DETERMINANTS OF INTENTION TO USE CONTRACEPTIVES AMONG SURVIVORS OF SEVERE ACUTE MATERNAL MORBIDITIES KADUNA STATE, NIGERIA

BY

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ABSTRACT

Nigeria is the second highest contributor to maternal mortality globally and women who survive severe acute maternal morbidities (SAMMs) are at increased risk of repeated SAMMs and death. The use of modern contraceptives which has been shown to reduce maternal mortality by 35 to 58% remains low about 10%. Research has shown that behavioral change is a continuum from knowledge to intention and practice.

A descriptive cross sectional survey of 330 survivors of severe acute maternal morbidities, recruited consecutively over a period of 4 months from 10 referral health facilities in the state offering maternal health services. Data analysis was carried out and frequencies, chi squares and odds ratios of predictors and outcome variables were generated as well as logistic regression performed.

Respondents had a mean age of 29 ± 7.5 years and 119 (35.9%) of respondents were Christians while 210 (63.8%) were Muslim. Women with no education were 27 (8.2%) of respondents while 79 (24%) had quaranic education only, 81 (24.6%) had primary education, 93 (27.9%) secondary education and 50 (15.2%) higher education. Less than half of respondents 139 (42.1%) were found to have good knowledge of modern contraceptives, 64 (19.4%) had fair knowledge of modern contraceptives while 127 (38.5%) had poor knowledge of modern contraceptives. We observed that a high proportion of respondents (69.9%) intend to use modern contraception in future and women with more than 5 children living children were 4 times more likely to intend to use modern contraceptives (OR = 3.87, CI= 1.05 – 14.07), women with proposed birth interval of greater than 2 years were twice more likely to intend to use modern contraceptives (OR=1.88, CI= 1.05 – 3.37) and finally women who have ever used modern contraceptives before were 4 times more likely to intend to use modern contraceptives (OR=3.85, CI=1.93 -7.76). The main reasons given for not wanting to use modern contraceptives in future include religious reasons (45.9%), fear of side effects (21.8%) and to a lesser extent spousal approval (14.9%).

Modern contraceptive use intention is high among survivors of SAMMs presenting an opportunity to scale up postpartum family planning use and furthermore behavioral change communication strategies in the state need to be more comprehensive to ensure women have adequate knowledge about modern contraceptives and are well informed to make informed choices about the range of methods available.

Key words: Severe Acute Maternal Morbidities, Modern Contraceptives Use Intention, Maternal Mortality, Postpartum Family Planning

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CERTIFICATION

I certify that this dissertation entitled factors that determine the intention to use modern contraceptives in survivors of acute severe maternal morbidities among women in Kaduna state, Nigeria was carried out by Dr Ojonye Chris Ega a postgraduate student from the Department of Epidemiology and Medical Statistics, University of Ibadan and under my supervision. This dissertation meets the regulation for the award a masters in field epidemiology and practice (MPHFEP) and it is approved for its contribution to knowledge and literature.

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DEDICATION

This is dedicated to God Almighty and Women and Children in Nigeria.

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CHAI	Clinton Health Access Initiative
CPR	Contraceptive Prevalence Rate
DHIS	District Health Information System
EmONc	Emergency Obstetric and Newborn Care
FP	Family Planning
ICD	International Classification of Disease
IMNCH Strategy	Integrated Maternal, Newborn and Child Health Strategy
IUCD	Interuterine Contraceptive Device
LAM	Lactational Amenorrhea Method
LGA	Local Government Area
MDGs	Millennium Development Goals
MNCH	Maternal, Newborn and Child Health
NDHS	National Demographic and Health Survey
NFELTP	Nigerian field Epidemiology and Laboratory Training Program
PPFP	Postpartum Family Planning
SAMM	Severe Acute Maternal Morbidities
SBA	Skilled Birth Attendants
SSHDP	State Strategic Health Development Plan
UN	United Nations

CHAPTER ONE

INTRODUCTION

1.1 Background

Maternal mortality is death of a woman during pregnancy and child birth or within 42 days after delivery or termination of a pregnancy (WHO, 2006) and this remains a great public health challenge in many developing countries. Majority of these deaths can be prevented if there is increased access to effective maternal health services at the right time and place, unfortunately this is not the case especially in most low and medium income countries.

Lack of effective maternal health services has led to high rates of maternal deaths whereas no woman should lose her life because she is birthing new life into the world. Global maternal deaths are steadily declining from 376, 034 in 1990 compared with 292, 982 in 2013 (The Lancet, 2014). Nigeria is the second largest contributor to maternal mortality worldwide, contributing as much as fourteen percent (UNECA, 2013) which is indeed an unenviable tag. Nigeria's maternal mortality ratio (MMR) is currently 576 per 100,000 live births which is a marked reduction from the 1990 value of 1000 per 1000,000 live births. However at this rate Nigeria would not achieve MDG 5, thus the inclusion of this target as a key component of the sustainable development goals. Maternal mortality is one of the least performing developmental indicators, maternal near miss or acute severe maternal morbidity is a useful tool in monitoring the quality of obstetric care, especially within the health facility. Maternal near miss or Acute Severe maternal morbidity (SAMM) can be defined as women who have experienced or survived a severe condition related to pregnancy and child birth.

In line with Global Evidence-based Strategies certain interventions which include ensuring a skilled birth attendant is present at every birth as well as access to emergency obstetric and newborn care have been implemented at scale with limited success in Nigeria. These strategies have their limitations especially in low resource settings that lack trained personnel, effective transportation and referral systems (Pratal et al, 2008). Systematic review of safe-motherhood interventions have revealed that there are certain interventions suitable for low

income countries that can be delivered without skilled care as well as ensuring maximum impact (Pratal et al, 2008). These interventions include the following: 1) Improved access to contraception. 2) Increased efforts to reduce deaths from unsafe abortions. 3) Increased access to misoprostol to control postpartum hemorrhage.

It is said that contraception reduces the number of maternal deaths by decreasing the odds of being pregnant, and its associated complications (Lancet, 2012), lowers the risk of unsafe abortions (vulnerability reduction), reduces the risk from getting pregnant too early or too late as well as high parities and closely spaced births. Increased access to contraception and its use can reduce complications and deaths from conditions of pregnancy and delivery by thirty five percent, (UNH4 Report, 2007). Prata et al, 2008, also reported that contraceptive use can also reduce maternal mortality in women less than 20 years, those greater than 39 years as well as women with parity greater than 5 by between the ranges of 35% to 58%.

1.2 Problem Statement

Top causes of maternal mortality and morbidity in Nigeria are: Haemorrhage, Pre-eclampsia/Eclampsia, Infection, unsafe abortion, malaria and anaemia (IMNCH Strategy 2007, currently been revised). Short birth intervals, unsafe abortions and inadequate obstetric care are major contributing factors to the high maternal mortality rates seen in the country (UNH4 Report, 2007). The use of contraception is also said to be an intervention that can be scaled up quickly and is also sustainable, however, over 100 million married women have an unmet need for contraception most living in sub-Saharan Africa, south and Southeast Asia (Prata et al 2008). The unmet need in Nigeria is 16% and in 2008 alone there were 342,213 maternal deaths. It was reported that contraception alone averted 272,040 maternal deaths in 2008, a 44% reduction and therefore without contraception the number of maternal deaths may have been 1.8 times higher (The Lancet, 2012).

The sub-Saharan average for married women using modern contraceptive is twenty two percent but in Nigeria it is as low as 10%. The trend in the North East and North West areas of the country is even worse having coverages of three and four percent respectively. The Southwestern part of the country has the highest coverage of 38% (NDHS, 2013). The

percentage of women using postpartum contraception are equally low as shown in a study in Senegal which puts it at 3% (Tuncalp et al 2014). As far as I know there is also very little literature on the use of contraception postpartum, this also an area that may need further research. Contraceptive use in Nigeria is still very low, despite the huge efforts by the Nigerian government to scale up its use in line with global evidence of the huge impact it can have on maternal mortality if the right group of women have access to this intervention and are well informed and motivated to use it. Several factors affect contraceptive use ranging from non-availability of different range of contraceptive options, access inequities and financial inequity across social income groups, fear of side and health effects, low literacy rates/level of education, lack of male involvement and cultural and religious factors.

1.3 Justification

Women who survive Severe Acute Maternal Morbidities (SAMM) are at increased risk of repeated SAMM and death. Maternal morbidity is also a continuum and if the causes of SAMMs are addressed, then there may be changes across the continuum along the continuum (Tuncalp et al, 2014). This group of women, that is women who survived SAMMs should be encouraged to use contraceptives to reduce this risk as contraceptive use is a key intervention that can be scaled up to maximum impact in low resource settings. This is especially very important as results from the 2013 NDHS which showed that about 63% of women do not intend to use contraceptives in Nigeria and this is worrying especially among those who survived SAMMs. The postpartum period also represents a window of opportunity to promote its use to women and their spouses especially those who have survived near misses. To my knowledge there is very little literature in Nigeria where this high risk group is specially targeted to ensure contraceptive use.

It is my hope that the results of this study would help provide information on how to increase family planning use in this special group of women and shape policies and programmes of government in addressing the issue of high maternal mortality in the country. Women at risk of SAMMs, their families as well as their community as the whole also will gain from the findings of this study as the use of contraceptives provides several benefits: In women the risk of SAMMs and death is reduced, it also frees the woman from involuntary reproduction

thus increase her opportunities for non-domestic activities that includes secondary and tertiary education enrollments as well as getting paid jobs.

For the family; increase child survival and alleviation of household poverty as studies have shown a strong correlation between households with large population of children and poverty. To the community and nation at large, smaller populations aids responsible governments to better use and management of natural resources (The Lancet, 2012). Finally the choice of Kaduna State found in Northwest Nigeria, based on the fact that maternal mortality is also highest in the northeast and North West of the country where risk factors like early marriages, short birth, intervals, too frequent pregnancies and multiparty are also prevalent. Thus increasing the relevance of the findings from this study and it applicability.

1.4 General Objective

To determine the factors that affect intention to use modern contraceptives in women who survive Severe Maternal Morbidity.

1.4.1 Specific Objectives

1. To determine the proportion of modern contraceptive use among survivors of SAMMs
2. To assess knowledge of modern contraceptive use among women who survive SAMMs
3. To determine the proportion of women who survive SAMMs reporting prior use of contraceptives
4. To explore future fertility intentions of these women
5. To identify the factors that affect the intention to use contraceptives in these women

CHAPTER TWO

LITERATURE REVIEW

2.1 Maternal Mortality and Morbidity and MDG Goals

Maternal mortality as defined by the WHO International Classification of Diseases {ICD-10} (Lancet, 2006) is the death of a woman while pregnant or at child birth or within 42 days of termination of pregnancy irrespective of the duration and site of pregnancy from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes. Maternal morbidity and mortality is often an overlooked but important cause of disease burden, especially in low and middle-income countries (WHO, 2013).

