Lagos Youth Respondent-Driven Sampling Survey: Final Report

PMA AGILE

Version 2, September 2020

Acknowledgements:

The development of this report and implementation of the Youth Respondent-Driven Sampling Survey (YRDSS) was coordinated by the team at PMA Agile, a project within PMA2020 at the Bill & Melinda Gates Institute for Population & Reproductive Health at the Johns Hopkins Bloomberg School of Public Health in collaboration with the College of Medicine, University of Ibadan and the Johns Hopkins Center for Communication Programs (CCP).

The Lagos YRDSS team at University of Ibadan was led by Dr. Funmilola OlaOlorun and included Oluwaseyi Olubayo, Ogunmola Saliu Adebowale and Michael Abiona. The study resident enumerators include: Adeola Adeboye, Simisola Akintola, Atinuke Busari, Mary Kabowei, Olawunmi Obiorah, Adeola Ogundare, Folakemi Oguntuase, Olajumoke Oloniyo, Oluwabusayomi Olukayode, and Abimbola Oyebanji. The team was also supported by the YEDI Coaches Coordinator, Sodiq Adeyemi. The study youth coordinators included: Olayemi Akinpelu, Chinasa Ani, Hannah Bamiwola, Damilola Koya, and Tofunmi Oladipo. The study youth helpers included: Ajoke Ahisu, Olufisayo Akinwale, Adewunmi Awoniyi, Deborah Ayoola, Opeyemi Cotterell, Emeka Ikpeoha, Blessing Israel, Patrick Kelechi, Habeeb Lawal, and Folashade Olamiti.

The YRDSS team at PMA was led by Dr. Michele Decker and Meagan Byrne, with technical input from Drs. Amy Tsui, Scott Radloff, Alain Koffi, and Saifuddin Ahmed, and support from Titilope Akinlose, Kurt Dreger, and Varsha Srivatsan. The drafting and coordination of this publication was carried out by Meagan Byrne and Dr. Michele Decker.

The team at JHUCCP, Abuja, led by Mr. Akiode Akinsewa and Mr. Olusegun Akinola, provided key programmatic assistance and contributed to survey development, which is gratefully acknowledged.

We express our gratitude to the staff of the youth-friendly centers (YFCs) for their collaboration and allowing our use of their facilities, and to the Director for Family Health & Nutrition, Lagos State Ministry of Health; the Coordinator for Reproductive Health, Lagos State Ministry of Health; and the Coordinator for Adolescent Health, Lagos State Ministry of Health for their support of the study.

This study was conducted with support received from the Bill & Melinda Gates Foundation, which is gratefully acknowledged.

Suggested Citation:

College of Medicine, University of Ibadan & PMA Agile. Lagos Youth Respondent-Driven Sampling Survey: Final Report. 2020. Performance Monitoring for Action Technical Report. Baltimore, Maryland, USA: Bill & Melinda Gates Institute for Population and Reproductive Health, Johns Hopkins University Bloomberg School of Public Health.

List of Tables and Figures

List of Acronyms

CCP	Center for Communication Programs
DHS	Demographic & Health Survey
EC	Emergency contraception
IQR	Interquartile range
IUD	Intrauterine device
LARC	Long-acting reversible contraception
NURHI	Nigerian Urban Reproductive Health Initiative
PMA	Performance Monitoring for Action
RDS	Respondent-driven sampling
SRH	Sexual and reproductive health
STI	Sexually transmitted infection

Executive Summary

The growing urban population, limited data on reproductive health behaviors, and low levels of contraceptive use have made urban youth and adolescents a key group for sexual and reproductive health services and research. In February-March 2020, PMA Agile, a project within Performance Monitoring for Action (PMA, formerly PMA2020) suite, the College of Medicine, University of Ibadan, and the Johns Hopkins Center for Communication Programs (CCP) conducted the Youth Respondent-Driven Sampling Survey (YRDSS) among unmarried youth aged 15 to 24 years living in Lagos, Nigeria. YRDSS used respondent-driven sampling (RDS) methodology, a chain-based recruitment method in which study participants recruit their peers through numbered coupon distribution. This study followed two previous YRDSS conducted by PMA Agile in Abidjan, Côte d'Ivoire and Nairobi, Kenya among unmarried youth residing in those cities.

The goals of the study were to collect information about awareness, use, and procurement of contraception among unmarried adolescents and youth, both female and male, and enable reach into a population and topic that may be otherwise hidden. The survey could be self-administered by participants and asked questions on a range of topics related to sexual and reproductive health including sexual and fertility history, current contraceptive use, current partnerships, and reproductive coercion. The study enrolled 1281 eligible female and male participants at five sites throughout Lagos state. The data presented are for 1249 participants with limited missing data.

Among study participants, 53.4% of young men and 38.3% of young women reported ever having sex, which may be reflective of the more represented younger age group (43.5% of all participants were 15-17 years old). The study found that modern contraceptive prevalence use was estimated at 23.5% for young men and 11.6% for young women, and male condoms were the most commonly reported main method among both male (80.0%) and female (42.4%) users. Use of highly effective, non-coital-dependent methods, like implants or IUDs, was reported by less than 10% of female users. Over half of male and female users reported that they obtain their current main method from a pharmacy (37.0%) or chemist/PMS store (16.9%), a source where the most common main method in this group, male condoms, can be easily obtained with limited provider interaction. The heavy reliance on condoms for family planning may be compromised by inconsistent or incorrect use, as lifetime prevalence of condom removal during sex, sometimes referred to as "stealthing", was reported by 36.3% of young men and was experienced by 25.0% of young women.

Young women using contraception were more likely to rely on a partner (53.1%) or someone else (10.7%) to obtain their main method, while most young men obtained their method themselves (66.4%). Among the young women who rely on their partner or another person to obtain their method, 41.3% indicated they were entirely dependent on this person for their method. Partner responsibility factored heavily into dependence on partners for contraception, though nearly one in four (22.7%) indicated they felt fear for being shamed by a provider for obtaining a family planning method. These patterns speak to gendered social expectations for family planning and sexual activity that interfere with young women successfully procuring their own contraceptive methods.

Despite low contraceptive use overall, most participants reported that they feel confident or very confident using contraception with their current/recent partner and capable or very capable negotiating sex with their current/recent partner. In addition, nearly two-thirds (62.9%) of both male and female respondents discussed using contraception with their current/recent partner before having sex with him or her for the first time. Participants' level of self-efficacy to use contraception despite partner disagreement or disapproval from friends, family, or community members was high. These measures point to a disconnect between one's level of comfort discussing contraception within partnerships or in spite of outside disapproval and actual use of contraception.

In conclusion, the data presented point to gaps in knowledge and behavior among adolescent and youth regarding SRH in Lagos state, including low contraceptive use overall. These gaps could be narrowed by:

- Addressing contraceptive negotiation and agency to close the gap between contraceptive knowledge and implementation within adolescent and youth relationships;
- Developing communication strategies for adolescents and youth to raise awareness on LARCs, and expand knowledge of method effectiveness and common barriers, including through women's groups and peer-to-peer outreach; and
- Engaging with pharmacists, as most youth obtain their methods from pharmacies or chemists.

Background

Urban adolescents and young people have become a target group for reproductive health research and services given the population's growing size, limited data on their reproductive health behaviors, and low levels of contraceptive use compared to the general population. PMA Agile, a project within Performance Monitoring for Action (PMA, formerly PMA2020), sought a means of measuring contraceptive awareness and use among adolescents and youth as they enter a period of probable sexual activity. PMA Agile typically monitors contraception uptake via clinic-based surveys of providers and clients; however, in this age group, it is suspected that youth and adolescents may be procuring contraceptives via other means, making young contraceptors effectively "hidden" to clinic staff and compromising the accuracy of clinic-based survey measures. Capturing information from youth clients of health facilities, especially unmarried females, is challenging due to social and familial pressure to hide sexual activity and contraceptive use. How young females and males procure their methods is not well known and it is assumed their sexual partners, relatives or other adults assist in procurement. Moreover, data on the contraceptive behaviors of adolescent and youth males are not frequently captured in household surveys, leaving the behaviors of this segment of the population hidden, as well.

It is within this context that PMA Agile in collaboration with the College of Medicine, University of Ibadan and the Johns Hopkins Center for Communication Programs (CCP) conducted a survey of youth aged 15-24 years in Lagos using respondent-driven sampling (RDS) methodology. This study follows two previous YRDS studies in Abidjan, Côte d'Ivoire in 2018 (AIBEF & PMA Agile, 2019) and Nairobi, Kenya (ICRHK & PMA Agile, 2019).

The present study aims to inform about awareness, use, and acquisition of contraception among both female and male unmarried youth and adolescents in Lagos and enable reach into a population and topic that may be otherwise hidden.

The primary objective of the study was to determine awareness, usage and source of contraception among unmarried aged 15-24 years in Lagos state while specific objectives were:

1. To estimate the percent of 15-24-year-old unmarried females and males aware of different methods of contraception
2. To estimate the percent of 15-24-year-old unmarried females and males using contraceptive methods
3. To understand the sources of and consumption patterns of contraceptive methods among unmarried females and males aged 15 to 24 years

About PMA & PMA Agile

Performance Monitoring for Action (PMA) is implemented by the Bill & Melinda Gates Institute for Population and Reproductive Health at the Johns Hopkins Bloomberg School of Public Health and Jhpiego. PMA supports regular low-cost, rapid turnaround, nationally-representative surveys using mobile technology to gather, analyze and disseminate health information at both household and facility levels. PMA Agile is a separate but related three-year grant that was developed to capitalize on PMA and build a monitoring and evaluation platform for large-scale projects that will enable near-continuous tracking of family planning (FP) performance and progress toward their intended results. PMA Agile tracks change at the health system level through quarterly public and private health facility audits and periodically through the conduct of client exit interviews about contraceptive behaviors. PMA Agile is operational in six countries in Africa and Asia, including Kenya, working through local university and research organizations with the aim of building local capacity.

