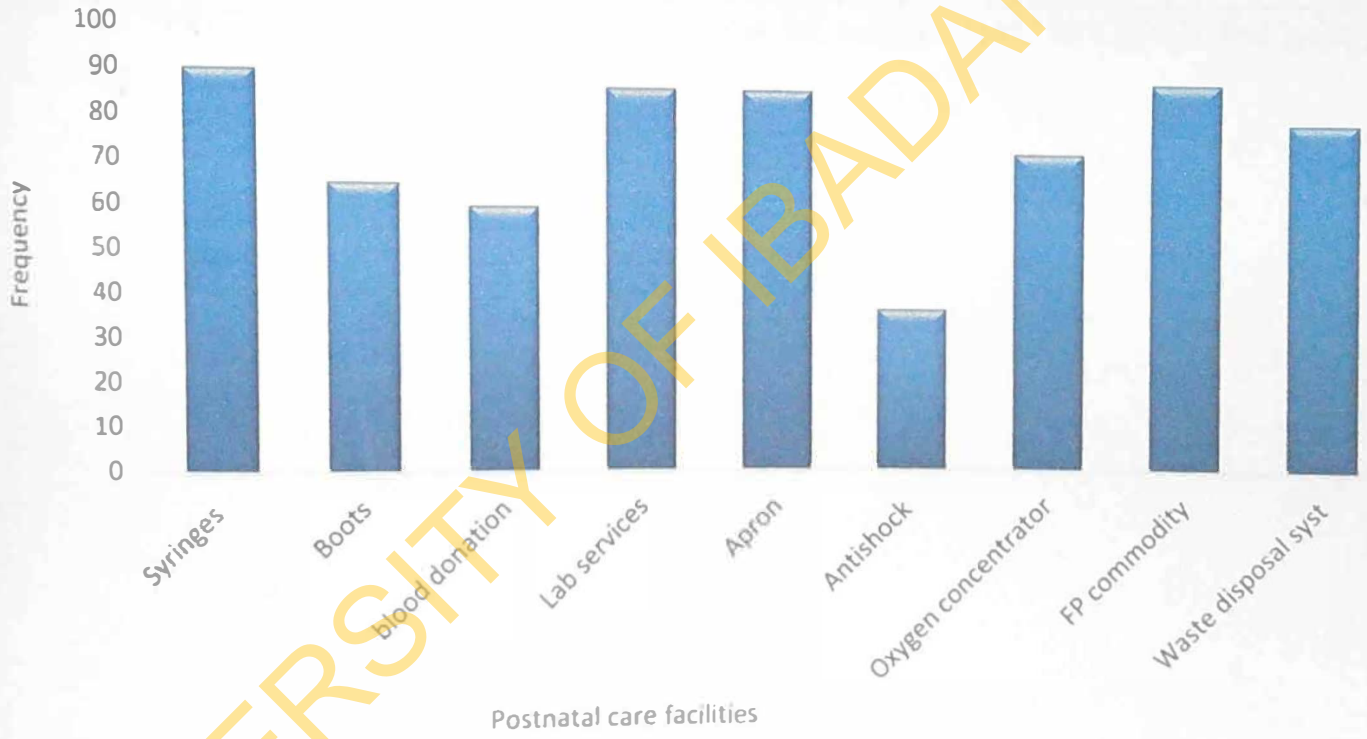

Figure: 4.2.2 Availability of Postnatal care facilities in selected Health facilities in Abeokuta Ogun State, 2018

4.3 Process attributes

4.3.1 Knowledge of health care workers on Maternal Postnatal services in Ogun State, 2018

The mean (SD) score for knowledge was 13.2 (2.57). Out of obtainable score of 22, the maximum score obtained was 20 while minimum score was one. Knowledge on postnatal care definition, timings of visit and postpartum mood assessment were good. It will be inferred also that most HCW had poor knowledge of postpartum danger signs and emergency obstetrics' care (only 34.5% could identify severe headache as danger sign postpartum, while only 44% understand that post-partum hemorrhage can be prevented even in labor). The knowledge on antibiotic use is very poor generally. (Only 12% understood the W.H.O recommendation).

Overall, 63 (44.3%) of the midwives had good knowledge of maternal postpartum care while 79(55.2%) had poor knowledge of maternal postpartum care. Overall, 101 (71.1) had good practices on PNC while 41(28.9) had poor PNC practices.

4.3 Process attributes

4.3.1 Knowledge of health care workers on Maternal Postnatal services in Ogun State, 2018

The mean (SD) score for knowledge was 13.2 (2.57). Out of obtainable score of 22, the maximum score obtained was 20 while minimum score was one. Knowledge on postnatal care definition, timings of visit and postpartum mood assessment were good. It will be inferred also that most HCW had poor knowledge of postpartum danger signs and emergency obstetrics' care (only 34.5% could identify severe headache as danger sign postpartum, while only 44% understand that post-partum hemorrhage can be prevented even in labor). The knowledge on antibiotic use is very poor generally. (Only 12% understood the W.H.O recommendation).

