RESULTS OF SECONDARY ANALYSIS OF THE 2013 NIGERIA DEMOGRAPHIC AND HEALTH SURVEY (DHS)

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Nigerian Family Planning Landscaping

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LIST OF ACRONYMS AND ABBREVIATIONS

CCP	The Johns Hopkins Center for Communication Programs
DHS	Demographic and Health Survey
FP	Family Planning
HC3	Health Communication Capacity Collaborative
IUD	Intrauterine Device
LAM	Lactational Amenorrhea Method
LGA	Local Government Area
MSION	Marie Stopes International of Nigeria
PMV	Patent Medicine Vendor

1. INTRODUCTION

The Johns Hopkins Center for Communication Programs (CCP), Marie Stopes International of Nigeria (MSION), and DKT International Nigeria are partnering to conduct a family planning landscaping exercise in Lagos and Kaduna states on behalf of the Nigerian government and the Bill and Melinda Gates Foundation. The purpose of the analysis is to better understand state-specific family planning supply and demand barriers and identify key solution levers to accelerate contraceptive use. The landscaping exercise, covering urban and rural areas in both states, entails data collection and analyses and solicits inputs from family planning clients and potential clients, service providers, community leaders, and key stakeholders from government, donors, and the private sector.

One of the key initial activities conducted as part of the landscaping exercise is secondary analysis of the 2013 Demographic and Health Survey (DHS). The analysis seeks to provide answers to specific questions, including the following: (1) What is the typical profile of users versus non-users; (2) How do users of various methods differ? How large are each of these user and non-user segments? (3) What type of service outlet do contraceptive users access for obtaining their methods? (4) What are the demographic characteristics of women who access the various media (radio, television, newspapers, none) regularly in Kaduna and Lagos?

2. OVERVIEW

Nigeria has one of the lowest contraceptive prevalence rates in the world. Only 10% of married women were using a modern method; a prevalence that has not changed since 2008 (NPC/ICF Macro, 2014). This low contraceptive prevalence rate masks considerable socio-demographic

variations. Indeed, in Nigeria, contraceptive use varies significantly by state of residence, urban residence, education level, religion, socio-economic status, ethnicity, parity and other background characteristics. Understanding audience characteristics that are likely to hinder or promote contraceptive use is critical for designing potentially effective communication strategies that address the communication needs of specific audience groups. In this regard, the analyses reported in this document rely on data from the 2013 DHS to compare profiles of contraceptive users and non-users, describe the differences among users of various methods, examine service outlets for various methods, and describe the characteristics of consumers of various communication media.

Combined with findings from other components of the landscaping analysis, the results of these analyses provide a rich picture of the family planning situation in Nigeria. The other components of the landscaping analysis include mapping of health facilities, supplementary data collection using omnibus survey, marketing and pricing studies, policy and donor analysis, supply chain analysis, private sector services analysis, and qualitative data collection. The sets of findings from these data sources will complement one another.

3. METHODOLOGY

3.1 DATA

The data analysed in this report come from the 2013 Nigeria Demographic and Health Survey. Information on the sampling procedure, instruments, data collection methods, ethical considerations, and other relevant aspects of the survey is provided in the original survey report available online at: www.dhsprogram.com. The data set analysed in this report included information on 1243 women from Kaduna State and 1482 women from Lagos

State. Some of the analyses reported in this document focused on the entire sample of women in the two states while those pertaining to contraceptive use focused only on sexually experienced women, that is, 1106 women in Kaduna and 1248 in Lagos.

3.2   DATA ANALYSIS

3.2.1   Key Research Questions and Analytical Strategy

All analyses were conducted separately for Kaduna and Lagos. We began with exploratory data analysis before moving on to the bivariate analysis. We examined data spread, frequency distributions, outliers, and patterns of missing values to ascertain appropriate treatment of variables. This was followed by univariate analysis to check frequency distributions and summary statistics, like means and variances for continuous variables and proportions for categorical variables. Subsequently, the following analyses were conducted:

1. Using bivariate analytic methods, we investigated potential differences in the socio-demographic characteristics of three categories of respondents: non-users with no intention to use, non-users with an intention to use (that is, those who plan to use a method within the next twelve months), current users of modern methods, and, in Lagos State only, users of traditional method. In addition, the Kaduna sample was differentiated into urban and rural to further understand how these sub-samples varied.

2. We conducted an analysis among modern method users and explored the socio-demographic characteristics of users of various methods.

3. We assessed the type of service outlets that contraceptive user access for obtaining their methods.

4. We investigated the demographic characteristics of women who access the various media (radio, television, newspapers) regularly in Kaduna and Lagos.

3.2.2 Measurement

Key Dependent Measures: We focused our analysis on three key contraceptive use outcomes.

1. Use of/intention to use a modern contraceptive method was measured as a categorical variable that classifies respondents into one of four categories: currently using a modern method, non-user with an intention to use a method during the next 12 months, non-user with no intention to use a method in the next 12 months, and (for Lagos only) traditional method user. For Kaduna, we excluded the traditional method user because there were very few women who reported using traditional methods.

2. Analysis of the type of method used was restricted to modern method users. The dependent variable was measured as a binary variable distinguishing respondents who reported using a short-acting versus a long-acting method. Methods such as injectables, pills, emergency contraception, lactational amenorrhea method (LAM) condoms, and female condoms were classified as short-acting methods. Long-acting methods consisted of implants and IUDs. For the sake of parsimony, we also include the few women who used sterilization in the long-acting category.

Key Independent Measures: The following socio-demographic predictors of contraceptive use were measured.

1. Age Group: Age was divided into three categories: 15 – 24 years, 25 – 34 years, and 35 years or older.

2. Education was measured as a categorical variable following standard classification of schooling levels in Nigeria. The categories included no schooling, primary, secondary or higher levels of schooling.

3. Parity, which specifies the number of times a woman has given birth, was assessed by the woman's response on a series of questions about her childbirth history.

4. The wealth index is a composite measure of a household's cumulative living standard. Household wealth was constructed through a principal components analysis of household assets and housing characteristics, such as ownership of consumer items, and type of dwelling. To differentiate between the poorer and richer households, we did not use the original wealth quintiles that come with the DHS dataset. Instead, we divided the wealth factor score for each state into tertiles to denote poorer, middle income, and richer households.

5. Marital status was categorized as unmarried (never married or previously married but not currently in a union) and currently married or cohabiting.

6. Religion was measured as a binary variable indicating Christian or Muslim. Since other religious groups constitute only 1.4% of the national sample, we did not retain them in the analysis.

7. Media habits were evaluated by asking respondents how often they read a newspaper, watched television, or listened to the radio. For some of the analyses, we constructed a categorical variable that showed if the respondent was exposed to both radio and television, radio alone, television alone or to neither of the two media.

