

SHORT REPORT

Awareness, Use, and Unmet Need for Family Planning in Rural Northern Nigeria

Henry V. Doctor^{*1,2} Sally E. Findley,³ Godwin Y. Afenyadu,⁴ Charles Uzundu⁵ and Garba M. Ashir⁶

¹Associate Research Scientist, Columbia University, Mailman School of Public Health, Department of Population and Family Health, 60 Haven Avenue - B2, New York, NY 10032, USA; ²Operations Research Advisor, PRRINN-MNCH Program, Abia State House, Abuja, Nigeria; ³Professor of Population and Family Health (same as '1' above); ⁴Health Systems Research Manager, PRRINN-MNCH Program, Nassarawa GRA, Kano, Nigeria; ⁵Operations Research Coordinator, PRRINN-MNCH Program, Dutse, Jigawa State, Nigeria; ⁶Same as '5', Damaturu, Yobe State, Nigeria.

*For correspondence: E-mail: hvd2105@columbia.edu; Phone: +2557873763592

Abstract

Access to quality reproductive health and family planning services remain poor in Nigeria. We present results on family planning awareness and use from a survey of 3,080 women (age 15-49 years) in Jigawa, Katsina, Yobe, and Zamfara States. About 43.0% had heard of any method of contraception whereas 36.6% had heard of any modern method. Overall, 7.0% of all currently married women reported ever using a method of contraception; 4.4% used a modern method and 2.9% used a traditional method. Only 1.3% of women in union (currently married or cohabiting) used modern contraception methods at the time of the survey; 1.3% of women in union used traditional methods. Unmet need for family planning was 10.3%. Low family planning use in the presence of low awareness and low felt need suggests, among other things, a need to increase awareness and uptake and make family planning commodities available. (*Afr J Reprod Health 2013; 17[4]: 107-117*).

Keywords: contraception; family planning; fertility; maternal health; Nigeria

Résumé

L'accès à la santé de la reproduction de qualité et des services de planification familiale demeure pauvre au Nigeria. Nous présentons les résultats sur la sensibilisation à la planification familiale et l'utilisation à partir d'un sondage de 3.080 femmes (âgées de 15-49 ans) dans les Etats de Jigawa, Katsina, Yobe et Zamfara. Environ 43,0% d'elles avaient entendu parler d'une méthode de contraception alors que 36,6 % avaient entendu parler d'une méthode moderne. Dans l'ensemble, 7,0 % des toutes les femmes actuellement mariées ont déclaré avoir déjà en utilisant une méthode de contraception dans le passé ; 4,4 % utilisaient une méthode moderne et 2,9 % utilisaient une méthode traditionnelle. Seulement 1,3 % des femmes en union (actuellement mariées ou en concubinage) utilisaient des méthodes modernes de contraception au moment de l'enquête; 1,3% des femmes en union utilisaient des méthodes traditionnelles. Le taux de besoins non satisfaits en planification familiale a été de 10,3 %. La faible utilisation de la planification familiale en présence d'une faible prise de conscience et le faible besoin ressenti suggèrent, entre autres, la nécessité d'accroître la sensibilisation et l'adoption et d'assurer la disponibilité des produits de planification familiale. (*Afr J Reprod Health 2013; 17[4]: 107-117*).

Mots-clés: contraception, planification familiale, fécondité, santé maternelle; Nigeria

Introduction

Maternal health outcomes in Nigeria are among the worst in the world, with Nigeria second only to India in the number of maternal deaths^{1,2}. In Northern Nigeria, the maternal mortality ratio (MMR) is estimated to be appreciably higher than

the national average³ with recent estimates for the north over 1,000 deaths per 100,000 live births, compared to MMR estimates for the southern region below 300 deaths per 100,000 live births^{4,5}.

In Nigeria, the rise in maternal mortality has been accompanied by a decline in antenatal care utilization and deliveries with a skilled birth

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attendant. According to the 2003 and 2008 Nigeria Demographic Household Surveys (DHS), between 2003 and 2008, the percent of women who received any antenatal care services for births in the previous five years dropped from 36.9% to 31.1% in the North West region (including Katsina and Zamfara states) and from 47.3% to 43.0% in North East Region (including Yobe state). Similarly, the percentage of women with skilled assistance at delivery, declined from 12.0% to 8.9% in the North West region and from 19.8% to 13.1% in the North East region^{6,7}.

Access to quality reproductive health and family planning services remain poor in Nigeria. According to the 2008 Nigeria DHS only 9.7% of married women used a modern method of contraception, while 20.2% of women had an unmet need for family planning services⁶. Contraceptive use was also lowest in Northern Nigeria with 2.5% and 3.5% in the North West and North East regions using a modern method of contraception, respectively, with unmet need for family planning among currently married women at 18-21%⁶.

