Characteristics and patterns of use of emergency contraception among urban women in Nigeria and Kenya

Gwendolyn Morgan[1,*], **Jill Keesbury**[2], and **Ilene Speizer**[3]

[1] Management Sciences for Health, Arlington, VA

[2] PATH, Washington, DC

[3] Department of Maternal and Child Health and Carolina Population Center, University of North Carolina, Chapel Hill

Abstract

Rates of emergency contraception (EC) use in sub-Saharan Africa are highest in Kenya and Nigeria, although little is understood about user characteristics and use dynamics in these countries. In order to better meet the emergency contraceptive needs of women, and contribute to the limited knowledge base on EC in Africa, this study examines a large, representative sample of EC users. It draws on data collected from household surveys that included 7,785 sexually experienced women in urban Kenya and 12,653 sexually experienced women in urban Nigeria. Bivariate and multivariate analyses found that among these urban women, knowledge of EC was higher than reported in other nationally representative surveys (58% in Kenya and 31% in Nigeria). About 12% of sexually-experienced women in Kenya and 6% in Nigeria ever used EC, although fewer women (less than 5%) reported using EC in the past one year. Recent users of EC were more likely to be in their twenties, unmarried, and more highly educated than never users or ever users of EC in both countries. Results contradict public perceptions of EC users as younger adolescents, and indicate the importance of strengthening EC provision in Africa, including targeting information and services to unmarried women and supporting private pharmacies in delivering quality EC services.

Keywords

emergency contraception; sub-Saharan Africa; Kenya; Nigeria

Introduction

Emergency contraception (EC) pills are an essential, although often underutilized, family planning option.[1] In sub-Saharan Africa, where access to formal health care and family planning services remains limited, dedicated EC pills—which are often accessed through

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[*] Corresponding author gmorgan@msh.org Postal address: 19174 Sweig Terrace, Leesburg, VA 20176 Phone (U.S.): 703-210-3553 (office) 703-728-8103 (mobile).

[1] EC methods—which includes both oral contraceptives and intra-uterine devices—represent the only reliable post-coital family planning option currently available to women, and have been recommended by numerous professional associations as safe and effective for use following both consensual and non-consensual sex (FIGO 2009; WHO 2012).

private sector pharmacies— have emerged to play an important role in preventing unwanted pregnancy. Demographic and Health Surveys (DHS) from across the continent demonstrate that, while still limited, knowledge and use of EC has increased in nearly all the African countries where data on EC is available: Ghana, Kenya and Uganda. (GSS, GHS, and ICF Macro 2009; KNBS and ICF Macro 2010; UBOS and ICF International 2012)

Based on the Demographic and Health Surveys from Kenya and Nigeria, rates of EC use are currently highest in Kenya and Nigeria, although only 1.7% of all Kenyan women and 2.8% of Nigerian women have ever reported using the method. (KNBS and ICF Macro 2010; NPC and ICF Macro 2009) Despite Nigeria's higher use rates, overall knowledge of the method has remained largely unchanged at 15% of all women included in the DHS; whereas over 40% of women in Kenya are now aware of the method, a proportion that has grown significantly in recent years. In Kenya, this growth exists within the context of a relatively robust family planning (FP) program, which has achieved a national contraceptive prevalence rate. (CPR) of 46%. (KNBS and ICF Macro 2010) Conversely, Nigeria's FP efforts have been hampered by political instability, commodity shortages and significant regional variations, resulting in a 15% CPR. (NPC and ICF Macro 2009) In both countries, EC is accessible in urban and peri-urban private sector pharmacies, ensuring its availability beyond the traditional outlets for FP services. (Lang et al 2012; PSI [Kenya] 2007)

EC has been the subject of increased public debate in both countries, despite the fact that very little reliable data exists on the characteristics of users and the factors that influence their decision to use EC. Across the continent, African media has consistently portrayed EC users as very young adolescents who use the method 'like chocolates' and engage in frequent, risky sexual behavior. (Okwemba 2004; Wesangula 2008; Punch 2012) Available research, while very limited, suggests that this is not the case. One study of Kenyan women who purchased EC in urban areas found that EC users had a mean age of 25 years, and 61% had attended university and were employed. It also found that 58% (unadjusted rate) of these women reported purchasing EC at least twice in the past month. (Keesbury et al 2010) Another study in urban Kenya demonstrated that 94% of those who purchased EC in Kenya did so from private sector pharmacies, reporting that they preferred the convenience and confidentiality of pharmacies over the lower-cost public sector outlets. (PSI [Kenya] 2007) EC access in Nigeria has been less closely studied, although research conducted among university women has consistently found that their levels of knowledge are substantially higher than the general population (58% at the University of Benin and 51% at the University of Port Harcourt).(Aziken et al, 2003; Akani, 2008) In the Port Harcourt study, 35% of those surveyed had used EC, which was most likely to have been purchased from a pharmacy or patent medicine store. (Akani, 2008) In this context, many providers— including social marketers— are concerned that the method is being used "too often" by young women. (Lang et al 2012)