8. Place of residence distinguishes urban from rural residents.

4. RESEARCH FINDINGS FOR LAGOS STATE

4.1   CHARACTERISTICS OF RESPONDENTS

Table 1 shows the distribution of the respondents from Lagos by their socio-demographic characteristics. The modal age group for women in Lagos State was 25 – 34 years while the mean age was 30.2 years. A majority had at least secondary education. Indeed fewer than 5 percent of the sample had no formal education. More than two-thirds of the women were Christians while more than one third were not currently married. Almost one third (31.2%) of the women had had no children while fewer than 6 percent had six or more children. The average parity was about 2.0 children.

Table 1: Percent of Women by Socio-Demographic Characteristics and Media Exposure in Lagos

Variables	n	Percent
Age		
15-24	439	29.60
25-34	558	37.66
35+	485	32.74
Education		
No Education	66	4.42
Primary	198	13.34
Secondary	898	60.59
Higher	321	21.65
Socio-economic Status		
Poorer	498	33.61
Middle	496	33.44
Richer	488	32.94
Religion		
Christian	1033	69.68
Muslim	449	30.32
Marital Status		
Unmarried	549	37.07
Married/co-habiting	933	62.93
Parity		
No children	506	34.14
1 – 2	405	27.33
3 – 5	469	31.65
6 +	102	6.88
Number of observations	**1482**	

4.2   Media Consumption Habits

Table 2 presents information on the media consumption habits of the sample. More than three-fifths of the respondents listened to the radio at least once a week while about three-quarters

watched the television at least once a week. The reach of newspapers/magazines is more limited as only about 16 percent of the women reported this medium.

We analyzed the relative and combined reach of the media focusing only on the radio and television. The data showed that about one-fifth of the women did not have a regular (that is, at least once a week) exposure to either the radio or the television. This finding indicates that combining the radio and the television will help to ensure that messages reach at least 80 percent of the intended audience in Lagos State. Also of note is the finding that women who are exposed to either the radio or the television are also very likely to the exposed to the other medium. Overall, more than half of the women (56.4%) had regular exposure to both the radio and the television; about 18 percent were exposed to the television alone while only about 5 percent were exposed to the radio alone.

Table 2: Percent distribution of women by media consumption habits in Lagos

Variables	n	Percent
Regularly listens to radio	898	60.57
Regularly watches TV	1094	73.81
Regularly reads newspaper or Magazine	235	15.87
Exposed to neither radio nor television	313	21.13
Exposed to radio only	260	4.91
Exposed to television only	73	17.55
Exposed to both radio and television	836	56.42
Number of observations	1482	

4.3   Socio-demographic characteristics of various media consumption groups

Information on the socio-demographic characteristics of the various groups of women defined by their media consumption habits is provided on Table 3. In the following paragraphs, we compare the profiles of the "No Media", "Television Only", "Radio Only" and "Both Radio and Television" groups.

No Media Group: Compared to the other exposure groups, the women in this group are less likely to have post-secondary education and more likely to have primary education or lower.

They are also less likely to be rich and more likely to be Muslim than the women in the "Television Only" or the "Television and Radio" groups.

Table 3: Percent distribution of women by media habits (listening/viewing at least once a week) and by socio-demographic characteristics in Lagos (n=1482)

Variables	None	TV only	Radio Only	TV & Radio
Age				
15-24	28.86	31.06	32.80	29.15
25-34	39.23	40.29	24.08	37.43
35+	31.90	28.65	43.12	33.42
Mean age in years	30.0	29.4	31.2	30.3
Education				
No Education	7.73	7.00	8.64	2.01
Primary	21.23	11.59	14.13	10.86
Secondary	58.48	59.78	56.21	62.01
Higher	12.56	21.62	21.03	25.12
SES				
Poorer	44.82	33.08	61.21	27.17
Middle	33.53	31.84	24.38	34.70
Richer	21.65	35.08	14.40	38.13
Religion				
Christian	61.89	74.51	60.31	71.90
Muslim	38.11	25.49	39.69	28.10
Marital Status				
Single	35.50	39.52	43.78	36.31
Married/co-habiting	64.50	60.48	56.22	63.69
Mean number of children-ever-born	2.4	1.9	2.4	2.0

Television Only Group: This group comprises proportionally fewer poorer women compared to the "No Media" or "Radio Only" groups. The women in this group also appear to be of lower parity, on average, than the women in the "No Media" or "Radio Only" groups. Also compared to the "No Media" or "Radio Only" groups, the women in this group are more likely to be Christians.

Radio Only Group: This group comprises relatively older, poorer and higher parity women.

Television and Radio Group: The women in this group are generally richer and better educated than the women in the "No Media" or the "Radio Only" groups. Moreover, the women are more likely than their peers in the "No Media" or "Radio Only" groups to be Christians.

4.4 Awareness about methods

Table 4 presents awareness of modern methods among women in Lagos State. The data showed that the best known methods were male condom, the Pill, and injectables. About nine out of ten women reported awareness of each of these methods. Other commonly mentioned methods included female condoms, IUD and female sterilization. In contrast, most women were not aware of implants, male sterilization, emergency contraception and diaphragm. The women mentioned an average of 6.2 modern methods. As expected, methods awareness increased with socio-economic status and education. The mean number of methods knows was significantly higher for married or cohabiting women compared to their unmarried peers; and for Christians than Muslims.

Table 4: Percent distribution of women by awareness of specific modern methods, Lagos

Methods	Percent
Pill	89.34
IUD	67.29
Injectables	86.09
Diaphragm	18.57
Male condom	98.05
Female condom	70.13
Implant	35.08
Female Sterilization	53.50
Male Sterilization	33.11
Lactational Amenorrhea Method	47.53
Emergency Contraception	23.06

4.5 Socio-demographic differentials in contraceptive use status

Table 5 presents the socio-demographic characteristics of the respondents in Lagos State by their contraceptive use status. The data reveal moderate levels of use of modern methods (30.3%) and traditional methods (18.7%) in Lagos. Differences in age by contraceptive use status are such that non-users with no intention to use were generally older than the women in

the other three user groups. On average, non-users with future intentions to use a method were younger than their peers currently using a method, and than non-users with no intention to use. In addition, users of traditional methods were, on average, older than their peers currently using a modern method. Regarding differences by parity, users of traditional methods were the least likely to have had no children. On average, users of traditional methods were of higher parity than any other group while the lowest average parity was observed among non-users with an intention to use. Non-users with no intention to use were poorer than the women in any of the other three groups. Differences by educational level are slight and only noticeable when we compare non-users with no intention to use with current users or non-users with intention to use. Similarly, concerning marital status, the largest differences are seen when we compare users of traditional methods with any of the other three groups. Specifically, users of traditional methods were less likely to be unmarried than the other women. In addition, current users of any method were more likely to be unmarried than non-users with no intention to use. Non-users were less likely than users to be regular radio listeners. As for regular television viewing, the only significant difference was between current users and non-users with no intention to use: regular television viewing was less common among non-users with no intention to use compared to current users.