It is becoming increasingly a major public health challenge in developing and low resource countries (Margret Hogan et al, 2012). Global concerns to raising maternal deaths which was attributed to the fact that most primary health care programmes felt that what was good for the child was good for the mother when however the causes of maternal mortality were quite different and needed different interventions to address them as compared to that of the child (Nawal Nour et al, 2008).

This led to the launch of the Safe Motherhood Initiative (SMI) in 1987 and maternal health was placed on the front burner as an important global initiative to address the plight of pregnant women. The efforts of the SMI culminated in the reduction of maternal mortality been one of the targets of the 5th Millennium Development Goal (MDG 5). That is a 75% reduction in maternal mortality ratio between the 1990 and 2015 values (Lancet, 2014). The perception of the rate of reduction presently is that progress is very slow especially in some countries in west and central Africa with 'global rates of change suggesting that only 16 countries achieved the MDG 5 target in 2015.

Pragti Chhabra in his write up in 2014 attested to the fact that maternal mortality has fallen worldwide by 47% but maternal deaths in developing nations still remains as high as 240 maternal deaths per 100,000 live births. The global maternal mortality ratio is said to be

currently 210 per 100,000 live births, while maternal mortality rates in developed countries is put at 14 per 100,000 live births, these statistics clearly indicate that developing nations still are a long way off from achieving zero tolerance to maternal mortality as compared to more developed countries. The distribution of maternal mortality worldwide is not uniform, it is higher in sub-Saharan Africa with a life time risk of 1 in 16 live births, 1 in 43 live births in South Asia, 1 in 30,000 in Sweden and the worst indices in Afghanistan and Sierra Leon with 1 in 6 live births. This puts the global total at 400,000 maternal deaths per 100,000 Live births (Nawal Nour et al, 2008). In 2010 Margret Hogan et al in a publication where maternal mortality was reviewed in 181 countries arrived at a value of 348, 900 per 100,000 live births for 2008. The 2014 Lancet puts the global maternal deaths at 292, 982 for 2013. It is said that for every woman that dies, there are at least 20 more women who suffer from injuries, infection and disabilities relating to pregnancy and birth (Ashford Hidden, 2012). In Nigeria, 57,600 women die annually from conditions of pregnancy and child birth accounting for about 14% of the world's global burden, the risk of dying from child birth in Nigeria is 1 in 18 slightly lower than the sub-Saharan average.

2.2 Causes of Maternal Mortality

The triggers of maternal mortality are said to be direct and indirect and maternal mortality is said to be caused by direct factors like hemorrhage, sepsis, pre-eclampsia, obstructed labour, unsafe abortion, anaemia and malaria. Indirect causes of maternal mortality which are less obvious and include poor educational status, harmful practices, low status of women, poverty, weak communication support, poor and inadequate health services among others (Saraki, 2008).

Hemorrhage, eclampsia, obstructed labour and sepsis are the leading causes of maternal mortality worldwide (Nawal Nour et al, 2008). Estimates produced by USAID approximate that of direct causes postpartum hemorrhage contributes (24%), infections (15%), unsafe abortions (13%), eclampsia (12%) and obstructed labour (8%). Indirect causes; anaemia, malaria and heart diseases (20%), ectopic pregnancy, embolism and anesthetic complications (8%). Prata et al in 2008, using data sets from Khan et al, (2006) however reported that haemorrhage is the number one cause of maternal death in Africa and Asia, accounting for

30% of all maternal deaths. Deaths due to eclampsia, unsafe abortion and obstructed labour combined to account for 17.7% and 26.7% of deaths respectively.

In Nigeria major causes of maternal death include; haemorrhage (23%), infections (17%), eclampsia (11%), unsafe abortions (11%); malaria (11%) and anaemia (11%) (IMNCH Strategy, 2007). Ogunjimi Lucas et al in 2012 in his paper curbing maternal and child mortality wrote that the major causes of maternal deaths are: Eclampsia (27%), postpartum haemorrhage (25%), Sepsis (15%), unsafe abortions (13%) and other causes (20%). It is also reported that 68,000 deaths maternal deaths that occur worldwide are as a result of unsafe abortions which follow the 46 million induced abortions annually. Abortions account for 37 per 100,000 maternal deaths in sub-Saharan Africa and 12 per 100,000 maternal deaths in South Asia (Lancet 2006). In Nigeria 20,000 maternal deaths are as a result of unsafe abortions thus abortion represents an important cause of maternal morbidity and death.

Most maternal deaths occur during labour or the first 24 hours postpartum, it is estimated that 45% of postpartum deaths occurs in the first 24 hours and 66% in the first 1 week following delivery.(Nawal Nour et al, 2008). Another school of thought believes that most maternal deaths occur between the third trimester and first twenty four hours after the end of pregnancy and can be highest on the first and second days after birth as a study in Matlab, Bangladesh showed that it is 100 times higher on the first day and 30 times higher on the second day after birth. These findings support interventions that focus on intrapatum care (Lancet, 2006). Recent findings also reveal evidence that of risk of death up to 6 months postpartum is especially high following an abortion or still birth with deaths following abortions or still births accounting for 50% of deaths in first week and sixth weeks of life respectively this findings clearly illustrate that postpartum interventions which include postpartum family planning are very important to ensuring the survival of women.

2.3 Severe Acute Maternal Morbidity

Severe Acute Maternal Morbidity (SAMM) also known as "maternal near miss" can be defined a very ill pregnant or recently delivered woman who would have died had good luck and good care had not been on her side (Mantel et al, 2000). Patterson and Hall in 2003 defined SAMM as women who experienced and survived a severe health condition during

pregnancy, child birth or postpartum. The World Health Organization (WHO) recommends the term "maternal near miss" instead of SAMM, using the ICD version 10 definition maternal near miss is defined as a woman who nearly died of but survived a complication that occurred during pregnancy, childbirth or within 42 days of termination of a pregnancy.

The term "near miss" is also said to connote an event which had the potential to result in injury, illness or damage but did not do so. It is a borrowed term from the aviation industry (Lale Say et al, 2009). Olufemi Oladapo in (2005) defined near miss as an acute obstetric complication that immediately threatens a woman's life but does not result in her death either by chance or because of the hospital care she receives during pregnancy, labour or within 6 weeks of termination of pregnancy or delivery. He further said that a near miss case is a woman with at least one near miss event.

Review of the MDG's indicators reveal that maternal mortality is one of the worse performing indicators especially in resource poor settings. Near miss mortality provides important information regarding the quality of care provided in health facilities to help address weaknesses or failures in the health system in order to take corrective action (Lale Say et al, 2009). Joao Paulo Souza et al in 2002 further buttresses this fact in his write up. Drife Jo, since 1993 had identified near miss is an important instrument in identifying health system failures, priorities in maternal health care more than maternal deaths because these events are rare and makes it easier to collect data. Patterson and Hall further wrote in 2003 that studying near miss has the advantage to help assess the quality of care provided during pregnancy, delivery and postpartum as well as by interviewing a proportion of these women information on areas of deficiencies in the health system can be identified.

Maternal Near miss can be classified based on the following 3 sets of criterion: 1) Disease specific criterion 2) Management based criterion 3) Organ based dysfunction (Tuncalp et al, 2010). These criterions can be used in different settings and have their advantages and disadvantages (Patterson and Hall, 2003). A uniform measure of near miss is difficult because of contextual issues in different settings and thus lacks of a standard and uniform case identification criteria (Lale Say et al, 2009). The organ based criterion is more specific in

identifying near misses but has minimal applicability in low resource settings, where the disease specific criteria is more applicable but less specific and cannot be easily standardized.

The prevalence of maternal near miss vary between regions and countries and a study by Lale Say et al in 2009, revealed a prevalence of between 0.8% to 8.23% in studies that used the disease specific criterion, 0.36% to 1.09% using the organ based criterion, 0.01% to 2.99% using the management based criterion. Tuncalp et al in 2010 showed a prevalence of 0.6% to 14.98% for the disease specific criterion, 0.14% to 0.92% for the organ based criterion and 0.04% to 4.54% for the management based criterion. A study in Sagamu, Nigeria by Olufemi et al, in 2005 put it at 14% using the disease specific criterion which is more applicable in low resource settings.

Common causes of near miss mortality include hypertensive disorders (41%), haemorrahage (15%), sepsis (13%) (Joao Paulo Souza et al, 2002). Systematic reviews of near miss mortality by WHO puts hemorrhage as the leading cause of near miss in Africa (33.9%) and Asia (30.8%), while in Latin America and the Caribbean it is hypertensive disorders of pregnancy (25%). In Asia, anaemia was reported as an important cause of death in 12.5%, while in Africa in 3.7% of deaths. Olufemi et al in his study in Nigeria (2005) showed that common causes of near miss in Nigeria are; hypertensive disorders in pregnancy (61%), haemorrahge (50%), uterine rupture (37.5%), and infection (28.6%).

2.4 Interventions to reduce Maternal Mortality

The United Nation's Secretary General said that "the knowledge and resources to achieve a broad set of health and developmental goals are here on earth and falling short of these goals would be an unacceptable and moral failure (Lancet, 2010). However as we have already arrived at the end of the MDG developmental agenda the world is yet to meet most of its goals. The current approach to scaling up interventions to reduce maternal mortality is the continuum of care approach which targets various aspects of the human life cycle of women from pre-pregnancy to pregnancy including the postnatal period. This approach also encompasses linking the individual and community with the health facilities ensuring referral and transportation to the hospital (IMNCH Strategy, 2007).

According to Ogunjimi et al, 2012, this care includes interventions to ensure girl child education as evidence indicates women who have completed secondary education are more likely to delay first pregnancy, receive prenatal and postnatal care as well as have their births attended by skilled birth attendants. Focused Antenatal care is also a priority intervention to improve maternal and child health as well as provides an opportunity to integrated prevention of maternal to child transmission of HIV as well as intermittent prophylactic treatment of malaria and provision of long lasting insecticidal treated bed nets. Other high impact interventions include: provision of family planning services and the use of misoprostol.

According to Prata et al, 2008, the most notable strategies used so far by the international community to combat maternal mortality has been to ensure ready access to skilled birth attendants (SBA) and Emergency Obstetric and Newborn Care (EmONC) in the case of complications. Provision of SBA has been shown to be cost effective yet a midwife or doctor to every birth is a difficult task to achieve in low resource countries. Prata et al, 2008, also says that WHO estimates that 57 countries have a critical deficit of health workers mostly in sub-Saharan Africa with the highest burden of maternal mortality of 24% and yet with less than 3% of the world's providers. Ironically, countries with the lowest maternal mortality rates also have the highest proportions of skilled birth attendants and contraceptive prevalence rates (CPR).