About the College of Medicine, University of Ibadan

The College of Medicine, University of Ibadan is physically situated on the same compound as the University College Hospital, Ibadan, and is the foremost medical school in Nigeria. The College of Medicine includes 4 of the 16 faculties of the University of Ibadan: Basic Medical Sciences, Clinical Sciences, Dentistry, and Public Health. The College, though fully part of the University of Ibadan is autonomous in many ways, including being able to manage research grants independently. Academic staff of the College of Medicine continue to successfully attract and implement research grants that involve data collection in many Nigerian states.

Methods

Design

From 28 February to 21 March 2020, PMA Agile and the University of Ibadan conducted a study among unmarried adolescents and youth aged 15 to 24 years living in Lagos, Nigeria. The study utilized respondent-driven sampling (RDS), a chain-based recruitment method, given feasibility concerns for household- and clinic-based sampling for this study population. RDS is premised on the assumption that peers are better able to locate and recruit other members of a hidden population than health facility or research staff. Thus, RDS surveys have been widely used for hard-to-reach populations, including men who have sex with men, people who inject drugs, and homeless youth. While typically indicated for hidden populations, RDS is similarly valuable for hidden behaviors. In settings where sexual activity and contraceptive use among adolescents are intentionally hidden due to social and familial pressure, RDS can be a valuable means of recruiting adolescents for survey and intervention research on this hidden topic.

The study began with a formative research phase in February 2020, which included focus group discussions with youth to solicit input on study feasibility and network subpopulations of interest. Focus groups with youth were conducted at five sites throughout Lagos state to explore RDS acceptability, sensitivity of survey question themes, and interest in the study among this target population. The central study team also held a meeting with youth-serving stakeholders prior to data collection to solicit their input on the study design and youth networks in Lagos. We characterized youth network properties including subgroupings and the level of networking within and across subgroupings, identified necessary seed characteristics, and refined survey domains, consistent with formative RDS recommendations (Johnston, 2008, 2010).

Sample

The target sample size of the study was 1365 participants. Eligible seeds and participants were unmarried adolescents aged 15-24 years who have resided in Lagos state for at least one year. Seeds were purposefully selected to serve as the initial contacts for recruiting from the target population. Seeds were identified by staff of partnering Hello Lagos sites through their youth networks. Based on formative work, seed characteristics included sex, age, neighborhood, level of schooling, and current school status (in-school or out-of-school). A total of five seeds were launched: two seeds were launched on February 28 (1 male, 1 female), two seeds were launched on February 29 (1 male, 1 female), and one male seed was launched on March 11. After selection and enrollment of initial seeds, recruitment was achieved through peer-to-peer coupon distribution.

Enrollment was forced to end abruptly on March 21 due to social restrictions and government building closures implemented in Lagos state on March 23 in response to the Coronavirus-19 (Covid-19) pandemic. Data collection ended before the target sample size was achieved, but the study team determined that participant enrollment (n=1281) was sufficiently close to the target sample size (n=1365) to warrant concluding data collection rather than pausing data collection, particularly given the uncertainty around when sites could reopen and operate safely which made resuming data collection at a later date unfeasible.

Data Collection Tools

Participants completed an anonymous survey that focused on nine main areas related to youth sexual and reproductive health (SRH): demographic information; fertility preferences; contraceptive knowledge; general sexual history; current partnerships and sexual activity; contraceptive use; relationship behaviors; myths, attitudes, and norms related to contraception; perceived self-efficacy around contraceptive use; and social influence. For questions related to current use of contraception, participants could report the method(s) that they or their current/most recent partner, if they reported that they had a partner, was/were currently using. Participants reported for themselves or on behalf of their partners. All responses were self-reported.

To maximize confidentiality and minimize bias, the survey could be self-administered via a handheld tablet, which has been demonstrated to enhance accuracy in reporting on sensitive topics among many populations (Ghanem KG, 2005). Staff assistance and/or staff administration of the questionnaire was also available in cases of limited literacy, difficulty comprehending the questions, or unfamiliarity with use of a tablet. If the participant opted to self-administer the questionnaire, a member of the study staff was always present in the room to answer questions.

Participants self-reported the size of their social network to account for potential bias due to differences in selection probability for participants with larger versus smaller networks as required for RDS implementation. To improve accuracy (Johnson, Malekinejad, Kendall, Iuppa, & Rutherford, 2008), network size questions were asked sequentially and structured

to ensure reciprocity in social ties. The sequence was: how many youth between age 15 and 24 who are unmarried and live in Lagos, 1) do you know personally (know their names), 2) do you know who also know you, 3) do you know who know you and whom you have seen or spoken to at least once in the past six months, with the final question serving as the participant's network size. This sequence of questions was always administered by an interviewer to allow for explanation and further probing given the specificity of the questions.

The survey was developed in English, professionally translated into Yoruba, and piloted with native speakers to ensure comprehension. Discrepancies were resolved through an iterative process. Participants could opt to take the survey in either language. All interviewers were fluent in both languages, or were partnered with another interviewer who was fluent in both languages at their site.

Implementation & Study Procedures

Participant enrollment and data collection took place at five Hello Lagos sites located in five different Local Government Areas (LGA) throughout the state: LASUTH, Ikeja LGA; Ogudu, Kosofe LGA; Oko-Awo, Lagos Island LGA; Ajeromi, Ajeromi/Ifelodun LGA; and Alimosho LGA. There are seven Hello Lagos youth-friendly centers in Lagos state, owned by the Lagos state Ministry of Health, and domiciled in the Department of Family Health and Nutrition. The Youth Empowerment and Development Initiative (YEDI), a non-profit organization, helps to manage the activities of the Hello Lagos facilities through site coordinators.

When a seed or recruit presented for data collection, staff first verified coupon validity and assessed the participant's eligibility. Staff also scanned the recruit's fingerprint to ensure that s/he had not already participated in the survey. Fingerprint scanning was used in this study to prevent duplicates, especially given that the study had multiple sites and staff from one site would not know who enrolled at another site. Consent was conducted in a private space; parental consent for minors under age 18 was waived for this study, as it was considered low risk and guidelines from the Nigerian Federal Ministry of Health states that persons aged 13 and above "can consent for themselves without parental consent" if participating in non-therapeutic research (Federal Ministry of Health, 2014).

Following informed consent, participants were oriented to the survey procedures. After survey completion, consistent with RDS methods (Magnani R, 2005), seeds and subsequent recruits were provided with up to three recruitment coupons each to recruit additional youth into the study until recruitment goals were reached. Each coupon had an expiration date, after which it could not be redeemed. Coupon expiration dates were used to control recruitment pace and to end recruitment when the sample size was achieved. Coupons were identifiable by sequential numbers which linked recruits to their recruiters, enabling creation of recruitment chains. Coupon data were input into electronic coupon manager forms, which were uploaded and monitored daily for duplicate coupons and missing referral linkages. All coupons included a coupon number, barcode of the corresponding coupon number, and a referral number that linked the participant with their recruiter. Coupons also included study site names, hours, and phone numbers, as well as a description of study eligibility criteria.

After survey completion, participants received a primary compensation of ₦1800 (approximately US$5) to compensate them for their time and participation and ₦1800 for transport reimbursement, as well as referral information for local health and wellness supports. Prior to their departure from the study office, participants received a short explanation about coupon distribution from study staff and were informed that they could receive a secondary compensation of ₦1000 (approximately US$3) per recruit if they successfully distributed coupons to eligible participants who came to the office and completed the study. Participants received a one-page recruitment script to take with them that outlined this information. All participants were also given a coupon stub that included their coupon number and site information (locations, hours, and phone numbers) to reference if they called the study site to inquire about their recruits. Appropriate amounts for compensation were discussed with stakeholders and youth focus group members prior to study launch.

Procedures to ensure data quality included a staff-monitored private data collection room and participant notification at enrollment that they would not receive recruitment coupons if they appeared to complete the survey haphazardly. Rate of non-response by respondents was monitored throughout the data collection period.

To taper participant enrollment, coupon distribution was reduced towards the final weeks of data collection as enrollment neared target sample size.

Ethical Review

All study procedures were approved by Institutional Review Boards at Johns Hopkins Bloomberg School of Public Health and the Health Research and Ethics Committee at the Lagos State University Teaching Hospital.

Results

All results presented are from the Youth Respondent-Driven Sampling Survey in Lagos. The following table and figures illustrate the study enrollment pace and coupon distribution, a key element of RDS implementation. Overall, 2376 coupons were issued, including coupons for 5 seeds, of which 1303 (54.8%) were returned within their validation period. Of participants who returned valid coupons, 98.1% were deemed eligible to participate and 100% of these participants consented to be in the study. The final analytic sample came to 1249 after 32 participants were excluded for excessive missing data.

Table 1. RDS implementation parameters (metrics)

Coupons issued (including seeds)	2376
Coupons returned outside of validation period (after expiration date)	2
Coupons returned within validation period (including seeds)	1301
Coupon return rate within validation period (returned/issued)	54.8%
Eligible participants/coupons returned	1281 (98.5%)
Consented/eligible	1281 (100.0%)
Included in analysis for minimal missing data/consented	1249 (97.5%)
Number of recruits by seed (mean, range)	260.6 (94-353)
Number of recruitment waves per seed (mean, range)	8.6 (7-11)

Figures 1-3 show enrollment patterns for the entire study period. These metrics were monitored regularly to ensure enrollment remained on target as well as to ensure an equal gender mix.