While these studies help create a snapshot of EC use in Kenya and Nigeria, this picture is shadowed by small and unrepresentative samples. Nationally-representative surveys, such as the DHS, capture only a small number of EC users due to the relatively low levels of EC use across the general population. While these small samples are useful for estimating national usage rates, their ability to detect important characteristics of EC users is fundamentally

limited. This study significantly adds to the understanding of EC use in Nigeria and Kenya, presenting data from the largest representative sample to-date of EC users which was collected through household surveys in five purposively selected urban areas of Kenya and six purposively selected urban areas of Nigeria. These data provide unique and unparalleled insight into the characteristics of urban EC users in two important countries, and provides the basis for further comparative work across the continent. For the first time in the emerging field of EC research, this study allows us to validate previous smaller studies, examine new dimensions of use, and ultimately further our understanding of this increasingly popular method.

Methods

Using data from urban Kenya and Nigeria provides a large sample of users to permit in-depth analysis into use patterns. To do this, an EC module was included in the baseline data collection for the Urban Reproductive Health Initiative (URHI) activities in Kenya and Nigeria, where large-scale representative household surveys with women and men from five cities in Kenya and six cities in Nigeria were undertaken. Baseline data collection was conducted in Kenya between September and November 2010 and from October, 2010 to April, 2011 in Nigeria. Multi-stage sampling methods were used and in the first stage, national census enumeration sampling frames were utilized in both countries and a total of 400-500 clusters were sampled within 5-6 cities in each country, which were purposively selected by the URHI implementing consortia. In the second stage, a household listing for all sampled clusters was undertaken and a representative sample of households (30 in Kenya and 41 in Nigeria) was selected for interview using pretested questionnaires; all women ages 15-49 in selected households were eligible for interview. For complete sampling information, see full reports. (MLE, NURHI, and DRMC 2011; MLE, Tupange, and KNBS 2011)

Of the 13,140 households selected for inclusion in Kenya, 12,565 were occupied and eligible for interviews. Of these, 10,992 households were interviewed successfully, yielding a household response rate of 84 percent. There were a total of 10,502 eligible women, of which 8,932 consented and participated in an interview, yielding an individual response rate of 85 percent in Kenya. For these analyses, we only include sexually experienced women (weighted n=7785). In Nigeria, a total of 19,556 households were selected and 16,935 were successfully interviewed, yielding a household completion rate of 87 percent. Among the interviewed households, a total of 16,957 women were eligible for individual interviews; 95 percent (16,144) of them were successfully interviewed. For these analyses, we only include sexually experienced women (weighted n=12,652).

In both countries, interviews took place in a location where the respondent could be assured some level of privacy and were conducted by a same-sex interviewer using a paper-and-pencil questionnaire following the receipt of informed consent. Respondents were asked about demographic characteristics, current and past FP method use, fertility desires and intentions, health-seeking behaviors for themselves and their children, how they pay for health care services, exposure to FP messages, and migration patterns, using a structured questionnaire. The Kenya data collection was approved by the Kenya Medical Research

Institute (KEMRI) and by the University of North Carolina at Chapel Hill Institutional Review Board. Likewise, the Nigeria data collection was approved by the National Health Research Ethics Committee (NHREC) in Nigeria and by the University of North Carolina at Chapel Hill Institutional Review Board.

The key variables for this analysis are related to knowledge of emergency contraception (EC), ever use of EC, source of EC, and repeat use of EC. These questions were all asked in a specific EC module included in the Kenya and Nigeria surveys. All descriptive analyses are stratified by marital experience (never married and ever married) to examine how use patterns differ by marital status.

We examined the association between use EC and socio-demographic variables using a multinomial logistic regression. For this multivariate analysis, a three category outcome variable is created that determines experience with EC: never used EC; ever used EC but not in last 12 months; and ever used EC and used in last 12 months ("recent use").

Aside from socioeconomic status, we also include a number of other demographic characteristics as control variables in the multivariate analyses. See Table 1 for a list of all control variables and their classification in the two countries. Analyses also control for wealth quintiles calculated across the cities within countries using principal components analysis methods on household assets similar to the approach used by the Demographic and Health Surveys. (Gwatkin et al, 2000) In each country, analyses control for city variables; for standardization, the capital city was selected as the reference group. Note also that the education variable was coded slightly differently in the two countries, reflecting the varying education levels and education systems in the countries. The statistical significance level for each covariate effect on each dependent variable was examined. All *P* values were 2-sided and considered significant at the p<.05 level.