Emergency Obstetric and Newborn Care (EmONC) are a set of interventions provided at two different levels targeted to address women who have complications of pregnancy and delivery. These levels are Basic EmONC and Comprehensive EmONC. Basic EmNOC is performed at the level of a primary health care center and includes: administration of antibiotics, oxytocic's, anticonvulsants, manual removal of placenta and assisted deliveries. Comprehensive EmONC includes caesarian section and provision of safe blood transfusion inclusive of all the Basic EmONC interventions. UNFPA prescribes that 4 Basic and 1 Comprehensive EmONC facilities per 500,000 people. A review of these interventions by Prata et al in 2008 shows that the interventions are difficult to implement at scale rapidly in low resource settings because of various contextual issues. Existing literature shows that Comprehensive EmONC is widely available even in the poorest countries but Basic EmONC which should be implemented at a level closest to those who need them are consistently

unavailable. EmONC requires skilled manpower, reliable transportation systems, adequate drug supply and functioning equipment. Scalable strategies that have been shown to have maximum impact in low resource settings include decrease of unintended pregnancies by increase access to contraception, increase access to abortion care and post abortal care as well as use of misoprostol to control postpartum hemorrhage. These interventions share basic characteristics in common that they can be implemented outside the health facility and by lower level providers. It is thus proposed that efforts should be made to scale up these interventions.

Low level of utilization of MNCH services have implicated as a main reason for the high maternal deaths in Nigeria. In a study conducted by Hadeja et al (2013) in Kaduna State revealed that only (2.7%) of mothers utilized pre-conception services, (98.7%) antenatal care services, (24%) delivery services, (35.5%) postnatal care services and (14%) family planning services. The following were highlighted as reasons for not using MNCH services; no complications at delivery (57%), no complications during the postnatal period (60%), negative health provider attitude (27%) and the desire for more children (32.6%). This study called for the need to raise awareness on the benefits of utilizing MNCH services in the community.

In addition a study conducted in 2015 in the northeastern region of Nigeria in Bauchi State revealed that marginal progress has been made in scaling up interventions across the continuum of care although not enough to meet the national average or MDG targets. This holds true for majority of the states in northern Nigeria. In this study contraceptive prevalence rate was (7.8%) far below the national average of (15%), skilled birth attendance (22.5%) below the national average of (39%) and postnatal care within 4 days of delivery (7.4%). The authors called for sustained scale up of interventions particularly at local government level as well as priority attention paid to regions with low indices if Nigeria is to universally scale up these priority interventions across the continuum of care (Abegunde et al, 2015). The above studies have clearly shown there is the need to focus on winnable strategies as well as adopting a different approach if we are to effectively address the issues having an adverse effect on the health of women in Nigeria.

2.5 Life Saving Commodities for Maternal, Newborn and Child Health

In 2010 concerned by lack of access to essential medicines and supplies for maternal and child health, a committee set up by the United Nations Secretary general identified 13 lifesaving commodities for women and children to be scaled up to universal coverage. This initiative is under the auspices of the UN Secretary General's Global Strategy for Women and Children's health as part of the Every Woman, Every Child's Initiative and implemented through the leadership of the UN commission on Life saving commodities with the potential to save 6 million lives of women and children, including averting 230,000 maternal deaths through improved access to family planning alone.

These interventions include: Oxytocin, misoprostol, magnesium sulphate, female condoms, contraceptive implants and emergency contraception for maternal health and injectable antibiotics, corticosteroids, chlorhexidine, resuscitating devices, amoxicillin, oral rehydrating salts and zinc. The commission identified barriers to effective scale up to be under resourced regulatory agencies, delayed registration of products, lack of quality control, slow return on investments and limited demand for the product by end-users. To address these challenges 10 time bound actions were proposed: improved international and local markets, innovative financing, quality strengthening, regulatory efficiency and improved national delivery of commodities as well as better integration of private sector and consumer needs. The Federal Government of Nigeria also keyed into this initiative in 2011 using the Free Contraceptive Programme as an entry point with the support of UNFPA and Clinton Health Access Initiative (CHAI) and other partners.

A multi-country assessment also revealed that 12 sub-saharan countries are off track to achieving the MDGs and common barriers to achieving universal access to these life saving commodities include; regulatory challenges (10 out of 12), poor quality assurance (11 out of 12), insufficient training (more than half of facilities) and weak health systems (11 out of 12) as well as stock outs of essential commodities reported in about 40% of facilities. The Reproductive Maternal, Newborn and Child Health Fund has so far committed US$ 175.7 million to 19 countries to support strategies aimed at health system strengthening, health workers training, supply chain strengthening and demand generation. However, slower

progress was evident around regulatory harmonization and quality assurance (Lancet Global Health, 2016).

2.6 Family Planning

Family planning is one of the pillars of safe motherhood and has a profound effect on maternal mortality. Adolescence, older age, high parity, and short birth intervals are known risk factors for maternal mortality. Worldwide 205 million pregnancies occur annually, a third of them are unintended and two thirds occur in women not using any form of contraception (Prata et al, 2008).

Family planning (FP) use prevents over 230 million births annually as well as prevents unintended pregnancies. Decreases in fertility rates from 4.7 in the early 1970's to 2.3 by the late 2000's have been attributed to family planning (Lancet, 2012). The odds of pregnancy, its associated complications and risk of unsafe abortions can all be decreased by correct use of family planning methods. The use of family planning methods delays age at first pregnancy, and decreases the risk attributed to high parity and short birth intervals.

The Lancet 2012 series reveal that maternal mortality would reduce by 34% if women less than 20 years and greater than 35 years avoid pregnancy. In addition elimination of births in women with greater than 5 children would further decrease maternal mortality by (50%). Invariably this makes family planning a significant contributor to maternal mortality reduction (Lancet, 2012). It was also estimated that family planning can reduce maternal mortality from (25%) to (58%) among women between the ages of 20 and 39 years and above as well as among those with greater than 5 or more children.

Most of the 100 million women who have an unmet need for family planning live in sub-Saharan Africa and south and Southeast Asia (Prata et al, 2008). In 2008, among 1.2 billion women of reproductive age married or sexually active about 722 million use contraception and its use averted 272 maternal deaths worldwide. Contraception thus averted (44.3%) of maternal deaths in 2008 and it is said that without contraception the number of maternal deaths would have been 1.8 times higher (Lancet, 2012). The relationship between use of contraception and maternal deaths averted is a direct relationship, in more developed regions

of the world where contraceptives use is greater than (65%) maternal deaths averted is as high as (60%). However in sub-Saharan Africa where its use is as low as (22%), maternal deaths averted is only (32%). In Nigeria where its use was about 8.5% for modern contraceptives maternal deaths averted was (23.5%).

About 20 million women are at risk annually especially if they do not have access to a skilled provider. The use of contraception can reduce this dramatically as unintended pregnancies and unsafe abortions are preventable conditions (Prata et al, 2008). Each year 1 out of every 4 women who become pregnant have abortions and about (13%) of maternal deaths are caused by abortions, averted abortions reduces maternal mortality Lancet, 2012).Even though the use of family planning is pivotal in achieving the Millennium Development Goals 5 which includes increasing universal access to reproductive health commodities, contraceptive use is low in many West African countries (Lancet, 2012).Pregnancy and immediately postpartum period are important opportunities for counseling women on the use and adoption of family planning (Eliason et al, 2013).

2.7 Postpartum Family Planning

A very important reason for scaling up family planning is its potential benefits in improving the health and welfare of women and children as preventing maternal complications like uterine rupture and utero-placenta which have been linked to inadequate child spacing. Despite increase in CPR, there has been a decline in inter-birth order compared to the previous decade from (29%) to (25%) in the length of birth between the second and higher children. All this clearly underlines the need for postpartum family planning (John Cleland et al, 2015).

Postpartum family planning has been long neglected and studies have clearly shown a high proportion of women (65%) have the wish to postpone the birth of another child for at least 2 years and these women account for (39%) of the unmet need. A study in Ibadan, Nigeria by Idowu A. et al, in 2015, shows that (54%) of women have an unmet need for limiting, (46%) have an unmet need for spacing and the commonest need for not using postpartum family

planning is the fear of side effects (17.4%) and that women with no knowledge of postpartum family planning were twice less likely to use family planning after delivery.

In Nigeria postpartum family planning has not improved over the last two demographic and health surveys with no increase in Postpartum Family Planning use (PPFP) as compared to a (55%) increase in countries like Malawi from the national average of (5%) to (9.5%) respectively in the years 2008 and 2013 (Sennen Hounton et al, 2015). The prevalence of PPFP in women at 3 months also has large regional differences as mentioned in the aforementioned study with large regional variations across 3 countries studied Ethiopia, Malawi and Nigeria. This study shows a low modern contraceptive prevalence in all 3 countries. In Ethiopia for instance (55%) of childbearing women adopted PPFP in Addis Ababa region followed by Dire dawn region (21%). In Malawi there are regional variations between the 3 regions (17%), (13%) and (11%) of childbearing region used modern postpartum family planning. In Nigeria however, the use of PPFP was extremely low with some outliers regions and states. These regions are the South west and South south region and states like Delta, Edo, Imo, Lagos and Oyo states where the prevalence was higher than the National average of (8.5%).

In the above study by Senna Houston et al, postpartum family planning in Nigeria was observed to have a systematic decrease across all age groups. In Ethiopia and Malawi however there was a 4.3 and 1.8 times increase in contraceptive use in adolescents 15-19 age groups. In all 3 countries there was strong statistical association between PPFP use and educational level, place of residence and wealth quintile, however in Nigeria there was no statistical significance across educational groups. In addition, PPFP is still low in Nigeria regardless of parity. In Malawi like Nigeria there was no significant difference attributed to parity however in Ethiopia it was higher for low parity with a drop of by half for parity of 4 and above. This study also highlighted that the use of PPFP after a health facility delivery in Malawi is 2 times more likely than those who deliver at home (in Ethiopia is 1.3 times and in Nigeria it is 1.2 times).

Women with severe maternal morbidity therefore represent an important group to target for increasing contraceptive uptake (Ozge Tunçalp et al, 2014) this also helps us to access the quality of care given to women post delivery/termination of pregnancy Women who survived SAMMs provides a window of opportunity to counsel and offer family planning services. Most often this is a missed opportunity in the African hospital setting (Ozge Tuncalp et al, 2014). Ensuring postpartum family planning services are available following child birth may be an important solution to reducing maternal morbidity and mortality. Achyut P. et al in a study in urban Utter, Predesh in india revealed that if family planning information was disseminated during antennal at the 3rd trimester, delivery and immediate postpartum period it would have positive correlation with use of contraceptives during the postpartum period and so this may be the most appropriate time to introduce postpartum family planning.

2.8 Family Planning Programmes

A maternal health intervention that can quickly be scaled up in low resource settings is family planning and it is also equally sustainable: Women for many reasons that include: fear of health problems and side effects, risk of not getting pregnant, partner negotiation as well as cultural and religious beliefs refuses to use family planning methods. These concerns and misconceptions need to be addressed effectively by family planning programmes (Prata et al, 2008). Educating women on FP and other health intervention is a continuum from knowledge to intension to acceptance to practice and confirmation. This continuum has to be continually reinforced since behavioral change is a cycle. I is also worthy to note that the determinants of FP use affect intension and therefore use of FP commodities.