Figure 1. Overall daily enrollment

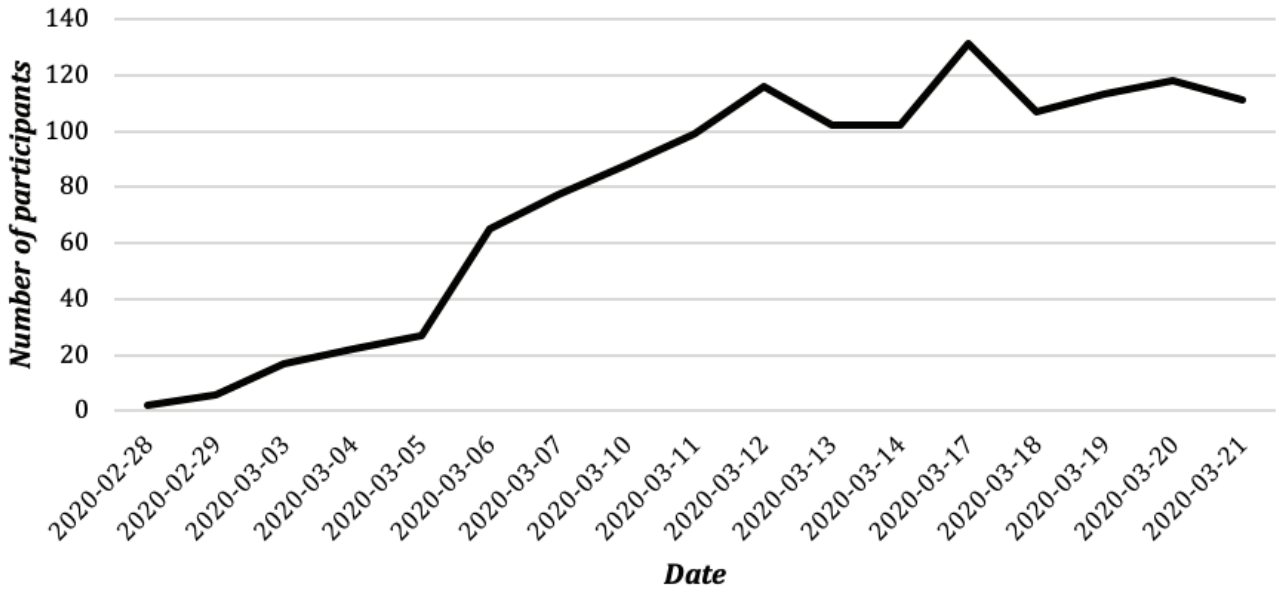


Figure 2. Daily enrollment by gender

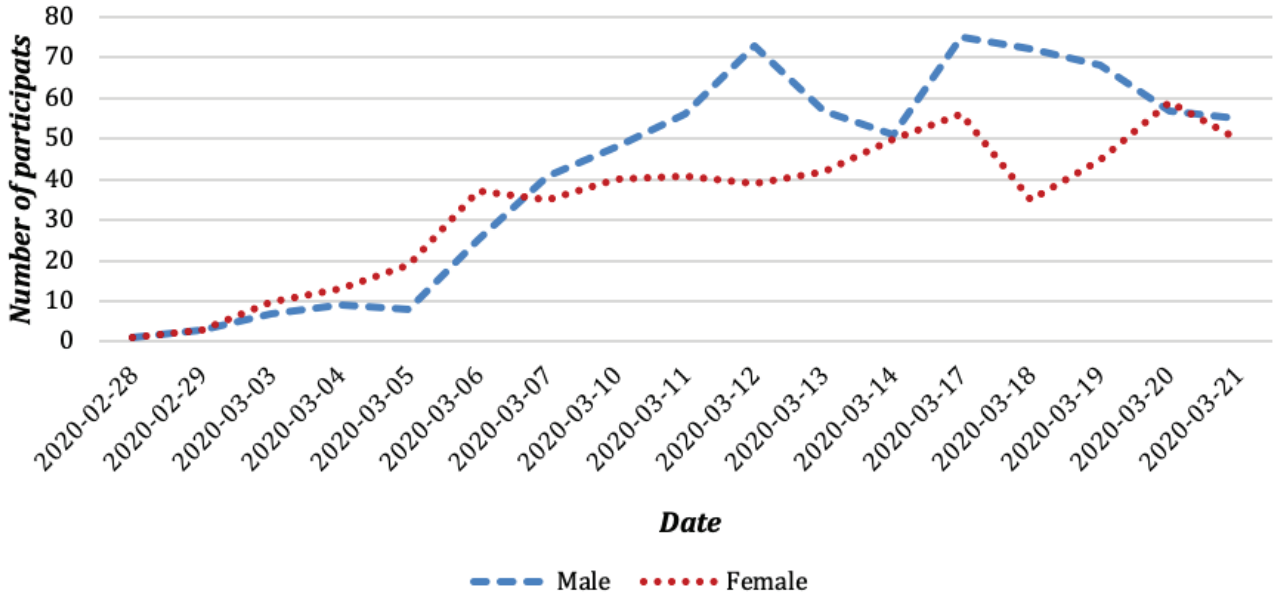
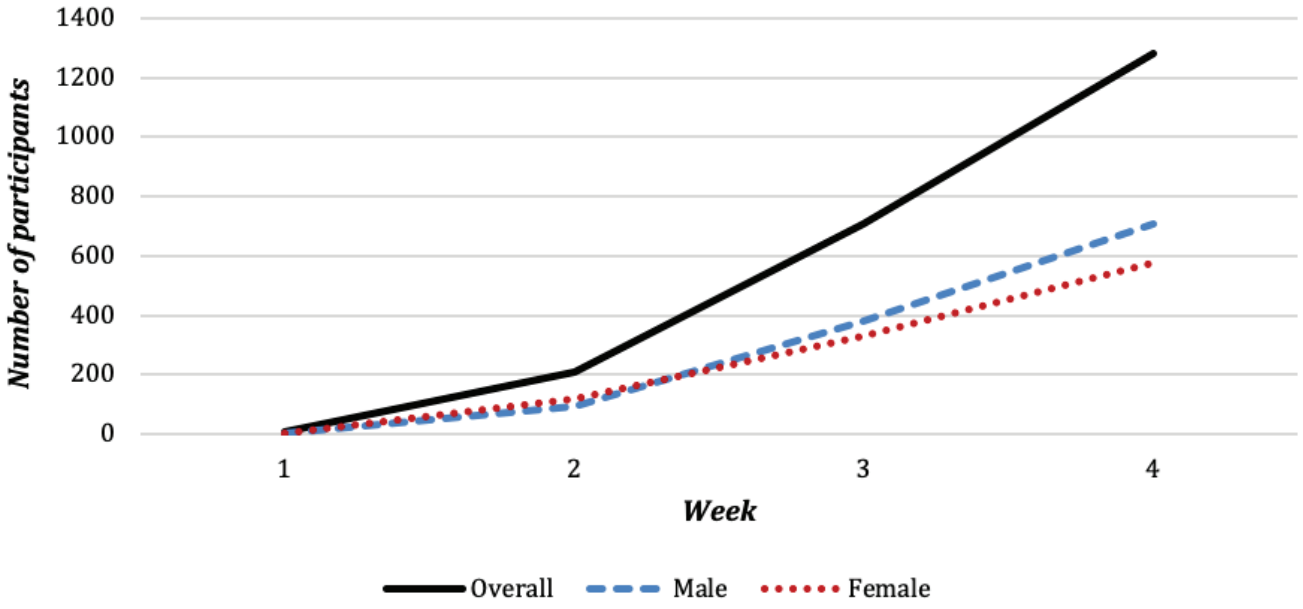


Figure 3. Cumulative weekly enrollment overall and by gender



Both male and female participants were highly likely to distribute coupons to youth of the same gender: 74% of young men distributed their outgoing coupons to other young men and 70% of young women distributed their outgoing coupons to young women [Table 2].

Table 2. Transition matrix by gender

	Male	Female
Male	73.8%	26.2%
Female	30.3%	69.6%

Data Weights

The sample was weighted to accommodate the RDS design. Weights were generated using the RDS-II (Volz-Heckathorn) estimator to account for differences in reported network size of participants and therefore the participant's likelihood of receiving a coupon. Using data from the 2018 DHS (National Population Commission [Nigeria] and ICF, 2019), a postestimation weight was developed and combined with the RDS weight to account for differences in demographics (age and education level) in the sample as compared with the underlying population of unmarried adolescents and youth in Lagos measured in household-based surveys. Unless otherwise indicated, all final results in Tables 5-16 are fully weighted using RDS-II and post-estimation weights. In this sample, female respondents reported smaller network sizes on average (mean network size for females = 12.5; mean network size for males = 16.9) and therefore females are weighted more heavily using the RDS weights.

Demographic Information

The final analytic sample proportion is 696 males and 553 females (1249 total). After weighting, the percentage of males and females came to 47.8% and 52.2%, respectively. The largest proportion of participants in the sample were 15-17 years old (45.4%), while 33.8% were 18-20 years old, and 20.8% were 21-24 years old; after weighting, the distribution skewed older with 26.3% of participants between 21 and 24 years old [Table 3].

Nearly all participants had attended formal schooling and education levels were similar by sex; however, slightly more male participants reported attending higher education (13.6%) compared to female participants (11.7%). Almost half of participants reported that they live in a "Face-me-I-face-you" home, followed by 18.3% who reported living in a bungalow.

Table 3. Demographic characteristics

	Overall (N=1249)			Males (N=696)		Females (N=553)	
	W%	U%	N	W%	N	W%	N
Sex							
Male	47.8	55.7	696	--	--	--	--
Female	52.2	44.3	553	--	--	--	--
Age group							
15-17 years	43.5	45.4	567	40.9	310	45.9	257
18-20 years	30.2	33.8	422	26.5	245	33.5	177
21-24 years	26.3	20.8	260	32.6	141	20.5	119
Highest level of education attended							
Never attended	0.8	0.6	7	0.0	4	1.4	3
Primary	4.5	3.0	37	4.7	16	4.4	21
Secondary	82.1	85.0	1062	81.7	615	82.5	447
Higher	12.6	11.4	142	13.6	60	11.7	82
No response	0.0	0.1	1	0.0	1	0.0	0
Home structure							
House	11.7	12.1	151	10.8	88	12.6	63
Bungalow	18.3	19.2	240	18.8	132	17.9	108
Apartment / Flat	16.7	17.0	212	17.1	115	16.2	97
Iron sheet house	1.0%	1.4	17	0.9	8	1.2	9
Face-me-I-face-you	46.5	45.6	570	46.3	318	46.6	252
Mud house	5.2	3.8	48	5.4	28	5.0	20
Wooden house	0.4	0.5	6	0.4	4	0.3	2
Does not have a home	0.2	0.2	3	0.2	2	0.2	1
No response	0.1	0.2	2	0.1	1	0.1	1

*U%: Unweighted percent

*W%: Weighted percent

Sexual Experience and Fertility History

Slightly more than half of young men (53.4%) and 38.3% of young women reported that they had ever had sex [Table 4]. Among sexually active respondents, median age at first sex was the same for both young men and young women (17 years). Among all female respondents, 7.4% had ever been pregnant, including those who report being currently pregnant, while 19.5% males reported ever had a pregnant partner or have a partner who is currently pregnant.

