Evaluating the Impact of Promoting Long Acting and Permanent Methods of Contraceptives on Utilization: Results from a Quasi Experimental Study in Kenya

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Abstract
The use of long acting and permanent methods (LAPMs) such as male and female sterilization, implants and IUCD is low in Kenya- women do not use contraception or use short term methods that are less efficacious, cumbersome and user dependent. This study evaluated the program impact on the uptake of LAPMs in Kenya. Data used were drawn from two rounds of surveys collected in 2010/11 and 2012 by Population Council in both intervention and control sites. A total of 2934 women of reproductive age (15-49 years) were interviewed at baseline and 3094 similar women at endline in 2012. Ethical approval was obtained from both the Population Council and Kenya Medical Research Institute (KEMRI). Use of LAPMs increased in both the intervention and control sites but the increase was more pronounced in the intervention than the control sites (88.7% vs. 46.5% respectively). DiD analysis showed that the program increased the uptake of LAPMs by 6%.

Key words: Long Acting Permanent Methods; IUCD; Implants; sterilization

Introduction

The World Health Organization (WHO) recognizes long-acting and permanent methods (LAPMs) of family planning including intrauterine contraceptive devices (IUCD), implants and voluntary surgical contraception (bilateral tubal ligation and vasectomy) as the most efficacious and cost-effective methods of contraception in the long run (WHO 2012). Unlike other methods, LAPMs are not dependent on compliance and repeated correct use by clients; their efficacy begins almost immediately; they have low rate of complications and side-effects; and they provide the possibility of long-term use (Bahamondes 2008; Blumenthal et al. 2011). In spite of these advantages and the remarkable progress that has been made in expanding the availability and use of modern family methods in low- and middle-income countries over the past four decades, the uptake of LAPMs remains low in many of these regions (Takele et al. 2012; Jacobstein 2007). As a result, there are still high levels of unmet need for family planning and unintended pregnancies in the region. It was, for example, estimated that as of 2012, about 222 million women aged 15-49 years in the developing world had unmet need for modern methods of family planning with 26% of these being in sub-Saharan Africa (Singh and Darroch 2012). In addition, as of 2008, the rate of unintended pregnancies was 57 per 1,000 women aged 15-44 years in the developing world (86 per 1,000 women in Africa) compared to 42 per 1,000 women in developed regions (Singh et al. 2010).

Several factors affect the uptake of LAPMs in parts of the developing world. These include prohibitive initial costs associated with obtaining the methods; prevalent myths and misconceptions about the methods among service providers and potential clients; lack of specialized clinical skills, training and supportive supervision systems necessary for the

provision of the methods especially at lower levels of health care provision that are accessed by a large segment of the population; ensuring a continuous supply of contraceptive commodities, associated medical equipment, and expendable medical supplies; and cultural norms and beliefs that limit acceptance and access to the methods (Campbell et al. 2006). One strategy that has been used to address the cost barriers to accessing reproductive health services in low- income countries is the use of vouchers. The strategy involves channeling government or donor subsidies to the service user rather than the provider (Bhatia and Gorter 2007; Gorter et al. 2003). Besides reducing cost barriers, voucher programs aim to improve service quality and achieve cost-effectiveness in service delivery through explicit targeting of beneficiaries, performance-based contracting with providers, accrediting several providers to stimulate competition for voucher clients, and negotiating reimbursements with the providers (Bhatia and Gorter 2007; Cave 2001; Gorter et al. 2003).