Programmes to promote family planning use in response to child survival and rapid developmental growth started in the 1960's. Different regions had different motives for example in Asia the need to enhance socio-economic development drove their family planning programmes and government provided leadership. The high levels of unsafe abortions in Latin America galvanized support for family planning and these efforts were driven by Non-Governmental Associations. Currently the proportion of married women in developing countries is using family planning ranges from 10% to 60% and the average birth falling from 6 to 3. Improved living standards, life expectancy education and emancipation of

women are important determinants put forward by some that ensure the use of family planning. But it has also been observed that in low resource settings the use of family planning only occurred in the presence of a comprehensive family planning programme. Therefore context is an important factor that must be considered when deciding or scaling up your family planning programme, especially when deciding what packages of interventions would work as well as noting that priorities would evolve over time. In the early period of any programme creation of awareness and legitimacy is very important, taking factors and creativity and support of key stakeholders from across different sectors is equally important (WHO, 2006).

CHAPTER THREE

METHODS

3.1 Study Area

Kaduna State is the third most populous state in Nigeria, located in the North West Zone of Nigeria and one of the zones with lowest use of modern contraceptive methods as well as reported high maternal mortality rates. The prevalence rate for married women using modern contraceptives in Nigeria is 10%, in the North West Zone of the country where Kaduna State is located it is 4%. Kaduna state's maternal mortality ratio is 1025 per 100,000 live births which is six times the rate in the southern part of the country (Kaduna SSHDP revised 2011).

Low level of utilization of MNCH services have implicated as a main reason for the high maternal deaths. In Kaduna State it was revealed that only (2.7%) of mothers utilized pre-conception services, (98.7%) antenatal care services, (24%) delivery services, (35.5%) postnatal care services and (14%) family planning services (Hadeja et al, 2013). Another study conducted in the northeastern region of Nigeria also revealed a contraceptive prevalence rate was (7.8%) far below the national average of (15%), skilled birth attendance (22.5%) below the national average of (39%) and postnatal care within 4 days of delivery (7.4%) (Abegunde et al, 2015).

The state has a total population of 6. 4 million people and Women of Reproductive Age make up 20% of this population. Kaduna State has 739 Local Government Facilities, 34 public Secondary Care Facilities, 20 private secondary health care facilities, Five Tertiary Hospitals, 656 Private Health Facilities and 2500 patent medicine shops. Kaduna State has 3 senatorial zones and 23 Local Governments and 255 wards. See figure 1 on the next page:

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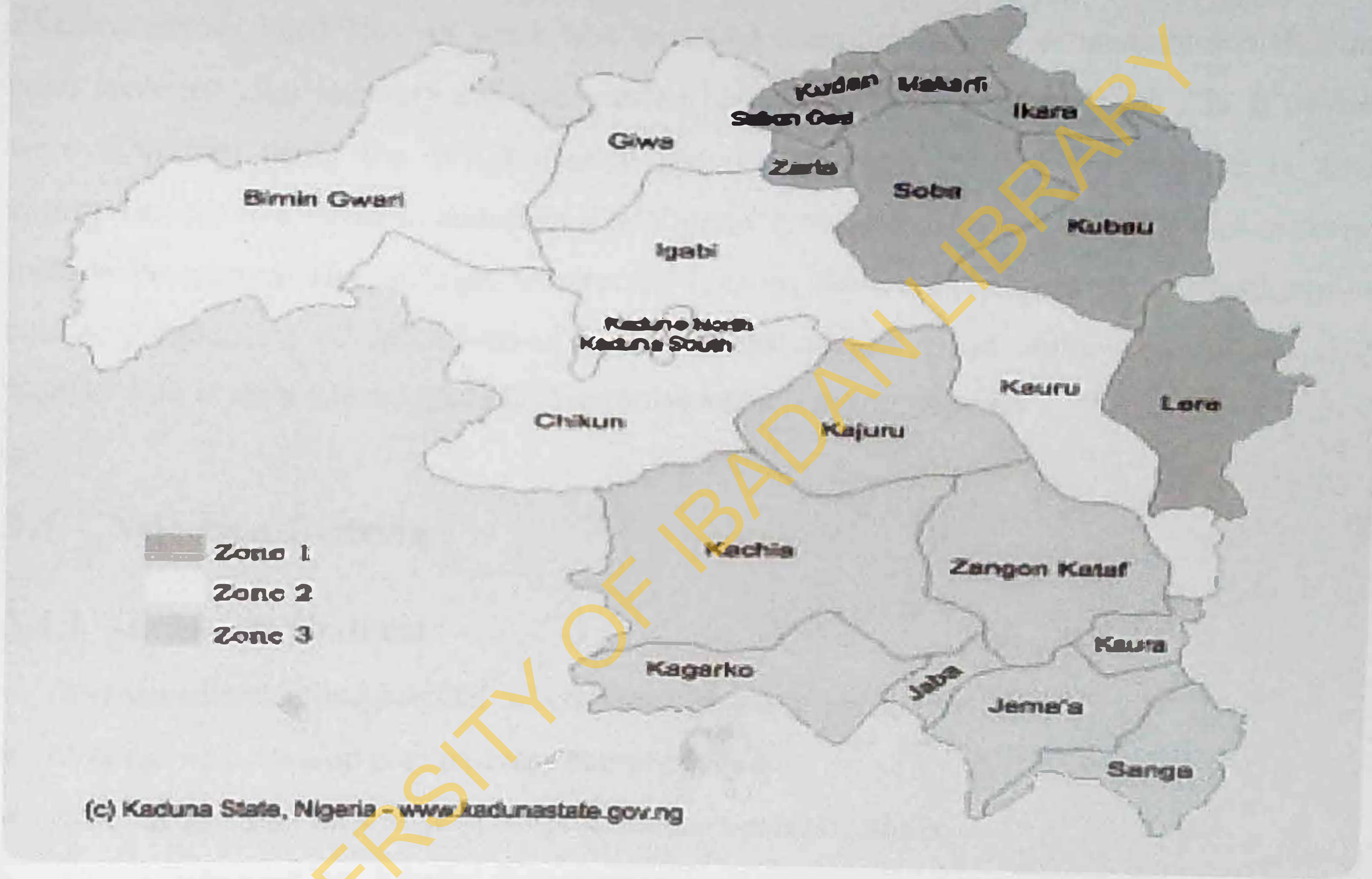

Figure 1: Map of Kaduna State showing the LGAs & Senatorial Zones

3.2 Study Design

A descriptive cross-sectional study design was used to assess health facilities in the state that manage SAMMs.

3.3 The Study Population

Eligible women aged 15 - 49 years who survived complications of pregnancy and delivery were recruited after recovery and interviewed before discharge from hospital. These women were identified using the WHO disease specific criterion for SAMMs/near miss more appropriate for low resource countries like Nigeria. Examples of SAMMs using this criterion include Postpartum Hemorrhage, Obstructed Labour, Severe Eclampsia and pre-eclampsia, ectopic pregnancies, complications of abortions, hysterectomy, and ruptured uterus etc. Any woman with at least one near SAMM/near miss event was interviewed.

3.4 Selection Criteria

3.4.1 Inclusion Criteria

- Women admitted into hospital for complications of pregnancy
- Women who develop post-delivery complications
- Women admitted into hospital for post abortion complications
- Women admitted into hospital for ectopic pregnancies

3.4.2 Exclusion Criteria

- Women who develop such complications outside 42 days of termination of pregnancy

3.5 Sample Size Calculation

We calculated the minimum sample size based on the prevalence of women who intend to use modern contraceptive in a typical Nigerian setting as described by:

$$\text{Minimum Sample Size (n)} = \frac{z^2 * p * q}{d^2}$$

Where:

Z = 1.96

P (proportion of women who intend to use modern contraceptives) = 0.23 (NDHS 2013)

q = 0.96

d = 0.03

$$n = \frac{1.96^2 * 0.23 * 0.77}{0.05^2} = 272$$

Anticipated Non Response Rate (NRR) of 10% (0.1)

$$n \text{ (Final sample size)} = \frac{n}{1-NRR} = \frac{272}{1-0.1} = \mathbf{302}$$

3.6 Sampling Technique

Purposive sampling of all referral hospitals (tertiary and secondary) in Kaduna State that treat complications of pregnancy and delivery in the state using service utilization data. 10 facilities that manage the most number of cases of SAMM were selected and the questionnaire was field tested in the 11th facility. A total of 330 women were interviewed from these facilities based on the inclusion criteria. Medical officers and Midwives working in these facilities as were used Research Assistants.

3.7 Data Collection Methods & Tools

A structured questionnaire pretested at General Hospital Kachia was used to interview women who survived/experienced acute severe maternal morbidities/near miss. The questionnaire had the five sections: personal information, clinical & management information and classification, knowledge about FP, previous contraceptive use and future fertility intensions. We collected the aforementioned information from respondents over a period of 2 months on a daily basis until the sample size was exhausted.

3.8 Study Variables

3.8.1 Dependent Variable

The dependent/outcome variable is intention to use contraceptives (Yes or No). Types of contraceptives methods include: male and female sterilization, Intrauterine Contraceptive Device (IUCD), implants, injectables, oral contraceptive pills (progestin-only and combined), emergency contraceptive pills, diaphragm, male and female condom and the lactational amenorrhea (LAM) method. All women who intend to use any of these methods would be coded as one and those who do not intend to use contraceptives would be coded zero for this outcome.

3.8.2 Independent Variables

The independent variables include the women's age, categorized as under 20 years, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years and 45-49 years old; women's religion, categorized as Christians, Muslims and others, highest level of school attended, categorized as none/quranic, primary, secondary, or higher than senior secondary; and categorized as never married/single, married/living together, divorced/separated and widowed, occupation, near miss status, no of days spent in the hospital, gestational age, parity, pregnancy now, ever heard of contraception, ever used contraception, plan to use contraception in future and cost of contraceptive method of choice.

3.8.3 Assessment of Knowledge

Respondent's knowledge on modern contraceptives was assessed using percentiles with knowledge on 14 key modern contraceptives elicited based on yes or no responses graded 1 or 0. Respondent's knowledge was then scored over a total of 14. Respondents with a score of less than 50 percentile were graded to have poor knowledge, those with score between the 50^{th} to the 74^{th} percentile fair knowledge and those with scores above the 75^{th} percentile good knowledge.

3.9 Data management

The data was cleaned and analyzed the data using Epi-info software and micro-soft Excel: Univariate analysis (frequencies and proportions of women who survived SAMMs intending to use contraceptives or not) was done, Bivariate analysis (Chi-square tests, ORs of the predictor variables and outcome variable) to confirm direction of relationship or not and Multivariate analysis (Logistic regression to identify effect modifiers and control confounders.