There is a direct relationship between the outcome of pregnancy and family planning. The demographic transition theory states that only when fetal, infant, and child mortality rates are reduced it is likely that a family will accept family planning⁸. Thus, improvement of maternal and child health services is a prerequisite for family planning. As a result, child spacing is a critical factor which influences the outcome of pregnancy. When women adhere to the World Health Organization recommended minimum inter-birth interval of 33 months between two consecutive live births, the incidence of prematurity reduces. Thus, prevention of rapid series of many pregnancies provides a greater possibility of reducing maternal, fetal, infant, and childhood mortality⁹.

In general, child spacing provides greater opportunities for nurturing the individual child thereby providing the possibility of preventing complications such as gastrointestinal infections and malnutrition during infancy and early childhood⁹. Family planning may also improve the quality of life and raise the standard of living by decreasing the number of dependents requiring

intensive personal care, education, food, shelter, and clothing, among others. Nevertheless, where family planning services may be available, its use may be limited due to a number of factors such as low literacy levels, socio-cultural beliefs favoring large families, and unavailability of services due to dysfunctional health services¹⁰.

Along with these dynamics in maternal care and contraceptive use patterns, there has been less progress in improving infant and child survival and primary care utilization. As of 2008, the North West and North East regions were the regions with the highest proportions of children 12-23 months who had never been vaccinated, 48.7% and 33.9%, respectively, and fewer than 15.0% had a vaccination card⁶. Vaccination coverage rates in the four northern states of Zamfara, Katsina, Jigawa, and Yobe were all 5.4% and below⁶. When their young children became sick with pneumonia, malaria or diarrhea, under half of all sick children were taken to a health facility for treatment. Infant mortality rate was 139 deaths per 1,000 births in the North West region and 126 deaths per 1,000 live births in the North East region, while under five mortality rate was 217 and 222 deaths per 1,000 live births, respectively⁶.

In the face of this evidence of decline in maternal and child health in the North West and North East regions, the Partnership for Reviving Routine Immunization in Northern Nigeria (PRRINN) was established in 2006, and expanded in 2008 to include maternal, newborn and child health (MNCH), becoming PRRINN-MNCH (hereafter "the program"). It was established in the four northern states of Jigawa, Katsina, Yobe, and Zamfara. With co-funding from the Department for International Development of the United Kingdom and the State Department of the Norwegian Government, the program in Northern Nigeria represents a strategic attempt to reduce the unacceptably high rates of maternal, newborn, and child mortality through systems changes addressing issues of health governance, human resources, health information utilization and community engagement alongside the strengthening of clinical services.

The program adopts the implementation research approach to generate information that

improves the quality of decision making of health managers on what works and what does not in the Northern Nigerian context. Although the program focuses on a number of activities aimed at improving maternal and child health, this report presents selected results from the program's 2011 Mid-Term Household Survey (MTS) on a number of contraception use indicators including knowledge of specific contraceptive methods, ever use and current use, and unmet need for family planning. The focus in this report is on women who were married or cohabiting at the time of the survey because these women have the greatest risk of exposure to pregnancy and the need for regulating their fertility. Although fecund women who are not married or living together but sexually active require family planning, they were excluded due to the sensitivity of asking family planning questions to unmarried young women since religious and cultural teachings forbid them to have premarital sexual relations. Although the program conducted a baseline household survey in 2009 in Katsina, Yobe, and Zamfara, the survey did not include family planning questions. Therefore, the results presented in this report are specific to the 2011 MTS. The next sections present the survey design and sample for the MTS, analytical approach, results, and reflection of the findings as they relate to the Millennium Development Goals 4 and 5 of reducing child mortality and MMR by two-thirds and 75%, respectively by 2015.

Methods

Survey design and sample

This study is based on two surveys: the baseline and the Mid-Term Household Survey (MTS). The two surveys were nearly identical with additional questions in one survey and administered at two different points in time. The MTS was a cross-sectional survey that represents a snapshot of maternal, newborn, and child health (MNCH) at the time the survey was conducted. The survey was population-based to ensure that all families living in the four states were reflected in the survey findings, not just the subgroups which use health care services of a particular type. Because the goal of the survey was to assess changes in

health status, behaviors, and care utilization, survey questions included not only the basic parameters for assessing the key mortality indicators but also relevant health behaviors and health care utilization patterns. This was critical for assessing exposure to the MNCH activities. In the survey, family planning questions were included in order to have baseline information on contraceptive use indicators and to provide a benchmark against which to measure progress in family planning uptake for any interventions to be deployed in the future by the program.

As the MNCH activities are implemented in key clusters in each state, the sample design needed to include enough respondents in these clusters to allow estimation of program impact. Therefore, the sampling design was a stratified two-stage cluster, random sample, with oversampling of individuals in the MNCH intervention clusters. Individuals from MNCH clusters were oversampled according to a ratio of 2:1, even though MNCH clusters cover a significantly lower proportion of the population of each state. In the baseline survey there were 24 Local Government Areas (LGAs), with 3,901 households sampled in the intervention area and 2,444 in the control areas. For the MTS, these same LGAs were included, with the addition of 6 LGAs from Jigawa (not included in the baseline). The exclusion of LGAs, including the state capital, was not done because they were not considered to be an appropriate control for the largely rural intervention. This left 21 LGAs in the sampling frame for the MTS. In order to balance the need for a sample which was powerful enough to detect the smallest change in MNCH outcomes between the baseline and the MTS, with the constraints of a reduced budget, the mid-term sample size was reduced to 770 per state, yielding a sample of 2,360 households in the intervention areas and 960 in the control areas.