Studies show that voucher programs improve the uptake of sexual and reproductive health services including antenatal and postnatal care, facility-based deliveries, contraceptive use, and treatment for sexually transmitted infections (Bellows 2009; Bellows et al. 2011, 2013; Brody et al. 2012; Meuwissen et al. 2006; Obare et al. 2013). Although vouchers address cost barriers to accessing services, its effect on the uptake of LAPMs may be limited by the other factors that affect use of the methods, that is, lack of provider training, equipment and supplies as well as cultural norms and beliefs around family planning in general and LAPMs in particular. In theory, accredited health facilities should use the revenue generated from voucher programs to update the skills of providers and to purchase equipment and supplies in order to improve quality of care and attract more voucher clients (Bhatia and Gorter 2007; Cave 2001; Gorter et al. 2003). However, the extent to which facilities are able to use the revenue from voucher programs to improve services partly depends on the organization of the health care system which determines how much autonomy they have regarding decisions involving the use of such funds. Even if organization of the health care system is not an issue, the cultural norms and beliefs could still present a barrier to the use of subsidized LAPMs. This paper uses two rounds of survey data to examine the effect of the reproductive health vouchers program in Kenya on the uptake of long-term family planning methods including implants, IUCD and bilateral tubal ligation. It specifically compares changes in the uptake of the methods over time in voucher and non-voucher sites.

Study Context

The Government of Kenya has implemented a reproductive health vouchers program since 2006 with major funding from the German Development Bank (KfW). The voucher program was initiated in the context of poor or stagnating reproductive health indicators in the country. For example, the maternal mortality ratio at the time of the program's inception was 414 deaths per 100,000 live births, only 40% of the births were delivered at a health facility, and only 42% of the births were delivered under skilled care (CBS, MOH and ORC Macro 2004). The country was also experiencing stagnation in the contraceptive prevalence which had stalled at 39% since 1998 while the level of unmet need for family planning was 25% (CBS, MOH and ORC Macro

2004). At the same time, women desired fewer children than they actually gave birth to, that is, average of 3.9 and 4.9 children desired and given birth to respectively (CBS, MOH and ORC Macro 2004). Poor women were also disadvantaged in terms of access to reproductive health services. For example, the proportion of births delivered at a health facility or under skilled care was four times higher among women from the richest compared to those from the poorest households (74% and 16% respectively for health facility delivery and 74% and 17% respectively for skilled delivery care; CBS, MOH and ORC Macro 2004). In addition, unmet need for family planning was nearly twice as high among women from the poorest compared to those from the richest households (33% and 17% respectively; CBS, MOH and ORC Macro 2004).

The voucher program targets economically disadvantaged women in Kiambu, Kisumu, Kitui, and Kilifi Counties, and in Korogocho and Viwandani informal settlements in Nairobi County. The program subsidizes: (1) comprehensive safe motherhood services including up to four antenatal care visits, delivery, complications, and one postnatal care visit; (2) three long-term family planning methods namely, implants, IUCD, and voluntary bilateral tubal ligation; and (3) gender-based violence recovery services (GBVRS) including medical examination, treatment and counselling. The safe motherhood and family planning vouchers are made available at subsidized cost equivalent to US $2.50 and US $1.25 respectively. Distributors appointed by the voucher management agency identify the voucher beneficiaries in the community. The distributors use a poverty grading tool consisting of eight items on household assets and amenities, expenditure or income, and access to health services customized to each County to identify voucher clients. Women scoring between eight (minimum) and 16 points on the poverty grading tool qualify to purchase the vouchers at the subsidized cost. They then redeem the vouchers for services at accredited service providers that comprise public, private-for-profit, and private-not-for-profit health facilities. Unlike the safe motherhood and family planning vouchers, the GBVRS voucher is available at no fee at facilities contracted to provide the services. Further details about the program and its design are in Hagenmeyer et al. (2005), Janisch et al. (2010), and RH-OBA Technical Committee (2009).