Most respondents plan to have children in the future (81.2%), but greater than 90% would like to wait over one year before having a child, highlighting the need for contraception in this age group. These respondents include those who may have a child or children already.

Table 4. Sexual and fertility history among all respondents

	Overall		Males		Females	
	W%	N	W%	N	W%	N
	(N=1249)		**(N=696)**		**(N=553)**	
Ever had sex	45.5	555	53.4	336	38.3	219
Ever pregnant (females) or ever partner pregnant (males) among all respondents	13.1	142	19.5	109	7.4	33
Among respondents aged 15-19 years (n=870)	11.6	90	17.5	71	7.1	19
Among respondents aged 20-24 years (n=379)	16.1	52	22.4	38	7.9	14
Ever given birth *(females)*/have a child *(males)*	3.0	22	2.8	9	3.2	13
Would like to have a child in the future	81.2	1055	78.1	575	84.1	480
Desired wait time before (next) child						
Soon / Now	4.0	38	3.2	16	4.7	22
< 1 year	3.5	39	4.8	26	2.2	13
1-3 years	13.1	160	10.4	74	15.7	86
4-6 years	18.5	235	15.7	107	21.1	128
7-9 years	10.4	166	10.7	94	10.2	72
≥ 10 years	16.3	254	19.9	174	12.9	80
Cannot get pregnant/cause a pregnancy	2.0	29	2.0	18	2.0	11
Other / Don't know / No response	32.3	328	33.3	187	31.3	141
	(N=495)*		**(N=304)**		**(N=191)**	
Age at first sex in years [median, IQR**]	17 (15-19)		17 (15-18)		17 (16-19)	

*Sexually active respondents who reported age at first sex

**IQR: Interquartile range

Current Partnerships

The survey asked questions related to the respondent's current or most recent partner, which was reported by 67.6% of males and 59.0% of females. Respondents were also asked if they had dated or had sex with any other persons while dating their current/recent partner, which was more commonly reported among male respondents (17.4%) than female respondents (4.6%). The current/recent partners of female respondents tended to be older than the respondents: 55.7% had a partner two or more years older and 30.0% had a partner four or more years older. In contrast, only 2.2% of male respondents reported having a current/recent partner who was two or more years older, and the median age difference between a male respondent and his partner was one year older [Table 5].

Table 5. Characteristics of partnerships among all respondents and respondents in a current/recent relationship

	Overall		Males		Females	
	W%	N	W%	N	W%	N
	(N=1249)		**(N=696)**		**(N=553)**	
Has a current/recent partner	63.1	792	67.6	470	59.0	322
Involved in concurrent relationships	10.7	143	17.4	114	4.6	29
	(N=723)*		**(N=429)**		**(N=294)**	
Age of current/recent partner in years [median, IQR] years	20 (17–23)		18 (17–20)		22 (19–25)	
Age difference between partners in years [median, IQR]	0 (-1–3)		-1 (-2–0)		3 (1–3)	
Has a partner 2 or more years older	28.2	178	2.2	13	55.7	165
Has a partner 4 or more years older	15.1	93	1.0	6	30.0	87

*Has current/recent partner and reported partner age

Contraceptive Knowledge and Information Sources

While 94.2% of respondents reported that they had heard of at least one contraceptive method, knowledge of individual methods was low [Table 6]. Knowledge of LARCs was low overall but higher among female respondents compared to males (7.4% vs. 3.4% for implant; 9.2% vs. 3.0% for IUD). Male condoms were the most known method among both male and female respondents (70.0% and 51.4%, respectively) and almost two-thirds (60.3%) had heard of pills that can cause an abortion.

Approximately the same percentage of males and females felt that they can access contraception information (76-77%); however, a smaller percentage of females reported knowing a place where they can obtain a method of contraception (39.6%) compared to males (55.6%).

While respondents reported a variety of people in their lives who served as sources of contraception information, mothers were the most preferred source of information for the largest proportion of respondents, both male and female (27.1% and 41.0%, respectively). For young men, friends were the second most important source of information (15.7%), followed by doctors/nurses (11.7%). For young women, the second most important source after mothers was doctors/nurses (15.8%), followed by friends (9.2%).

Table 6. Family planning knowledge and information sources among all respondents

	Overall (N=1249)		Males (N=696)		Females (N=553)	
	W%	N	W%	N	W%	N
Has heard of at least one contraceptive method	94.2	1171	95.8	659	92.8	512
Has heard of the following contraceptive method:						
Male condom	60.3	816	70.0	512	51.4	304
Female condom	37.3	498	29.5	207	44.5	291
Female sterilization	19.2	254	11.8	95	25.9	159
Oral contraceptive pills	18.9	282	14.8	49	22.7	112
Injectables (like Depo)	17.6	234	7.2	65	27.1	169
Male sterilization	13.7	204	18.9	135	9.0	69
Withdrawal	13.0	191	10.0	86	15.8	105
Emergency contraception	11.3	816	6.2	512	16.0	304
Traditional methods	9.5	122	9.5	52	9.6	70
Self-injectables (DMPA-SC)	7.9	116	3.6	36	11.7	80
LAM / Exclusive breast feeding	6.4	94	3.9	26	8.7	68
Intrauterine device (IUD)	6.2	99	3.0	23	9.2	76
Implant	5.5	88	3.4	27	7.4	61
Cycle beads	5.0	89	4.1	33	5.9	56
Standard days / Safe days / Rhythm	4.9	79	2.7	21	6.8	58
Other methods	1.8	24	1.9	9	1.7	15
Has heard of abortion pill	60.3	798	60.3	430	60.3	368
Can access contraception information	76.7	970	77.3	543	76.1	427
Knows a place to obtain contraception	47.2	627	55.6	373	39.6	254

Preferred source of information on contraception						
Mother	34.3	426	27.1	199	41.0	227
Doctor / Nurse	13.8	186	11.7	90	15.8	96
Friend(s)	12.3	134	15.7	88	9.2	46
Father	6.2	74	10.7	65	2.0	9
Teacher	6.0	83	6.6	57	5.5	26
Sister(s)	5.0	55	3.6	24	6.3	31
Health center	4.1	47	3.8	24	4.3	23
Brother(s)	3.0	41	5.9	39	0.3	2
Youth center	2.8	39	1.5	20	4.0	19
Partner / Boyfriend / Girlfriend	2.1	34	3.3	23	1.0	11
Community health volunteers	2.0	18	0.6	6	3.3	12
Internet / Web	1.6	14	2.8	8	0.5	6
Other family member(s)	1.1	14	1.5	10	0.8	4
Social media (Facebook, Twitter, etc.)	1.0	9	0.4	2	1.6	7
Health outreach, fair, or forum	0.9	13	1.0	5	0.8	8
SMS, Whatsapp	0.4	7	0.1	3	0.6	4
After school program	0.4	4	0.5	3	0.3	1
Religious leader / Church / Mosque	0.3	6	0.5	5	0.2	1
Radio	0.2	7	0.2	4	0.2	3
Books / Magazines	0.2	6	0.1	4	0.3	2
Films / Videos / TV	0.1	3	0.1	2	0.0	1
Pharmacist / Shopkeeper	0.1	2	0.1	1	0.2	1
Poster / Billboard	0.1	2	0.0	0	0.1	2
Other	0.4	4	0.4	2	0.4	2
No one	0.5	8	0.4	4	0.5	4
Don't know / No response	1.1	13	1.4	8	0.8	5

The survey asked respondents to select all contraceptive methods that they had heard of, and respondents were then asked subsequent questions about the efficacy of a certain method in comparison to another. The respondent had to have heard of both methods in the question to receive it. The survey found that in addition to low levels of awareness of individual methods as reported above, knowledge of method effectiveness between a coital-specific method like condoms and longer-term, more effective methods was also low, particularly among young men. The sample size for these questions is low and results should be interpreted with caution.

Of respondents who reported that they had heard of both condoms and IUD, 14.8% of males and 36.4% of females correctly identified that the IUD is more effective in preventing pregnancy. Between condoms and implants, 17.8% of males and 37.2% of females correctly identified that implants are more effective. Nearly two-thirds of male respondents and 54.6% of female respondents who had heard of emergency contraception (EC) knew that it is effective when taken within 72 hours of unprotected sex. Finally, the majority of respondents (78.8%) recognized that unprotected sex, even the first time the person has had sex, can cause a pregnancy [Table 7].

Table 7. Knowledge of comparative effectiveness among contraceptive methods

	Overall		Males		Females	
	W%	N	W%	N	W%	N
	(N=89)		**(N=19)**		**(N=70)**	
Provided correct response to: "Between these two choices, which is more effective in preventing pregnancy: condoms or IUD?"*	31.5	23	14.8	2	36.4	21
	(N=77)		**(N=22)**		**(N=55)**	
Provided correct response to: "Between these two choices, which is more effective in preventing pregnancy: implants or condoms?"*	32.4	23	17.8	4	37.2	19
	(N=161)		**(N=49)**		**(N=112)**	
Provided correct response to: "Emergency contraception is effective if taken: within 72 hours (3 days) after unprotected sex."*	61.8	115	64.4	33	54.6	82
	(N=1249)		**(N=696)**		**(N=553)**	
Responded YES to: "If a person does not use any method of contraception the FIRST time he/she has sex, can it lead to a pregnancy?"	78.8	972	77.9	542	79.7	430

*To receive these questions, the respondent had to have reported earlier that s/he had heard of all methods mentioned in the question. For example, the respondent needed to select both condoms (either male or female) and IUD in the question, "Which methods have you heard of?", to receive the first question in this table.