3.10 Ethical Considerations

a. Informed consent was sought from all participants
b. Kaduna State Ministry of Health gave ethical approval to conduct the study
c. Findings from the study would be disseminated to all stakeholders

CHAPTER FOUR

RESULTS

4.1 Demographic characteristics of respondents, Kaduna State, Nigeria

Respondents had a mean age of 28.85 ± 7.5 years and 119 (35.9%) of respondents were Christians while 210 (63.8%) were Muslim and 1 (0.3%) had no religion. Women with no education were 27(8.2%) of respondents while 79 (24%) had quaranic education only, 81(24.6%) had primary education, 93 (27.9%) secondary education and 50 (15.2%) higher education. Majority of respondents 310 (93.9%) were married and 158 (69%) of them were Hausa, 32 (14.1%) were Fulani while 102 (31.2%) were from other major tribes in Kaduna State. See table 4.1 on the next page for details

Table 4.1: Demographic characteristics of respondents, Kaduna State, Nigeria, 2016 N=330

Socio demographic characteristics	n (%)
Mean Age, 29 ±7.5	
Age group	
<24	87 (26.44)
24-34	158 (47.72)
>35	85 (25.84)
Religion	
Muslim	210 (63.8)
Christians	119 (35.9)
Traditionalist	1 (0.3)
Education	
None	27(8.2)
Quranic	79 (24.0)
Primary	81 (24.6)
Secondary	93 (27.9)
Higher	50 (15.2)
Marital status	
Single	14(4.3)
Married	310 (93.9)
Divorced	3(0.9)
Living together	2(0.6)
Widowed	1(0.3)
Main Language	
Hausa	158 (69.2)
Igbo	13 (5.7)
Yoruba	23(10.1)
English .	2(0.8)
Fulani	32(14.1)
Others specify	102(31.2)

4.2 Demographic characteristics of respondents, key obstetric explanatory variables, Kaduna State, Nigeria

A large proportion of respondents 246 (74.6%) wanted this index pregnancy/birth now and 294 (89.1%) had heard of contraception before. Less than half of respondents 148 (48.9%) had used contraception in the past while 182 (55.2%) had never used any form of contraception before. Majority of respondents 228 (69.9%) plan to use contraception in the future although 258 (79.1%) of them need husbands permission before using contraception. See table 4.2 on the next page for details

Table 4.2: Distribution of respondents key Obstetric and social explanatory variables, Kaduna State, Nigeria, 2016 N=330

Obstetric and Socio explanatory Variable	n (%)
Timing of Pregnancy	
Now	246 (74.6)
Later	84 (25.5)
Heard of Contraception before	
Ever heard	294(89.1)
Never heard	36(10.9)
Ever used contraception	
Ever used	148(48.9)
Never used	182(55.2)
Plan to use contraception in the future	
Yes	228(69.9)
No	33(10.10
Currently done that (BTL)	1(0.3)
Don't need it (Hysterectomy)	1(0.3)
Undecided	39(11.8)
Don't know	27(8.2)
Needs husbands consent	1(0.3)
Permission to use Contraceptives	
Yes	258(79.1)
No	68(20.9)
Unmet need for FP	
For limiting	88(26.7)
For spacing	104(31.5)
Ever had Abortions/Miscarriages	
Ever had	109(33.0)
Never had	221(66.9)
No of Living Children	
0	34(10.3)
1-2	136(41.2)
3-4	81(24.5)
>5	79(23.9)

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Ever used contraception	
Ever used	148(48.9)
Never used	182(55.2)
Plan to use contraception in the future	
Yes	228(69.9)
No	33(10.10
Currently done that (BTL)	1(0.3)
Don't need it (Hysterectomy)	1(0.3)
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Don't know	27(8.2)
Needs husbands consent	1(0.3)
Permission to use Contraceptives	
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No	68(20.9)
Unmet need for FP	
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Never had	221(66.9)
No of Living Children	
0	34(10.3)
1-2	136(41.2)
3-4	81(24.5)
>5	79(23.9)

4.3 Distribution of respondents, knowledge of at least one modern contraceptive method in Kaduna State, Nigeria

Injectables was the most common modern method known with 281 (85.2%) of respondents saying they have heard about it. This was closely followed by the Pill with 269 (81.5%) of respondents. The least method known was emergency contraception with 157 (47.5%) of respondents. See table 4.3 on the next page for details

Table 4.3: Distribution of respondents, knowledge of at least one modern contraceptive method in Kaduna State, Nigeria, 2016 N=330

Method	n (%)
Female Sterilization	192 (58.2)
Male Sterilization	162 (49.1)
Pill	269 (81.5)
IUD	196 (59.4)
Injectables	281 (85.2)
Implants	229 (69.4)
Male condom	264 (80.0)
Female condom	221 (66.9)
Lactational amenorrhea (LAM)	216 (65.5)
Emergency contraception	157 (47.6)
Any other modern method	85 (25.7)
Rhythm	166 (50.3)

4.4 Assessment of knowledge of respondents on modern contraceptive methods, Kaduna State, Nigeria, 2016

Respondent's knowledge on modern contraceptives was assessed using a 14 item knowledge score. This was based on elicited responses on 14 key modern contraceptives and a total score of 14 for each respondent. The mean knowledge score was 8.4 ± 5 and less than half of respondents 139 (42.1%) were found to have good knowledge of modern contraceptives, 64 (19.4%) had fair knowledge of modern contraceptives while 127 (38.5%) had poor knowledge of modern contraceptives. See table 4.4 on the next page for details.

Table 4.4: Assessment of respondents knowledge on modern contraceptive methods, Kaduna State, Nigeria, 2016

Grade	Score	n (%)
Poor	Less than 50%	127 (38.5)
Fair	50-74%	64 (19.4)
Good	Greater than 75%	139 (42.1)

4.5 Common methods of modern contraceptives used by respondents, Kaduna State, Nigeria, 2016

Only 148 respondents reported using modern contraceptives in the past and four types of contraceptives were most commonly used. Injectables was the commonest method of modern contraceptives used in 57 (38.8%) of this sub group, followed by pills in 38 (25.9%) and finally implants and male condoms seen in 11(7.5%) of this sub group respectively. The least common methods reported were female sterilization, female condom and rhythm method. See table 4.5 on the next page for details

Table 4.5: Common methods of modern contraceptives used by respondents, Kaduna State, Nigeria, 2016 (N=148)

Method	n (%)
Injectables	57 (38.8)
Pill	38 (25.9)
Implants	11 (7.5)
Male condom	11 (7.5)
Lactational Amenorrhea (LAM)	8 (5.4)
IUD	6 (4.1)
Any traditional method	5 (3.4)
Withdrawal	5 (3.4)
Female Sterilization (after index birth)	3 (2.0)
Female condom	1 (0.7)
Rhythm	1 (0.7)
Don't know name	1 (0.7)

4.6 Main reasons for stopping the use of modern contraceptives by respondents, Kaduna State, Nigeria, 2016

Only 91 out of 148 respondents who reported prior use of modern contraceptives responded to this question. The commonest reason given for stopping the use of modern contraceptives among respondents who have ever used modern contraceptives was desire to conceive in 51 (56%). This was followed by fear of side effects in 21 (25.3%) of this sub group of respondents. See table 4.6 on the next page for details

Table 4.6: Main reasons for stopping the use of contraceptives by respondents, Kaduna State, Nigeria, 2016 (N=91)

Reasons	n (%)
Desire to conceive	51 (56)
Because of side effects	23 (25.3)
Spousal factors	4 (4.4)
No specific reason	2 (2.2)
Not married	2 (2.2)
Personal desire to stop	2(2.2)
Weaning	2 (2.2)
Missed appointment	1 (1.1)
Mother in law rejected FP	1(1.1)
Could not afford it	1(1.1)
Fear of cancer	1(1.1)
Feeling of taken too much	1 (1.1)
TOTAL	**91 (100)**

4.7 Main reasons for not wanting to use modern contraceptives in the future among respondents, Kaduna State, Nigeria, 2016

Only 87 out of 100 respondents that reported not wanting/undecided in using modern contraceptives in future responded to this question. The main reason given for not wanting to use modern contraceptives in the future among respondents was that God should decide when one should conceive in 21 (24.1%). This was followed by religious reasons and fear of side effects in 19 (21.8%) respectively. About 13 (14.9%) of them said their partners would disapprove. See table 4.7 below for details

Table 4.7: Main reasons for not wanting to use modern contraceptives in future among respondents, Kaduna State, Nigeria, 2016 (N=87)

Reasons	n (%)
God decides	21 (24.1)
Religious reasons	19 (21.8)
Side effects	19 (21.8)
Partner disapproves	13(14.9)
Health Concern	3 (3.4)
Reduce Fertility	7 (8.1)
Makes women promiscuous	2 (2.3)
Cultural Reasons	2(2.3)
Harm Baby	1(1.2)
Total	**87(100)**

4.8 Common reasons giving for not wanting to get pregnant again among Respondents, Kaduna State, Nigeria, 2016

Only 56 out of the 69 respondents who reported not having the desire to have another child in future responded to this question. The commonest reason given for not wanting to get pregnant again among respondents was to avoid complications 17 (30.4%). This was followed by respondents feeling they have completed child bearing in 16 (28.6%). 7 (12.5%) respondents clearly voiced the opinion that they are tired and this group had greater than 5 children. See table 4.8 below for details.

Table 4.8: Reasons for not wanting to be pregnant again among respondents Kaduna State, Nigeria, 2016 (N=69)

Reasons	n (%)
Am tired	7 (12.5)
Avoid complications	17 (30.4)
Completed child bearing	16 (28.6)
God decides	1 (1.8)
Had uterus removed	2 (3.6)
High cost of living	5 (8.9)
Not discussed issue with spouse yet	1 (1.8)
Still in School	2 (3.6)
To improve health	5 (8.9)
TOTAL	**56**

4.9 Significant other for consent to use modern contraceptives among respondents, Kaduna State, Nigeria, 2016

Only 258 respondents answered this question and 237 (91.9%) of them said that the significant other they need to get consent from to use modern contraceptives is their spouse/partner. This was followed by religious leaders and mothers in 13 (5%) and 7 (2.7%) respectively. See table 4.9 below for details

Table 4.9: Significant other for consent to use modern contraceptives among respondents , Kaduna State, Nigeria, 2016

Significant Other	N (%)
Spouse/Partner	237 (91.9)
Religious/spiritual leaders	13(5)
Mother	7 (2.7)
Peer group/friends	1 (0.4)
TOTAL	**258**

4.10 Sources of FP messages among survivors of respondents, Kaduna State, Nigeria, 2016

Radio is the main source of FP message for 144 (38.6%) respondents. This was followed by television, women groups, magazines, internet and SMS in 75 (20.1%), 71 (19%), 29 (7.8%) 23 (6.2%) and 18 (4.8%) of respondents respectively. See table 4.10 below for details

Table 4.10: Sources of FP messages among respondents, Kaduna State, Nigeria, 2016

Source	n (%)
Radio	144 (38.6)
Television	75 (20.1)
Women groups	71 (19.0)
Magazine	29 (7.8)
Internet	23 (6.2)
SMS	18 (4.8)
Community Drama	8 (2.1)
Friends/Peers	3 (0.8)
School	1 (0.3)
Husband	1 (0.3)

4.11 Knowledge on modern contraceptive methods by background characteristics among respondents

Within the age groups of 24 -34 years and greater than 35 years 78 (49.4%) and 40 (47.1%) of respondents respectively had good knowledge of modern contraceptives as compared to 21 (24.1%) of respondents in the age group of less than 20 years where 56 (64.4%) of respondents in this age group had poor knowledge of modern contraceptives. In the aforementioned age groups only 47(29.8%) and 24 (28.2%) had poor knowledge of modern contraceptives respectively.