The organization of the health care system in the country is such that public health facilities do not have direct control over decisions regarding the use of revenue generated from the voucher program. At the beginning of the program, public health facilities were allowed to operate separate accounts for revenue generated from the program and to budget for and spend the funds from the accounts without obtaining an Authority to Incur Expenditure (AIE) from the health facility management committees or the Provincial Health Management Teams (PHMTs). However, with the roll-out of the Health Sector Services Fund (HSSF), public health facilities are required to operate only one account—the HSSF account. Funds generated from the voucher program are channeled into the HSSF account together with other funds including those from the government. Facilities cannot dispense funds in the HSSF account without an Authority to Incur Expenditure (AIE). At the beginning of every financial year and at every quarter, heads of departments in the facilities budget for the pooled money in their HSSF account and submit the budget to the CHMTs for approval (previously PHMTs). The organization of the health care system therefore implies that private health facilities have greater autonomy regarding decisions involving the use of revenue from the voucher program compared to public facilities.

The uptake of LAPMs remains low in the country. Only 8.3% of currently married women use implants, IUCDs, or bilateral tubal ligation yet the gap between actual and desired fertility remains huge (KNBS and ICF Macro 2010). In addition, almost half (49%) of currently married

women in Kenya want to limit childbearing and 43% have unintended births (KNBS and ICF Macro 2010). As in other low- and middle-income countries, the uptake of LAPMs in the country has been affected by constraints in service delivery, poor quality of care, and client-provider misconceptions (Government of Kenya 2008). The Government has adopted a number of strategies to address some of these challenges including: (1) increasing the health sector funding for family planning services; (2) conducting contraceptive technology updates for service providers; (3) using community health workers for commodity distribution and referral; (4) streamlining the procurement of contraceptive commodities through the Kenya Medical Supplies Agency (KEMSA); and (5) offering integrated family planning and HIV or postnatal care services (Government of Kenya 2008). It is, however, worth noting that although these measures are likely to address service delivery constraints and poor quality of care in the public sector, cultural beliefs and norms are still likely to limit the uptake of LAPMs not only in the public but private sector as well.

Methods

Data

The paper uses data from two rounds of household surveys conducted in Kenya in 2010-2011 and 2012 among 2,933 and 3,094 women of reproductive age (15-49 years) respectively. Respondents were identified from within a five-kilometre radius of the facilities that were contracted by the voucher program in voucher sites (Kiambu, Kilifi, Kisumu and Kitui) and comparable non-contracted facilities (in terms of level and type of ownership) in adjacent non-voucher Counties (Makueni, Nyandarua and Uasin Gishu). A total of 400 women were targeted in each County in order to detect significant differences in key reproductive health indicators between voucher and non-voucher sites at 95% confidence level with 80% power (Warren et al., 2011).

The study used a two-stage sampling process with 14 sub-locations (the smallest administrative unit in Kenya) being randomly sampled in each County from among those that were within the five-kilometre radius of the health facilities. A total of three villages were then randomly sampled from each of the selected sub-locations in the second stage. In each of the sampled villages, the local administration assisted with identifying households that were considered poorest for inclusion in the study. Interviewers then administered the poverty grading tool that is used by the voucher management agency (VMA) to identify beneficiaries to the households in order to capture as many individuals who would qualify for the vouchers as possible. In each County, the study targeted 75% poor and 25% non-poor women for comparison based on the poverty grading tool.

In each household, a female member aged between 15 and 49 years who gave birth in the past 12 months before the survey or was pregnant at the time of the interview was targeted for individual interview. In case the selected household did not have such a member, any female member within the same age group was approached for interview. Thus, households and individuals were different in each survey round although the two surveys were conducted in the same villages and sub-locations. Respondents provided information on household assets and amenities; health-related household arrangements; food security, household expenditures on goods and services; individual background characteristics including age, education level, religious affiliation, and marital and employment status; general health status and health care

utilization; childbearing experiences and intentions; family planning knowledge and use; and awareness, use and perceptions about vouchers. The distribution of respondents by background characteristics according to study site and survey round is presented in Table 1.

<Insert Table 1 about here>

Interviewers obtained written informed consent from participants in both surveys. The interviews were conducted in Kiswahili, English or the local language. The Institutional Review Board of the Population Council, the Ethics Review Committee of the Kenya Medical Research Institute (KEMRI), the National Council for Science and Technology (NCST), and the then Ministries of Health (Public Health and Medical Services) granted ethical and research clearance for the study. Further details about the survey design are in Obare et al. (2013) and Warren et al. (2011).