The survey also asked respondents about condom use related to HIV prevention and concern about contracting HIV and STIs. Among sexually active respondents, 37.5% overall reported that they "always" use condoms to prevent HIV or STIs; however, there is a large discrepancy between "always" use as reported by males (48.0%) and females (24.2%). Respondents of both sexes reported a high level of concern about contracting HIV or other STIs: 62.7% of males and 56.1% of females reported feeling "very concerned" and an additional 18.7% of males and 17.5% of females reported feeling "somewhat concerned" [Table 8].

Table 8. HIV prevention and concern among sexually active respondents

	Overall (N=555)*		Males (N=336)		Females (N=219)	
	W%	N	W%	N	W%	N
How often did/do you use condoms to prevent HIV or other sexually transmitted infections?						
Always	37.5	221	48.0	164	24.2	57
Most of the time	15.4	81	13.8	48	17.4	33
Sometimes	17.6	101	19.5	63	15.2	38
Rarely	8.0	43	6.3	17	10.3	26
Never	19.5	97	11.4	39	30.0	58
No response	1.9	12	1.1	5	3.0	7
How concerned were/are you that you might catch HIV/AIDS or another sexually transmitted infections?						
Very concerned	59.8	349	62.7	220	56.1	129
Somewhat concerned	18.1	84	18.7	50	17.5	34
Not concerned	14.7	88	10.7	47	19.9	41
No response	7.3	34	7.9	19	6.5	15

*Sexually active respondents

Contraceptive Use

Among all respondents, 25.5% reported that they had ever used a contraceptive method and 19.1% reported that they were currently using a method at the time of the survey. Males were more likely to be ever or current users (33% and 25%, respectively) than females (19% and 14%) [Table 9]. A participant was considered a current modern contraceptive user if any of his or her reported current methods included IUD, implant, injectables, pills, EC, male condoms, female condoms, or cycle beads. In this population of young women, modern contraceptive prevalence was estimated at 17.3%. About half of all sexually active respondents reported using a method at last sex, though this differed by gender (54.5% among males and 46.1% among females).

Participants were asked to select all methods that they and/or their partner, if they reported a partner, were "currently" using. The most common method reported by both males and females was male condoms, although male condom use was higher among male respondents compared to females (82.5% of males vs. 48.1% of females). The second most common method reported by male users was female condoms, accounting for 7.8% of current users, followed by implants at 7.3%. Other commonly reported methods for female users, a small sample size of only 86 respondents, included oral contraceptive pills (13.5%) and intramuscular injectables like Depo-Provera (12.8%). Sub-cutaneous injectables, like DMPA-SC were presented as a separate response option and reported as a current method by 3.9% of female users.

Participants were then asked to select the method that they use "most of the time", or that they would consider their main method. For male respondents, male condoms were the main method reported by 80.0% of users. Male condoms were also the most commonly reported main method for female users (42.4%), but the distribution of methods was greater among female users than male users. Injectables (intramuscular) were for the main method for 11.2% of female users, followed by EC (7.6%), female condoms (7.1%), and pills (6.3%). Among respondents who reported not currently using a method and having had sex in the past three months, slightly over half said that they intend to use a method in the future (54.7% overall).

Table 9. Contraceptive use

	Overall		Males		Females	
	W%	N	W%	N	W%	N
	(N=1249)		**(N=696)**		**(N=553)**	
Ever user	25.5	335	32.6	213	19.0	122
Current user	19.1	250	25.2	164	13.6	86
Current user (modern method)	17.3	225	23.5	152	11.6	73
Current user (LARC method)	1.4	14	1.9	8	1.0	6
	(N=555)*		**(N=336)**		**(N=219)**	
Used a contraceptive method at first sex	45.5	270	49.0	174	40.9	96
Used a contraceptive method at last sex	50.8	311	54.5	113	46.1	198
Use of emergency contraception in past 12 months (by participant or partner)	34.5	323	38.0	193	30.2	130
Current method(s) *(select all that apply)*	**(N=250)****		**(N=164)**		**(N=86)**	
Male condom	69.7	183	82.5	138	48.1	45
Female condom	9.4	24	7.8	11	12.1	13
Withdrawal	7.1	22	5.9	11	9.0	11

Oral contraceptive pills	6.8	18	2.9	8	13.5	10
Implant	5.7	10	7.3	7	3.0	3
Emergency contraception	5.1	16	1.6	5	11.0	11
Injectables (like Depo)	5.0	10	0.4	2	12.8	8
Traditional methods	3.7	7	3.6	4	3.7	3
Standard days / Safe days / Rhythm	3.0	8	2.5	4	3.8	4
Cycle beads	2.9	5	2.9	2	2.7	3
Intrauterine device (IUD)	2.2	5	0.1	1	5.7	4
Self-injectables (DMPA-SC)	1.6	2	0.3	1	3.9	1
LAM / Exclusive breast feeding	0.0	0	0.0	0	0.0	0
Other method	1.0	5	0.5	2	1.9	3
Don't know / No response	2.5	8	2.7	6	2.1	2
Current main method *(select one)*						
Male condom	66.0	173	80.0	134	42.4	39
Withdrawal	5.2	13	5.3	7	5.0	6
Injectables (like Depo)	4.4	7	0.3	1	11.2	6
Emergency contraception	3.3	10	0.8	2	7.6	8
Female condom	2.7	7	0.0	0	7.1	7
Oral contraceptive pills	2.6	6	0.4	2	6.3	4
Implant	2.3	7	2.7	5	1.6	2
Standard days / Safe days / Rhythm	1.8	5	0.6	1	3.7	4
Self-injectables (DMPA-SC)	1.6	2	0.3	1	3.8	1
Intrauterine device (IUD)	1.5	3	0.1	1	3.9	2
Traditional methods	1.2	2	0.0	0	3.3	2
Cycle beads	0.9	1	1.4	1	0.0	0
Other method	0.4	2	0.0	0	1.1	2
Don't know / No response	6.2	12	8.1	9	2.9	3
	(N=126)* **		**(N=72)**		**(N=54)**	
"Do you think you will use a contraceptive method to delay or avoid getting pregnant at any time in the future?" among current non-users	54.7	73	52.8	42	57.0	31

*Sexually active respondents

**Current contraceptive users

***Current non-users who have had sex in the past 3 months

Among participants that reported currently using a modern method of contraception (implant, IUD, injectables, pills, emergency contraception, male condom, female condom, or cycle beads), 64.5% were male and 35.1% were female. Almost half current modern method users were over 21 years (47.4%) and had attended secondary school (82.4%) [Table 10]. As noted above, few female respondents reported using a contraceptive method and the sample size for these indicators is small.

Table 10. Current users of modern contraception by background characteristics

	Overall (N=225)		Males (N=152)		Females (N=73)	
	W%	N	W%	N	W%	N
Sex						
Male	64.9	152	--	--	--	--
Female	35.1	73				
Age						
15-17 years	23.3	48	26.7	39	17.1	9
18-20 years	29.3	89	26.9	64	33.7	25
21-24 years	47.4	88	46.5	49	49.2	39
Highest level of education attended						
Never	0.0	2	0.0	2	0.0	0
Primary	6.8	8	5.4	3	9.3	5
Secondary	82.4	186	84.4	133	78.8	53
Higher	10.8	29	10.3	14	11.8	15

Contraceptive Procurement

For questions related to contraceptive procurement, participants were only asked about their "main" method, or the method that they use most of the time, if they selected more than one current method. The highest percentage of participants obtain their current, primary method of contraception at a pharmacy (37.0%) or a chemist/PMS store (16.9%) [Table 11].

Table 11. Source of current main method among current users

	Overall		Males		Females	
	W%	N	W%	N	W%	N
Source of current main method	(N=220)*		(N=147)		(N=73)	
Pharmacy	37.0	73	41.2	48	30.2	25
Chemist / Patent Medicine Store (PMS store)	16.9	52	14.8	34	20.3	18
Shop	9.2	20	8.2	16	10.7	4
Government hospital	8.7	19	7.8	13	10.3	6
Friend / Relative	7.9	13	12.7	13	0.0	0
Government health center	6.0	12	3.8	6	9.5	6
Family planning clinic	5.1	9	2.4	3	9.7	6
Private hospital / Clinic	2.8	7	2.7	5	2.9	2
Private doctor	2.0	6	2.9	4	0.7	2
Market / Hawking	2.0	3	1.0	1	3.8	2
Mobile clinic	1.0	3	1.7	3	0.0	0
Other	0.6	1	0.0	0	1.6	1
Don't know / No response	0.6	2	0.8	1	0.3	1

*Current contraceptive users, excluding those who did not report a method or reported using withdrawal or rhythm/standard days

Table 12 shows that most male users obtain their current main method themselves (66.4%), while the largest percentage of female users reported that their partner obtains their current main method for them (53.1%). Slightly more than one-third of female users (36.2%) reported obtaining their method themselves. More females (34.2%) rely on their partner to obtain their method than males (4.3%). After disaggregating by respondents whose main method is male condoms and users whose main method a female-controlled method like EC, pills, female condoms, or cycle beads, the gender of the person obtaining the method shifts. Male users of male condoms tended to obtain the method themselves (69.0%), while nearly all female users of male condoms reported that their partner obtains the method for them (92.5%). By contrast, 77.6% of female users of a female-controlled method (EC, pills, female condoms, or cycle beads) obtained their method themselves.

Among all those who reported that they rely on their partner or another person to obtain their current method, 37.3% said that they are "entirely" dependent on that person to obtain the method, 37.9% said that they are "somewhat" dependent, and 19.5% said that they are "not at all" dependent. The most common reasons for relying on someone else to obtain contraception among females was that it is their partner's responsibility (32.1%) and among males was that it is easier/more convenient (29.0%). Females and males were equally likely to report relying on someone else for a stigma-based reason (36% for both), such as fear of being denied the method, fear that someone will see them obtaining the method, or fear of being shamed by the provider.