The results of size estimates (Table 5) show that the largest use status group in Lagos comprises of current users of modern methods with an estimated 839,270 women. Following this group in size are non-users with no intention to use and non-users with intention to use. Interestingly, there are an estimated more than half a million users of traditional methods in Lagos State.

Table 5: Percent distribution of users and non-users of contraceptive methods, by selected socio-demographic characteristics, Lagos 2013

Variables	Users of modern methods	Users of traditional methods	Non-users, intending to use	Non-users, not intending to use
Age				
15-24	24.7	9.7	23.0	10.7
25-34	42.2	45.9	55.5	29.8
35+	33.1	44.4	21.5	59.5
Average age in years	30.9	33.9	29.5	35.9
Parity				
None	26.9	9.1	25.8	18.7
1 – 2	26.3	26.1	41.9	35.8
3 – 5	39.6	55.2	28.4	32.5
6 +	7.2	9.6	3.9	13.0
Average parity	3.1	4.4	2.6	3.5
Education				
No Education	2.0	3.6	4.0	10.0
Primary	14.4	17.7	12.1	17.5
Secondary	59.7	53.4	57.9	52.2
Higher	23.9	25.3	26.0	20.3
Socio-economic Status				
Poorer	32.9	26.0	33.4	40.9
Middle	34.0	34.5	34.1	31.4
Richer	33.1	39.5	32.4	27.7
Religion				
Christian	66.8	67.3	71.0	74.8
Muslim	33.2	32.7	29.0	25.2
Marital Status				
Unmarried	33.1	12.1	27.1	24.7
Married/cohabiting	66.9	87.9	72.3	75.9
Media Consumption Habits				
Regularly listens to radio	67.0	64.7	58.0	56.9
Regularly watches TV	78.3	70.7	75.3	68.8
Regularly reads newspaper/magazines	19.2	15.5	14.0	16.5
All Women	30.3	18.7	25.5	25.6
Number of survey respondents	378	233	422	449
Population estimates[1]	839,270	517,965	706,316	709,086

[1]Based on estimated 3,297,462 women of reproductive age in 2015, 84% of whom were sexually experienced.

4.6   Socio-demographic Characteristics of Users of Various Methods

In this section, we focus on current contraceptive users and examine the specific methods used as well as socio-demographic differences among users of various methods. Figure 1 provides the distribution of users by type of method used. In Lagos, almost two-fifths of the users were reportedly using a traditional method. Among modern methods, condom was the most common, followed by the Pill. There were relatively few users of IUD and implants.

We compare pertinent socio-demographic characteristics of the women using the various methods in Table 6.
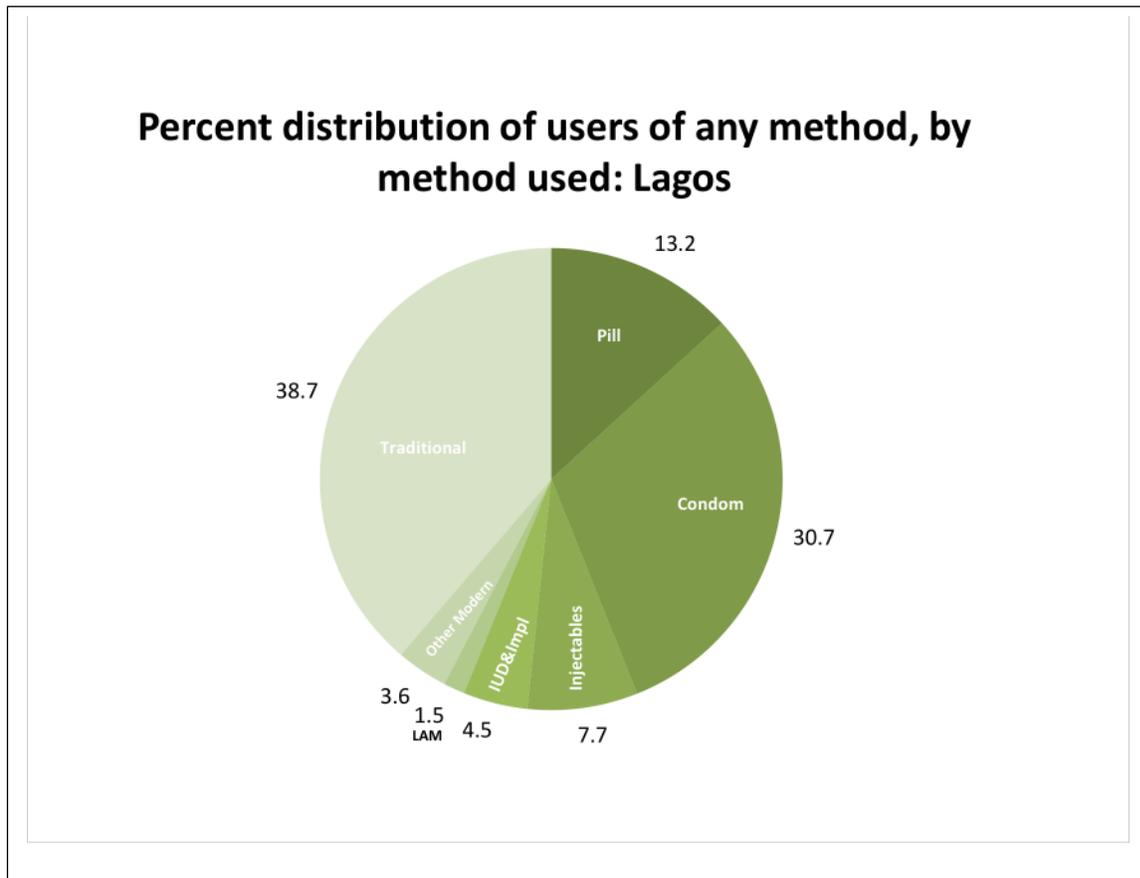
Table 6: Percent distribution of users of modern methods, by selected socio-demographic characteristics, Lagos 2013

	Pill & Condom	Injectable	Long Acting	Traditional
Age				
15-24	29.99	0.00	00.00	9.66
25-34	44.19	40.84	39.36	45.89
35+	25.83	59.16	69.64	44.45
Education				
No Education	1.52	0.00	10.98	3.54
Primary	12.59	25.90	8.48	17.73
Secondary	61.31	60.22	32.01	53.42
Higher	24.57	13.89	48.53	25.31
SES				
Poorer	33.09	28.18	22.22	26.01
Middle	35.24	41.81	20.43	34.45
Richer	31.67	30.00	57.34	39.53
Religion				
Christian	65.81	59.60	91.9	67.29
Muslim	34.19	40.40	8.10	32.71
Marital Status				
Unmarried	39.46	6.81	7.66	12.14
Married/co-habiting	60.54	93.19	92.34	87.86

Pill and condom users: The women who use the Pill or the condom were generally younger and secondary educated. They were also more likely than the users of injectables and long-acting methods to be unmarried

Injectable users: Users of injectables in Lagos were generally older and married. In addition, the women in this category were more likely to be Muslim compared to the other women.

Users of long-acting methods: These women were generally older, richer and married. Furthermore, the women were more likely than the women in the other user categories to possess higher education and to be a Christian.

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Users of traditional methods: On average, these women were older than the users of condoms and the Pill but younger than their peers using injectables or long-acting methods. Compared to the women using long-acting methods, users of traditional methods were more likely to have secondary education or lower.

Variables	Government	Private clinical	Private non-clinical	Field-worker
Table 7: Percent distribution of users by sources of contraceptives and by selected characteristics and contraceptive type; Lagos (n=315)				
Age				
15-24	0.00	0.00	100.00	0.00
25-34	14.38	13.08	71.09	1.45
35+	22.40	25.86	50.82	0.91
Education				
No Education	10.70	46.80	42.50	0.00
Primary	25.17	17.04	57.79	0.00
Secondary	10.41	12.80	75.17	1.62
Higher	17.21	15.47	67.33	0.00
SES				
Poorer	16.14	8.80	72.03	3.02
Middle	11.39	15.11	73.50	0.00
Richer	15.13	20.12	64.75	0.00
Religion				
Christian	14.79	16.69	68.04	0.48
Muslim	12.82	10.92	74.35	1.91
Marital Status				
Single	16.14	6.81	88.70	0.00
Married/co-habiting	62.03	18.29	15.64	0.00
Media consumption habits				
Exposure Radio	15.16	14.24	69.85	0.74
Exposure TV	14.23	15.30	70.05	0.41
Contraceptive used				
Pills & Condoms	4.72	2.93	92.34	0.00
Long acting	51.31	48.69	0.00	0.00
Injectable	38.50	53.34	1.85	6.31

4.7   Sources of contraceptive methods

Table 7 shows variations in sources of contraceptives by socio-demographic characteristics, media exposure and methods used among women in Lagos. Overall, the most common sources of contraceptive supply were private non-clinical sites (chemists: 42.7%, pharmacy: 15.8%) and private health facilities (13.7%). The proportion of women obtaining contraception from private non-clinical facilities decreased with age.   While all of the youngest women obtained their contraception from private non-clinical facilities, 71% of the 25-34 year olds and 51% of the older women attained their supply from such facilities. Unmarried women tended to obtain their methods from private non-clinical facilities whereas for married women, government clinical facilities were the most popular source. Proportionally more of richer than poorer women sourced their methods from private clinical sites. In terms of contraceptive use, the proportion of women who obtained long-acting methods from government versus private clinics was almost equally split.   A slightly larger proportion of women acquired injectables from private clinics as opposed to the government hospitals. Almost all other short-acting methods were acquired from private non-clinical facilities.   Community field workers formed a very small proportion of the contraceptive suppliers.

4.8   Fertility intentions

Overall, about one fifth (21.7%) of the women in Lagos desired a child within the next two years while 31.3 percent wanted to wait at least two years. About one fifth (21.0%) were ambivalent about their fertility intentions and 25.1 percent desired no more children. Table 8 presents the distribution of women in various fertility intention categories by socio-demographic characteristics and media exposure in Lagos State. The women that desired to have a child within the next two years were generally aged less than 35 years, with relatively low parity and likely to be married. Similarly, the women who desire to wait at least two years to have a child

were generally aged less than 35 years and of low parity. They were nonetheless more likely than the women who desire a child within the next two years to be single. As for the women unsure of the timing of the birth of their next child, they were generally young women with very

Table 8: Percent distribution of users by fertility intentions and by selected characteristics; Lagos (n=1396)				
Variables	Wants within 2 years	Wants, after 2+ years	Wants, unsure of timing	Wants no more
Age				
15-24	12.72	48.31	65.66	0.32
25-34	52.45	43.96	26.27	24.06
35+	34.83	7.74	8.07	75.62
Education				
No Education	4.82	3.79	1.51	6.84
Primary	12.09	10.33	6.49	21.60
Secondary	53.66	64.75	73.12	53.16
Higher	29.44	21.12	18.88	18.40
SES				
Poorer	29.16	32.16	35.37	39.25
Middle	31.49	37.51	32.46	28.37
Richer	39.36	30.32	32.18	32.38
Religion				
Christian	70.97	69.16	72.52	67.67
Muslim	29.03	30.84	27.48	32.33
Marital Status				
Not married	27.73	42.35	86.14	9.82
Married/co-habiting	72.27	57.65	13.86	90.18
Mean number of children-ever-born	1.56	1.31	0.52	4.39
TV & Radio Exposure				
None	21.90	19.76	24.76	20.14
Only TV	19.27	15.06	24.30	14.00
Only Radio	2.88	4.98	5.31	6.46
Radio & TV	55.94	60.19	45.62	59.40

low parity, and predominantly unmarried. The women who desired no more children were generally older and predominantly married.

4.9   Unmet Need

Total unmet need was relatively low in Lagos (11.2%). The total unmet need included 7.8 percent for spacing and 3.3 percent for limiting. There were a few significant differences in unmet need by socio-demographic characteristics. Total unmet need was higher for poorer women (14.9%) than for middle income (10.2%) or richer (8.7%) women. Unmet need for spacing was higher for young women (15.3%) than for their older peers (11.3% for 25-34; 3.1% for 35 years or older). In addition, unmet need for limiting was higher among uneducated women (6.5%) than among the women with post-secondary education (1.9%). Differentials by parity were such that unmet need for spacing was significantly higher for women with one or two children (13.2%) compared to their peers with 3 – 5 children (5.2%) or six or more children (2.9%). In contrast, unmet need for limiting was higher for high parity women (six or more children; 16.8%) compared to their lower parity peers (2.8% for women with 3 – 5 children; 1.0% for women with one or two children).

4.10   Lapsed Contraceptive Use

In Lagos State, less than one third (29.2%) of sexually experienced, non-pregnant women had never used any form of contraceptives. Less than one fifth (18.3%) of the women had used a method in the past but were not currently using. More than half (52.6%) of the women were currently using any form of contraceptives, including modern, traditional, and folkloric methods. There are limited socio-demographic variations in lapsed use. Christians were more likely than Muslims to experience lapsed use and women with no education than their educated peers.

Table 9: Prevalence of lapsed use among women who ever used any method of contraceptives, by selected characteristics, Lagos

Variable	Percent
Age Group	
15 – 24	28.72
25 – 34	35.38
35 +	26.55
Education	
None	39.96
Primary	25.94
Secondary	31.37
Higher	32.27
Religion	
Christian	34.36
Muslim	23.22
SES	
Poorer	32.22
Middle	31.85
Richer	29.23
Number of respondents	**880**

4.11   SUMMARY AND RECOMMENDATIONS FOR LAGOS STATE

Most women in Lagos State had at least post-primary education and had five or fewer children. A majority of the women listened to the radio and/or watched the television at least once a week. About one fifth of the sample did not have regular exposure to radio or television. Relatively few women were exposed to newspaper or magazines. The women with no regular exposure to the radio or television were less likely than the other women to have higher education. Compared to the women with regular exposure to the television, these women were more disadvantaged in terms of socio-economic status and also more likely to be Muslims.

Contraceptive awareness was widespread although level of awareness varied across socio-demographic groups. The groups least knowledgeable about contraceptives were poorer women and those with primary education or less. About half of the women were using a

contraceptive method, mainly pills, condoms and traditional methods. Use of long-acting methods was not very common. About half of those who were not currently using a method reported the intention to do so later.

Private clinical facilities were as popular as government sites for obtaining injectables and long-acting methods. Young people invariably obtained their methods from private non-clinical sites. Private non-clinical sites were also the predominant sources for pills and condoms.

Total unmet need was relatively low and a greater proportion of this need was for spacing. Some significant variations exist across socio-demographic variables. For example, unmet need for limiting was highest among women with six or more children while unmet need for spacing was highest for women with one or two children. Total unmet need declined with socio-economic status.

Based on these findings, the following recommendations are pertinent:

- Strategies to reach Lagos State audience with potentially effective messages to promote contraceptive use should prioritize the combined use of radio and television. However, considering the complex media landscape in the state, further research is needed to identify the channels that have the potential to reach the larger segments of the population and to determine the best times to broadcast messages.
- It is also important to design appropriate strategies for reaching the women with no regular access to the radio or television. Community mobilization activities, particularly those involving working with religious leaders and organizations, are possible alternative approaches for reaching these marginalized women. Outreaches from health facilities to the community can also help to ensure that these women have access to contraceptive

information and services thereby compensating for their lack of access to the mass media.

- Further research is needed to understand the reasons for the widespread use of traditional methods in Lagos State and develop appropriate strategies for enabling users of traditional methods transition to modern methods. It is equally important to understand the reasons for the low prevalence of long-acting methods in order to develop potentially effective strategies. Programs should capitalize on the high level of readiness to use contraceptives among current non-users and target demand and supply factors that will allow these women to translate their contraceptive intentions into reality. Efforts designed to promote contraceptive use designed to reach current non-users who have an intention to use a method in the future should focus on younger and lower parity women

- Intention is the most proximate determinant of actual use (Bankole and Westoff 1998; Roy et al. 2003). To transition to use of contraceptive methods, people need to first develop the intention to use. It is therefore important to design comprehensive strategies that will help couples with no intention to use contraceptives to transition to intention to use. Efforts to move non-users with no intention to use to develop concrete contraceptive intentions and actualize such intentions in Lagos State should focus on older women and those from poorer households as a special target.

- Given their predominant role as sources of contraceptives, private clinical and non-clinical sites should be included in efforts designed to improve quality of care.

5. RESEARCH FINDINGS FOR KADUNA STATE

5.1 CHARACTERISTICS OF RESPONDENTS

Table 10 shows the distribution of the respondents from Kaduna by their socio-demographic characteristics. On average, the women from Kaduna State were younger than their peers from Lagos. The modal age group for women in Kaduna State was 15 – 24 years while the mean age was 27.8 years. Similarly, the women were, on average, less educated than their peers from Lagos State. More than half of the women had primary education or lower while less than 10 percent had post-secondary education. The sample was equally divided between Christians and Muslims. Furthermore, about three-quarters of the women were married or cohabiting. More than one quarter of the women had had no children while about 15 percent had six or more children. The average parity was about 2.7 children. Rural residents made up more than half of the sample.

Table 10: Percent of Women by Socio-Demographic Characteristics in Kaduna

Variables	n	Percent
Age		
15-24	507	40.75
25-34	408	32.81
35+	329	26.44
Education		
No Education	501	40.34
Primary	183	14.75
Secondary	454	36.52
Higher	104	8.39
Socio-economic Status		
Poorer	405	32.62
Middle	383	30.85
Richer	454	36.54
Religion		
Christian	617	49.64
Muslim	626	50.36
Marital Status		
Unmarried	315	25.37
Married/co-habiting	928	74.63
Parity		
No children	358	28.81
1 – 2	291	23.41
3 – 5	404	32.48
6 +	190	15.30
Type of Place of Residence		
Urban	569	54.22
Rural	674	45.78
Number of observations	1243	

5.2 Media consumption habits

We present information on the media consumption habits of the sample on Table 11. Media exposure is comparatively lower in Kaduna than in Lagos State. Only about one third of the respondents listened to the radio or watched the television at least once a week. Only about 10 percent of the women reportedly read newspapers or magazines regularly.

As we did for Lagos, we analyzed the relative and combined reach of the media focusing only on the radio and the television. Many of the women exposed to the radio were also exposed to the television. The data showed that more than half of the women in Kaduna had no regular exposure to the radio or the television. This finding indicates that combining the radio and the television will help to ensure that messages reach only about 47 percent of the intended audience effectively.

Table 11: Percent distribution of women by media consumption habits in Kaduna

Variables	n	Percent
Regularly listens to radio	438	35.21
Regularly watches TV	445	35.79
Regularly reads newspaper or Magazine	129	10.39
Exposed to neither radio nor television	663	53.36
Exposed to radio only	135	10.86
Exposed to television only	142	11.43
Exposed to both radio and television	303	24.35
Number of observations	**1243**	

5.3 Socio-demographic characteristics of various media consumption groups

Table 12 provides Information on the socio-demographic characteristics of the various groups of women defined by their media consumption habits. In the following paragraphs, we compare the profiles of the "No Media", "Television Only", "Radio Only" and "Both Radio and Television" groups.

No Media Group: Compared to the other exposure groups, the women in this group were more likely to be illiterate, of higher parity, and poor. They are also predominantly married and rural women.

Table 12: Socio-demographic characteristics of groups of women defined by media consumption habits (listening/viewing at least once a week) and – Kaduna (n=1243)

Variables	None	TV only	Radio Only	Radio & TV
Age				
15-24	41.15	49.32	32.36	39.6
25-34	32.19	30.99	36.29	33.47
35+	26.66	19.69	31.36	26.93
Mean Age in years	27.7	25. 9	29.3	28.2
Education				
No Education	48.57	31.34	62.47	16.67
Primary	17.05	12.52	5.85	14.71
Secondary	31.67	46.99	29.81	45.23
Higher	2.70	9.15	1.86	23.39
Socio-economic Status				
Poorer	42.96	18.80	49.94	8.71
Middle	32.00	30.10	46.28	20.54
Richer	24.46	51.11	3.78	70.75
Religion				
Christian	46.91	51.43	35.72	60.99
Muslim	53.09	48.57	64.28	39.01
Marital Status				
Single	17.95	43.45	15.87	37.37
Married/co-habiting	82.05	56.55	84.13	62.63
Mean number of children-ever-born	2.95	2.09	3.58	2.19
Residence				
Urban	35.61	59.93	15.32	75.02
Rural	64.39	40.07	84.68	24.98

Television Only Group: This group comprises younger, educated, richer and urban women. The women in this group are also likely to have fewer children than their "No Media" or "Radio Only" peers.

Radio Only Group: This group comprises predominantly illiterate, rural, and higher parity women. The women in this group are also very likely to be Muslim, married and poor.

Television and Radio Group: The women in this group are generally richer, educated, and of lower parity. They are also predominantly urban residents and Christians. Moreover, the women are more likely than their peers in the "No Media" or "Radio Only" groups to be single.

5.4   Awareness about methods

Table 13 describes awareness of modern methods among women in Kaduna State. As we observed for Lagos State, in Kaduna, the data showed that the best known methods were male condom, the Pill, and injectables. More than eight out of ten women reported awareness of each of these methods. More than three quarters of the women reported awareness of female sterilization while implants, male sterilization and lactational amenorrhea method were known by about two fifths of the women. In contrast, less than one third of the women reported awareness of IUD and female condom whereas about one fifth were aware of diaphragm and emergency contraception. The women mentioned an average of 5.7 modern methods. The mean number of modern methods known increased monotonically by education level from 3.9 among women with no education to 8.9 among those with post-secondary education. Methods awareness also increased by socio-economic status: from a mean of 4.1 methods among women from poorer households to 7.4 methods. Awareness was also higher for Christians (mean of 7.3 methods) than for Muslims (4.1 methods).

Table 13: Percent distribution of women by awareness of specific modern methods, Kaduna

Methods	Percent
Pill	86.75
IUD	30.10
Injectables	85.78
Diaphragm	20.83
Male condom	84.06
Female condom	32.14
Implant	44.41
Female Sterilization	77.96
Male Sterilization	44.95
Lactational Amenorrhea Method	43.20
Emergency Contraception	18.64

Table 14: Percent distribution of users and non-users of contraceptive methods, by selected characteristics, Kaduna 2013				
Variables	Users of modern methods	Users of traditional methods	Non-users, intending to use	Non-users, not intending to use
Age				
15-24	25.3	(24.0)	40.2	34.3
25-34	41.2	(36.2)	42.5	32.3
35+	33.4	(39.8)	17.3	34.4
Average age in years	30.8	30.8	27.1	29.8
Parity				
None	25.6	(7.3)	28.8	14.4
1 – 2	17.3	(12.5)	30.3	28.5
3 – 5	41.1	(49.7)	32.8	35.9
6 +	16.0	(30.4)	10.0	21.2
Average parity	3.1	(4.4)	2.6	3.5
Education				
No Education	8.5	(37.5)	21.4	72.1
Primary	18.5	(18.2)	14.7	13.6
Secondary	55.2	(14.7)	51.4	11.6
Higher	17.8	(29.6)	12.5	2.7
Socio-economic Status				
Poorer	10.5	(51.4)	20.0	49.5
Middle	24.4	(9.4)	33.7	34.2
Richer	65.1	(39.2)	46.3	16.2
Religion				
Christian	90.0	(45.0)	66.2	18.5
Muslim	10.0	(55.0)	31.8	81.5
Marital Status				
Unmarried	29.1	(12.9)	23.1	6.9
Married/cohabiting	70.9	(87.1)	76.9	93.1
Media Consumption Habits				
Regularly listens to radio	36.1	(54.6)	47.8	26.4
Regularly watches TV	41.2	(48.4)	53.4	20.9
Regularly reads newspaper/magazines	16.6	(24.0)	19.6	1.4
Type of Place of Residence				
Urban	70.0	(44.8)	58.2	28.4
Rural	30.0	(55.2)	41.8	71.6
All Women	19.5	(1.7)	25.5	53.2
Number of respondents	216	19	282	589
Population estimates[1]	**320,263**	**(27,920)**	**418,806**	**873,744**

Numbers in parenthesis are based on fewer than 30 respondents
[1]Based on an estimated 1,845,367 women of reproductive age in 2015, 89% of whom were sexually experienced.

5.5 Socio-demographic differentials in contraceptive use status

In Table 14, we present the socio-demographic characteristics of various categories of users and non-users in Kaduna State. Most women were not currently using any form of contraceptive methods while only 19.5% and 1.7% were using a modern or traditional method, respectively. There are some noticeable socio-demographic differences among the various categories of women. For example, the women not currently using a method but who intend to use a method later were likely to be younger than their peers currently using a method or who were not using a method and not intending to use any method in the future. Similarly, non-users with an intention for future use were more likely to be of lower parity than the women who were using a method or non-users with no intention to use a method. Non-users with no intention to use a method were more likely to be illiterate compared to their counterparts currently using a modern method or those who express an intention for future use. In addition, proportionally fewer of the women currently using a modern method or intending to use a method in the future were Muslim compared to their peers who were not using any method and who had no intention to use a method. Current users were the group most likely to be Christians. We also observe wealth inequalities in contraceptive use status. Specifically, the women with no future intention to use a method were generally poorer than the other groups.

Regarding differences by marital status, fewer of the women with no intention to use a method were unmarried compared to those who were using a modern method or who had the intention of using a method in the future. There were also considerable differences by media consumption habits. On average, media consumption was lower among the women with no intention to use a contraceptive method compared to those currently using a modern method or those with contraceptive intentions. Surprisingly, non-users with future contraceptive intentions were more likely to be regularly exposed to the television or the radio compared with their peers

who were currently using a method. Finally, non-users with no intention to use were considerably more likely to live in rural area than current users or non-users with an intention to use.

We estimated the sizes of the various contraceptive use categories in 2015 based on the 2006 census figures. The results (Table 14) show that the largest group of women comprises those not using a contraceptive method and with no intention to use a method in the future. This group is followed by non-users with an intention to use a method. The estimates show an estimated 320,263 current users in Kaduna State in 2015.

5.6   Socio-demographic Characteristics of Users of Various Methods

In this section, we focus on current contraceptive users and examine the specific methods used and socio-demographic differences among users of various methods. Figure 2 provides the distribution of users by type of method used. In Kaduna, most users were on a short-term
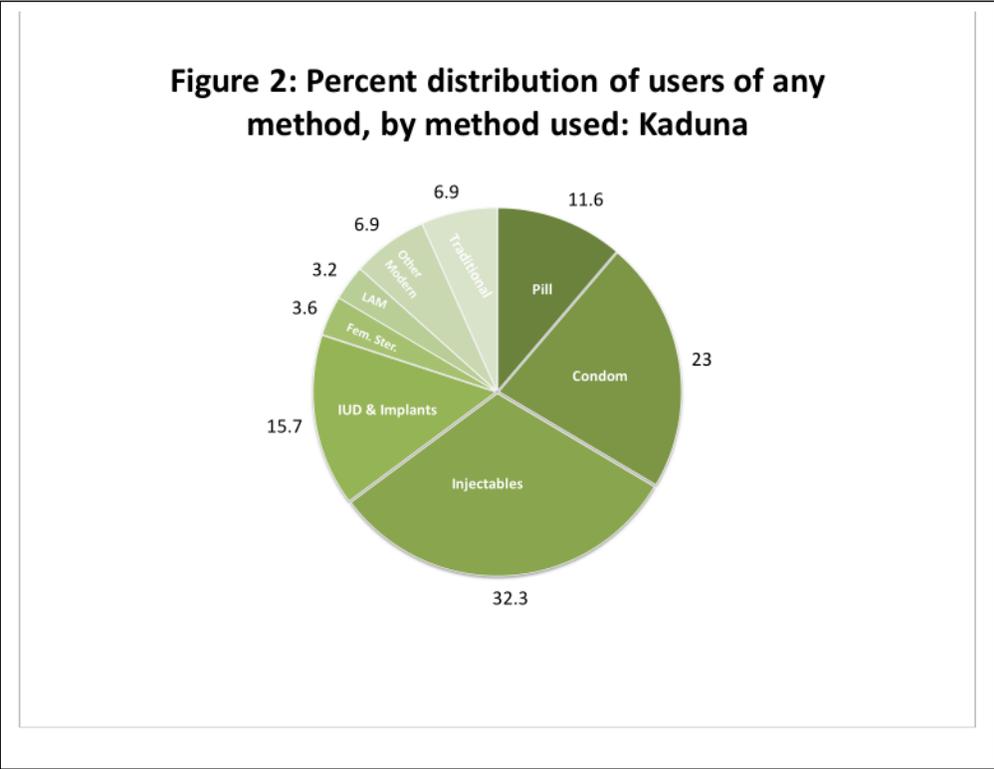

Figure 2: Percent distribution of users of any method, by method used: Kaduna

Table 15: Percent distribution of users of modern methods, by selected socio-demographic characteristics, Kaduna 2013			
Variable	Pill & Condom	Injectable	Long-acting
Age			
15-24	43.42	13.77	7.69
25-34	43.63	34.21	47.46
35+	12.95	52.02	44.85
Education			
No Education	9.84	9.50	4.55
Primary	18.88	20.97	14.92
Secondary	43.29	66.77	56.99
Higher	27.99	2.75	23.54
SES			
Poorer	9.18	14.96	5.01
Middle	14.62	40.18	20.01
Richer	76.20	44.86	74.98
Religion			
Christian	83.71	94.21	96.98
Muslim	16.29	5.79	3.02
Marital Status			
Unmarried	61.66	0.75	11.29
Married/co-habiting	38.34	99.25	88.71
Residence			
Urban	79.69	50.55	81.68
Rural	20.31	49.45	18.32

method (Figure 2). Injectables were the single most popular method, followed by the Pill. Only about one sixth of users were using an IUD or Implants. Female sterilization, LAM, and traditional methods were not commonly used.

We compare pertinent socio-demographic characteristics of the women using the various methods in Table 15.

Pill and condom users: The women who use the Pill or condoms were generally younger, unmarried and urban residents. Compared to users of injectables, these women were richer and more likely to have higher education.

Injectable users: Women who use injectables are generally older and married. Compared to the users of other methods, these women were less likely to be rich or have higher education. In addition, injectables appear to be equally popular in urban and rural areas.

Users of long-acting methods: These women were generally older, richer and married. Furthermore, the women were predominantly urban residents.

Table 16: Percent distribution of users by sources of contraceptives and by selected characteristics and contraceptive type; Kaduna (n=191)			
Variables	Government	Private clinical	Private non-clinical
Age			
15-24	19.99	6.97	73.04
25-34	46.67	18.47	34.86
35+	58.32	25.23	16.45
Education			
No Education	39.42	21.28	39.30
Primary	63.84	9.89	26.27
Secondary	51.08	17.22	31.70
Higher	8.38	25.80	65.82
SES			
Poorer	40.34	19.49	40.16
Middle	66.50	11.67	21.83
Richer	35.54	20.22	44.24
Religion			
Christian	46.08	18.55	35.37
Muslim	19.46	10.70	69.84
Marital Status			
Single	3.28	8.02	88.70
Married/co-habiting	62.03	22.33	15.64
Residence			
Urban	38.51	18.65	42.84
Rural	56.37	16.33	27.30
Media consumption habits			
Regularly listen to the radio	28.26	27.73	44.01
Regularly watches TV	9.80	29.74	60.46
Contraceptive used			
Pills/Condoms	17.27	5.67	77.06
Long acting	54.29	45.71	0.00
Injectable	38.50	53.35	1.85

5.7   Sources of contraceptive methods

Table 16 shows variations in sources of contraceptives by socio-demographic characteristics, media exposure and methods used among women in Kaduna State. Most current users obtained their method from government facility (33.5%), pharmacy (23.7%), private health facility (15.3%) or chemist (10.8%). Sources of contraceptive methods varied by socio-demographics and by type of contraceptive used. For example, while the largest proportion (73%) of the young (15-24 years) obtained contraceptive methods from private non-clinical facilities (pharmacy, chemists, PMVs), the 25-34 years olds obtained their supply from a government hospital (47%) or a private non-clinical setup (35%), and the oldest group attained their supply mainly from government and private clinics (83%).

Private non-clinical facilities were the most common sources of contraceptive supply for women with higher education (66%), Muslim (70%) women and unmarried women (89%). In contrast, government health facilities were the most popular source among women with primary or secondary education, rural residents and married women.

Among contraceptive users in Kaduna, users of injectable and long-acting methods obtained their supply from government hospitals or private clinics, whereas, users of other short-acting methods obtained their supply mainly from private non-clinical facilities.

5.8   Fertility intentions

The data indicate a high demand for children in Kaduna State. Overall, 29.4 percent of the women desired a child within the next two years while an equal proportion (29.7%) wanted to wait at least two years. About one quarter (27.6%) were ambivalent about their fertility intentions whereas only 8.7 percent desired no more children. Table 17 presents the distribution of women in various fertility intention categories by their socio-demographic characteristics and media

exposure in Kaduna State. The women who want a child within the next two years were generally younger than 35 years, married, uneducated, Muslim and likely to be rural residents.

These women were also less likely to be exposed to the mass media and more likely to be poor

Variables	Wants within 2 years	Wants, after 2+ years	Wants, unsure of timing	Wants no more
Table 17: Percent distribution of users by fertility intentions and by selected characteristics; Kaduna (n=1156)				
Age				
15-24	34.23	35.50	79.94	0.00
25-34	39.53	47.57	18.09	12.50
35+	26.23	16.94	1.97	87.50
Education				
No Education	60.58	43.12	15.66	23.52
Primary	13.45	15.71	10.75	24.12
Secondary	21.00	34.21	58.34	44.81
Higher	4.97	6.96	15.25	7.56
SES				
Poorer	41.42	32.11	24.99	22.50
Middle	34.57	31.15	24.40	30.19
Richer	24.01	36.74	50.61	47.32
Religion				
Christian	28.21	45.99	68.26	76.42
Muslim	71.79	54.01	31.74	23.58
Marital Status				
Not married	2.07	1.45	91.19	12.07
Married/co-habiting	97.93	98.55	8.81	87.93
Residence				
Urban	35.96	47.12	56.04	54.20
Rural	64.04	52.88	43.96	45.79
Mean number of children-ever-born	3.09	2.97	2.70	5.69
TV & Radio Exposure				
None	61.07	54.13	41.78	52.14
Only TV	7.14	11.11	19.07	9.68
Only Radio	10.60	12.86	7.01	7.37
Both	21.18	21.89	32.13	30.81

compared to their peers in the other intention categories. The women who wanted a child after two years were also younger than 35 years and predominantly married. The women who were unsure of the timing of the birth of their next child were predominantly young, medium parity, well educated, more likely to be Christians, and single. Finally, the women who desire no more children were predominantly 35 years or older, with higher parity, married and Christian.

5.9   Unmet Need

Overall, unmet need was extremely low in Kaduna State (6.1%: 4.5% for spacing and 1.6% for limiting). There were generally no significant differences in unmet need by socio-demographic characteristics.   The only exception was by socio-economic status with unmet need being significantly lower among richer women (4.2%) compared to their middle income peers (8.8%).

Table 18: Prevalence of lapsed use among women who ever used any method of contraceptives, by selected characteristics, Kaduna

Variable	Percent
Age Group	
15 – 24	34.11
25 – 34	31.67
35 +	32.21
Education	
None	43.23
Primary	32.61
Secondary	30.29
Higher	31.14
Religion	
Christian	30.07
Muslim	45.09
Type of Place of Residence	
Urban	34.00
Rural	29.00
SES	
Poorer	27.70
Middle	33.54
Richer	33.02
Number of respondents	**339**

5.10   Lapsed Contraceptive Use

In Kaduna, 60.4 percent of sexually experienced, non-pregnant women had never used any form of contraceptives. Less than one tenth (8.9%) of the women had used a method in the past but were not currently using. About 30.7 percent of the women were currently using any form of contraceptives, including modern, traditional, and folkloric methods. As we found for Lagos State, there were limited socio-demographic differentials in lapsed use. The only noteworthy differences were between Muslims and Christians and between illiterates and their educated peers.

5.11   SUMMARY AND RECOMMENDATIONS FOR KADUNA STATE

A large proportion of women of reproductive age in Kaduna State had primary education or lower. There was limited exposure to the media: more than half of the women had regular exposure to neither the radio nor the television while only about a quarter were exposed to both media. The categories most likely to have no regular exposure to the radio or television included uneducated, married, rural, poorer and Muslim women.

Although overall relatively high, contraceptive awareness was lower in Kaduna than in Lagos State. There were significant socio-demographic variations in awareness. The groups least knowledgeable about contraceptives were poorer, uneducated and Muslim women. About a quarter of the women were using a contraceptive method, mainly injectables, condoms and long-acting reversible methods. Unlike in Lagos, use of traditional methods was not common. Users of long-acting reversible methods were predominantly rural women while users of pills and condoms were urban women. More than three quarters current non-users reported that they had no intention to use a method later.

Private clinical facilities were slightly more popular than government sites for obtaining injectables while the reverse was the case for long-acting methods. Private non-clinical sites were the predominant sources for pills and condoms. This source was also the most popular for and young people, Muslims, and women with higher education.

Demand for children was very high in Kaduna State. Total unmet need was extremely low and a greater proportion of this need was for spacing.

The following are the recommendations that emanate from these findings:

- The relatively low literacy level in Kaduna indicates a need for interventions that are specially designed for low literate audience, particularly in the rural areas. Combined use of the radio and the television is likely to ensure effective reach of less than half of the intended audience of women. There is therefore need to explore the use of other forms of media, including folk (drama, skits, poems, stories, riddles, songs, dance) media, interpersonal communication and community events/meetings to achieve both depth and breadth of messaging. It is important to target poorer households, Muslims and uneducated women, especially, with family planning promotion using the media that are most accessible to these audience groups. Programs that work with Muslim religious leaders to develop interventions that specifically target Muslim women are relevant. There are several excellent examples of interventions designed to promote health-protective behaviors among faith communities that programs could draw on. For example, CCP has designed and implemented interventions that engage Muslim religious leaders in multiple countries (Guinea, Nigeria, Jordan, Senegal) and for a wide variety of health topics, including family planning, child immunization, and breastfeeding.

Toolkits for designing such interventions are available on the CCP (www.ccp.jhu.edu) and HC3 (www.healthcommcapacity.org) websites.

- The issue of high demand for children in Kaduna State should be addressed with culturally appropriate strategies that engage religious and traditional leaders. Considering that most non-users of contraceptives in Kaduna did not intend to use a method in the future, it is critical to design comprehensive strategies that will help couples with no intention to use contraceptives to develop concrete intention to use. Efforts to motivate non-users with no intention to use to develop concrete contraceptive intentions should focus on uneducated, poorer, rural, Muslim women as special targets. Such strategies should draw on the literature on the intention-behavior gap. Indeed, there is evidence from extant literature about how to maximize the likelihood that intentions to act will become a reality. Goal (what people plan to do sometime in future) intentions are less likely to translate into behaviors than implementation (concrete, time-bound) intentions (Fennis et al. 2011; Gollwitzer and Sheeran 2006). It is therefore important to design messages that persuade people to formulate concrete contraceptive intentions with associated "when", "where" and "how" components.

- Efforts designed to promote contraceptive use designed to reach current non-users who have an intention to use a method in the future are also relevant. Such efforts should target Christians, low to medium parity women, and non-poor women as special audience groups.

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