Analysis

The effect of the voucher program on the use of LAPMs is determined through difference-in-differences estimation (Gertler et al. 2011), that is, the difference in changes in the use of the methods over time between voucher and comparison sites. Analysis is in two parts. The first part entails comparing changes in the proportions of women using LAPMs in the 12 months preceding the survey date in voucher and non-voucher sites by background characteristics. The difference-in-differences estimator is computed as follows:

$$(I_E - I_B) - (C_B - C_E) \qquad (1)$$

Where I_E and I_B are the proportions of LAPM use in the past 12 months by female respondents of reproductive age at follow-up and baseline respectively for any given covariate in voucher sites while C_E and C_B are the proportions of LAPM use in the past 12 months by female respondents of reproductive age at follow-up and baseline for any given covariate in the comparison sites. Overall, positive percentages show that there was greater increase in the use of LAPMs in voucher than in comparison sites for a given covariate.

The second part entails estimating between-effect regression model (i.e. regression on group means) using village as a grouping variable to account for unobserved heterogeneity. The between regression is one of the models for analyzing panel data and is the same as taking the mean of each variable for each case across time and running a regression on the collapsed dataset of means (Petersen 2004). The purpose of the analysis is to control for omitted variables that change over time but are constant between cases. The dependent variable is use of LAPMs that are subsidized by the voucher program (implants, IUCD or bilateral tubal ligation) in the 12 months preceding the survey date. The model includes an interaction term between study site and survey round. The model is expressed as follows:

$$Y_{ijt} = \alpha_0 + \alpha_1 X_{1ijt} + \alpha_2 X_{2ijt} + \alpha_3 X_{1ijt} * X_{2ijt} + \ldots + X_{ijt}\beta + \mu_{jt} \qquad (2)$$

where Y_{ijt} is the probability of individual i from village j using LAPMs at time t; X_1 is the indicator for survey year, X_2 is the indicator for study site, X_{ijt} is the vector of other covariates included in the model for individual i from village j at time t, and β is the associated vector of

fixed parameters; α_0 is the likelihood of using LAPMs among women from comparison sites at baseline; α_1 is the change in the likelihood of using LAPMs among women from comparison sites at follow-up; α_2 is the difference in the likelihood of using LAPMs between women from voucher and comparison sites at baseline; α_3 is the difference in the changes in the likelihood of using LAPMs between women from voucher and comparison sites over time (difference-in-differences estimate); and μ_{jt} are the unobserved characteristics of women from the same village that might be correlated with the use of LAPMs.

The model controls for age, education level, marital status, place of residence, household wealth status, religious affiliation, number of living and desired children, type of facility used, knowledge of the voucher programme and whether the respondent lives with a partner. The definitions and measurement of the variables included in the model are presented in Table 2. It is expected that the difference in the outcome variable should be the same if two different subjects are observed with a one-unit difference in covariate X between them, or one subject whose covariate X value increases by one unit is observed. The results are presented as log odds.

<Insert Table 2 about here>

Results

Changes in proportions using LAPMs

Summary characteristics of the study population in both the intervention and control sites show that the use of LAPMs nearly doubled in the intervention site while it increased by half in the comparison site. The relative percentage increase in the use of LAPMs was more in the intervention as compared to the control site (88.7 vs. 46.5 percent respectively). The difference in the uptake of LAPM between the intervention and the control sites was statistically significant ($p<0.05$).

Apart from uptake of LAPMs, respondents belonging to the Islamic religion also recorded a significant threefold increase between baseline and follow up period. The rest of the sample characteristics remained largely constant over the follow up period implying that sampling variability was largely negligible. Consequently, the observed increase in the use of LAPMs among respondents over the evaluation period must have been largely due to the effect of the program.