Where appropriate, we examined interactions in the models of EC use; the results of these interactions are discussed in the results section below. Stata 12.0 was used to produce bivariate and multivariate results of characteristics of EC users and patterns of use.

Results

Table 1 presents the demographic characteristics (control variables) of sexually-experienced women aged 15-49 years in the selected urban areas of each country. A majority of sexually experienced Kenyan women reported that they were in their twenties (54% were aged 20-29 years), whereas Nigerian women in this sub-sample were older (80% were 25 years and older). Urban sexually experienced women in both countries also had a relatively high level of education; 56% of women in Kenya and about 60% of women in Nigeria had a secondary or higher level of education. Nearly all (89%) of Kenyan sexually-experienced women aged 15-49 years reported being Christian, whereas Nigerian women evenly report that they are Christian (49%) and Muslim (50%). In Kenya, nearly one-quarter (24%) of urban, sexually-experienced women interviewed were never married, while almost two-thirds (64%) were currently married or living with a partner as if married. In Nigeria, a greater percentage of

urban, sexually-experienced women aged 15-49 years reported being currently married (80%); only 16% of these women were never married.

The distribution of women by city reflects the different city population sizes and related sampling and weighting schemes used to select women by city and by country. Kenya's largest city is Nairobi, whereas the other four Kenyan cities and towns included in this study are much smaller than Nairobi. Thus, after weighting, 73 percent of sexually experienced women aged 15-49 years are based in Nairobi. In contrast, population distribution of the six selected Nigerian cities is more even, and the sampling and sample weighting scheme reflected this. Distribution by city ranged from 24% of sexually experienced women in Kaduna to 12% based in Zaria.

Participating women were asked about their knowledge of various modern and traditional methods of family planning, including emergency contraception. Table 2 shows the percentage of women with knowledge, either spontaneous or probed, of emergency contraception by marital status and country. Table 2 shows that in these uniquely large urban samples, knowledge of EC was 58% in Kenya and 31% in Nigeria. Never married sexually experienced women in both Kenya and Nigeria were significantly more likely to be aware of EC than ever married women (65% vs. 55% in Kenya, and 50% vs. 28% in Nigeria).

This study is not just interested in gauging women's awareness of EC, but also understanding their level of correct knowledge of EC use. To that end, two additional dimensions of knowledge about EC were probed among women who had ever heard of EC: 1) number of pills in a dedicated EC product (to distinguish women who might be confusing the daily combined oral contraceptive pill with EC); and 2) the timeframe after sex in which EC may prevent pregnancy, a key indicator of effective use of EC. Among sexually experienced women who knew of EC, around half in both countries know that there are two pills in one pack of EC[2]. A majority of sexually experienced women in both countries who have ever heard of EC know that EC can be taken within 120 hours of unprotected sex: 60% in Kenya and 56% in Nigeria. Over half of never married women aged 15-49 who have ever had sex and who have ever heard of EC know that one pack of EC includes two pills and that EC can be taken within 120 hours of unprotected sex in both Kenya (57%) and Nigeria (52%). Knowledge of both of these features of EC is significantly lower for ever married women in both countries (41% in Kenya; 39% in Nigeria).

Table 3 presents use dynamics of emergency contraception among women aged 15-49 years who have ever had sex by marital status and country. A majority of respondents who have ever had sex report that they have ever used a modern method of family planning[3] (80% in Kenya and 52% in Nigeria). While Kenyan women who are currently or previously married are significantly more likely (83%) than never married women (69%) to have ever used a modern method of family planning, the opposite is true in Nigeria, where never married, sexually experienced women are more likely (68%) to have ever used a modern method of family planning than ever married women (49%). Never married, sexually-experienced

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[2]Although single-pill formulations of EC are available in other markets, they are not currently available in Kenya and Nigeria.
[3]Modern family planning includes: female and male sterilization, the pill, intrauterine devices (IUCDs), male condoms, female condoms, emergency contraception (EC), diaphragms, foam or jelly, implants, and lactational amenorrhea method [LAM].

women in both countries are consistently more likely than ever married women to have ever used EC, to have used EC in the past one year, and to have used EC more than once per month at any time in the past year; this difference is significant for all measures by marital status in both countries. Overall, few women in Kenya (5%) and Nigeria (2%) reported using EC in the past one year. Even fewer sexually experienced women reported using EC more than once per month in the past one year (1% in both Kenya and Nigeria). Never married, sexually-experienced women were also significantly more likely than ever married women to consider EC to be their main method of family planning in both countries, though these percentages were also similarly low.

Table 3 also presents data on the subset of women who have used EC at least once in the previous year of the survey. While this subset is small (n=420 in Kenya and n=300 in Nigeria), it is still large enough to look at behaviors related to use of family planning and EC. Emergency contraception is sometimes viewed as a "bridge" or "gateway" method for use of more permanent methods of family planning. Among women who used EC at least once in the past one year, 44% of Kenyan women and 35% of Nigerian women reported currently using a non-EC modern method of family planning. Also of interest is whether women use EC as a regular method of family planning. Among Kenyan women who used EC at least once in the past one year, 18% reported using EC at least twice per month at any time during the past one year and 12% reported that they used EC as their main method of contraception. In Nigeria, recent users of EC are much more likely to use EC regularly and as a main method of family planning: 48% of recent users reported using EC at least twice per month at any time during the past one year, and 38% of recent users reported using EC as a main method of FP.

Finally, Table 3 presents information on women's preferred source of EC among women who have ever used EC. Nearly all women in both Kenya (96%) and Nigeria (92%) reported that if they needed to obtain EC, they would most likely obtain it from a pharmacy or drug shop (also called chemist). About 2% of women in Kenya and 6% of women in Nigeria reported that they would likely obtain EC from a hospital, clinic, dispensary, or other source.

This large urban study of women and family planning also allows for comparisons of women who have never used EC, women who have ever used EC but not in the past one year, and women who have used EC in the past one year (recent users). Table 4 presents these different categories of EC users by demographic characteristics of sexually experienced women aged 15-49 by country. In examining women's age by use of EC, Table 4 reveals that women in their 20s constitute the majority of recent and past EC users. In Kenya, the largest proportion of women who used EC in the past one year are aged 20-24 (46%), whereas the largest proportion of women who have ever used EC (but not in the past one year) is women aged 25-29 years (41%). In Nigeria, about one-third of recent (36%) and past EC users (32%) are in their late twenties.

A significantly greater percentage of recent and past EC users have secondary or higher levels of education in both countries as compared to never users of EC. In Kenya, ever (83%) and recent (74%) EC users were also significantly more likely than never users of EC (63%) to have been employed in the past year. No significant differences existed in Kenya

with respect to EC use and religion; however in Nigeria, ever (37%) and recent (29%) users of EC were significantly less likely to be Muslim than never users (51%). In both countries, ever users and recent users of EC were significantly more likely to be never married than never users. In both countries, recent users of EC were the least likely to have at least one child; about 51% of recent users in both countries reported having at least one child, as compared to ever (about 65%) and never users (about 80%) of EC. Lastly, in Kenya, ever (42%) and recent (35%) EC users were more likely than never users of EC (19%) to be in the highest wealth quintile.

Finally, Table 4 also provides some sexual behavior characteristics and their relationship to never, ever, and recent use of EC. Table 4 reveals that women who used EC in the past one year were the least likely to have sex at least on a weekly basis (Kenya only). In both countries, recent users were the most likely (18% in Kenya and 13% in Nigeria) to report having more than one sexual partner in the past one year, as compared to never users (5% in Kenya and Nigeria) or ever users (6% in Kenya and 12% in Nigeria) of EC. Recent EC users in Kenya (7%) were the most likely to report having exchanged gifts or money for sex in the past one year as compared to ever (4%) and never (3%) users of EC. In Nigeria, both recent (14%) and ever (16%) users were more likely to report having exchanged gifts or money for sex than never users (7%).

The findings from Table 4 are confirmed in the multivariate analyses presented in Table 5. In particular, we compare recent users (used in the last one year) to never users and recent users to ever users who did not use in the last one year. In Kenya, compared to never users, recent users are significantly more likely to be aged 20-24 than 40 or over. Moreover, recent users are significantly more likely to have higher education or to be never married or formerly married than never users. Women who have any children are significantly less likely to be recent users than never users as compared to women with no children; conversely, women with no children are more likely to be recent users than never users. Finally, women who had more than one partner in the last one year are significantly more likely to be recent users than never users as compared to women with only one sexual partner. The second column for Kenya presents the comparison between recent users and ever but not recent users. The main difference between recent users and ever users is that recent users are significantly more likely to be never married than ever but not recent users. Interaction effects between marital status, coital frequency, number of sexual partners in the past one year, and exchanged gifts or money for sex in the past one year were tested; none of the interactions were found to be significantly related to EC use among urban Kenyan women.

In Nigeria, compared to never users, recent users are significantly more likely to be aged 20-29 than 40 years or over. As with Kenyan women, recent users in Nigeria are significantly more likely to have higher education or to be never married than never users. Nigerian Catholic women were significantly more likely to have used EC in the past year than Muslim women, who were more likely to be never users. No differences were noted for employment status, wealth, coital frequency, or sexual behaviors in the past one year between never and recent users. The second column for Nigeria demonstrates that the main difference between recent users and ever users is that recent users are significantly more

likely to be never married. In addition, women with university education are less likely to be recent users than ever users as compared to women with lower levels of education. Interaction effects between marital status, coital frequency, more than one sexual partner in the past one year, and exchanged gifts or money for sex in the past one year were tested. No significant interaction effect was observed between marital status and coital frequency or exchanging gifts or money for sex in the past one year. However, an interaction between marital status and having more than one sexual partner in the past one year was observed to be significant (not shown). Interactions indicated that divorced/separated women who also report having more than one sexual partner in the past one year are significantly more likely to have used EC recently than divorced women who do not report having had multiple partners in the past one year (not shown); all other variables remained the same in the models with these interactions.

Discussion

These findings counter the public perception in both Kenya and Nigeria that young schoolgirls are the primary users of EC, a myth that has colored much of the debate around access to the method. (Wesangula 2004) Instead, the data confirm the findings of previous studies that users in urban areas are in their 20s, educated, employed and unmarried. (Keesbury, Morgan, and Owino 2010) Overall, there are few significant differences between those who have ever used EC in their lifetimes and recent users (within the past year), perhaps because the method is still relatively new in each country. The data suggest a slight generational shift, in that ever-users are more likely to be married than recent users, so that some of the users may have simply "aged" into marriage (and perhaps now have stopped using family planning or rely on other methods).

These findings also refute the proposed relationship between EC use and sexual-risk taking. In the bivariate analysis EC users were significantly more likely to have exchanged gifts or money for sex than those who never used EC. However, these differences disappeared in the multivariate analysis for Kenya, even after testing for interaction, which controls for marital status and age, suggesting that such risky behavior is more closely related to age and marital status than to EC use. One exception is that, in Kenya, recent EC users were significantly more likely than never-users to report having multiple sexual partners in the past one year, even after controlling for age and marital status. A second exception is that divorced women in Nigeria with more than one sexual partner in the past one year were also significantly more likely to be recent users than divorced women with one or no sexual partners in the past one year. Nonetheless, on the whole these data suggest that while unmarried women are more likely to use EC, EC users are no more likely to engage in frequent or risky sexual behavior.

These data clearly demonstrate that private sector pharmacies are the primary preferred point of access for nearly all EC users in both Kenya and Nigeria. While previous research highlighted this trend in Kenya, it has been less widely confirmed in Nigeria. This highlights the importance of the private sector in delivering non-provider dependent family planning services across Africa, as well as EC's unique suitability for pharmacy or drug shop provision. By offering EC services in a quick, convenient and confidential manner,

pharmacies, or drug shops can meet the needs of most women who desire to prevent pregnancy following unprotected sex and who can afford the method. In Kenya, this remains the case despite lower-cost access to EC in public sector clinics.

One surprising finding is the relatively high proportion of women in Nigeria who identify EC as their main method of FP. Of those who used EC in the past year, a greater percentage of Nigerian women identify EC as their main method of FP as compared to their Kenyan counterparts (38% vs. 12%), and a greater percentage of recent users in Nigeria report using EC more than once a month in the past year than in Kenya (48% vs. 18%). These rates are likely to reflect a response to the more limited access and use of other contraceptive options in Nigeria, where far fewer urban women have ever used modern contraception (80% in Kenya vs. 52% in Nigeria). In this context, women may be using the more readily available EC as a replacement for more difficult to obtain, or less familiar, FP methods.

There are several limitations that should be considered when interpreting the results of these data. Sexual behavior data are based on self-reported behaviors and respondents may give socially accepted/expected responses, especially on a sensitive topic like EC, which is often confused with abortion. Additionally, this sample is not representative of the general Kenyan or Nigerian population nor is it representative of all urban areas in each country. These data come from a purposively-selected set of five or six cities in each country and are derived from baseline surveys, which have the characteristic limitations of cross-sectional data with respect to causal direction and interpretation of predictors. Finally, recent EC use among sexually active women remains relatively rare (5% or less in both samples); therefore, this study is unable to examine in more depth specifics around use (such as dual use and transitioning to/from other methods of family planning). It also raises a set of questions on user preferences and behaviors that may be best answered through qualitative studies.

Conclusions

This study provides unprecedented detail to our understanding of who, when, and how EC is used in urban Kenya and Nigeria. It dispels many myths about this increasingly-popular method, and provides an empirical foundation for other African countries grappling with similar questions about use dynamics. Findings regarding the high proportion of recent EC users who report using EC more than once per month and as a main method of contraception (particularly in Nigeria) indicate the need for greater understanding regarding the dynamics of repeat use, as well as the importance of ensuring availability and access to effective, short-term, woman-controlled barrier and hormonal methods.

This study identifies some clear recommendations for strengthening EC provision in similar contexts across Africa. It highlights the need to adequately target information and services on EC to unmarried urban women, a demographic that appears to increasingly look to EC as an important element of their contraceptive toolkit. While the private sector is well-placed to help ensure service availability, the public sector and civil society must complement these efforts through awareness-creation activities.

The experience of Nigerian women suggests that EC can serve as an especially important element of the contraceptive method mix when public sector provision is limited, and that legal and procedural barriers to pharmacy and drug shop access should be minimized in order to ensure broad access. Given the importance of private sector provision, it is essential to ensure that private sector pharmacies and drug shops deliver quality EC services, while not undermining the characteristics that contribute to the appeal of such an outlet. Social marketing initiatives that provide poorer women access to subsidized EC pills at a lower cost than commercially available EC are also important in contexts where price may be a barrier for poorer women.

Increasing access to a broad range of quality family planning services, including EC, is critical for Kenya, Nigeria, and many other African countries as they strive to meet the ambitious goals laid out at the 2012 London Family Planning Summit[4].

Acknowledgments

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[4]On July 11, 2012, governments and partners from across the world committed to the ambitious goal of providing an additional 120 million women and girls with access to contraceptive information, services and supplies by the year 2020. An important element of this effort is to ensure that individual rights are respected and that users are empowered to make their own contraceptive choices.

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Table 1

Demographic characteristics among all women aged 15-49 years who ever had sex in selected urban sites of Kenya and Nigeria

Characteristic	Kenya		Nigeria	
	N=7785	Percent	N=12,652	Percent
Age category, years				
15-19	519	6.7	512	4.0
20-24	2106	27.1	2033	16.1
25-29	2055	26.4	2901	22.9
30-34	1272	16.3	2623	20.7
35-39	910	11.7	2075	16.4
40 years and older	923	11.9	2508	19.8
Highest education level				
None/Quranic	263	3.4	1806	14.4
Primary incomplete (KE) /Primary (NG)	1088	14.0	2152	17.1
Primary complete/vocational (KE) /Junior Secondary (NG)	2106	27.1	1120	8.9
Secondary or higher (KE)/ Senior Secondary (NG)	4326	55.6	4267	34.0
Higher (NG)	na	na	3219	25.6
Employment status				
Did not work in last year	2735	35.1	4591	36.3
Worked in last year	5051	64.9	8061	63.7
Religion				
Protestant/other Christian	1837	65.8	5633	44.7
Catholic	5122	23.6	582	4.6
Muslim	711	9.1	6305	50.1
Other/none	109	1.4	72	0.6
Marital/relationship status				
Never married	1887	24.3	2039	16.3
Married/living together	4948	63.7	9927	79.5
Divorced/separated	707	9.1	260	2.1
Widowed	222	2.9	261	2.1
Has at least one living child				
No	1669	21.4	2840	22.4
Yes	6117	78.6	9812	77.6
Wealth quintile				

Characteristic	Kenya		Nigeria	
	N=7785	Percent	N=12,652	Percent
Poorest	1439	18.5	2505	19.8
Second	1488	19.1	2583	20.4
Middle	1590	20.4	2650	20.9
Fourth	1596	20.5	2524	19.9
Richest	1671	21.5	2390	18.9
City				
Nairobi/ Abuja	5674	72.9	1694	13.4
Mombasa/ Benin City	1446	18.6	1651	13.0
Kisumu/ Ibadan	416	5.3	2611	20.6
Machakos/ Ilorin	112	1.4	2101	16.6
Kakamega/ Kaduna	137	1.8	3082	24.4
na/ Zaria	na	na	1514	12.0

N's and percentages weighted; some N's smaller than total due to missing observations on demographic characteristic; na-not applicable

Table 2

Emergency contraception knowledge among women aged 15-49 years who have ever had sex in selected urban sites of Kenya and Nigeria

	Kenya Percent, % N=7785			Nigeria Percent, % N=12,487		
	Never married	*Ever married/in union*	*Total*	*Never married*	*Ever married/in union*	*Total*
Knowledge/awareness of EC (spontaneous and probed)	64.8	55.3***	57.6	49.8	27.5***	31.2
	n=1224	n=3262	n=4485	n=1016	n=2874	n=3890
Percent who correctly report that there are two pills in one pack of EC (among all women who have ever heard of EC)	64.6	49.3***	53.5	57.7	46.4***	49.3
Percent who correctly report that EC can be taken within 120 hours of unprotected sex (among all women who have ever heard of EC)	66.8	57.4***	60.0	65.3	52.9***	56.1
Total knowledge of EC[†]	56.7	41.2***	45.4	51.5	39.0***	42.2

Cross tabulation with significance testing between never married and ever married/in union using F test:

*p 0.05

**p 0.01

***
 p 0.001.

[†]Total knowledge is the percentage of women who correctly report there are two pills in a packet and who know that EC can be taken within 120 hours, among women who have ever heard of EC.