In both the baseline and MTS, the number of households at the first stage was proportional to the size of the unit, which is defined as the enumeration area in the baseline and the LGA in the MTS. In the MTS, communities in the intervention LGAs were included in the intervention if it was confirmed that the program

interventions had been deployed in the community. In the MTS, sampling within each community was also proportional to size within each intervention and control LGA. The sampling fraction for each community was determined by information on the households solicited from the community leadership. For both surveys, households within each selected community were randomly sampled using a procedure similar to that used in the WHO-EPI cluster surveys¹¹, namely by numbering and sampling households according to the community sampling fraction along randomly selected paths leading out from the center of the village.

The household was the ultimate sampling unit. In compounds that comprised one to three households, one household was randomly chosen for interviews; in compounds with four to six households, two were surveyed; in compounds with seven or more households, three were surveyed. Within each randomly selected household, in the baseline survey, all ever-married women of childbearing age (15-49 years) were interviewed, whereas in the MTS only one ever-married woman with children born in the last five years was selected for interview. In the baseline survey there were 6,842 women successfully completed interviews, while in the MTS 3,079 women completed interviews (out of the 3,080 selected women).

The MTS survey asked respondents a number of questions related to characteristics of the household, food security and animal possessions, socio-demographic characteristics, reproductive history, antenatal care, delivery, newborn and infant care, immunization, health seeking behavior, family planning, and sisterhood questions for estimating maternal mortality. The sisterhood questions focus on the number of sisters (born to the same mother) the respondent ever had and who ever reached the age of 15 years (or who were ever married) including those who are now dead. These questions also focus on the number of sisters who reached the age of 15 years and are alive now, how many of the sisters are dead, and how many of the sisters who died did so during a pregnancy or childbirth, or during the six weeks after the end of a pregnancy.

Analysis

We used descriptive statistics to report on the basic findings from the survey. The survey included socio-demographic characteristics of the households and women interviewed, which were used to describe the survey respondents and assess the extent to which there were differences between the respondent characteristics and family planning indicators. No weights were used in the calculation of the results since the study used proportionate sampling at the LGA and community level. Although some of the family planning indicators in our preliminary analyses were not statistically significant by intervention status (intervention or control), we do not present the results by intervention status since the program does not have a full functioning intervention package on family planning. Disaggregation of the results by intervention status in the future will provide an opportunity to assess whether there are any differences that may arise due to some of the activities of the program in the intervention cluster. In addition, we do not present the breakdown of some of the results by state due to insufficient number of cases for some of the indicators.

Results

Background characteristics of women surveyed

The survey focused on women with births in the past five years and results presented in Table 1 show that 48.9% were in their twenties. Virtually all (99.1%) women were married or in a union (currently married or cohabiting). Almost half (49.6%) had given birth to at least five children. Over three out of four women (78.3%) had never been to school and for those who had been to school, 76.5% had primary schooling. Consistent with the low level of schooling, the percent of women who were able to read and write in Hausa, Arabic, and English were 13.2%, 16.6%, and 16.9%, respectively. More than half of women (59.2%) interviewed in the Mid-Term Survey had access to a cell phone. Women in the intervention area accounted for 68.4% of the sample.

Table 1: Selected background characteristics of women surveyed (number and percent) MNCH MTS-2011