Table 12. Reliance on self vs. others to obtain contraception among current users

	Overall		**Males**		**Females**	
	W%	N	W%	N	W%	N
	(N=220)*		**(N=147)**		**(N=73)**	
Person who obtains current main method						
Self	55.0	139	66.4	115	36.2	24
Partner	28.0	61	12.8	17	53.1	44
Other	16.2	17	19.5	12	10.7	5
Don't know	0.9	3	1.4	3	0.0	0
Person who obtains current main method *(users of male condoms only)*	**(N=173)**		**(N=134)**		**(N=39)**	
Self	54.1	111	69.0	108	5.8	3
Partner	29.5	47	10.0	12	92.5	35
Other	15.3	12	19.5	11	1.6	1
Don't know	1.1	3	1.4	3	0.0	0
Person who obtains current main method *(users of EC, pills, female condoms, and cycle beads only)*	**(N=24)**		**(N=5)**		**(N=19)**	
Self	68.3	14	23.7	2	77.6	12
Partner	28.0	9	76.3	3	17.9	6
Other	3.7	1	0.0	0	4.5	1
Don't know	0.0	0	0.0	0	0.0	0
Level of dependence on others to obtain current method	**(N=78)****		**(N=29)**		**(N=49)**	
Entirely dependent	37.3	29	32.4	12	41.3	17
Somewhat dependent	37.9	24	51.9	10	26.3	14
Not dependent	19.5	20	10.9	5	26.7	15
No response	5.3	5	4.7	2	5.7	3

Reasons for relying on someone else for obtaining method *(all that apply)*						
Easier/more convenient	22.1	21	29.0	9	16.3	12
It is my partner's responsibility	24.6	27	15.5	7	32.1	20
Allows the other person to pay	3.6	4	1.2	1	5.5	3
The other person knows better where to go	14.7	14	7.3	4	20.9	10
Selected any convenience-based response	59.6	58	51.2	20	66.6	38
Fear that I will be denied the method	5.5	4	6.6	2	4.5	2
Fear that someone will see me obtaining the method	20.9	13	25.1	4	17.4	9
Fear of being shamed by provider for obtaining a method	14.6	12	4.9	3	22.7	9
Selected any stigma-based response	36.2	53	36.0	21	36.4	32
Other	6.5	3	14.4	3	0.0	0

*Current contraceptive users, excluding those who did not report a method or reported using withdrawal or rhythm/standard days
**Respondents who report that a partner or "other" person obtains their current method

Relationship Power Dynamics and Threats to Sexual/Reproductive Autonomy

Another theme explored in the questionnaire was power dynamics in relationships and threats to the respondent's sexual or reproductive autonomy. Among sexually active respondents who reported that they have a current/recent partner, 64.2% reported that they felt "very capable" of negotiating sex with their partner [Table 13]. Female respondents were more likely than male respondents to report feeling "very confident" using contraception with their partner (62.8% vs. 52.3%, respectively). Slightly less than two-thirds of both male and female respondents (62.9%) reported that they discussed using contraception with their current/recent partner before having sex with him or her for the first time.

Among all respondents who reported having a current/recent partner, 89.4% felt that their partner shows respect for their feelings even during issues on which they disagree. More male respondents (67.8%) than female respondents (55.6%) reported that they try not to cause problems because they are afraid of what their partner might do, and 20.6% of males and 10.7% of females reported that their partner has ever been physically violent towards them. Among female respondents, 93.0% reported that they have received something from their current/recent partner, and 93.2% of male respondents reported providing something to their current/recent partner. Options for something received or provided to their partner included money, food, gifts, safety, shelter, transportation, or other; more than one option could be selected for both questions.

On indicators related to reproductive coercion, 25.5% sexually active female respondents reported that any partner, past or current, had ever pressured them not to use birth control and 25.0% reported that a partner had agreed to use a condom and then removed it during sex at any point in their sexual history, also known as "stealthing". A higher percentage of sexually active male respondents (36.3%) reported that they had agreed to use a condom and then removed it during sex with any partner in the past. These indicators are particularly notable as most current users, especially male users, considered male condoms their main contraceptive method.

Both male and female respondents reported ever receiving something in exchange for sex outside of their current relationship (49.2% and 38.1%, respectively). More young men reported ever providing something in exchange for sex (60.0%) than young women (35.4%). Options for things exchanged for sex were the same as those listed above and multiple options could be selected.

Table 13. Relationship power dynamics and threats to sexual/reproductive autonomy

	Overall		Males		Females	
	W%	N	W%	N	W%	N
Capability of negotiating sex with partner	(N=356)*		(N=196)		(N=160)	
Very capable	64.2	226	61.6	121	67.1	105
Capable	26.9	86	26.5	45	27.3	41
Somewhat capable	4.3	22	6.2	16	2.2	6
Not at all capable	3.0	14	5.2	12	0.5	2
Don't know / No response	1.6	8	0.4	2	2.9	6
Confident using contraception with partner						
Very confident	57.2	107	52.3	90	62.8	197
Confident	29.0	60	34.3	42	23.1	102
Somewhat confident	5.5	14	6.8	7	3.9	21
Not at all confident	5.6	10	5.2	15	6.1	25
Don't know / No response	2.6	5	1.3	6	4.2	11
Discussed contraception with partner before first intercourse with him/her	62.9	213	63.0	120	62.8	93
	(N=792)**		(N=470)		(N=322)	
My partner shows respect for my feelings about issues we disagree on	89.4	709	87.3	412	91.7	297
I try not to cause any problems with my partner because I am afraid of what my partner might do	61.8	295	67.8	154	55.6	141
Partner has ever been physically violent	15.8	148	20.6	114	10.7	34
Respondent receives something from partner in current/recent relationship (Females only)	NA	NA	NA	NA	93.0^	295^
Respondent provides something to partner in current/recent relationship (Males only)	NA	NA	93.2^	434^	NA	NA
	(N=555)***		(N=336)		(N=219)	
Has a partner ever pressured you not to use birth control, taken your birth control (like pills) away from you, or kept you from going to the clinic to get birth control?	NA	NA	NA	NA	25.5	55
Has a partner ever agreed to use a condom and then removed it during sex?	NA	NA	NA	NA	25.0	60
Have you ever agreed to use a condom then removed it during sex?	NA	NA	36.3	109	NA	NA
Receipt of something in exchange for sex outside of current/recent relationship	44.3	242	49.2	161	38.1	81
Provision of something in exchange for sex outside of current/recent relationship	49.2	269	60.0	196	35.4	73

*Respondents who have had sex with current/recent partner; **Respondents with a current/recent partner;
***Sexually active respondents; ^Corrected in Version 2 (25 September 2020)

Attitudes and Norms about Contraception

To collect information on different norms related to contraception and family planning, the survey presented a series of statements that all respondents were asked to rate from "strongly agree" to "strongly disagree". About two-third of males and about 45% of females either "strongly agreed" or "mostly agreed" with two statements that frame contraceptive use negatively: that male condoms reduce men's sexual pleasure and that girls and young women who use contraception are promiscuous. Yet, positive messaging around contraception also found strong support among both male and female respondents: close to 80% of males and 64% of females "strongly agreed" or "mostly agreed" that couples who practice family planning have a better quality of life, with over half of male respondents strongly agreeing with this statement. Over half of all respondents also "strongly agreed" or "mostly" agreed that contraceptives have more advantages than disadvantages, although support for this statement was lower among female respondents [Table 14].

Items are presented individually because psychometric analysis revealed poor internal consistency reliability when handled as a scale (α= 0.1993 overall; 0.2201 among males; 0.2085 among females). Items were also evaluated in two groups. Group 1 included the statements: male condom's reduce men's sexual pleasure; girls/young women who use contraception are promiscuous; using a male condom is a sign that a person has been cheating (α= 0.6029 overall; 0.5475 among males; 0.6536 among females). Group 2 included the last two statements in the table: Couples who practice family planning have a better quality of life than those who do not; and contraceptives have more advantages than disadvantages (α= 0.4347 overall; 0.3765 among males; 0.4727 among females).

Table 14. Contraception-related attitudes and norms among all respondents

	Overall (N=1249)		Males (N=696)		Females (N=553)	
	W%	N	W%	N	W%	N
Male condoms reduce men's sexual pleasure.						
Strongly agree	31.0	395	39.2	269	23.5	126
Mostly agree	24.2	326	27.5	198	21.2	128
Neither agree nor disagree	16.0	191	11.9	91	19.8	100
Mostly disagree	6.9	100	8.7	59	5.2	41
Strongly disagree	6.6	87	5.2	36	7.8	51
No response	15.2	150	7.4	43	22.4	107
Girls/young women who use contraception are promiscuous.						
Strongly agree	27.6	324	31.1	198	24.4	126
Mostly agree	26.0	344	31.7	225	20.8	119
Neither agree nor disagree	17.2	223	13.6	119	20.5	104
Mostly disagree	7.9	119	9.5	68	6.4	51
Strongly disagree	10.1	124	6.9	41	13.0	83
No response	11.3	115	7.2	45	14.9	70
Using a male condom is a sign that a person has been cheating.						
Strongly agree	20.7	255	22.2	155	19.3	100
Mostly agree	18.4	250	19.3	144	17.6	106
Neither agree nor disagree	13.2	165	11.3	87	14.9	78
Mostly disagree	17.5	232	21.6	152	13.8	80
Strongly disagree	20.4	256	21.3	136	19.5	120
No response	9.8	91	4.3	22	14.8	69

Couples who practice family planning have a better quality of life than those who do not.						
Strongly agree	47.0	635	53.1	384	41.4	251
Mostly agree	24.8	311	26.8	186	22.9	125
Neither agree nor disagree	10.2	119	7.3	51	12.9	68
Mostly disagree	5.4	68	4.7	34	6.0	34
Strongly disagree	5.0	53	3.5	19	6.4	34
No response	7.6	63	4.6	22	10.4	41
Contraceptives have more advantages than disadvantages.						
Strongly agree	38.1	480	43.1	294	33.5	186
Mostly agree	28.0	381	28.6	209	27.4	172
Neither agree nor disagree	12.7	146	14.4	89	11.1	57
Mostly disagree	7.3	96	6.4	54	8.2	42
Strongly disagree	4.0	60	2.2	22	5.7	38
No response	9.9	86	5.3	28	14.1	58

Perceived Self-Efficacy around Contraceptive Use

Respondents were presented with a series of statements that described actions they could take and asked to select how confident they felt that they could carry out that action successfully [Table 15]. All actions related to the respondent's perceived self-efficacy around contraceptive use. Over half of all participants "strongly agreed" or "mostly agreed" with the statements presented, indicating high levels of self-perceived autonomy around having conversations about using contraception and deciding to use contraception, even if others in their social circle are not. However, the largest share of female respondents "strongly disagreed" that they could continue to use a method even if they experienced side effects, indicating that side effects may still be a key reason that young women may not choose to use contraception. Psychometric analysis of all seven items showed high internal consistency reliability as a scale (presented in Table 15).