The proportion of Christians who had good knowledge of modern contraceptives was also higher as compared to Muslims (57.9% as compared to 32.9%). A larger proportion of Hausa women 49.5% had poor knowledge of modern contraceptives as compared to 23.3% in other major native Kaduna tribes. There was no marked difference as regards proportions of women with poor knowledge of modern contraceptives across educational levels except for those with no education at all having the highest proportion of 66.7%. In addition there was no marked difference in the proportions of respondents with good knowledge of modern contraceptives across educational levels except for those with higher educational qualifications having the highest proportion of 68%.See table 4.11 on the next page for details.

Table 4.11: Knowledge of modern contraceptive among respondents by background characteristics Kaduna State, Nigeria, 2016

Descriptive Variable	Good n (%)	Fair n (%)	Poor n (%)	Chi-square	P-Value
Age Group					
<24	21 (24.1)	10 (11.5)	56 (64.4)	28.9	<0.001
24-34	78 (49.4)	33 (20.9)	47 (29.8)		
>35	40 (47.1)	21 (24.7)	24 (28.2)		
Religion					
Christian	69 (57.9)	31 (26.0)	19 (15.9)	41.7	<0.001
Muslim	69 (32.9)	33 (15.7)	108 (51.4)		
Language					
Hausa/Fulani	62 (32.8)	29(15.3)	98 (49.5)	31.4	<0.001
Other major tribes	27 (26.2)	52 (50.5)	24 (23.3)		
Education					
None	5 (18.5)	4 (14.8)	18 (66.7)	48.8	<0.001
Qur'anic	20(25.3)	14(17.7)	45(46.9)		
Primary	36 (44.4)	11 (13.6)	34 (41.9)		
Secondary	44 (47.3)	23 (24.7)	26 (27.9)		
Higher	34 (68)	12 (24)	4 (8)		

4.12 Ever used any modern contraceptive methods by background characteristics among respondents, Kaduna State, Nigeria, 2016

The use of modern contraceptives among respondents increases with age as respondents in the age groups of 24-34 years and greater than 35 years having higher proportions of women who have ever used modern contraceptives 48.7% and 67.1% respectively. Only 16.1% of women in the age group less than 24 years have ever used modern contraceptives before. The proportion of Christian women who have ever used modern contraceptives is slightly higher although difference in proportions within each religious group is marginal. Among the different languages there was no marked difference in the proportions who have ever used modern contraceptives and those who had not. Across educational levels the proportions of women who have ever used modern contraceptives seemed to increase with those with greater than higher having the highest proportion of 66%. See table 4.12 below for details

Table 4.12: Ever used any contraceptive method by background characteristics among respondents, Kaduna State, Nigeria 2016

Descriptive Variable	Yes n (%)	No n (%)	Chi-square	P-Value
Age Group				
<24	14 (16.09)	73 (83.91)	47	<0.001
24-34	77 (48.73)	81 (51.29)		
>35	57 (67.06)	28 (32.94)		
Religion				
Christian	63 (52.94)	56 (47.06)	6.4	0.041
Muslim	84 (40)	126 (60)		
Language				
Hausa/Fulani	77 (40.74)	112(59.26)	14.9	0.005
Other major tribes	57 (49.51)	52 (50.49)		
Education				
None	7 (25.93)	20 (74.07)	16.1	0.003
Qur'anic	29 (36.71)	50 (63.29)		
Primary	40 (49.38)	41 (50.62)		
Secondary	39 (41.94)	54 (58.06)		
Higher	33 (66)	17(34)		

4.13 Future intention to use modern contraceptives based on number of living children

Majority of respondents irrespective of parity had intention to use modern contraceptives in future. See table 4.13 below for details.

Table 4.13: Future intention to use modern contraception based on number of living children among respondents, Kaduna State, Nigeria, 2016

Descriptive Variable No of living children	Yes n (%)	No n (%)	Chi-square	P-Value
0	24 (70.6)	10 (29.4)	13.4	0.004
1-2	83 (61)	53 (38.9)		
3-4	56 (69.1)	25 (30.9)		
>5	67 (84.8)	12 (15.2)		
Total	230	100		

4.14 Association between intention to use modern contraceptives and predictors among respondents

Bivariate analysis was performed to look at the association between certain predictors and the intention to use modern contraceptives in women who survivors of SAMMs. Ever used contraceptives before and women with greater than greater than 5 living children were found to be significant predictors of modern contraceptive use. Birth interval may also be a significant predictor but may be confounded by age or number of living children. See table 4.14 below for details

Table 4.14: Association between intention to use modern contraceptives and predictors among respondents Kaduna State, Nigeria 2016

Predictors	Intention to use Modern Contraceptives n (%)		Odds ratio	Confidence Intervals	Chi-square	P value
	Yes	No				
Age (years)						
<24	52 (22.6)	35 (35.0)	0.54	0.32 - 0.90	5.5	0.010
≥24	178 (77.4)	65 (65.0)				
Ever use Contraception						
Never used	121(52.6)	27(27.0)	3.00	1.79 – 6.00	18.5	<0.001
Ever used	109(47.4)	73(73.0)				
No of Living Children						
<5	163(70.9)	88 (88.0)	0.33	0.17 -0.65	11.2	<0.001
≥ 5	67(29.1)	12 (12.0)				
Birth Interval						
<2	73(45.9)	46 (58.2)	0.61	0.35 – 1.05	3.2	0.037
≥2	86 (54.1)	33 (41.8)				
Religion						
Muslim	146(63.5)	64 (64.7)	0.95	0.58 - 1.55	0.1	0.470
Christian	84(36.52)	35(35.3)				
Education						
Primary/no Education	134(58.3)	53(53.0)	1.24	0.77- 1.98	0.8	0.220
≥ Secondary	96(41.7)	47(47.0)				
Marital Status						
Single	13(5.7)	5(5.0)	1.34	0.39 - 3.28	0.6	0.520
Married	217(94.4)	95(95.0)				
Language						
Hausa/Fulani	131 (56.9)	59(59.0)	0.91	0.57 – 1.48	0.1	0.410
Other tribes	99(43.0)	41(41.0)				
Timing of Pregnancy						
Pregnancy now	172(74.8)	74(74.0)	1.04	0.60 – 1.78	0.1	0.437
Pregnancy later	58(25.2)	26(26.0)				

Table 4.14 cont: Association between intention to use modern contraceptives and predictors among respondents Kaduna State Nigeria, 2016

Predictors	Intention to use Modern Contraceptives n (%)		Odds ratio	Confidence Intervals	Chi-square	P value
	Yes	No				
Knowledge of Contraception						
Poor	89 (38.8)	38(38.0)	1.03	0.64 – 1.67	0.014	0.450
Good	141(61.3)	62(62.0)				
Sex Preference						
No Male Child	55(23.9)	30(30.0)	0.73	0.43 – 1.24	1.35	0.125
Have Male Child	175(76.1)	70(70.0)				
Desire for More Children						
Yes	163(70.9)	78(78.0)	0.69	0.39 -1.19	1.79	0.091
No	67(29.1)	22(22.0)				

4.15: Multivariate Analysis between intention to use modern contraceptives and predictors among respondents

To control for confounding and confirm association multivariate analysis using multiple logistic regression/modeling was performed between significant predictors and the intention to use modern contraceptives in women who survivors of SAMMs. This model also confirmed that ever used contraceptives before, women with greater than 5 living children and birth interval were found to be significant predictors of intention to use modern contraceptives in survivors of SAMMs. Age was however not found to be significant. See table 4.15 below for details.

Table 4.15: Multivariate Analysis between intention to use modern contraceptives and predictors among respondents, Kaduna State, Nigeria, 2016

Predictor	Odds Ratio	95% CI	P-Value
Age group (Ref <24)			
≥24	0.90	1.48 -1.70	0.750
Ever Used Contraception			
(Ref/No Yes)	3.85	1.93 – 7.76	<0.001
No of Living Children (Ref <5)			
≥5	3.87	1.07 – 14.07	0.038
Birth Interval (Ref ≤2)			
>2	1.88	1.05 – 3.37	0.034

CHAPTER FIVE

DISCUSSION

5.1 Intention to use modern contraceptives

There are few studies in Nigeria that have looked at intention to use modern contraceptives from the perspectives of women who survive severe acute maternal morbidities and some studies state that intention to use may be a better measure for demand than other indicators like unmet need (Roy et al, 2003). By expressing intention women are able to visualize their future need and are more likely to put it into practice (Kariaku D.M. et al, 2011). In this study 69.9% of women who survive severe acute maternal morbidities have the intention to use modern contraceptives and this may indicate that the demand for modern contraceptives in this group of women is high especially if intention can be translated into practice.

This finding is consistent with a similar study in Ghana by Tuncalp et al in 2014 which demonstrated that 51% of women who survived SAMMs intend to use contraceptives and a study in Kenya among postpartum women in 2011 by Kariuki et al stated that 91% of women intend to use PPFP. Whereas NDHS 2013 reported that only 27% of women within the reproductive age group have the intention to use modern contraceptives is quite smaller than women with SAMMs and postpartum women. The finding from NDHS was also collaborated by a study by Avideme et al in 2010 among women in the reproductive age group in 3 northern communities in which the intention to use modern contraceptives was even lower (9.2%).

This may indicate that the intention to use modern contraceptives may vary between different subgroups of women and therefore each group should be targeted in accordance to their needs as well as also indicate that there may be a missed opportunity for postpartum family planning in women who survive SAMMs as they most often present to hospitals. Therefore there is need for MNCH programmes to put policies in place to specifically target women who survive SAMMs as they are at increased risk of another SAMM and death and strengthen client-provider interaction during the postpartum period to ensure their intention to use modern

contraceptives is translated into practice as well as promoting intention to use as an indicator for demand for contraceptives.