Overall, 63 (44.3%) of the midwives had good knowledge of maternal postpartum care while 79(55.2%) had poor knowledge of maternal postpartum care. Overall, 101 (71.1) had good practices on PNC while 41(28.9) had poor PNC practices.

Table 4.5 Knowledge on Health care worker (HCW) on maternal PNC in Abeokuta Ogun 2018

Knowledge check questions	HCW that got the right response n (%)
a. Postnatal period is within 6 weeks of delivery	136 (95.8)
b. W.H.O. recommended that women should be admitted in the Health facility for at least 24hours after delivery	132 (93)
c. The first postnatal visit according to W.H.O is 14 days after delivery	96(67.6)
d. Most maternal deaths occur in the first month of after delivery	107(75.4)
e. The second postnatal visit is at 6weeks after delivery	115 (81.0)
f. A total of 4 postnatal visits was recommended by W.H.O	78(54.9)
g. Postnatal contacts can be made at home or in a health facility	102(71.8)
h. Blood pressure should be taken shortly after birth and if normal, a repeat measurement should be done 12 hours later	14(9.9)
i. Urine voids should be documented within 6 hours of delivery	122(85.9)
j. Regular assessment of fundal height, vaginal bleeding, body temperature and pulse should commence shortly before discharge	108(76.1)
k. Among the common presentations of mothers in the postnatal period are: perineal pain, headache, fatigue, back pain and breast tenderness	130(91.5)
l. Symptoms of transitory postpartum depression(maternal blues) within 10 days of delivery means mother has post-partum depression	123(86.6)
m. Symptoms like excessive crying, loss of appetite, inability to sleep experienced by the mother persisting after 3 weeks of delivery may be suggestive of postpartum depression	120(84.5)
n. Assessment of mothers for risks, signs and symptoms of domestic abuse was included in PNC care at each visit	98(69.0)
o. Danger signs in postpartum period exclude severe headache	51(35.9)
p. Postpartum haemorrhage can only be prevented during labour	63(44)
q. Mothers should be counselled on resumption of sexual intercourse and possible dyspareunia 2-6 weeks after delivery	110(77.5)

	Mothers should be counselled on Family Planning methods at postnatal visits, however, contraceptive method decided should be offered to the mother only after six months of delivery	72(50.7)
s.	It is needless to counsel women on physiology of recovery from birth delivery and nutrition during a postnatal visit	39 (27.5)
t.	Antibiotics are recommended for mothers that had vaginal delivery with any degree of perineal tear	17 (12.0)
u.	Antibiotics are recommended for mothers that had vaginal delivery with third and fourth degree perineal tear	125 (88.0)
v.	Mothers should use iron and folic acid tablets for at least 3 months after delivery	115 (81.0)

4.3.1 Factors affecting Midwives Knowledge of PNC in Ogun

Table 4.3.1 shows factors that are associated with midwife knowledge on postnatal care. No factor was significantly associated with the midwives' knowledge on postnatal care.

Table 4.3.1: Bivariate Analysis of factors affecting Midwives Knowledge of PNC in Ogun N==142

Variables	Knowledge on PNC		Chi-square	p-value
Age-group	Good N(%)	Poor N(%)		
21-30	2(8.3)	2(6.3)	8.56	0.19
31-40	8(33.3)	11(34.4)		
41-50	4(18.6)	14(43.8)		
51-60	10(41.6)	5(15.6)		
Years of practice				
1-10	17(27.9)	16(20.8)	4.7	0.58
11-20	24(39.3)	30(38.9)		
21-30	10(16.4)	22(32.4)		
>30	10(16.4)	9(11.7)		
Highest P. Qualification*				
Nurse/midwife	31(42.5)	47(61.0)	5.6	0.23
BSc nursing	25(32.9)	25(32.50		
Others	7(9.6)	5(6.5)		
Refresher Training on PNC care**				
Yes	9(15.0)	8(10.1)	0.57	0.20
No	54(85.5)	71(89.9)		

*Professional **Others: Master's degree in nursing, Master's degree in Public health ***Training on PNC in the last 6 months

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11-20	24(39.3)	30(38.9)		
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>30	10(16.4)	9(11.7)		
Highest P. Qualification*				
Nurse/midwife	31(42.5)	47(61.0)	5.6	0.23
BSc nursing	25(32.9)	25(32.50		
Others	7(9.6)	5(6.5)		
Refresher Training on PNC care**				
Yes	9(15.0)	8(10.1)	0.57	0.20
No	54(85.5)	71(89.9)		

*Professional **Others: Master's degree in nursing, Master's degree in Public health ***Training on PNC in the last 6 months

Analysis of factors affecting Midwives Postnatal care practices in Ogun State, 2018

Table 4.3.1 shows factors that are associated with midwives' maternal postnatal care practices.

No factor was significantly associated with midwives postnatal care practices.