Table 3

Emergency contraception use dynamics among women aged 15-49 years who have ever had sex in selected urban sites of Kenya and Nigeria

	Kenya Percent, % N=7785			Nigeria Percent, % N=12,487		
	Never married	*Ever married/in union*	*Total*	*Never married*	*Ever married/in union*	*Total*
Among all women who ever had sex:						
Ever use of modern family planning[a]	69.4	83.2 ***	79.9	68.4	48.5 ***	51.8
Ever use of EC	20.8	8.5 ***	11.5	14.0	4.8 ***	6.3
Used EC in the last year	12.5	3.1 ***	5.4	6.9	1.5 ***	2.4
Used EC more than once per month anytime in last year	1.7	0.7 *	1.0	3.0	0.8 ***	1.2
Consider EC as main method	1.4	0.4 ***	0.6	2.3	0.7 ***	0.9
Among women who used EC at least once in the past one year:	n=237	n=183	n=420	n=141	n=159	n=300
Current use of a non-EC modern family planning method	37.6	47.8	44.4	40.3	33.1 **	35.3
Used EC more than once per month anytime in last one year	13.9	23.0	17.5	43.5	51.5	47.8
Considers EC as main method	11.4	11.6	11.5	32.4	42.1	37.6
Preferred source of EC (among women who have ever used EC)	n=393	n=502	n=895	n=286	n=496	n=782
Pharmacy/chemist	98.5	94.2	96.1	96.5	90.0	92.4
Hospital/clinic/dispensary	0.0	4.1	2.3	1.6	8.2	5.8
Other	0.1	0.1	0.1	0.3	0.2	0.2
Don't know/missing	1.5	0.9	1.1	1.6	1.6	1.7

Cross tabulation with significance testing between never married and ever married/in union using F test:

*
p $\leq$ 0.05

**
p $\leq$ 0.01

***
p $\leq$ 0.001.

[a]Modern methods include: female and male sterilization, the pill, intrauterine devices (IUCDs), male condoms, female condoms, emergency contraception (EC), diaphragms, foam or jelly, implants, and lactational amenorrhea method [LAM].

Table 4

Characteristics of recent EC users vs. non-users among all sexually-experienced women aged 15–49 years in selected urban sites of Kenya and Nigeria

Characteristic	Kenya Percent			Nigeria Percent		
	Never used EC	Ever used EC/not last year	Used EC in last year	Never used EC	Ever used EC/not last year	Used EC in last year
	N=6891	N=475	N=420	N=11,861	N=488	N=302
Age category, years						
15-19	7.1	1.8	5.3	4.2	1.9	3.5
20-24	26.2	22.9	45.6	15.7	17.3	28.0
25-29	25.4	40.6	26.0	22.2	31.5	35.9
30-34	16.7	15.1	11.9	20.8	23.6	14.1
35-39	12.1	9.7	7.8	16.7	13.0	10.9
40 years and older	12.5	9.9	3.4 ***	20.4	12.7	7.6 ***
Highest education level						
None/Quranic	3.8	0.0	0.5	15.2	1.6	2.7
Primary incomplete/Primary	15.2	5.3	4.1	17.7	10.2	7.3
Primary complete/vocational/Junior Secondary	29.4	9.8	8.4	8.9	8.2	12.0
Secondary or higher/ Senior Secondary (Nigeria)	51.7	84.9	87.0 ***	34.1	28.8	34.9
Higher (Nigeria only)	na	na	na	24.1	51.3	43.1 ***
Employment status						
Worked in last 12 months	63.1	82.6	74.3 ***	64.0	60.5	59.2
Religion						
Protestant/other Christian	65.5	69.3	67.6	43.8	54.2	64.4
Catholic	23.6	23.9	23.6	4.4	8.5	5.4
Muslim	9.5	5.6	6.8	51.1	36.8	29.3