In order to demonstrate the impact of the program on the uptake of LAPMs, we showcase the counterfactual [7] i.e. we show the level of uptake of LAPMs had there not been any intervention. To do this, we computed the difference in difference estimates for each variable. The bivariate results of this analysis are presented in Table 2. Generally, results from Table 2 shows that there were positive absolute percentages which implies that *ceteris paribus*, the individuals in the intervention performed better as compared to those in the control site [6].

Multivariate analysis

We present the multivariate analyses to assess the net effects of the selected characteristics on the uptake of LAPMs. Results show that the expected difference in the uptake of LAPMs among individuals in the voucher and non-voucher sites in relation to having heard about the voucher program was 6 percent and this difference was statistically significant (p-value<0.05). The expected difference among formerly married women in the voucher and non-voucher sites in relation to use of LAPMs was about 2 percent and this difference was statistically different (p-value<0.05). Maternal education was negatively associated with the uptake of LAPMs. The expected difference between individuals seeking LAPMs services in government and municipal health facilities in voucher and non-voucher sites was about 13 percent while that of going to a private health facility was about 18 percent.

The expected difference in the uptake of LAPMs between individuals in the voucher and non-voucher site in relation to whether they were living away from spouse or not was about 7 percent. On the other hand, the mean difference in the uptake of LAPMs among individuals from the intervention and comparison sites was almost 8 percent and this difference was statistically significant (p<0.05). Difference in difference analysis with an interaction term between site and survey period showed that the expected difference between term between site and survey period showed that the expected difference between respondents from the voucher and non-voucher sites was almost 6 percent and this association was statistically significant (p<0.05).

Discussion

While there is widespread knowledge on the efficacy and cost effectiveness of LAPMs, the actual use of these methods remain low in Kenya. These methods are also ideal in Kenya where the problem of unintended pregnancy remains a critical sexual and reproductive health concern. It is widely expected that health interventions such as the promotion of LAPMs should lead to increased uptake of such methods. A population based study conducted by the Population Council revealed that promotion of vouchers was positively associated with increased utilization of LAPMs in Kenya.

The assumption behind the voucher program in Kenya is that if the poor and vulnerable women could be supported through LAPM subsidies, then the uptake of these methods would dramatically increase and address some of the significant reproductive health challenges. This study confirmed this: the use of LAPMs nearly doubled in the voucher sites while it increased by half in the non-voucher sites. The increase in the uptake of LAPMs in the voucher as compared to the non-voucher sites was statistically significant (p-value<0.05). A multivariate DiD analysis also revealed that the uptake in the use of LAPMs in the voucher sites increased by about 6 percent.

A critical finding was the expected increase in the likelihood of using LAPMs among individuals who had heard about vouchers as compared to those who had not. We argue that the higher increase in the uptake of LAPMs in the intervention as opposed to the control site at both bivariate and multivariate analysis could have been due to the positive effect of increased sensitization of the communities on the importance of LAPMs in the intervention sites. This is consistent with other studies that find community mobilization a critical factor in scaled uptake of health education messages. The finding calls for the need to upscale the voucher

program with a view to reach a larger population of low income and vulnerable women with subsidies that improve equitable access and reduce financial barriers to LAPMs.

A number of policy and research implications can be drawn from this study. Future programs on vouchers should have a strong evaluation component to improve our understanding of their effects on health outcomes. Designing programs should include proper matching of respondents in both the control and intervention areas as well as ensuring there is minimal contamination at the selected comparison sites. There is need for a longer period of assessment if we have to capture the long term impact of such an intervention, particularly with respect to discontinuation rates.

In some studies aimed at promoting the use of LAPMs [13-14], one of the unexpected results has been the increased use of short term methods as well. Suffice it to say, the promotion of long acting and permanent methods of contraception tends to have a synergistic effect on short term methods of family planning as well. Future studies should examine the extent to which this phenomenon was true.