Characteristic	Jigawa	Katsina	Yobe	Zamfara	All women
<i>Age group (years)</i>					
15–19	39 (5.1)	62 (8.1)	87 (11.3)	35 (4.6)	223 (7.2)
20–24	184 (23.9)	170 (22.1)	214 (27.8)	145 (18.8)	713 (23.2)
25–29	184 (23.9)	195 (25.3)	197 (25.6)	216 (28.1)	792 (25.7)
30–34	198 (25.7)	180 (23.4)	151 (19.6)	195 (25.3)	724 (23.5)
35–39	82 (10.7)	101 (13.1)	83 (10.8)	97 (12.6)	363 (11.8)
40–44	64 (8.3)	53 (6.9)	27 (3.5)	67 (8.7)	211 (6.9)
45–49	19 (2.5)	9 (1.2)	11 (1.4)	15 (2.0)	54 (1.8)
<i>Current marital status</i>					
Married	764 (99.2)	756 (98.2)	764 (99.4)	768 (99.7)	3,052 (99.1)
Widowed	1 (0.1)	7 (0.9)	3 (0.4)	1 (0.1)	12 (0.4)
Divorced	5 (0.7)	5 (0.7)	2 (0.3)	1 (0.1)	13 (0.4)
Separated	0 (0.0)	2 (0.3)	0 (0.0)	0 (0.0)	2 (0.1)
<i>Parity</i>					
1	81 (10.5)	83 (10.8)	109 (14.2)	53 (6.9)	326 (10.6)
2	90 (11.7)	111 (14.5)	116 (15.1)	75 (9.8)	392 (12.8)
3	109 (14.2)	143 (18.6)	118 (15.3)	84 (10.9)	454 (14.8)
4	106 (13.8)	77 (10.0)	103 (13.4)	91 (11.8)	377 (12.3)
5+	384 (49.9)	353 (46.0)	323 (42.0)	466 (60.6)	1,526 (49.6)
<i>Formal education</i>					
Yes	309 (40.1)	203 (26.4)	65 (8.4)	92 (12.0)	669 (21.7)
No	461 (59.1)	567 (73.6)	705 (91.6)	678 (88.1)	2,411 (78.3)
<i>Level of formal education</i>					
Primary	136 (70.8)	155 (85.2)	43 (71.7)	38 (74.5)	372 (76.7)
Secondary+	56 (29.2)	27 (14.8)	17 (28.3)	13 (25.5)	113 (23.3)
<i>Reading and writing in Hausa</i>					
Not at all	608 (79.0)	627 (83.8)	716 (93.0)	702 (91.2)	2,653 (86.8)
Some ability	162 (21.0)	121 (16.2)	54 (7.0)	68 (8.8)	405 (13.2)
<i>Reading and writing in Arabic</i>					
Not at all	582 (75.6)	630 (82.3)	735 (95.5)	617 (80.1)	2,564 (83.4)
Some ability	188 (24.4)	136 (17.8)	35 (4.6)	153 (19.9)	512 (16.6)
<i>Reading and writing in English</i>					
Not at all	566 (75.1)	618 (82.0)	721 (95.4)	616 (80.1)	2,512 (83.1)
Some ability	188 (24.9)	136 (18.0)	35 (4.6)	153 (19.9)	512 (16.9)
<i>Mobile phone ownership</i>					
Yes	492 (63.9)	388 (50.4)	523 (67.9)	420 (54.6)	1,823 (59.2)
No	278 (36.1)	382 (49.6)	247 (32.1)	350 (45.5)	1,257 (40.8)
<i>Sample area</i>					
Control	240 (31.2)	304 (39.5)	209 (27.1)	220 (28.6)	973 (31.6)
Intervention	530 (68.8)	466 (60.5)	561 (72.9)	550 (71.4)	2,107 (68.4)
Total	770 (100.0)	770 (100.0)	770 (100.0)	770 (100.0)	3,080 (100.0)

Notes: Some percentages may not add up to 100 due to rounding of figures; Formal education refers to highest level completed.

Thus, the women interviewed in the MTS appear to be younger and of lower social status, characteristics often associated with reduced access to health care workers or services such as family planning.

The results on the background characteristics per state are not generally different from the overall results with a few exceptions. For example, Zamfara had more (60.6%) women reporting parity of five or more than the average (49.6%); Yobe and Zamfara had more women with no education (91.6% and 88.1%, respectively) than the average (78.3%) while similarly registering few women with some ability to read and write in Hausa, Arabic, and English as the average.

Knowledge of contraceptive methods

Information on knowledge and use of family planning methods was obtained from respondents by asking them to mention ways or methods by which a couple can delay or avoid pregnancy. If the respondent failed to mention a particular method spontaneously, the interviewer described the method and asked whether the respondent had heard of it. For each method known, respondents were asked if they had ever used the method. Respondents who reported ever use of family planning were asked whether they were using a

method at the time of the survey.

Results showed that 43.0% of all currently married women knew at least one method of contraception. Modern methods were more widely known than traditional methods; 36.6% of all women knew of a modern method while only 16.2% knew a traditional method. On average, knowledge of contraceptive methods was slightly higher among older women (40+ years) than among younger women (Figure 1).

Among modern methods for women, the pill and injectables were the most commonly known method, 31.6% and 29.2%, respectively. Intrauterine devices (IUDs), diaphragm, foam/jelly, female and male sterilization, and implants are the least known modern methods, ranging between 0.3% (male sterilization) to 1.3% (IUDs). At the state level, awareness of any method was high in Zamfara (63.0%) followed by Jigawa (49.4%), Yobe (30.4%), and Katsina (29.1%). For any modern method, Zamfara had the highest awareness (48.7%) followed by Jigawa (48.7%), Katsina (26.1%), and Yobe (22.5%).

Among traditional methods, folk methods (e.g., strings and herbs) were the most commonly known among all women (15.4%). At the state level, folk methods were mentioned by 37.1% of women in Zamfara followed by Yobe (13.9%), Katsina (6.0%), and Jigawa (4.6%).

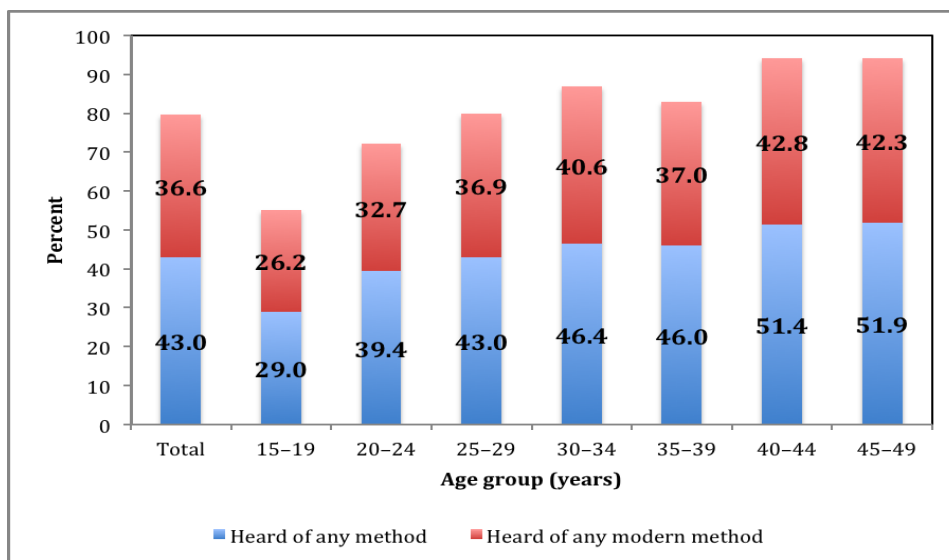


Figure 1: Knowledge of contraceptive methods, MNCH MTS-2011

Ever use of contraception

Ever use of contraception provides a measure of the cumulative experience of a population with family planning. Ever use of family planning methods in the 2011 Mid-Term Household Survey (MTS) thus refers to use of a method at any time, with no distinction between past and current use. The survey collected data on the level of ever use of family planning methods from respondents. All currently married women interviewed in the survey who said that they had heard of a method of family planning were asked whether they had ever used that method.

Overall, 7.0% of all currently married women reported ever using a method of contraception at some time; 4.4% used a modern method and 2.9% used a traditional method. Injectables (2.4%) were the most commonly used modern method, followed by the pill (2.2%), male and female condoms, implants, and IUD (0.1% each). Diaphragm and foam/jelly and both male and female sterilization were not reported to be used by any of the women. With 2.9% of women ever using any traditional method, specific methods used were folk (traditional) methods (2.7%), LAM (0.1%) and withdrawal method (0.1%). Rhythm/periodic abstinence and others were not mentioned by any of the currently married women.

Current use of contraception

Among other things, the level of current contraceptive use among women age 15-49 years can be used to estimate the reduction in fertility attributable to contraception. The contraceptive prevalence rate (CPR) is usually defined as the percentage of currently married women who are currently using a method of contraception. Because of the relative small numbers or percent of women associated with current use of contraception, the results are presented for all women together (not stratified by intervention/control area). The overall CPR among all currently married women in the selected states in Northern Nigeria is 2.5%; 1.3% of all currently married women were currently using any modern method of contraception and 1.3% of all currently married women were using any traditional method of contraception. Injectables were the most commonly used modern method (0.7%), followed by the pill (0.5%). Among the traditional methods, the folk (traditional) method was the most commonly used method (1.2%). The use of any family planning method was lowest in the 15-19 year age group (1.4%) and highest in the 45-49 year age group (7.8%) (Figure 2).

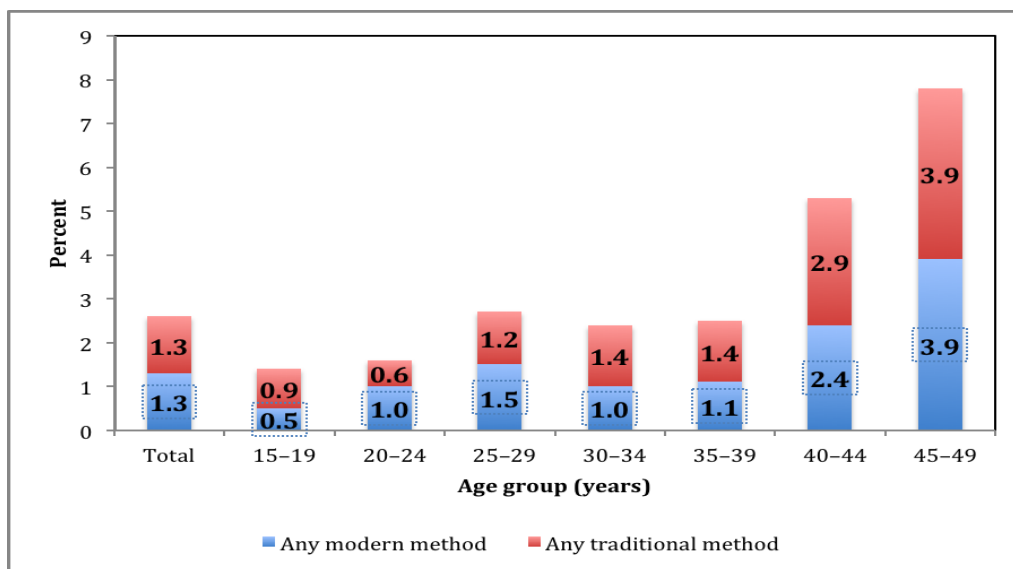


Figure 2: Current use of contraception, MNCH MTS-2011

Need for family planning services

Family planning methods can be used to space or limit childbearing. In the 2011 MTS, women who were fecund and sexually active and indicated that they either want no more children (limiters) or want to wait for two or more years before having another child (spacers), but were not using contraception, were a group identified as having an unmet need for family planning. Pregnant women were considered to have unmet need for spacing or limiting if their pregnancy was mistimed or unwanted, respectively. Similarly, amenorrhoeic women were classified as having unmet need if their last birth was mistimed or unwanted. Women who were currently using a family planning method were said to have a met need for family planning.

Table 2 presents information on unmet need among currently married and cohabiting women surveyed in the 2011 MTS. Overall, 10.3% of currently married women had an unmet need for family planning; 8.7% for spacing and 1.6% for limiting. Unmet need did not vary much by age except for extreme age categories; women in the 45-49 year age group had a total of 33.0% unmet need, whereas unmet need for the 15-19 year age group was only 3.3%. Unmet need for spacing was highest in the 45-49 year age groups, with 22.2% of women having an unmet need for spacing their births, while the unmet need for limiting was highest in the 20-24 year age group with 2.4% of women wanting no more children. It is notable that in the 45-49 year age group, a sizeable proportion of unmet need for family planning was for spacing purposes. The 20-24 year age group had the highest unmet need for limiting (2.4%). A decline was noticed in age groups 25-29 year age group and 30-34 year age group with 2.1% and 1.4%, respectively, with a final decline to 0.0% in other age groups. Smaller sample sizes for the older ages may influence the percent of unmet need.

Close to a quarter (23.7%) of women in urban areas had an unmet need for family planning whereas their unmet need for spacing was 23.7% and none for limiting. Among rural residents, total unmet need was 9.3% whereas unmet need for spacing and limiting was 7.6% and 1.6%, respectively.

Table 2: Percent of currently married women age 15-49 with unmet need for family planning, by background characteristics, MNCH MTS-2011

Background characteristic	Unmet need for family planning			Number of women
	For spacing	For limiting	Total	
<i>Age group (years)</i>				
15-19	3.3	0.0	3.3	64
20-24	7.9	2.4	7.9	280
25-29	9.0	2.1	11.7	338
30-34	7.1	1.4	11.5	336
35-39	5.9	0.0	8.8	167
40-44	8.0	0.0	12.0	108
45-49	22.2	0.0	33.0	28
<i>Residence</i>				
Urban	23.7	0.0	23.7	133
Rural	7.6	1.6	9.3	1,188
<i>State</i>				
Jigawa	14.1	0.7	14.1	377
Katsina	9.2	2.3	9.2	226
Yobe	2.2	0.4	3.7	233
Zamfara	8.3	2.1	13.0	485
<i>Parity</i>				
1	8.2	1.6	8.2	99
2	7.1	1.2	7.1	132
3	7.1	1.2	7.1	179
4	3.1	3.1	6.1	157
5+	10.9	1.2	14.0	753
<i>Formal education</i>				
Yes	9.8	3.3	11.4	377
No	8.2	0.9	10.0	944
<i>Level of formal education</i>				
Primary	4.8	3.2	4.8	197
Secondary+	18.2	4.5	18.2	85
<i>Mobile phone ownership</i>				
Yes	8.9	1.0	10.8	839
No	8.0	2.1	9.7	482
Total	8.7	1.6	10.3	1,321

Notes: Formal education refers to highest level completed; Women who indicated that they either want no more children (limiters) or want to wait for two or more years before having another child (spacers), but were not using contraception, were a group identified as having an unmet need for family planning.

Total unmet need for family planning was highest in Jigawa (14.1%) followed by Zamfara (13.0%), Katsina (9.2%), and Yobe (3.7%). Unmet need for spacing births was highest in Jigawa (14.1%) followed by Katsina (9.2%), Zamfara (8.3%), and Yobe (2.2%). Unmet need for limiting is highest in Zamfara (2.1%), followed by Katsina (2.3%), Jigawa (0.7%), and Yobe (0.4%).

Unmet need for family planning was highest among women with five or more children (14.0%) while the lowest figure was for women with only four children at 6.1%. Total unmet need for spacing births was highest among high parity mothers (10.9%) and lowest among women with four children (3.1%). Total unmet need for limiting child bearing was highest among mothers with four children (3.1%).

The total unmet need for family planning was slightly higher among women with formal schooling than those without (11.4% vs. 10.0%) and the differences were more pronounced with the level of schooling: women with at least secondary education had a total unmet need of 18.2% compared with 4.8% for those with primary schooling. Owning a mobile phone was associated with 10.8% total unmet need and slightly lower at 9.7% for women without mobile phones.

Comparison of the results with national level indicators

We summarize selected indicators in this study with those from the 2008 Nigeria Demographic and Health Survey (DHS) for the national level as well as the North East and North West zones (Table 3). Results show that the ever and current use of family planning indicators from the MTS are generally lower than those from the 2008 Nigeria DHS and the comparable zones. Similarly, unmet needs indicators in the MTS are very low compared with the DHS indicators.

Discussion

Our objective was to report on selected family planning indicators derived from the 2011 Mid-Term Household Survey (MTS) data.

Family planning in the predominantly Muslim and male dominated (many aspects of society are controlled by males) northern part of Nigeria is a

sensitive issue. Awareness creation through community engagement on the benefits of family planning could improve the low levels of awareness of contraceptive methods.

Table 3: Comparison of selected family planning 2011 MTS indicators with national indicators

Indicator (for currently married women)	2011 MTS	2008 DHS		
		North East	North West	National
Percent heard of any method of contraception	43.0	58.6	45.1	68.4
Percent heard of any modern method of contraception	36.6	57.2	43.1	67.0
Percent using modern methods of contraception	1.3	3.5	2.5	9.7
Percent using traditional methods of contraception	1.3	0.5	0.3	4.9
Percent with unmet (total) need for family planning	10.3	17.6	20.8	20.2
Percent with unmet need for spacing	8.7	13.6	17.9	15.0
Percent with unmet need for limiting	1.6	4.0	2.9	5.2

Notes: Women who indicated that they either want no more children (limiters) or want to wait for two or more years before having another child (spacers), but were not using contraception, were a group identified as having an unmet need for family planning; “MTS” – Mid-Term Household Survey.

On average, knowledge of contraceptive methods was slightly higher among older women (40 years+) than among younger women. This is not unusual in Muslim communities. The younger Muslim women are comparatively less aware of family planning programs because they face sociocultural problems in adopting family planning methods¹². Supporting girls to stay in school longer to delay age of marriage and to empower girls through education, as well as empowering young Muslim women economically, and awareness creation during antenatal and post natal clinics have been suggested as possible ways managing these sociocultural barriers^{12,13}.

Overall, 7.0% of all currently married women reported ever using a method of contraception; 4.4% used a modern method and 2.9% used a

traditional method. Injectables (2.4%) were the most commonly used modern method, followed by the pill (2.2%), male and female condoms, implants, and IUDs (0.1% each). The preference for injectables, unlike pills, provides an opportunity for women to take such injections without necessarily the consent of male partners. Ensuring access to providers and decisions to where such injections could be given to women in private is critical. Only 2.6% of women used any method of family planning, with half of women using traditional methods such as abstinence and withdrawal. In the four states, modern contraceptive methods use among women in union was highest among those aged 45-49 years old.

Results also showed that 10.3% of women in union (currently married or cohabiting) who were fecund and sexually active had unmet need for family planning—that is, they wanted to limit childbearing or delay it for two years or more but were not using contraceptives. Unmet need was higher for spacing births (8.7%) than for limiting births (1.6%) thereby calling for communication strategies that focus on promotion and the benefits of birth spacing. The higher Demographic and Health Survey rates of awareness and use of family planning compared with the MTS rates may be related to differences in sample design and time reference periods.

As the majority of countries, including Nigeria, are making slow progress in achieving the Millennium Development Goals (MDGs), the poor family planning indicators reported here re-echoes the challenge of attaining MDGs in the face of inadequate awareness and use of family planning methods. Preventing unwanted pregnancies, through family planning is a critical step in reducing reproductive risks and protecting maternal health during wanted ones.

Not only has family planning been understood to be one of the most cost-effective development investments^{14,15}, it is also specifically characterized by its contribution to efforts to reduce maternal and child mortality, prevent HIV transmission (by providing counseling on condom use), empower women, and help families create a path out of poverty¹⁶. Beyond the MDGs, the positive effects of family planning on lives have been documented elsewhere^{16,17}. Family planning stabilizes societies

since high birth rates have been associated with steady increases in the population of youth thereby creating a youth bulge which has potential to generate social turbulence in the event that their needs (e.g., employment opportunities) are not met. Family planning is also cost-effective since preventing unintended pregnancies is less expensive than treating maternal/infant complications of pregnancy. For example, in Zambia, for every \$1 invested in family planning, \$4 was saved in other development areas¹⁶.

While family planning will not solve all Northern Nigeria's maternal and child health problems, it is a highly effective cross-cutting development imperative that can help us reach the MDGs¹⁶. Achieving universal access to family planning is attainable if more consolidated approaches to ensure saturation of family planning uptake are adopted. Interventions that adopt a strong communication strategy that emphasizes the health benefits of child spacing can help address cultural preferences for more children are ideal.

Low family planning use in the presence of low awareness and low felt need suggests a need to increase awareness and uptake and to make family planning commodities available. This calls for communication strategies which include accurate information about specific contraceptive methods in order to dispel any misconceptions about family planning. Involving men and other religious leaders in program design will be critical in the uptake of family planning¹⁸. The PRRINN-MNCH Program has implemented a number of activities involving Muslim religious leaders on awareness creation and community engagement on various aspects of women's health. For example, in 2011, the program continued to involve religious leaders to communicate health-related messages such as the emphasis on skilled birth attendants for delivery, the need for more health workers, and promotion of maternal, newborn, and child health (MNCH). A strong partnership with religious leaders resulted in 2.4 million people being reached by religious leaders on various MNCH aspects during Ramadan Tafsir through mosque preaching sessions, radio jingles, and television programs¹⁹. The effectiveness of these interventions will be evaluated in the program's end-term household survey. We hope that these

activities will lead to improved health among women and the ability to exercise their reproductive rights. We hope that these results will provide indicators against which to measure progress in family planning uptake for any future interventions within the program's focal states and will also draw attention to policymakers and other stakeholders on the challenges documented here.

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References

1. UNICEF. The state of the world's Children 2009. New York: United Nations Children's Fund, 2009.
2. World Health Organization. Cause-specific mortality and morbidity, maternal mortality ratio. World Health Statistics, Global Health Observatory Repository Data. Available at: <http://apps.who.int/ghodata>; Accessed 31 October 2011.
3. Federal Ministry of Health of Nigeria, Save the Children and ACCESS. Saving newborn lives in Nigeria: newborn health in the context of the integrated maternal newborn and child health strategy. Abuja, Nigeria: Federal Ministry of Health, Save the Children and ACCESS, 2009.
4. Doctor, H.V., A. Olatunji, S.E. Findley, G.Y. Afenyadu, A. Abdulwahab, and A. Jumare. "Maternal mortality in northern Nigeria: findings of a health and demographic surveillance system in Zamfara State, Nigeria." *Tropical Doctor* 2012; 42(3): 140-143
5. Centre for Reproductive Rights and Women Advocates Research and Documentation Centre. Broken promises: human rights, accountability, and maternal death in Nigeria. New York, United States and Lagos, Nigeria: Centre for Reproductive Rights and Women Advocates Research and Documentation Centre, 2008.
6. National Population Commission [Nigeria] and ICF Macro. Nigeria Demographic and Health Survey 2008 Preliminary Report. Abuja, Nigeria and Calverton, Maryland: National Population Commission and ICF Macro, 2009.
7. National Population Commission (NPC) [Nigeria] and ORC Macro. Nigeria Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC Macro, 2004.
8. Kirk, D. Demographic transition theory. *Population Studies* 1996; 50(3): 361-387.
9. Wallace, H.M., E.M. Gold, and S. Dooley. Relationship between family planning and maternal and child health. *American Journal of Public Health* 1969; 59(8): 1355-1360.
10. Addai, I. Ethnicity and contraceptive use in sub Saharan Africa: The case of Ghana. *Journal of Biosocial Science* 1999; 31: 105-120.
11. World Health Organization. Immunization coverage cluster survey – reference manual. Geneva, Switzerland: World Health Organization, Department of Immunization, Vaccines and Biologicals, 2005.
12. Ahmed, S. *Muslim Women Attitude Towards Family Planning*. Chapter 8; p.122-125; India, New Delhi: Publisher Sarup and Sons; 2003.
13. Chen, L.C., M.C. Gesche, S. Ahmed, A.I. Chowdhury, and W.H. Mosley. Maternal Mortality in Rural Bangladesh. *Studies in Family Planning* 1974; 5(11): 334-341.
14. Disease Control Priorities Project. Why contraception is considered a best buy: family planning saves lives and spurs development, fact sheet. Washington, DC: Disease Control Priorities Project; 2007.
15. Winikoff, B. and M. Sullivan. Assessing the role of family planning in reducing maternal mortality. *Studies in Family Planning* 1987; 18(3): 128-143.
16. Cates, W. Family planning: the essential link to achieving all eight Millennium Development Goals. *Contraception* 2010; 81: 460-461.
17. Cincotta RP. How do democracies grow up: countries with too many young people may not have a fighting chance for freedom? *Foreign Policy* 2008; 165:80-82.
18. Duze, M.C. and I.Z. Mohammed. Male knowledge, attitudes, and family planning practices in Northern Nigeria. *African Journal of Reproductive Health* 2006; 10(3): 53-65.
19. PRRINN-MNCH Program. 2011 annual report. Kano, Nigeria: PRRINN-MNCH Program, 2012.