Characteristic	Kenya Percent			Nigeria Percent		
	Never used EC	Ever used EC/not last year	Used EC in last year	Never used EC	Ever used EC/not last year	Used EC in last year
	N=6891	**N=475**	**N=420**	**N=11,861**	**N=488**	**N=302**
Other/none	1.4	1.2	2.0	0.6	0.5	1.0 ***
Marital/relationship status						
Never married	21.8	32.9	56.4	15.0	30.0	46.9
Married/living together	66.3	53.8	32.4	80.8	66.1	50.6
Divorced/Separated/Widowed	11.9	13.3	11.2 ***	4.2	3.8	2.6 ***
Has at least one child	81.2	65.2	50.6 ***	78.8	63.5	51.5 ***
Wealth quintile						
Poorest	19.8	7.7	9.8	19.8	17.8	22.1
Second	19.9	8.8	17.4	20.7	17.2	14.8
Middle	21.0	15.3	17.5	21.1	18.3	20.6
Fourth	20.1	26.4	20.8	19.9	20.4	22.1
Richest	19.3	41.9	34.5 ***	18.5	26.3	20.4
Coital Frequency (sex at least on a weekly basis in past three months)	38.5	38.4	23.04 **	22.4	21.9	21.8
More than one sex partner in past one year	5.4	6.2	18.2 ***	4.9	11.8	12.9 ***
Exchanged gifts for sex in past one year	3.4	3.9	7.4 *	6.7	16.0	14.1 ***
Urban site						
Nairobi/ Abuja	71.7	82.2	81.1	13.2	15.6	18.4
Mombasa/ Benin City	19.3	12.7	13.3	12.8	16.7	15.7
Kisumu/ Ibadan	5.6	3.0	3.2	20.4	20.4	30.0
Machakos/ Ilorin	1.5	1.2	1.5	16.1	27.2	18.3

Characteristic	Kenya Percent				Nigeria Percent		
	Never used EC	Ever used EC/not last year	Used EC in last year		Never used EC	Ever used EC/not last year	Used EC in last year
	N=6891	**N=475**	**N=420**		**N=11,861**	**N=488**	**N=302**
Kakamega/ Kaduna	1.9	0.9	0.9 **		24.8	18.5	16.6
na/Zaria	na	na	na		12.7	1.6	1.0 ***

Cross tabulation with significance testing using F test:

na- not applicable.

*
p 0.05

**
p 0.01

***
p 0.00

Table 5

Multinomial logistic regression coefficients from analysis of whether women ages 15–49 who ever had sex have ever used EC and if EC use was in the last year, Kenya and Nigeria

Characteristic	Kenya		Nigeria	
	Used EC in last year vs. Never used EC	Used EC in last year vs. Ever used/not last year	Used EC in last year vs. Never used EC	Used EC in last year vs. Ever used/not last year
Age category, years				
15-19	0.38	1.50	0.16	0.90
20-24	1.14*	0.87	0.97**	0.77
25-29	0.75	0.10	1.00**	0.45
30-34	0.67	0.67	0.38	-0.11
35-39	0.38	0.54	0.31	0.25
40 years and older (ref)	Ref	Ref	Ref	Ref
Highest education level				
None/primary incomplete/primary (ref)	Ref	Ref	Ref	Ref
Primary complete/vocational/J. Secondary (Nigeria)	-0.05	0.26	1.06***	0.14
Secondary +(Kenya)/ Senior Secondary (Nigeria)	1.54***	0.44	0.50	-0.30
Higher than secondary	na	na	0.84**	-0.72*
Employment status				
Worked in last 12 months vs. did not work	0.42	-0.20	0.13	0.16
Religion				
Protestant/other Christian	-0.25	-0.37	0.48	-0.31
Catholic	-0.15	-0.23	0.56**	0.48
Muslim (ref)	Ref	Ref	Ref	Ref
Other/none	0.40	0.38	1.29*	1.18

Characteristic	Kenya		Nigeria	
	Used EC in last year vs. Never used EC	Used EC in last year vs. Ever used/not last year	Used EC in last year vs. Never used EC	Used EC in last year vs. Ever used/not last year
Marital/relationship status				
Never married	1.34***	0.99**	1.30***	1.07**
Married/living together (ref)	Ref	Ref	Ref	Ref
Divorced/Separated/Widowed	1.41***	0.52	1.16	0.18
Has at least one child vs. no children	-0.52*	-0.02	0.06	0.22
Wealth quintile				
Poorest (ref)	Ref	Ref	Ref	Ref
Second	0.29	0.19	-0.39	-0.30
Middle	0.40	0.04	-0.24	-0.04
Fourth	0.24	-0.29	-0.06	0.13
Richest	0.51	-0.67	-0.15	0.01
Coital Frequency (sex at least on a weekly basis in past three months vs. less frequent)	-0.23	-0.43	0.15	-0.02
More than one sex partner in past one year vs. only one	0.74**	0.79	0.37	-0.37
Exchanged gifts for sex in past one year vs. did not	0.09	-0.02	-0.07	-0.52
Urban site				
Nairobi/ Abuja (ref)	Ref	Ref	Ref	Ref
Mombasa/ Benin City	-0.12	0.01	-0.40	-0.60
Kisumu/ Ibadan	-0.46*	-0.04	0.47	0.21
Machakos/ Ilorin	0.04	0.23	0.37	-0.46
Kakamega/ Kaduna	-0.57	0.04	-0.30	-0.27
na/ Zaria	na	na	-1.92**	-0.59

na is not applicable.

*
p<0.05

**
p<0.01

***
p<0.001