Limitations of this study

The study did not establish whether some of the women in the reproductive age could have been infecund. This is likely to have biased the effect of the program on the uptake of long acting and permanent methods downwards resulting in understating its effect. It is also practically difficult to institute strict controls for an intervention of this nature owing to the fact that the general promotion of family planning is a national mandate towards achievement of Kenya's Vision 2030. Consequently, promotional advertisements on family planning methods are run by the National Council for Population and Development (NCPD) all over the country and respondents in both intervention and comparison sites are exposed to such promotional messages.

Conflict of Interest

We declare that there were no conflicts of interest. The views expressed in this paper are solely for the authors and do not necessarily reflect those of the funding or implementing agencies.

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Table 1: Distribution of respondents by background characteristics according to study site

	Voucher sites		Comparison sites	
Characteristics	2010/11 survey (*N*=1,742)	2012 survey (*N*=1,826)	2010/11 survey (*N*=1,191)	2012 survey (*N*=1,268)
Place of residence				
Urban	19.4	12.5	13.0	19.8
Rural	80.6	87.5	87.0	80.2
Religious affiliation				
Catholic	24.7	21.6	28.6	31.9
Protestant	31.0	36.9	35.8	37.2
Pentecostal	25.0	27.6	27.0	20.0
Muslim	6.9	5.1	0.3	1.1
Other	12.4	8.9	8.3	9.9
Marital status				
Single	10.7	14.3	10.8	11.2
Married/living together	80.0	78.1	81.9	81.3
Formerly married	9.3	7.6	7.3	7.5
Education level				
No education/primary incomplete	43.0	37.6	28.5	30.4
Primary complete	34.6	38.5	42.6	37.8
Secondary incomplete	10.2	8.9	12.1	13.0
Secondary complete and above	12.2	15.0	16.9	18.8
Household wealth index				
Poor	40.3	39.9	39.0	39.8
Middle	19.6	20.0	19.4	20.3
Rich	40.1	40.1	41.7	39.9
Number of living children				
0-2 children	45.5	43.8	44.2	45.8
3-4 children	33.9	35.1	33.3	34.3
5 or more	20.6	21.2	22.6	19.9
Desired number of children				
0-3	42.8	44.1	46.5	49.4
4-6	45.2	46.6	46.0	44.4
7 and above	12.0	8.3	7.6	6.1

Table 2: Definition and measurement of variables used in multivariate analysis

Variable definition	Measurement
Outcome variable	
Used LAPMs in the past 12 months	0 = No 1 = Yes
Covariates	
Study site	0 = Comparison sites 1 = Voucher sites
Survey round	0 = 2010-2011 survey 1 = 2012 survey
Respondent's age (years)	15-19 20-25 26-30 31-35 36-49
Current place of residence	0 = Urban 1= Rural
Education level	1 = No education/primary incomplete 2 = Primary complete 3 = Secondary incomplete 4 = Secondary complete and above
Current marital status	1 = Single 2 = Married/living together 3 = Formerly married
Religious affiliation	1 = Catholic 2 = Protestant 3 = Pentecostal 4 = Muslim/other
Household wealth index	1 = Poor 2 = Middle 3 = Rich
Type of facility	1 = Government/Council 2 = Private 3 = FBO/NGO/other
Knowledge of voucher program	0= No 1=Yes
Number of living children	1 = 0-2 children 2 = 3-4 children 3 = 5 or more children
Desired number of children	1 = 0-3 children 2 = 4-6 children 3 = 7 and above

[a]Separated/divorced/widowed; FBO: Faith-based organization; NGO: Non-governmental organization.

Table 3: Comparison of changes in the proportions of respondents using LAPMs and the difference-in-differences estimates between voucher and comparison sites

	Voucher sites (%)		Comparison sites (%)		DID estimate (percentage points)
	2010/11 survey (*N*=1,742)	2012 survey (*N*=1,826)	2010/11 survey (*N*=1,742)	2012 survey (*N*=1,826)	
All women	5.3	10.0	7.1	10.4	1.4
Place of residence					
Urban	5.3	8.3	5.8	10.0	-1.2
Rural	5.3	10.3	7.3	10.5	1.8
Religious affiliation					
Catholic	2.8	8.6	6.8	11.4	1.2
Protestant	6.1	11.4	7.8	11.0	2.1
Pentecostal	7.3	10.9	6.8	10.3	0.1
Muslim/other	4.5	6.7	6.8	5.8	3.2
Marital status					
Single	2.1	4.6	5.4	11.3	-3.4
Married/living together	5.7	11.2	7.5	10.4	2.6
Formerly married	5.6	7.9	5.8	9.5	-1.4
Education level					
None/primary incomplete	4.4	7.3	9.7	12.4	0.2
Primary complete	3.8	12.8	5.7	9.0	5.7
Secondary incomplete	9.0	8.0	3.4	6.7	-4.3
Secondary complete and above	9.4	11.0	9.0	12.6	-2.0
Household wealth index					
Poor	5.6	10.4	7.1	11.5	0.4
Middle	6.2	8.5	7.4	9.3	0.4
Rich	4.6	10.4	7.1	9.9	3.0
Number of living children					
0-2 children	3.8	7.1	4.1	8.9	-1.5
3-4 children	6.9	12.7	10.5	10.6	5.7
5 or more	7.0	14.2	9.3	12.1	4.4
Desired number of children					
0-3	5.8	10.1	5.5	11.8	-2.0
4-6	5.3	11.3	8.5	10.3	4.2
7 and above	4.1	8.5	7.1	8.2	3.3
Lives with partner					
Yes	5.6	11.3	7.8	11.4	2.1
No	5.3	11.4	6.4	5.7	6.8

Table 4: Log odds from the between-effects regression model predicting uptake of LAPMs over time

	Odds Ratio	Std Error	[95% Conf.	Interval]
Survey time	1.23***	0.05	0.12	0.30
Site	1.03***	0.01	0.01	0.05
Site*Survey period	0.94***	0.02	-0.09	-0.02
Age Group (ref=15-19 years)				
15-19	1.15	0.09	-0.04	0.32
20 -25	1.18	0.10	-0.02	0.36
26-30	1.17	0.11	-0.05	0.37
30-35	1.21	0.11	-0.02	0.41
36-49	1.18	0.45	-0.72	1.05
Religion (ref=Muslim/other)				
Catholic	1.06	0.06	-0.06	0.18
Protestant	1.07	0.07	-0.06	0.20
Pentecostal	1.05	0.06	-0.08	0.17
Marital status (ref=Single)				
Married/living together	0.68*	0.11	-0.60	-0.17
Formerly Married [a]	0.54**	0.32	-1.25	0.01
Place of residence (ref Urban)				
Rural	0.94**	0.03	-0.12	-0.01
Educational level (ref=primary incomplete)				
Primary complete	0.81**	0.07	-0.35	-0.09
Secondary incomplete	0.83**	0.06	-0.31	-0.07
Secondary complete and above	0.71**	0.10	-0.54	-0.14
Number of living children (ref=5 or more)				
0-2 children	0.85**	0.07	-0.30	-0.03
3-4 children	0.93	0.06	-0.19	0.04
Household wealth index (ref = poor)				
Middle class	0.99	0.04	-0.08	0.07
Type of Facility (ref=FBO/NGO/other)				
Government/Council	0.90	0.06	-0.24	0.02
Private	0.90	0.10	-0.30	0.10
Lives with spouse (ref =No)				
Yes, lives with partner	1.21**	0.05	0.09	0.29
Ever heard of voucher program (ref= No)				
Yes	1.03**	0.04	-0.21	-0.06
constant	2.00	0.20	0.31	1.08
Number of women	**2521**			
Number of villages	**281**			

[a] Separated/divorced/widowed; Each category in parenthesis represents the reference category; FBO: Faith-based organization; NGO: Non-governmental organization; *p<0.05; **p<0.01.