Table 15. Perceived self-efficacy related to contraceptive use among all respondents

	Overall (N=1249)		Males (N=696)		Females (N=553)	
	W%	N	W%	N	W%	N
You could start a conversation with your partner about contraceptive use.						
Strongly agree	42.0	523	44.8	297	39.4	226
Mostly agree	28.7	388	29.4	228	28.1	160
Neither agree nor disagree	10.1	109	10.4	64	9.8	45
Mostly disagree	6.9	83	6.9	46	6.8	37
Strongly disagree	5.5	78	3.9	36	6.9	42
No response	6.8	68	4.6	25	8.9	43
You could convince your partner that you should use a method of contraception.						
Strongly agree	38.9	494	41.8	286	36.3	208
Mostly agree	28.4	382	32.0	227	25.1	155
Neither agree nor disagree	9.0	107	9.7	62	8.3	45
Mostly disagree	6.9	91	7.2	56	6.6	35
Strongly disagree	10.1	115	5.2	45	14.7	70
No response	6.7	60	4.1	20	9.1	40
You could use a method of contraception even if your partner does not want you to.						
Strongly agree	32.7	419	36.3	239	29.5	180
Mostly agree	27.6	361	29.2	212	26.0	149
Neither agree nor disagree	11.2	131	13.1	80	9.5	51
Mostly disagree	8.8	135	9.9	88	7.7	47
Strongly disagree	12.8	136	7.3	55	17.8	81
No response	6.9	67	4.1	22	9.5	45
You could use a method of contraception even if none of your friends or neighbors uses one.						
Strongly agree	38.1	505	41.4	295	35.0	210
Mostly agree	26.5	349	30.9	205	22.4	144
Neither agree nor disagree	8.7	114	8.2	67	9.1	47
Mostly disagree	7.8	92	6.7	51	8.7	41
Strongly disagree	12.1	128	6.0	47	17.7	81
No response	6.9	61	6.7	31	7.1	30

You could use a method of contraception even if your religious leaders do not approve.						
Strongly agree	33.9	412	39.9	250	28.5	162
Mostly agree	23.5	315	26.2	183	21.1	132
Neither agree nor disagree	11.7	147	12.2	88	11.3	59
Mostly disagree	9.8	132	9.7	76	9.9	56
Strongly disagree	14.3	179	8.2	77	19.8	102
No response	6.8	64	3.9	22	9.5	42
You could obtain a contraceptive method if or when you decided to use one.						
Strongly agree	39.6	520	39.4	300	39.9	220
Mostly agree	32.1	407	38.5	242	26.3	165
Neither agree nor disagree	7.0	100	6.6	55	7.4	45
Mostly disagree	6.2	68	5.7	34	6.6	34
Strongly disagree	7.1	83	4.3	38	9.6	45
No response	8.0	71	5.4	27	10.3	44
You could continue to use a contraceptive method even if you experience some side effects.						
Strongly agree	22.2	262	29.0	181	16.1	81
Mostly agree	22.5	264	27.6	175	17.8	89
Neither agree nor disagree	11.0	149	10.1	81	11.8	68
Mostly disagree	12.8	199	14.0	113	11.7	86
Strongly disagree	24.4	307	14.6	122	33.3	185
No response	7.2	68	4.8	24	9.3	44
*Cronbach's alpha**	**α=0.834 (n=1071)**		**α=0.822 (n=624)**		**α=0.843 (n=447)**	

* Missing responses to any items in table dropped

Contraceptive Demand, Community Attitudes, and Exposure to Messaging

Participants reported a high level of exposure to contraceptive messages in the media (89.9%) but were less likely to report having attended a community event where contraception was favorably discussed (37.3%) or heard a public leader speak favorably about contraception. About one-third of respondents reported hearing a government official speak favorably about contraception, while 22.8% reported hearing a government official speak negatively about contraception in public. A slightly higher percentage of female respondents felt that people in their community would speak negatively about them if others knew they were using contraception compared to male respondents (44.1% vs. 36.9%) [Table 16].

Table 16. Contraceptive demand, community attitudes and exposure to messaging among all respondents

	Overall (N=1249)		Males (N=696)		Females (N=553)	
PARTICIPANT RESPONDED "YES" TO THE FOLLOWING:	W%	N	W%	N	W%	N
In the last 12 months, has a friend and/or relative recommended that you use a contraceptive method?	37.1	463	48.8	312	26.5	151
Have you attended a community event in the last year where contraception was favorably discussed?	37.3	465	38.9	264	35.8	201
Do you think there are some people in your community who will call you bad names or avoid your company if they knew that you were using a contraceptive method?	40.7	509	36.9	268	44.1	241
Do you think there are some people in your community who will praise, encourage, or talk favorably about you if they knew that you were using a contraceptive method?	41.5	497	48.0	317	35.6	180
In the past 12 months, have you heard any of the following people speaking publicly in FAVOR of contraceptive?						
Government official (national level)	32.6	402	34.8	219	30.5	183
State leader	6.5	94	9.0	64	4.2	30
Civic / Community leaders	17.7	238	17.4	127	17.9	111
Religious leader	15.8	206	17.5	125	14.1	81
In the past 12 months, have you heard any of the following people speaking publicly AGAINST contraceptive?						
Government official (national level)	22.8	258	25.5	152	20.3	106
State leader	7.4	89	8.5	56	6.3	33
Civic / Community leaders	10.1	135	9.4	78	10.7	57
Religious leader	15.8	250	15.3	136	16.3	114
Reported exposure to contraceptive messages on the radio, television, print, by text, or on social networks in the last few months	89.9	1136	92.4	644	87.6	492

The survey also asked a series of questions about exposure to specific contraceptive messages developed by the Nigerian Urban Reproductive Health Initiative (NURHI) designed to reach those with intention to use, traditional method users, and non-users [Table 17].

Table 17. Exposure to NURHI family planning messaging among all respondents

	Overall (N=1249)		Males (N=696)		Females (N=553)	
PARTICIPANT RESPONDED "YES" TO THE FOLLOWING:	W%	N	W%	N	W%	N
In the last few months, have you heard on the radio or seen on the television a jingle or advert with people talking about family planning during a naming ceremony?	55.2	696	54.4	395	55.8	301
In the last few months, have you heard on the radio or seen on the television a jingle or advert with people talking about family planning in a hairdressing salon?	46.1	580	43.9	306	48.1	274
In the last few months, have you heard on the radio or seen on the television a jingle or advert with people talking about family planning in a barbing salon?	39.6	516	44.1	316	35.5	200
In the last few months, have you heard on the radio or seen on the television a jingle or advert with a couple talking to each other about family planning?	61.6	788	59.6	423	63.5	365
In the last few months, have you heard on the radio or seen on the television a jingle or advert about a couple (husband and wife) going to a health facility to get a family planning method?	65.7	835	64.8	451	66.5	384

Quality of Contraceptive Services

Among current users who reported that they obtain their current method of contraception themselves, 91.6% obtained their method of choice at the visit. In addition, almost half (48.8%) reported that they were informed about other methods at the visit and 40.1% were informed about possible side effects that they or their partner might experience with the method that they obtained. Of those respondents, 78.8% were told what they should do if they or their partner experienced side effects or problems. Results should be interpreted with caution as the sample of users who obtained their main method themselves is small. Patterns may reflect youth reliance on condoms for contraceptive methods and chemists and pharmacies for procurement

Table 18. Quality of contraceptive services reported by current users

	Overall		Males		Females	
	W%	N	W%	N	W%	N
	(N=139)*		(N=115)		(N=24)	
Respondent obtained method s/he wanted at visit	91.6	129	91.9	106	90.6	23
Provider told respondent about other contraceptive methods other than current main method at visit	48.8	69	47.2	54	53.6	15
Provider told respondent about method side effects at visit	40.1	54	39.2	44	42.8	10
	(N=54)**		(N=44)		(N=10)	
Provider told respondent what to do if s/he experienced side effects	78.8	38	71.2	28	100.0	10

*Current users who reported that they obtain their contraceptive method themselves

**Current users who were told about side effects at visit

Summary of Results

The Youth Respondent-Driven Sampling Survey (YRDSS) in Lagos is the third iteration of this study methodology, after two previous YRDS Surveys in Abidjan, Côte d'Ivoire (AIBEF & PMA Agile, 2019) and Nairobi, Kenya (ICRHK & PMA Agile, 2019). As in those two studies, the methodology yielded a rapid study sample using peer-to-peer recruitment that had high acceptability from youth participants, despite the abrupt study closure in Lagos brought about by the COVID-19 pandemic. This study sample was younger overall, with 44% of participants 15-17 years old. The younger population may affect indicators related to sexual activity and contraceptive use, as adolescents 15-17 years are less likely to have started sexual activity and use of contraception. Results may be different in an older population of young adults.