Table 4.3.2 Bivariate Analysis of factors affecting Midwives Postnatal care practices in Ogun State, 2018 N=142

PNC Practices			Chi-square	p-value
	Good N (%)	Poor N (%)		
Agegroup (Years)				
21-30	4(6.3)	1(3.4)	8.24	0.41
31-40	17(26.9)	14(50.0)		
41-50	17(26.9)	10(35.7)		
51-60	25(39.6)	3(10.7)		
Yearsof Practice				
1-10	23(32.4)	13(32.5)	2.60	0.46
11-20	9(12.7)	15(37.5)		
21-30	24(33.8)	8(20.0)		
>30	15(21.0)	4(10.0)		
***Highest P Qualification**				
Nurse/midwife	59	19(50.0)	7.78	0.117
BSc nursing	31	19(50.0)		

*Highest professional qualification

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***Highest P Qualification**				
Nurse/midwife	59	19(50.0)	7.78	0.117
BSc nursing	31	19(50.0)		

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4.4 Outcome attributes

4.4.1 Obstetrics/ Postnatal History of women assessing postnatal care services in Ogun State, 2018

One hundred and thirty (31.9%) of women assessing PNC services interviewed were prim parous. (Table 4. 4.1)Two hundred and thirty-six (58.2%) of the women had their parity between two and four while 35(8.6%) were grand multiparous Two hundred and twenty-two (61.8%) stayed less than 24hours in the hospital post-delivery while 136(37.9%) stayed beyond 48hours in the hospital post-delivery. Three hundred and ten (76.9%) of the women had spontaneous vaginal delivery Fourteen (3.5%) had instrumental delivery while 79(19.6) had caesarean section 385(94.5%) had live births.

Table 4.4.1 Obstetrics/ Postnatal History of women assessing postnatal care services in Ogun State, 2018 (N=420)

Description	Frequency	Percentage
Days postpartum		
2-3 Days	182	45.1
1 Week	82	20.3
2 Weeks	22	5.5
Between 3 and 6 weeks	117	29.0
Parity		
First	130	32.2
Second	137	33.9
Third	99	24.5
Forth or more	35	8.7
Pregnancy outcome		
Live birth	385	98.5
Still birth	4	1.0
Mode of delivery		
Vaginal Delivery	310	76.9
Instrumental delivery	14	3.5
Elective CS	52	12.9
Emergency CS	27	6.7
Delivery personnel		
Doctor	115	28.5
Nurse	269	66.7
CHEW	8	2.0

Client's satisfaction with PNC services rendered in selected health facility in Ogun State, March 2018

Overall, 350(85.8%) of the women assessing PNC services in the facilities were satisfied with services rendered while 58(14.2%) were dissatisfied with PNC services rendered.

Client's satisfaction with PNC services rendered in selected health facility in Ogun State, March 2018

Overall, 350(85.8%) of the women assessing PNC services in the facilities were satisfied with services rendered while 58(14.2%) were dissatisfied with PNC services rendered.

4.4.3 Client Satisfaction with PNC offered in Ogun State, 2018

Respondents answered a combination of questions to help assess their satisfaction on postnatal care services rendered in the health facilities. Tables' 4.4.3-4.4.6 show client satisfaction with PNC services received on the day of visit.

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Respondents answered a combination of questions to help assess their satisfaction on postnatal care services rendered in the health facilities. Tables' 4.4.3-4.4.6 show client satisfaction with PNC services received on the day of visit.

Table 4.4.3 Satisfaction of PNC clients towards Health Care received and Health Care Workers communication in Ogun State, 2018

	Satisfied	Dissatisfied
Health Care		
	N (%)	N (%)
Did the provider treat you politely and with respect?	400(95.3)	19(4.5)
Medical care received today	399(95.0)	16(3.8)
Care received from Nurse	398(94.7)	18(4.3)
Waiting time to see provider	356(84.5)	29(7.2)
Pain control	354(84.2)	52(12.3)
Cost of healthcare	317(75.4)	86(20.4)
Confidence in health worker	384(91.4)	30(7.1)
Health worker's communication		
Provider explained your condition	366(87.1)	50(11.9)
Provider explained about drug	367(87.3)	28(9.0)
Provider listens to your worries	369(87.9)	39(9.3)
Information at discharge	309(73.6)	70(16.7)
Information about procedure & examination	352(83.8)	41(9.7)

Table 4.4.3 Satisfaction of PNC clients towards Health Care received and Health Care Workers communication in Ogun State, 2018

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Provider listens to your worries	369(87.9)	39(9.3)
Information at discharge	309(73.6)	70(16.7)
Information about procedure & examination	352(83.8)	41(9.7)

Table 4.4.5 Satisfaction of PNC clients towards Health worker's attitude and Health Facility Environment in Ogun State, 2018

	Satisfied N (%)	Dissatisfied N (%)
Health worker's attitude		
Courtesy, respect by the provider	394(93.8)	15(3.6)
The way staff treated you	386(91.9)	20(4.8)
The way staff treated family or companion	337(80.2)	75(17.9)
Acceptance of opinion by staff	363(86.4)	45(10.7)
Environment		
Amount of freedom in the ward	364(86.7)	45(10.7)
Amount of privacy in the ward	410(97.6)	53(12.6)
Quality of meal	176(74.9)	59(25.1)
Facility cleanliness	362(86.1)	48(11.4)

Table 4.4.5 Satisfaction of PNC clients towards Health worker's attitude and Health Facility Environment in Ogun State, 2018

	Satisfied N (%)	Dissatisfied N (%)
Health worker's attitude		
Courtesy, respect by the provider	394(93.8)	15(3.6)
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The way staff treated family or companion	337(80.2)	75(17.9)
Acceptance of opinion by staff	363(86.4)	45(10.7)
Environment		
Amount of freedom in the ward	364(86.7)	45(10.7)
Amount of privacy in the ward	410(97.6)	53(12.6)
Quality of meal	176(74.9)	59(25.1)
Facility cleanliness	362(86.1)	48(11.4)

4.4.7 Factors associated with Client Satisfaction of PNC in Ogun State March, 2018

Table 4.4.7 shows factors that are associated with client's satisfetion to PNC offered at the health facilities. None of the sociodemographic characteristics were significantly was associated with client satisfaction with PNC services rendered.

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Table 4.4.7 Bivariate Analysis of Factors affecting Client Satisfaction of PNC in Ogun State March, 2018 N=420

Variables	Satisfaction		Chisquare	p-value
	Satisfied N (%)	Dissatisfied N (%)		
Age(years)				
16-25	63(27.0)	32(18.3)	4.45	0.11
26-35	136(58.4)	117(66.9)		
36-45	34(14.5)	26(14.9)		
Facility				
Secondary	178(77.1)	151(87.5)	5.51	0.19
Primary	53(22.9)	24(13.6)		
Religion				
Islam	88(37.8)	60(34.3)	0.52	0.46
Christianity	145(52.2)	115(65.7)		
Education				
Primary	13(5.6)	8(4.6)	5.497	0.14
Secondary	121(51.9)	76(43.9)		
Tertiary	99(42.5)	87(50.3)		
Postgraduate	0	2(1.2)		
Occupation				
*CS	16(6.9)	13(7.4)	9.73	0.14
Artisans	42(18.0)	49(28.0)		
Trader	64(27.5)	35(20.0)		
Housewife	111(47.6)	78(44.6)		

*Civil servant

Table 4.4.7 Bivariate Analysis of Factors affecting Client Satisfaction of PNC in Ogun State March, 2018 N=420

Variables	Satisfaction		Chisquare	p-value
	Satisfied N (%)	Dissatisfied N (%)		
Age(years)				
16-25	63(27.0)	32(18.3)	4.45	0.11
26-35	136(58.4)	117(66.9)		
36-45	34(14.5)	26(14.9)		
Facility				
Secondary	178(77.1)	151(87.5)	5.51	0.19
Primary	53(22.9)	24(13.6)		
Religion				
Islam	88(37.8)	60(34.3)	0.52	0.46
Christianity	145(52.2)	115(65.7)		
Education				
Primary	13(5.6)	8(4.6)	5.497	0.14
Secondary	121(51.9)	76(43.9)		
Tertiary	99(42.5)	87(50.3)		
Postgraduate	0	2(1.2)		
Occupation				
*CS	16(6.9)	13(7.4)	9.73	0.14
Artisans	42(18.0)	49(28.0)		
Trader	64(27.5)	35(20.0)		
Housewife	111(47.6)	78(44.6)		

*Civil servant

4.4.8 Obstetrics' factors affecting Client Satisfaction of PNC in Ogun State March, 2018

Table 4.4.8 shows obstetrics factors that are associated with client's satisfaction to PNC offered at the health facilities. None of the client obstetrics history or factor was significantly associated with satisfaction to PNC services rendered.

Table 4.4.8 Bivariate Analysis of Obstetrics' factors affecting Client Satisfaction of PNC in Ogun State March, 2018 N=420

Variables	DissatisfiedN (%)	Satisfied N%	ChiSquare	P-value
Delivery				
Vaginal	135(78.9)	175(75.4)	5.82	0.12
Instrumental	9 (5.3)	5(2.1)		
Elective CS	16(9.4)	36915.5)		
Emergency CS	11(6.4)	16(6.9)		
Delivery by				
Doctor	45(26.4)	70(30.4)	2.81	0.59
Nurse	120 (70.5)	149(62.1)		
Chew	3 (2.5)	5(2.1)		
***Hospital stay**				
1-12hours	15(10.1)	15(7.2)	8.68	0.07
13-24hours	44(29.5)	52(24.9)		
25-48hours	29(19.5)	67(32.0)		
>48hours	61 (40.9)	75(35.9)		
Parity				
First	49(28.3)	81(35.5)	5.85	0.21
Second	60(34.7)	77(33.8)		
Third	45(26.0)	54(23.7)		
>=Four	19(10.9)	16(7.0)		

Foot note: CS-Caesarean section *: Stay in hospital post-delivery Delivered by: healthcare worker that attended to delivery

CHAPTER FIVE

Discussion

This study assessed the quality of postnatal care offered to women in the facilities in Abeokuta, Southwest Nigeria by determining the PNC infrastructures in the health facilities, midwife knowledge and practices and client satisfaction of care. A quality of care (QoC) framework adapted from the World Health Organization QoC framework for maternal health grouped elements or attributes into structures, processes, and outcomes of postnatal care.

Maternal postnàtal care services are routinely rendered to women within period they deliver to discharge in all the HFs sampled. As for the postnatal clinic supposed to be conducted after discharge home, it was noticed that only State hospital Ijaiye had a statutory maternal postnatal clinic day in a week. Other HFs conducted some maternal postnatal care services only at six weeks when mothers bring their babies for routine immunization. Mothers that deliver from this facility visit the HFs six weeks post-delivery for the purpose of taking the second dose of the routine immunization for their babies. The maternal postnatal care services include family planning services, blood donation services, counseling on breastfeeding, counseling on postnatal care visit, postnatal examination, counseling on good nutrition, infection prevention practices, and measurement of blood pressure, weight and urinalysis. Health education on personal hygiene and breast care were also reported.

5.1 structure component of quality of care

5.1a Adequacy of Postnatal Care Facilities

This study revealed that the maternal PNC care facilities in the HFs were inadequate and were generally below standard. The postnatal care facility assessed included but not limited to blood donation services, infection and prevention facilities, family planning, health services commonly assessed. Only one health facility has statutory date for postnatal clinic in the week. Mothers present their children at six weeks for immunization and some may decide to keep the postnatal visit appointment already scheduled. This finding is similar to findings in study of PNC utilization in Maiduguri which also revealed that most mothers' asses PNC services when they take their children for immunization at six weeks. (Takai et al 2015) Similarly, In 2001, study of

the status of PHC in Nigeria revealed inadequate laboratory service, this also agrees to a study in Zimbabwe where poor quality of services provided by heath cares are attributed to limited equipment (Guatemala, 2003, Chow et al, 2009). The facilities did not have adequate water supply, especially the PHCs.

The midwives that were interviewed work at the maternal health section of the facilities contrary to the findings in assessment of PNC services in Malawi where it was found that midwives combined postnatal care with other services within the health facilities which made them compromise the quality of postnatal care (Kanise et al, 2009). Also, Results in the Malawi study showed that the facilities did not have appropriate infrastructure for the provision of quality postnatal care. In terms of infection prevention and control (IPC) facilities in place, all the health care facilities were rated as "fair". Meanwhile, Good infection control is important in protecting the mother, child and health workers from hospital acquired infections. This finding on IPC is similar to the findings in a study in Uganda, (Tetui et al, 2017) the study findings indicated that eleven of the fifteen health facilities assessed had fair infection control facilities.

5.1. B Knowledge of healthcare workers on PNC

Knowledge of health worker is important in delivering quality PNC services in any system. Inadequate pre-service and in-service training sometimes limited health workers' skills and ability to provide quality maternal care. Our findings revealed that knowledge on postnatal care definition, timings of visit and postpartum mood assessment were good. It will be inferred also that most HCW had poor knowledge of postpartum danger signs and emergency obstetrics' care (only 34.5% could identify severe headache as danger sign postpartum, while only 44% understand that post-partum hemorrhage can be prevented even in labor) . The knowledge on antibiotic use is very poor generally, (Only 12% understood the W.H.O recommendation). Similarly, a comparative study on PNC quality in Kenya (Charlotte et al 2015) revealed that Providers' knowledge on PNC was fair. The reason for the HCW poor knowledge on PNC as revealed in our study may be because just 15 % had refresher training previously in the last six months preceding the study. Although bivariate analysis did not reveal significant association between HCW knowledge of PNC and having refresher training on PNC in the past three months before this study. Similarly, a study in Yemen revealed that more than

half of the community midwives sampled have knowledge of postnatal care schedules although most did had poor knowledge of management of complications during postnatal period. (Saleem et al 2017). It also noted that most HCW had poor knowledge of postpartum danger signs and emergency obstetrics' care while only 44% understood post-partum hemorrhage can be prevented even in labor. The knowledge on antibiotic use is very poor generally. Only 12% of the midwives understood the recommendations on antibiotic use after delivery.

Midwives PNC practices

Postnatal care practices among midwives were generally good. Among the good practices by the midwives is counselling on family planning at every opportunity for postnatal visit, although referral for family planning uptake was poor. The only private secondary HF included in this study is catholic owned, with high client flow; counselling or uptake of family planning is not practiced in this facility Most of the health workers refer women that had complaints at the PNC visit which they cannot handle to the next level of care.

5.2a Quality of Postnatal Care

This study revealed that most women were satisfied with the quality of PNC services rendered. While QoC assessed from the client perspective was good, but assessment from the providers perspective elicited through the knowledge check revealed gaps in quality of PNC rendered. From the analysis of client satisfaction, most clients were either completely satisfied or satisfied with the quality of PNC offered. The clients may either have a low threshold of satisfaction to PNC services (which can be influenced by many factors) or the providers meeting up with client demand. Similarly, there was high level of satisfaction with the quality of MHC services received reported from a study on perception of quality of maternal health services in South east Nigeria. (Emelumadu et al, 2014) and comparative study on PNC quality in Kenya (Charlotte et al 2015) where they observed that women satisfaction of PNC service received depended on the care received, waiting times, and time spent with a provider, regardless of facility type. Also, most women reported having received standard clinical services during their visit in a study conducted in Haiti (Kelsey et al, 2017). Women's experience of receiving general support and kindness relate to the way in which all interactions between mothers and staff take place rather than to specific tasks. They were most satisfied with the attitude of healthcare workers and communication and least satisfied with the cost of health care , dissatisfaction towards cost of

healthcare was also reported in the findings from the study in South east Nigeria. A study in Northwest Nigeria reported dissatisfaction with attitude of health care workers in a Qualitative assessment of women's satisfaction with maternal health care in referral hospitals in Nigeria (Friday et al, 2017) Elsewhere in Africa, clients' satisfaction with maternal services is generally high, even though service cost, payment mechanism and long waiting time were identified as barriers to maternal health service utilization (Sengooba, 2003).

5.2b Factors Affecting Quality of PNC offered to mothers

The sociodemographic factors are not predictive of client satisfaction with PNC offered. Contrary to these findings, the studies examined in Northwest Nigeria (Srivastava et al, 2015) and East Africa revealed that women who were younger, not currently married and primiparous were less likely to be satisfied with PNC services. Also, examination of client's perspectives on quality of maternal health care services in Malawi (Creanga et al, 2017) revealed clients dissatisfaction towards care, which contradicts the findings from this study. Client's experience of the content and delivery of care while in hospital may be a more important indicator of quality than the length of hospital stay; this will in turn contribute to whether women feel their length of stay is too long or too short. Some studies that have found that women are less than satisfied with postnatal care and that care should be more individualized and flexible (Brown et al 2004, Forster et al 2008) very few studies have implemented and evaluated new approaches to care

5.2 CONCLUSION

Overall, quality of PNC services in the State is good with respect to client's perspective. The postnatal care facilities were inadequate except for one secondary health facility.

The midwives had poor knowledge of emergency postpartum care although they are aware of the basic maternal postnatal care schedules. The midwives however reported good postnatal care practices as corroborated by the reports by the women assessing postnatal care during the exit client interview

The women assessing postnatal care were satisfied with the care received. The quality of postnatal care rendered was good based on client perception. The quality of postnatal care was undermined by inadequate PNC facilities and the poor knowledge of midwives on postnatal care.

The factors examined among midwives offering PNC services did not significantly affect the quality of PNC services offered. Also, the factors examined among women assessing PNC services had no significant effect on their satisfaction towards PNC services received.

5.3 RECOMMENDATIONS

Based on the findings of this study, the following recommendations should be considered so as to improve postnatal care services rendered in the State to enhance maternal survival.

1. The State should ensure that health facilities are adequately equipped with postnatal care Infrastructure to further improve quality of postnatal care offered to mothers in the State.
2. The community should be sensitized on maternal health care and the need to collaborate with Government and non-Governmental agencies to equip the health facilities with structures to provide adequate PNC services.
3. The State should integrate PNC services into the existing health insurance package to further improve facility provision
4. The midwives should partake in refresher courses on PNC services to further update their knowledge on evidence based routine PNC practices.

5. These findings should be used as advocacy tool to the policy makers and stakeholders on maternal health in the State so as to improve PNC infrastructures and provide update courses for routine PNC care for the midwives.
6. Further studies should be carried out using both quantitative and qualitative methods of data collection to further characterize factors associated with quality of PNC and mothers satisfaction.

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APPENDIX 1:

QUESTIONNAIRE FOR ASSESING THE KNOWLEDGE AND PRACTICES OF HEALTH CARE WORKERS IN OGUN STATE TOWARDS MATERNAL POSTNATAL CARE SERVICES

Dear respondents,

This study is being carried to determine the knowledge of Health Care Workers in Ogun State on Postnatal services offered to mothers. The knowledge gained will be useful in determining areas to be targeted for intervention on maternal health across all levels of care.

Your participation is entirely voluntary and carries no risk to you. It will however require you spending about 10 minutes of your time to answer this questionnaire. You may wish to withdraw from this study at any time and there will be no consequences for doing so. You will not be identified and your responses will be kept confidential. Thank you for choosing to participate

FACILITY IDENTIFICATION

Name of Facility .....

Facility Type: 1. Secondary 2. Primary

Date of Interview:

SECTION A: DEMOGRAPHIC DATA
Kindly tick the appropriate figure

1.Age		
2. Sex	Male Female	1 2
3.Highest professional qualification	Nurse/ Midwife BSc Nursing Masters degree in Nursing Masters Degree in Public health Others (specify)	1 2 3 4

4. Years of practice	1-10 11-20 20-30 >30	1 2 3 4

SECTION B: KNOWLEDGE OF MIDWIVES ON MATERNAL POST-NATAL CARE

1. What are the Postnatal care services rendered in your hospital?
2. When last did you receive a refresher training on Postnatal care

Kindly tick whichever option applies

	Yes	No	I don't know
w. Postnatal period is within 6 weeks of delivery			
x. W.H.O. recommended that women should be admitted in the Health facility for at least 24hours after delivery			
y. The first postnatal visit according to W.H.O is 14 days after delivery			
z. Most maternal deaths occur in the first month of after delivery			
aa. The second postnatal visit is at 6weeks after delivery			
bb. A total of 4 postnatal visits was recommended by W.H.O			
cc. Postnatal contacts can be made at home or in a health facility			
dd. Blood pressure should be taken shortly after birth and if normal, a repeat measurement should be done 12 hours later			
ee. Urine voids should be documented within 6 hours of delivery			
ff. Regular assessment of fundal height, vaginal bleeding, body temperature and pulse should commence shortly before discharge			
gg. Among the common presentations of mothers in the postnatal period are: perineal pain, headache, fatigue, back pain and breast tenderness			

hh. Symptoms of transitory postpartum depression(maternal blues) within 10 days of delivery means mother has post-partum depression			
ii. Symptoms like excessive crying, loss of appetite, inability to sleep experienced by the mother persisting after 3 weeks of delivery may be suggestive of postpartum depression			
jj. Assessment of mothers for risks, signs and symptoms of domestic abuse was included in PNC care at each visit			
kk. Danger signs in postpartum period exclude severe headache			
ll. Postpartum haemorrhage can only be prevented during labour			
mm. Mothers should be counselled on resumption of sexual intercourse and possible dyspareunia 2-6 weeks after delivery			
nn. Mothers should be counselled on Family Planning methods at postnatal visits, however, contraceptive method decided should be offered to the mother only after six months of delivery			
oo. It is needless to counsel women on physiology of recovery from birth delivery and nutrition during a postnatal visit			
pp. Antibiotics are recommended for mothers that had vaginal delivery with any degree of perineal tear			
qq. Antibiotics are recommended for mothers that had vaginal delivery with third and fourth degree perineal tear			
rr. Mothers should use iron and folic acid tablets for at least 3 months after delivery			

SECTION C: ASSESSMENT OF POSTNATAL CARE PRACTICES OFFERED BY THE HEALTH CARE WORKERS IN THE STATE

Please tick whichever applies

	Always	Most times	Sometimes	Rarely	Never
a. I asses the mothers for vaginal bleeding in the first hour after					

delivery					
b. I check for uterine contraction in the first hour of delivery					
c. I assess lochia and blood loss Between 24-48 hours after delivery					
d. I check for mother's pulse rate in the first hour post delivery					
e. I measure the mother's temperature in the first hour post delivery					
f. I measure and document urine voids within 6 hours of delivery					
g. I examine the mother's breast to asses lactation within 24 hours of delivery					
h. I counsel mothers on the danger signs in the postpartum period					
i. I counsel mothers on importance of postnatal visits when they are being discharged, post delivery					
j. I counsel mothers on good nutrition during postnatal visit					
k. I examine mothers for symptoms of postpartum depression during their Postnatal clinic visits					
l. I counsel mothers on family planning during the postnatal visit					
m. I counsel mothers on Family planning before discharge, post delivery					
n. I refer women who has issues of concern at any postnatal contact					

SECTION D: AVAILABILITY OF MEDICAL DEVISES FOR MATERNAL POST NATAL CARE

Which of the following is available for your use at your workplace?

	Never	Sometimes	Always
a. Syringes			
b. Boots			
c. Blood donation services			
d. Clinical transfusion services			
e. Diagnostic tests and laboratory			
f. Apron			
g. Anti-shock garments			
h. Oxygen Concentrator			
i. Family Planning Commodities			
j. Health care waste management			

APPENDIX 2

CLIENT EXIT QUESTIONNAIRE ON ASSESMENT OF QUALITY OF POSTNATAL CARE OFFERED TO WOMEN IN OGUN STATE

Health Facility ID.....

Good day ma,

Interviewers' name.....

This questionnaire will be used to get information on the mother's experience of post-partum care offered to them as part of the activities of a study assessing the quality of Postnatal care offered to mothers in Ogun State. The knowledge gained will be useful in determining areas to be targeted for intervention on Maternal health across all levels of care.

You are invited to participate in this study. Your participation is entirely voluntary and carries no risk to you. It will however require you spending about 10 minutes of your time to answer this questionnaire. You may wish to withdraw from this study at any time and there will be no consequences for doing so. You will not be identified and your responses will be kept confidential.

Thank you for choosing to participate

Section A: Sociodemographic Variables **Date of Interview**

Age of respondent .....

Religion of respondent.....

Educational level.....

Place of residence.....

Occupation of respondents.....

Section B: Information on postnatal services presently

Tick the appropriate option

1. When did you deliver your baby? a. 2 days ago b. 3 days ago c. 1-week d. 3Weeks e. > 3weeks

1.Parity a. First b. Second c. Third d. Forth or more

2. Who attended to you during delivery a. Doctor b. Nurse c. CHEW d. I don't know e. Others (specify).....

3. Mode of delivery a. SVD b. Instrumental delivery c. Elective CS d. Emergency CS

4. Gender of health care provider a. Male b. Female

5. Treatment fee a. Paying b. Free

6. Length of stay in hospital after delivery a. 1-12 hours b. 13-24 hours c. 25-48hrs d. >48 hours

7. Pregnancy outcome a. Live birth b. Still birth before labour c. Still birth after labour

Section C: Assessment of mother's level of satisfaction towards postnatal care offered

Health Care

Please tick whichever applies

	Completely satisfied	Satisfied	Neutral	Dissatisfied	Completely Dissatisfied
o. Did the provider treat you politely and with respect?					
p. Medical care received today					
q. Did the provider spend enough time with you at the visits?					
r. Care received from Nurse					
s. Waiting time to see provider					
t. Pain control					
u. Cost of health care offered today					
v. Did you have confidence in the general practitioner's professional competence?					

Health worker's-communication

	Completely satisfied	Satisfied	Neutral	Dissatisfied	Completely dissatisfied
a. Provider explained your condition					
b. Provider explained about drug					
c. Provider listens to your worries					
d. Information at discharge					
e. Information about procedure & examination					

Health worker's attitude

	Completely satisfied	Satisfied	Neutral	Dissatisfied	Completely dissatisfied
a. Courtesy, respect by the provider					
b. The way staff treated you					
c. The way staff treated family or companion					
d. Acceptance of opinion by staff					

Environment

	Completely satisfied	Satisfied	Neutral	Dissatisfied	Completely dissatisfied
a. Amount of freedom in the ward					

b. Amount of privacy in the ward					
c. Quality of meal					
d. Facility cleanliness					

Postnatal Care Services Offered today- This applies to women after delivery at the point of discharge from health facilities

Services	Yes	No	I don't know
The Health care workers (HCW) assessed vaginal bleeding in the first hour after delivery			
HCW checked mother's pulse rate in the first hour post delivery			
HCW measured the mother's temperature in the first hour post delivery			
HCW assessed Mother's breast for lactation within 24 hours of delivery			
HCW counselled mothers on breastfeeding practices			
HCW counselled mothers on the danger signs in the postpartum period before discharge			
HCW counsel mothers on importance of postnatal visits			

HCW counselled mothers on good nutrition			

Postnatal Care Services Offered today- This applies to all women assessing PNC

Services	Yes	No	I don't know
The HCW counsel mothers on family planning during the postnatal visit			
Were you given a prescriptions for a contraceptive method?			
Were you given a referral for family planning method			
HCW counselled mothers on the danger signs in the postpartum period			
HCW asked about any symptom of mood disorders in this period			

APPENDIX 3

CHECKLIST FOR ASSESSING HEALTH FACILITY'S POST NATAL CARE DEVICES IN SELECTED HEALTH CARE FACILITIES IN OGUN STATE

FACILITY IDENTIFICATION.....

Facility Type: 1. Secondary 2. Primary

Name of interviewer.....

Health Facility PNC Checklist		
	Present	

Structures and Facilities	Yes	No
a. Postnatal ward		
b. Laboratory services		
c. Blood donation services		
d. Functional blood bank		
e. IEC materials available		
f. Guidelines and registers		
g. PNC service available for 24 hours		
IPC Facilities		
h. Decontamination solution		
i. Running water		
j. Wash hand basin present		
k. Sharps box container present		
l. 0.05% chlorine solution		
m. 0.1% chlorine solution		
n. Sterile and clean latex gloves		
o. Color-coded waste bin: RED BLACK YELLOW		
Equipment and supplies		
Antishock garment		
p. Intravenous resuscitation Fluids		
q. Resuscitation drugs for emergencies like PPH		
r. Oxygen concentrator		

s. Family Planning Equipments			4
t. Family Planning Commodities			ΛΑ

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS
ABEOKUTA, OGUN STATE, NIGERIA

Ref No.....HPRS/381/256

Date.....22/12/2017.....

RE: "ASSESSMENT OF POSTNATAL CARE SERVICES IN SELECTED HEALTH CARE FACILITIES IN OGUN STATE, SOUTHWEST NIGERIA"

Notice of Research Exemption

This is to inform you that the activities described in the submitted protocol/documents have been reviewed by the State Health Research Ethics Committee, the activities described there-in meet the criteria for exemption and is therefore approved as exempt from SHREC oversight.

The State code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code. The HREC reserves the right to conduct compliance visit to your research site without previous notification.

Please note that, you are expected to share with us the findings of your research work via rantioladeinde@yahoo.com and ogundprs@yahoo.com

O.O. Oladeinde

Dr. Ranti Oladeinde BSc, MBBS, MPH, PGDHMGT, FMCPH, MNIM.
Director, Planning, Research and Statistics
Secretary, State Research Ethics Committee

MINISTRY OF HEALTH

DEPARTMENT OF PLANNING, RESEARCH & STATISTICS
ABEOKUTA, OGUN STATE, NIGERIA

Ref No.....HPRS/381/256

Date.....22/12/2017.....

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Director, Planning, Research and Statistics
Secretary, State Research Ethics Committee