5.2 Knowledge of women who survive SAMMs on modern contraceptives

In this study less than half of respondents (42.1%) had good knowledge of modern contraceptives (knew greater than 10 modern methods) although about 85.2% knew at least one modern method and this may affect their ability to make an informed choice on the appropriate modern contraceptives and when to use it. In this study only 48.9% of respondents have ever used modern contraceptives and a study by Avideme et al in 3 communities in Northern Nigeria demonstrated that there is a wide gap between knowledge/awareness and practice. In the study by Avideme et al 64.6% of women knew at least one method but only 3.1% were currently using. Idowu et al in 2015 showed that low knowledge of modern contraceptives is a significant predictor of contraceptives use in women of reproductive age group. Also a study carried out in the Democratic Republic of Congo by Mathe et al in 2011 reported that lack of adoption of family planning among postpartum women was due to lack of knowledge about modern family planning. Adeyemi et al in 2007 demonstrated that good knowledge of modern contraception translates to high utilization (60.5%) this was demonstrated in a study carried out among women attending FP clinics in a tertiary institution in Oshogbo, Osun State. Finally Adebayo et al in 2012 demonstrated that the use of FP is three times more likely in women with adequate knowledge/ awareness of FP adding it up he reported that women who have knowledge that the service/methods are easy to obtain are twice more likely to use contraceptives. These findings may illustrates the importance of MNCH programmes to strengthen demand creation activities in the state by improving the quality of information provided to women about modern contraceptives use and its benefits as well as where to access these services.

5.3 Prior use of Modern Contraceptives

In this study 48.9% of respondents had ever used a modern contraceptive method before and Prior use of contraception was also found to be a significant predictor of intention to use modern contraceptives with women who have previously used contraception four times more

likely to intend to use modern contraception as compared to those who have never used contraception. This finding may indicate that previous exposure to modern contraceptive use and confirmation of its benefits without obvious side effects influences the intention to use modern contraceptives. This finding is close to the results of a study in postpartum women by Mathe et al in 2011 that found that that 44% of women had ever used contraceptives. In contrast this to these findings a study by Avideme et al in Kaduna state among women of reproductive age found out that only 4.3% of women had ever used a contraceptive which is far lower than this study. However a study by Oye-Adeniran et al in 2006 which found out that 22.1% of sexually active women had ever used a contraceptive before and that choice, convenience and effectiveness influences the use of a contraceptive method. However exposure to contraceptives may vary with place of residence and region and Ashford et al in

2003 reported that women with very low exposure to contraceptives (never used) may likely face obstacles to using it as compared to those who have previously used. Sileu K. et al in 2014 in a study in Uganda among postpartum women reported that women with prior use of modern contraceptives are 11 times more likely to use. This has implications for the MNCH programmes in the state to improve awareness on FP and its perceived benefits as well as providing correct and appropriate information for each target audience and maybe showcasing individuals who have benefitted from modern contraceptive use as advocates.

5.4 Future Fertility Intentions

A lot of premium is placed on having a large family size as revealed in a study of six ethnic groups in Nigeria by Galandanci et al in 2007. It is not surprising therefore that in this study 72.3% of women desire to have more children in future. However 31.5% want to use modern contraceptives to space their births while 26.7% of respondents want to limit child bearing. This may indicate that although a large proportion of these women desire more children in future in this group of women but they are also increasingly becoming aware of the complications of not adequately spacing pregnancies and births as well as having too many pregnancies. It is therefore important to note that not having access to contraceptives may result in unplanned pregnancies thereby increasing the risk of further morbidities and death in these women. This also states that there is also an unmet need for FP in this group of women. This consistent with the study by Tuncalp et al in Ghana where 54% of women reported

wanting more children but more than 50% of them wanting to space their births and 40% wanting to limit child bearing in the same group of women. Avideme et al in 2010 also found out that 87% of women intended to get pregnant, while 15% felt that that their pregnancies were mistimed. Cleland et al in 2009 stated that greater than half of pregnancies worldwide are mistimed and this has made discussions on fertility intentions and contraceptive preferences paramount. He further stated that the goal of these discussions is to avert adverse health outcomes associated with mistimed pregnancies. MNCH programs must therefore ensure that PPFP counseling targets the needs of individual women as well as highlighting the need to plan pregnancies as well as reinforcing the dangers of not adequately spacing births and having too many pregnancies especially targeting women who survive SAMMs.

5.5 Factors affecting intention to use contraception

There is a strong relationship between socio-demographic factors and contraceptive use (Adebowale et al 2013 and Fotso et al 2011). In this study women with greater than 5 living children or more are 4 times more likely to intend to use contraceptives as compared to those with less than 5 children. This indicates that women with greater than 5 children have greater intention to use modern contraceptives in Kaduna state. This finding is consistent with NDHS 2013 report which showed that the proportion of those who intend to use contraception is higher in women with one or two children and lowest in women with no children. This finding was also consistent with findings by (Fotso et al 2014, Adebowale et al 2013, and Omo-Aghoja, 2009. These studies stated that increase contraceptive use was associated with increased no of living children and the goal was to limit family size. These findings support the importance of making PPFP service available to women with greater than 5 children as high parity has been shown to be a risk factor in developing complications during pregnancy and child birth. Research reveals that obstetric complications and severe morbidity may significantly affect maternal health and wellbeing and WHO recommends a pregnancy interval of at least 2 years before attempting the next pregnancy in order to minimize the risk of adverse maternal outcomes. Among respondents in this study women who intend to postpone births for at least 2 years were twice more likely to intend to use modern contraceptives as compared to those who intend to give birth in less than two years after the last birth. These findings are consistent with the study by (Kariaki et al, 2011 and Unumeri et

al, 2015). This finding indicates that there are groups of women who want to postpone births for a period greater than 2 years and also have the intention to use modern contraceptives. To further buttress this fact main reasons for wanting to use contraceptives in future in this study were the need to avoid complications (30.4%) and feeling that they have completed child bearing (28.6%). This finding is also consistent with the Tuncalp study in Ghana in 2015 which revealed that women intend to use modern contraceptives in the future to avoid complication and reduce financial concerns. This also supports the findings in a study by Hadeja et al in 2012 which revealed that about 57% women do not use maternal health services because they did not develop complications. Considering these findings MNCH programmes need to ensure that PPFP services target the individual needs women taking into consideration the needs of women who want to postpone births greater than 2 years and above.

In addition the main reasons for not wanting to use a contraceptive method in future in this study was as follows; God decides, fear of side effects, religious reasons and Partner disapproves. These findings were also in consonant with studies by (Garba et al, 2015, Omo-Aghoga, 2009). Over 91.86% of women said they needed spousal approval to decide to use modern contraceptives in this study. This indicates that partner involvement in decision making as regards intention and use of modern contraceptives is important. This was consistent with the Tuncalp study which showed that 90.5% of women need the approval of their partners to use modern contraceptives. Underscoring the need for MNCH programmes to ensure comprehensive family planning counseling with the inclusion of partners in the process.

5.6 Study Limitations

The results of this study however can be interpreted when its limitations are considered. One of the limitations of this study is that it is cross sectional so temporal relationship cannot be established, it was a facility based study so may be difficult to generalize findings, using disease specific criterion for identifying near miss is also non-specific and finally the study did not include spousal variables which are important explanatory variables when looking at barriers to contraceptive uptake.

5.7 Conclusions

A large proportion of women who survive severe acute maternal morbidities intend to use modern contraceptives. This presents a window of opportunity to scale up PPFP use and this is not surprising as studies show that this group of women would want to prevent suffering another complication in future. Other studies have also shown that introducing PPFP immediately after birth or during the third trimester women are more inclined to use it. Number of living children, birth interval and prior use of modern contraceptives are significant predictors of intention to use modern contraceptives and this helps to shed light on reasons why women intend to use modern contraceptives. Addressing their needs in a timely and appropriate manner would help reduce maternal morbidity and mortality as the use of contraceptives has shown to be effective in reducing maternal mortality as well as addressing the risk factors by delaying age at first pregnancy, reducing the risk attributed to high parity and short birth intervals.

In addition studies also show that women who deliver in health facilities are more likely to use PPFP than those who deliver elsewhere. It is my opinion that women who survive severe maternal morbidities do provide an opportunity to increase the uptake of PPFP because they usually also stay in hospital for a longer period of time as compared to women who have normal births. Further research needs to be undertaking on how best to make use of this opportunity. Reasons for not wanting to use modern contraception in future include religious reasons, fear of side effects and to a lesser extent spousal approval and in addition majority respondents also say the decision to use contraception would require discussing the benefits with their spouses. These are important contextual issues that should be considered when implementing maternal health programmes.

5.8 Recommendations

1. Give special attention to women who survive SAMMs to ensure their PPFP needs are met.

2. Demand creation activities should be strengthened and the quality of information provided to women about modern contraceptives be improved.

3. Individuals who have previously used contraceptives can be used as role models to show case the benefits of using modern contraceptives to prevent unintended pregnancies/births.

4. Women who survive SAMMs need to be specially targeted and counseled during the postpartum period highlighting the need to plan pregnancies as well as reinforcing the dangers of not adequately spacing births and having too many pregnancies.

5. Family planning programmes need to have comprehensive plans in place to address important contextual issues like religion, fear of side effects and spousal concerns.

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Appendix

Appendix 1: Distribution of Respondents by Facility N=330

Hospital Name	n (%)
Dr Gwamna Awan General Hospital	40 (12.12)
Gambo Sawaba General Hospital	35 (10.61)
Giwa General Hospital	35 (10.61)
Jibrin Maigwari General Hospital	20 (6.06)
Kaduna State University Teaching Hospital	45(13.64)
Kafanchan General Hospital	64 (19.39)
Major Ibrahim General Hospital	22 (6.67)
Sabon Tasha General Hospital	26 (7.88)
Saminaka General Hospital	35 (10.61)
Yusuf Dantsoho General Hospital	8 (2.42)
TOTAL	**330 (100)**

Appendix II: Common causes of Acute Severe Maternal Morbidities in women 15-49 years in Kaduna State, 2016 N=330

Clinical Classification	N (%)
Haemorrhage	154 (46.67)
Abortion	26 (7.88)
Severe PIH	93 (28.18)
Cardiac Faliure	1 (0.30)
Gestational DM	2 (0.61)
Severe anaemia	11 (3.33)
Malaria in Pregnancy	3 (0.91)
Sepsis	5 (1.52)
Obtructed Labour	35 (10.61)

Appendix III: Questionnaire

Title

Nigerian Field Epidemiology and Laboratory Programme

Questionnaire on Intention to use Contraceptives among Survivors of Severe Acute Maternal Morbidities/Maternal Near Miss

Consent

Introduction and Consent

Informed Consent

Greetings

Greetingsl I am a resident of the Nigerian Field Epidemiology and Laboratory Training Programme (NFELTP) an affiliate of the African Field Epidemiology Network supported by the United States Center for Disease Control. I am carrying out a survey relating to the health of women in Nigeria as regards the use of contrceptives especially among women that developed severe complications during pregnancy and child birth. The information I would collect will help the government to plan health services. You have been selected for the survey. The questions asked take about 30-60 mins to answer. All of the answers you give will be confidential and will not be shared with anyone. You don't have to be in the survey, but I hope you will agree to answer the questions since your views are important. If I ask any question you don't want to answer let me know and I would move to the next one. You can also stop the interview at anytime

Information about the survey

In case you need more information about the survey and NFELTP you may contact the following persons
Project Coordinator NFELTP: Dr Akin Oyemakinde
Program Director NFELTP: Dr Patrick Nguku
University Supervisors: Dr Babatunde Adedokun (0806 842 4418), Dr J.O Akinyemi (0807 767 7427)
Programme Supervisor: Dr Saheed Gidado (0818, 999 1213)
Director PRS-Kaduna State Ministry of Haalth: Dr Butawa

Do you have any questions?

Eliciting consent

May i begin the interview ☐ Yes ☐ No

Signature of interviewer

Date - -

Section One - Personal Information

Q1. What is your name?

Q2. Sex ☐ male ☐ female

Q3. How old were you at your last birthday

Q4. What is your current marital status ☐ Married ☐ single ☐ Divorsed ☐ Living together ☐ Widowed

Q5. Have you ever attended school? ☐ Yes ☐ No

Q6. What is the highest level of schoo you have attended?

☐ None ☐ Quaranic ☐ Primary ☐ Secondary ☐ Higher

Q7. What is your main lanquage?

☐ Q7a. Hausa ☐ Q7b. Igbo ☐ Q7c.Yoruba ☐ Q7d.English ☐ Q7d. Fulani

Q7f. Others specify

Q8. What is your occupation?

Q9. What is your religion?

☐ Q9a. Catholic ☐ 9b. Other christians ☐ 9c. Islam ☐ 9d. traditionalist

Q9e. Others specify

Section two - Clinical and Management information of client

Q10. How many times have you been pregnant

Q11. Have you had any miscarraiges or abortions ☐ Yes ☐ No

Q12. If yes! How many times.

Q31. When was the last time you had an abortion/miscarriage?

☐ Q13a. Weeks Q13a. Figure

☐ Q13b. Months Q13b. Figure

☐ Q13c. Years Q13c. Figures

☐ Q13d. Can't remember

Other's Specify

Q14. At what month did such a pregancy end?

Q15. How did such a pregnancy end

☐ Spontaneous ☐ Therapeutic ☐ Criminal

Q16. Have you ever had a still birth ☐ Yes ☐ No Q16. If yes, how many times.

Q17. When was the last time this happened?

Q18. Have you ever given birth ☐ Yes ☐ No Q19.How many times have you given birth?

Q20. How many are alive? Q20a. Among those alive how many are boys?

Q20b. Among those alive how many are girls?

Q21. This current pregnancy/birth did you want to have it now or later ☐ Now ☐ Later

Q22. When did you know you had problems with this current pregnancy/birth

Q23. What was your complaint?

Q24. Clinical classification of client (from case/delivery notes)

Q25a. When did you decide to seek care?

☐ 25a. Days 25a. Figures

☐ 25b. Weeks 25b. Figures

☐ 25c. Months 25c. Figures

☐ 25d. Years 25d. Figures

Q26. How far do you live from the health facility (KM) ☐

Q27. How much did it cost you to get treated? ☐

SECTION THREE: KNOWLEDGE ABOUT Contraceptives {Now I would like to talk about contraceptve use - the various ways or methods that a couple can use to delay or avoid a pregnancy}

Q28.Have you ever heard of contraception? ☐ Yes ☐ No

Q29. If yes, which of the following contraceptives have you heard about:

Contraceptive options heard of

29a. Condom. PROBE: Men can put a rubber sheath on their penis before sexual intercourse. ☐ Yes ☐ No

29b. Female Condom. PROBE: Women can place a sheath in their vagina before sexual intercourse. ☐ Yes ☐ No

29c. Pill. PROBE: Women can take a pill every day to avoid becoming pregnant. ☐ Yes ☐ No

29d.Injectables. PROBE: Women can have an injection that prevents pregnancy ☐ Yes ☐ No

29e. Implants. PROBE: A rod or more is placed in a woman's upperarm to prevent pregnancy > 1 years ☐ Yes ☐ No

29f. IUD. PROBE: Women can have a loop or coil placed inside them by a doctor or a nurse. ☐ Yes ☐ No

29g. Female Sterilization. PROBE: Women can have an operation to avoid having any more children. ☐ Yes ☐ No

29h. Male Sterilization. PROBE: Men can have an operation to avoid having any more children. ☐ Yes ☐ No

29i. Diaphragm: Women can place a thin flexible disk in their vagina before intercourse. ☐ Yes ☐ No

29j. Foam or Jelly: Women can place a suppository, jelly, or cream in their vagina before intercourse. ☐ Yes ☐ No

29k. Standard Days Method. PROBE:Use of colored beads to know the days she can get pregnant. ☐ Yes ☐ No

29l Lactational Amenorrhea Method (LAM) ☐ Yes ☐ No

29m. Rhythm Method. PROBE:Women have sexual intercourse only during their safe period ☐ Yes ☐ No

29n Female Sterilization. PROBE: Women can have an operation to avoid having any more children. ☐ Yes ☐ No

29o Emergency Contraception.PROBE: Women take pills within 3 days after unprotected sex to prevent pregnancy ☐ Yes ☐ No

29p. Have you heard of any other ways or methods that women or men can use to avoid pregnancy ☐ Yes ☐ No

if yes specify ☐

Section Four - Ever used

Q30.Have you ever used something or any contraceptive method to delay or avoid getting pregnant? ☐ Yes ☐ No

Q31. If yes, what method did you last use?

☐ Condom ☐ Female condoms ☐ Pills ☐ Injectables ☐ IUDs ☐ Implants ☐ Diaphargm
☐ Foam/Jelly ☐ Female sterilization ☐ Male sterilization ☐ Lat. Amen. Method ☐ Rhythm method
☐ Standard Days method ☐ Withdrawal method ☐ Other modern methods ☐ Other traditional method

Q32. Who decide on your choice of contraceptive methods?

☐ 32a. Joint decision ☐ 32b. Mainly Self ☐ 32c. Spouse
☐ 32d. Health worker 32e. Others specify

Q33.When did you use the method above?

Q34.Did you experience any side effects? ☐ Yes ☐ No

Q34b. What were the side effects

Q35.Were you told by any health worker/Family Planning (FP) provider about the side effects? ☐ Yes ☐ No

Q36.Were you told by any health worker/FP provider about other methods? ☐ Yes ☐ No

Q37.Did you face any challenges in obtaining your method of choice? ☐ Yes ☐ No

Q38.If yes! What are the challenges?

Q39.Why did you stop using this method?

Q40.How much did it cost you to buy the above method (in Naira)?

Q40b. other's specify

Section Five - Future Fertility Intentions

Q41.Would you like to have another child?

☐ Yes ☐ No ☐ Can't get pregnant ☐ Don't know/undecided

Q41b.Others specify

Q42. It yes, would you want to get pregnant again?

☐ 42a. months 42a. Figures ☐ 42b. years 42b. Figures

☐ 42c. Soon/Now ☐ 42d. dont know

42e. other's specify

Q43. If you could have the exact number of children you want. How many would that be?

Q44.How many would be boys? Q45.How many would be girls? ☐ Q46. Undecided

Q46b. Others's specify

Q47. Who decides on how many children you should have?

☐ Q47a.Self ☐ Q47b. Spouse/Partner ☐ Q47c. Joint decision ☐ Q47d. Government

47e. other's specify

Q48.If No! Why don't you want to get pregnant again?

Q49. Would you want to use a contraceptive method in the future?

☐ Yes ☐ No ☐ Don't know ☐ Undecided

Other's specify

Q50. if yes, why would you want to use contraceptive methods? Multiple responses allowed (probe)

☐ Q50a.Space births ☐ Q50b.Limit no of children ☐ Q50c. Avoid complications ☐ Q50d. Preg/Child birth expensive

☐ Q50e. Smaller families better quality of life ☐ Q50f. Enhances maternal health ☐ Q50g. Enhances child health

Q50h. Other's specify

Q51. if yes, what would be your prefered method of choice

☐ Condom ☐ Female condoms ☐ Pills ☐ Injectables
☐ IUDs ☐ Implants ☐ Diaphargm ☐ Female sterilization ☐ Male sterilization ☐ Rhythm method
☐ Withdrawal method ☐ Standard Days method ☐ Other modern methods ☐ Lat. Amen. Method
☐ Other traditional method

Q52. if no what are the reason for not wanting to use contraceptive methods (multiple responses allowed)

☐ Q52a.God decides ☐ Q52b.fear of side effects ☐ Q52c.Health concerns ☐ Q52e. Can harm baby
☐ Q52d. Lead to reduce fertility/prevent conception ☐ Q52f. make women promiscious
☐ Q52g. partner dissapproves ☐ Q52h. religious reasons ☐ Q52i. cultural reasons

Q53.Are you willing to pay for contraception of your choice? ☐ Yes ☐ No

Q54.If you wanted to use contarceptives do you need to ask anyone for permission ☐ Yes ☐ No

Q55. If yes, who would you need to ask for permission to use contraceptives

☐ Mother ☐ Partner ☐ Peer groups/Friends ☐ Religious/Spiritual leaders

Q56. In the last 1 year have you heard of contraception via the following?

☐ Q56a. Church ☐ Q56b.Mosque
☐ Q56c. Health worker ☐ Q56d. Radio ☐ Q56e.Community drama ☐ Q56f.Television ☐ Q56g. Internet
☐ Q56f.SMS ☐ Q56g. women groups ☐ Q56h. Magazines

Q56i. others specify

Thank You

Appendix IV: Health Facility Selection and Ranking (DHIS2 2015)

Facilities	Number of Deliveries by Caesarian Section	Facility Ranking
Dr Gwamna Awan General Hospital	237	1st
Barau Dikko Specialist Hospital	200	2nd
Kafanchan General Hospital	146	3rd
Yusuf Dantsoho General Hospital	140	4th
Saminaka General Hospital	102	5th
Gambo Sawaba General Hospital	94	6th
Jibrin Maigwari General Hospital	84	7th
Sabon Tasha General Hospital	83	8th
Major Ibrahim General Hospital	78	9th
Giwa General Hospital	54	10th
Kachia General Hospital	48	11th
Zonkwa General Hospital	45	12th
Zangon Kataf General Hospital	39	13th
Doka Rural Hospital	31	14th
Kagarko General Hospital	31	14th
Kawo General Hospital	31	14th
Turunku Rural Hospital	20	15th
General Hospital Ikara	19	16th
Gwantu General Hospital	13	17th
Kujama Rural Hospital	13	17th
Kwoi General Hospital	13	17th
Hunkuyi General Hospital	11	18th
Rigasa General Hospital	10	19th
Kaura Rural Hospital	9	20th
Idon Rural Hospital	7	21st
Makarfi General Hospital	6	22nd
Pambegua Rural Hospital	1	23rd
Fadan Kagoma Rural Hospital	0	24th
Kauru Rural Hospital	0	24th
Maigana Rural Hospital	0	24th