Among all female respondents, 7.4% had ever been pregnant, while 19.5% males reported ever had a pregnant partner or have a partner who is currently pregnant. This difference may be attributable to underreporting by young women, who may not want to disclose an abortion by disclosing a previous pregnancy. However, these results should be interpreted with caution, as only 3.2% of young women reported giving birth and 2.8% of young men reported having a child of their own. The large disparity between ever being pregnant/having a pregnant partner and having a child may be due to a number of factors including misreporting, lack of acknowledgement by young men of their partners' children as their own, or abortions.

Modern contraceptive prevalence use was estimated at 23.5% for males and 11.6% for females in this study, which is nearly equal to that of 2018 PMA2020 data for unmarried females aged 15-24 years in Lagos state (12%). Male condoms were the most commonly reported main method among both male (80.0%) and female (42.4%) users and use of highly effective, non-coital-dependent methods was rarely reported. Over half of male and female users reported that they obtain their current main method from a pharmacy (37.0%) or chemist/PMS store (16.9%), a source where the most common main method in this group, male condoms, could be easily obtained with limited provider interaction.

The heavy reliance on condoms for family planning may reflect relatively low levels of awareness of other methods and low levels of knowledge of method effectiveness. While condoms were the most reported method among all users, inconsistent or incorrect condom usage may hinder its effectiveness for STI/HIV and pregnancy prevention. Lifetime prevalence of condom removal or "stealthing" was reported by 36.3% of males and was experienced by 25.0% of females. Taken together, even for contraceptive users in this setting, there may be risks for unintended pregnancy.

Young women using contraception were more likely to rely on a partner (53.1%) or someone else (10.7%) to obtain their main method, while most young men obtained their method themselves. The majority (66.4%) of young men in the study procured their own contraceptive method; however, approximately one-third of young women relied on their partners for family planning. Among the young women who rely on their partner or another person to obtain their method, 41.3% indicated they were entirely dependent on this person for their method.

Despite low contraceptive use overall, most participants reported that they feel confident (29.0%) or very confident (57.2%) using contraception with their current/recent partner and capable (26.9%) or very capable (64.2%) negotiating sex with their current/recent partner. In addition, nearly two-thirds (62.9%) of both male and female respondents reported that they discussed using contraception with their current/recent partner before having sex with him or her for the first time. Participants' level of self-efficacy to use contraception despite partner disagreement or disapproval from friends, family, or community members was high. These measures point to a disconnect between one's level of comfort discussing contraception within partnerships, or in spite of outside disapproval, and actual use of contraception. Bridging this gap will be crucial for improving uptake of contraception among young people.

Recommendations

Overarching recommendation: Expand youth access to contraception

The study found that both current contraceptive use (19.1%) and lifetime contraceptive use (25.5%) is low among unmarried youth aged 15-24 years in Lagos, yet the majority of youth preferred to wait at least one year before pregnancy. Less than half of participants reported that they had had sex at the time of the survey, revealing a population that will need to be prepared with contraceptive knowledge and access when needed. The following recommendations aim to improve access to contraception among youth and adolescents in Lagos, and ensure that youth and adolescents have reliable, safe, and confidential access to contraceptive methods, the necessary autonomy and agency with which to implement them, and accurate information about their use.

Address contraceptive negotiation and agency to close the gap between contraceptive knowledge and implementation within AY relationships

Close to two-thirds (62.9%) of respondents reported that they discussed contraception with their current or most recent partner before having sex; however, only 50.8% of all sexually active respondents reported using any contraceptive method at last sex and 45.5% reported using a method at first sex. This indicates a divergence between youth and adolescents' initial discussion of contraceptive use with a partner, and the reality of then opting to use a method during intercourse. Promotion of non-coital-dependent methods and ensuring non-stigmatizing, non-judgmental access to those methods may help to close the gap between discussion of use and actual use.

The potential risks of unprotected intercourse appear to be well-recognized, as 78.8% of all participants responded in the affirmative that not using any method of contraception the first time a person has sex can lead to a pregnancy. Negotiation skills and agency, and the developmental stage of AY may be partially responsible for the gap between knowledge and action. For example, condoms were the dominant method of choice, yet 36.3% of male participants and 25.0% of female participants reported experiences of condom removal during sex. Most participants strongly or mostly agreed that young women who use contraception are promiscuous, suggesting the potential for social shaming which could pose a barrier to use, particularly for women. Improved communication strategies are needed to then address the barriers to youth successfully implementing contraception, normalize the use of highly effective methods, and allow youth to translate their confidence in contraceptive discussions into successful use.

Adolescents and youth, who already have knowledge around adverse effects of unprotected sex, including unplanned pregnancy and STIs, thus need support and direction in operationalizing this knowledge through correct and consistent use. Communication strategies can engage peer educators who speak openly about the benefits of their own contraceptive use and can model behavior for other AY. Organizations that produce visual media around family planning advocacy, to which youth already report exposure in high numbers, can employ more direct and explicit messaging that highlights the consequences of failing to operationalize the knowledge they already have. For example, depicting a young couple embracing with the young woman saying, "Do you know that if we have sex now without using any contraceptive, we may have a baby in 9 months? Are you ready to be a father?" Messaging can also incorporate positive, empowerment themes including promotion of obtaining methods of a form of self-care and bodily autonomy, and providing options for youth-friendly, non-stigmatizing services particularly for young women.

Develop communication strategies for adolescents and youth to raise awareness on LARCs, and expand knowledge of method effectiveness and common barriers

Recognition of individual contraceptive methods, outside of condoms, was low overall, and less than 10% of respondents had heard of LARC methods like IUDs or implants. Respondents who had heard of IUDs and implants often incorrectly reported that they were less effective than condoms. Messaging about highly effective methods and the comparative effectiveness of different methods available should target young people. Providers as well as messaging campaigns can emphasize that non-coital-dependent methods are not vulnerable to many of the barriers to successful condom use that youth reported, including attitudes that condoms may reduce male pleasure as well as experiences of condom removal during sex. Finally, knowledge of where to obtain a method was less than 50% overall and 39.6% among young women. Any AYSRH information shared about contraception should include information on where adolescents and youth can reliably obtain methods of their choice.

Information on method mix, effectiveness, and correct use should be disseminated through various messengers, expanding the scope of communication strategies beyond traditional mass media and consultations with healthcare providers:

- *Through women's groups:* Mothers were the most reported source for both young women (41.0%) and young men (27.1%) when asked where they would prefer to receive information about contraception. These data show that AYSRH interventions must engage mothers as valuable sources of information for youth, particularly young women. Mothers who may not be comfortable as the direct information source for their children should receive supportive information on where to refer their daughters and sons to trusted information sources within the health system. Women's groups can organize seminars and programs for women where they live and work, with a focus on encouraging women to share this information with the adolescents and youth in their homes and lives. The Lagos state Ministry of Health can work with Ministry of Women Affairs & Poverty Alleviation to develop targeted and appropriate messaging for mothers to share with their adolescent children on AYSRH, with an emphasis on method efficacy, places to obtain contraception and counseling, and overcoming interpersonal and stigma-related barriers to use.

- *Through peer-to-peer outreach programs:* Friends were also cited as a preferred source of contraceptive information and dissemination of accurate SRH information through peers could be another effective strategy to increase SRH knowledge among youth. Many NGOs and community-based organizations in Lagos already have programs that engage with young people on SRH issues. For example, the Youth Empowerment and Development Initiative (YEDI) has peer educators that attend regular training sessions. Additional information on contraceptive method mix and levels of effectiveness of different methods can be incorporated into regularly scheduled training sessions.

Engagement with pharmacists

In this sample, pharmacies and chemists were the main source of contraceptives for youth (over 50% of current users); however, pharmacists were not reported to be the preferred source of information on contraceptive methods for youth. This gap suggests an opportunity to better engage pharmacies in provision of contraceptive information, including method efficacy. Further work is needed to explore options to expand knowledge through common contraceptive service delivery points, for example posting referral information or conducting pharmacist training. While time with clients is limited in this setting, pharmacists and pharmacy technicians could be trained to explain side effects and when to return for a refill, if applicable. Posting efficacy information or including visually appealing and accurate information in contraceptive packaging may also be valuable means of communication at the point of purchase for youth.

References

AIBEF & PMA Agile. (2019). *Abidjan Youth Respondent-Driven Sampling Survey: Final Report. 2019. Performance Monitoring for Action Technical Report*. Baltimore, MD: Bill & Melinda Gates Institute for Population and Reproductive Health, Johns Hopkins University Bloomberg School of Public Health.

Federal Ministry of Health. (2014). *Guidelines for young persons' participation in research and access to sexual and reproductive health services in Nigeria*. Retrieved from https://www.popcouncil.org/uploads/pdfs/2014HIV_YoungPersonsSRH-Nigeria.pdf

Ghanem KG, H. H. (2005). Audio computer assisted self interview and face to face interview modes in assessing response bias among STD clinic patients. *Sexually transmitted infections*, 421-5.

ICRHK & PMA Agile. (2019). *Nairobi Youth Respondent-Driven Sampling Survey: Final Report. 2019. Performance Monitoring for Action Technical Report*. Baltimore, MD, USA: Bill & Melinda Gates Institute for Population and Reproductive Health, Johns Hopkins University Bloomberg School of Public Health.

Johnson, L. G., Malekinejad, M., Kendall, C., Iuppa, I. M., & Rutherford, G. W. (2008). Implementation challenges to using respondent-driven sampling methodology for HIV biological and behavioral surveillance: field experiences in international settings. AIDS and behavior. *AIDS & Behavior*, S131-41.

Johnston LG, W. S.-L. (2010). Formative research to optimize respondent-driven sampling surveys among hard-to-reach populations in HIV behavioral and biological surveillance: lessons learned from four case studies. . *AIDS Care*, 784-92.

Magnani R, S. K. (2005). Review of sampling hard-to-reach and hidden populations for HIV surveillance. *AIDS*, S67-72.

National Population Commission [Nigeria] and ICF. (2019). *Nigeria Demographic and Health Survey 2018*. Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF.