The Effect of Performance-based Financing of Home Visitation in Overcoming Barriers to the Use of Modern Methods of Contraception in the Kumbo East Health District, Cameroon

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Authors' contributions

This work was carried out in collaboration between all authors. Authors TOE and ET did the study design and wrote the protocol. Authors JA and ET did the statistical analysis and literature searches while analyses of study was by authors TOE, GEHE and MBSA. All authors read and approved the final manuscript.

Article Information

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ABSTRACT

Background: The use of modern methods of contraception (MMC) still remains a challenge in much of Sub-Saharan Africa including Cameroon. Performance-based Financing (PBF) home visitation was introduced in the Kumbo East Health District (KEHD), Cameroon, to increase the use of modern methods of contraception.

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Objective: To determine the comparative advantage, on the one hand, of PBF home visits, and, on the other hand, the absence of such home visits, in overcoming barriers to the use of modern methods of contraception (MMC) in the Kumbo East Health District (KEHD), in Cameroon.

Materials and Methods: This was a cross-sectional study carried out in the KEHD during the period February 1 – May 31, 2015. A multistage cluster sampling method was used to recruit 262 and 221 women aged 15-49 in the intervention and non-intervention health areas respectively. A structured closed-ended questionnaire was used. Data was analyzed using STATA at 95% confidence interval, power of 80% and design effect of 2. Statistical significance was set at P<0.05.

Results: The average age of women was similar in both groups: 30.40 (SD 8.57) in the intervention group and 30.49 (SD 7.84) in controls. Computing logistic regression showed that home visitation had an effect on both groups in terms of where women heard about MMC (OR 13.64, 95% CI: 3.31-56.03) and (aOR 14.95, 95% CI: 3.52-62.16). Women in health areas with home visits were 2.34 times more likely to have cultural approval to use MMC than their counterparts without home visits (OR 2.34, 95% CI: 1.37-3.99) and (aOR 2.29, 95% CI: 1.33-3.94). Women in health areas with home visitation were less likely to have disapproval from their partners to use MMC (OR 0.48, 95% CI: 0.32-0.73) and (aOR 0.47, 95% CI 0.31-0.71)

Conclusion: PBF home visitation was effective in overcoming barriers to the use of modern methods of contraception.

1. INTRODUCTION

Modern methods of contraception are effective ways to control fertility [1]. Although the past 40 years have registered considerable global improvement in the use of these methods, much still remains to be done in many sub-Saharan African countries including Cameroon [2]. At the same time, countries like the Comoros, Cape Verde, and Rwanda within the same geographical area negotiated their transition successfully, with a corresponding increase in contraceptive prevalence [3].

There are two methods of contraception: the modern modern (combined oral contraceptive and progestin only pill, long acting reversible contraceptive (LARC) methods (intrauterine device and implants) medroxyprogesterone acetate, female condom, tubal ligation, spermicides, sponge) [4,5] and the natural (abstinence, withdrawal, periodic abstinence/ rhythm and lactational amenorrhea) methods [6,7].

The male methods include: Male condoms and vasectomy and testosterone induced azoospermia [8,9]. In SSA, data recorded in 2011 showed that about 19.7% of the population use modern methods of contraception while 5.4% use natural methods [10,11]. These low values account for the high rates of unintended and mistimed pregnancies that have been reported in the region, with the resultant increased risk of poor maternal outcomes [12,10,11]. The statistics indicate that sub-Saharan Africa has the highest maternal mortality and morbidity rates in the world, with a third of all deaths of women of reproductive age resulting from pregnancy and/or childbirth complications [12,13]. Teenage pregnancy accounts for a significant share of these maternal deaths. Complications in abortion, often related to unintended pregnancies, are also among the main causes of high maternal mortality [14,15]. The region is also home to the highest levels of HIV (human immunodeficiency virus) infection in the world, particularly among the youth [13]. That is why low use of modern methods of contraception in sub-Saharan Africa remains a formidable obstacle to the achievement of health-related Millennium Development Goals (MDGs) [10].

The performance-based financing (PBF) pilot project, based on a similar initiative in Ruanda, was introduced in the Kumbo East Health District in March 2012 in order to improve the quality and quantity of services rendered to the population by home visits. In this project, health care personnel move from house to house and educate women on MMC and refer cases to hospital for counseling, uptake and use [16].

The aim of this study was to determine the effect of PBF home visits on the one hand, and no home visits on the other, in overcoming barriers to the use of modern methods of contraception

(MMC) in the Kumbo East Health District (KEHD), Cameroon.

2. MATERIALS AND METHODS

2.1 Study Design

We conducted a cross-sectional comparative study of women of childbearing age in the Kumbo East health district (KEHD), Bui Division of Cameroon. The field study for data collection was carried out during the period February 1 – May 31, 2015. The KEHD has a surface area of about 1,087 square kilometers. It is a hilly terrain with fast-flowing streams and towns located on hills and valleys. This difficult topography renders the District inaccessible all year round, road maintenance efforts notwithstanding. According to the 2013 district data, the KEHD has 20 health areas and a population of 179 789, 43 689 of which are women of child-bearing age.

The Faculty of Health Sciences Institutional Review Board and the Regional Delegation of Public Health approved the study.

Women eligible to participate in the study had to fulfill the following conditions: have lived in the KEHD for at least one consecutive year and have been educated about MMC, speak English or pidgin, be willing to give informed consent, be a pregnancy risk but not pregnant at enrollment, and be non-sterile and of reproductive age (15–49 years of age). In addition, they needed to have had sex in the past month or be planning to do so in the next month with at least one fertile male partner and without any consistent use of birth control. We defined inconsistent use of birth control as not using contraception consistently during every sexual encounter within the last three months preceding enrollment. To be eligible, participants also had to be interested in delaying pregnancy for at least twelve months by using a modern method of contraception (e.g., oral contraceptives, contraceptive injections (depomedroxyprogesterone) or contraceptive patches, implants, IUD or condoms).

2.2 Sample Size Determination

The sample size was calculated using the sample size formula for two proportions [17] and confirmed with Epi info version 7. We used cluster sampling in this study, a design effect of 2 [18], a desired statistical power of 80% and a significance criterion of 0.05. The proportion of women using MMC in the KEHD in 2011 was 0.2% [19]. Basing our projection on a study in Rwanda, we assumed that through PBF home visits, MMC use would increase by 6.9% [16]. Based on this we expected that PBF home visits would increase MMC use by 6.9+0.2=7.1%, or a sample size N of 460.

Assuming a 20% non-response rate, we therefore had a sample size of 552 (276 in each study group). After data collection, the response rate was 87.5%, or a sample size of 483 participants. From this sample size, 262 women were recruited in the intervention health areas (IHA-home visits) and 221 participants were enrolled in the non-intervention health areas (NIHA-no-home visits).

2.3 Sampling Method

We used multistage sampling, in which a list of all the 20 health areas (a population with at least one health facility in the vicinity or neighbourhood) in the KEHD and their population of women of childbearing age was established. The number of households per cluster was calculated from this population by dividing the total population by 6 (average size of a household in Cameroon was 6 persons) [20].

Next, probability proportionate to size method was used to select the different clusters (communities) within the health areas. The representative sample of health areas within the district was done by calculating the sampling interval (the total number of households divided by the total number of clusters needed). A total of 25 clusters each was required for both the health areas implementing home visits and those with no home visits [18]. A random number between one and the sampling interval was chosen to represent our reference point. This random value was then added to the sampling interval to get the cluster positions. This was done continuously until we obtained the total number of clusters (communities) needed (25 clusters per group). (Table 1)

Finally, a random selection was derived from balloting among the clusters in order to identify the communities to be used for the study in each health area. An equal number of participants (first ten women per cluster or community) were then selected and one woman of childbearing age was interviewed per household.

2.4 Study Interventions

2.4.1 Questionnaire

The 27-item questionnaire covered demographics (age, level of education, occupation, marital status, number of children and religion), and knowledge and method of contraception used. The questionnaire was pre-tested with 10 sexually active females (15-49 years) from the Mantum quarter, Jakiri, for comprehensibility and content validity. The women who were used to test the questionnaire took 15 minutes to fill it and were excluded from the study.

A one-day training session was also organized for nine nurses who assisted in data collection using the CDC chart on effectiveness of family planning methods. The training included counseling on sexually transmitted infections and pregnancy prevention. Training addressed the following topics:

- The reproductive cycle in women
- How contraception works
- Different forms of contraception, especially behavioral methods, barrier methods and hormonal contraception
- Sexually transmitted disease and prevention

In addition to the training workshop, participants were also shown pictures of the female reproductive anatomy including visual descriptions of ovulation. Women were encouraged to ask questions.

2.5 Data Collection

Data was collected from women of childbearing age (15-49 years). Women aged from 15-20 signed an assent form backed by a guardian/parent and those aged 21-49 signed informed consent forms.

We visited selected homes and administered the questionnaire to eligible participants who accepted to be part of the study. Data was collected on traditional holidays and market days and after 4pm when women had returned from their daily activities. Women in the intervention health areas were later on referred to the health centre for further counseling, administration of a method of contraception and scheduled for follow-up visits. We could not rely on telephone numbers because majority of our patients did not

own phones; besides, the telephone network system was most unreliable.

2.6 Data Management and Analysis

We entered data into Microsoft Excel and analyzed it with the statistical package STATA. The analysis focused on the impact of home visit involving family planning counseling, without receipt of contraception, and no home visits. In computing the socio-demographic characteristics of study participants, measures of central tendencies (mean and standard deviation) were used while frequencies were used to compute level of education, religion, marital status, occupation and number of children. The Chi squared, student t-test and Anova were used to test for significant associations when appropriate. Binary logistic regression was used to measure the level of association and multiple logistic regressions were computed to control for confounders. Statistical significance was set at $p < 0.05$.

2.7 Ethical Consideration

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki."

3. RESULTS

Table 1: A total of 262 women were randomized in health areas with home visits and 221 women in health areas with no home visits. The mean age of women in health areas with home visits was 30.40 (SD 8.57) years as against 30.49 (SD 7.84) years in health areas with no home visits (p=0.90).

Over half (52%) of study participants were Catholics (p<0.03) and 44.7% had secondary education or less (p<0.06).

Table 2: Two hundred and fifty-four (95.95%) women in the intervention health areas and 208(94.12%) in the non-intervention health areas had heard about MMC. This difference was not statistically significant (P value = 0.13).

The source of information on MMC was an important factor in the propagation of the method. 196 (80.99%) women in the intervention health areas heard about MMC from health

facilities and 18(7.44%) from health personnel who educate women at home. Furthermore, 160 (77.29%) women in the non-intervention health areas heard about the method from health facilities and 3(1.45%) from health personnel who educate women at home (P < 0.001).

Computing logistic regression showed that home visits had an effect on both groups depending on where women heard about MMC (OR 13.64, 95% CI: 3.31-56.03).

After adjusting for confounders, women in health areas with home visits were 14.95 more likely to obtain information regarding MMC from health personnel than those in health areas without home visits (aOR 14.95, 95% CI: 3.52-62.16).

The average number of MMC methods known in both groups was similar: 3.40 (SD 2.02) in health areas with home visits, and 3.40 (SD 1.34) in those with no home visits (p=0.05).

Table 3: One hundred and seventy-two (84.73%) women in health areas with home visits and 137(79.19%) women in areas with no home visits wanted to postpone childbearing (p=0.16).

One hundred and twenty-seven (52.48%) women in health areas with home visits and 128(58.45%)

women in health areas with no home visits did not practice sexual intercourse frequently (p = 0.19).

Table 4: One hundred and thirty-three (61.86%) women in health areas with home visits versus 117(66.86%) women in health areas with no home visits used MMC against their religion (p = 0.31).

The majority of women, 126 (80.25%) in the health areas with home visits versus 80 (63.49%) in health areas without home visits who used MMC had cultural approval (p = 0.002). Women in health areas with home visits were 2.34 times more likely to have cultural approval to use MMC than their counterparts without home visits (OR 2.34, 95% CI: 1.37-3.99) and (aOR 2.29, 95% CI: 1.33-3.94).

Table 5: One hundred and thirty seven (64.02%) women in health areas with home visits and 78(64.15%) women in health areas without home visits had approval to use MMC from their partners (p<0.001). In logistic regression analysis women in health areas with home visits were less likely to have disapproval from their partners to use MMC (OR 0.48, 95% CI: 0.32-0.73) and (aOR 0.47, 95% CI 0.31-0.71).

Table 1. Socio-demographic characteristics of study population

Variable	Intervention (home visit)		P-value
	No (N=221)	**Yes (N=262)**	
Age (years)			
Age(x±SD)	30.40±8.57	30.49±7.84	0.90
Education (N, %)			
None	14(6.33%)	7(2.67%)	
Primary level	94(42.53%)	98(37.40%)	
Secondary level	91(41.18%)	117(44.66%)	
Tertiary level	22(9.95%)	40(15.27%)	0.06
Religion (N, %)			
Catholic	116(52.49%)	131(50.00%)	
Baptist	35(15.84%)	22(8.40%)	
Presbyterian	32(14.48%)	53(20.23%)	
Pentecostal	0%	3(1.15%)	
Muslim	38(17.19%)	53(20.23%)	0.03
Marital status (N,%)			
Single	39(17.65%)	48(18.32%)	
Married	164(74.21%)	195(74.43%)	
separated/divorced	15(6.79%)	10(3.82%)	
Widowed	3(1.36%)	9(3.44%)	0.25
Occupation (N, %)			
Unemployed	80(36.20%)	98(37.40%)	
Employed	141(63.8%)	164(62.60%)	0.78
Number of children (N, %)			
0-2	95(42.99%)	126(57.01%)	
3 >5	120(45.80%)	142(54.20%)	0.54

Table 2. Distribution of knowledge on MMC

Variable	Intervention (home visit)		P value	OR	95%CI	aOR	p Value	95%CI
	No	**Yes**						
Heard about MMC								
No	13/221(5.88%)	8/262(3.05%)						
Yes	208/221(94.12%)	254/262(95.65%)	0.13					
Place information gotten								
School	25/207(12.08%)	11/242(4.55%)						
Health facility	160/207(77.29%)	196/242(80.99%)		2.78	1.32-5.88	2.87	0.01	1.36-6.04
Media	19/207(9.18%)	17/242(7.02%)		0.15	0.77-5.34	2.28	0.09	0.86-6.09
Health personnel who educate women at home	3/207(1.45%)	18/242(7.44%)	<0.001	0.07	3.31-56.03	14.9	<0.001	3.59-62.14
Number of methods know (X±SD)								
Number of methods Known	3.09±1.34	3.4 0±2.02	0.05					

aOR: adjusted odds ratio, OR: odds ratio, CI: Confidence Interval

Table 3. Distribution of strength of motivation to avoid pregnancy

Variable	Intervention (home visit)		P value
	No	**Yes**	
Delay contraceptive use (N, %)			
stop childbearing	36/173(20.81%)	31/203(15.27%)	
postpone childbearing	137/173(79.19%)	172/203(84.73%)	0.16
Involvement in sexual intercourse (N, %)			
Infrequent	128/219(58.45%)	127/242(52.48%)	
Frequent	91/219(41.55%)	115/242(47.52%)	0.19

Table 4. Distribution of cultural and religious approval

Variable	Intervention (home visit)		P value	OR	95%CI	aOR	p Value	95%CI
	No	**Yes**						
Against religion								
No	58/175(33.14%)	82/215(38.14%)						
Yes	117/175(66.86%)	133/215(61.86%)	0.31					
Culture approves								
No	46/126(36.51%)	31/157(19.75%)						
Yes	80/126(63.49%)	126/157(80.25%)	0.002	2.34	1.37-3.99	2.29	0.003	1.33-3.94

aOR: adjusted odds ratio, OR: odds ratio

Table 5. Distribution of partner's disapproval

Variable	Intervention (home visit)		P value	OR	95%CI	aOR	p Value	95%CI
	No	**Yes**						
Partners disapproval								
No	78/169(46.15%)	137/214(64.02%)						
Yes	92/169(53.85%)	77/214(35.98%)	<0.001	0.48	0.32-0.73	0.47	<0.001	0.31-0.71
Reasons for fear to discuss MMC with partner								
He will disapprove	28/46(60.87%)	24/54(44.44%)						
He will reject me	18/46(39.13%)	30/54(55.56%)	0.1					

Table 6. Distribution of have side effects

Variable	Intervention (home visit)		P value
	No	**Yes**	
Think they will have side effect			
No	37/190(19.47%)	51/219(23.29%)	
Yes	153/190(80.53%)	168/219(76.71%)	0.35

Table 7. Distribution of access to MMC

Variable	Intervention (home visit)		P value	OR	95%CI	aOR	p Value	95%CI
	No	**Yes**						
Time taken to get to the health								
0-30 minutes	141/205(68.78%)	154/243(65.02%)						
>30 minutes	64/205(31.22%)	85/243(34.98%)	0.40					
Think contraceptive are expensive								
No	113/214(52.80%)	177/246(71.95%)						
Yes	101/214(47.20%)	69/246(28.05%)	<0.001	0.44	0.30-0.64	0.43	<0.001	0.29-0.63
Service provider								
Male	17/217(7.83%)	15/250(6.00%)						
Female	56/217(25.81%)	111/250(44.40%)		2.25	1.05-4.83	2.17	0.05	1.00-4.73
no sex preference	144/217(66.36%)	124/250(49.60%)	<0.001	0.98	0.47-2.03	0.96	0.92	0.46-2.03

aOR: adjusted odds ratio, OR: odds ratio

Of 46 participants in the intervention group, 28(60.87%) feared partners' disapproval of MMC use as against 24/54 (44.44%) in the no home visit group. Eighteen (39.13%) women in the group with home visits versus 30/54 (55.56%) in the group with no home visits feared rejection from partners. This was not statistically significant.

Table 6: One hundred and sixty eight (76.71%) women in the intervention group versus 153(80.53%) women in the control group feared side effects of MMC (p = 0.35).

Table 7: Eighty-five (34.98%) women in health areas with home visits and 64(31.22%) in health areas without home visits had to walk more than 30 minutes to a health facility to get MMC (p= 0.40).

Sixty-nine (28.05%) women in health areas with home visits and 101(47.20%) in health areas without home visits believed MMC were expensive (p <0.001).

Computing logistic regression, women in the intervention group were less likely to believe that MMC were expensive (OR 0.40, 95% CI: 0.30-0.64) and (aOR 0.43, 95%CI: 0.29-0.63).

One hundred and twenty four (49.60%) women in the intervention health areas and 144(66.36%) in health areas without home visits had no gender preferences in terms of service providers (p<0.001). Computing logistic regression, more women in the intervention group preferred female service providers than those in the control group (OR 2.25, 95% CI: 1.05-4.83) and (aOR 2.17, 95% CI: 1.00-4.73) (Table 7)

We therefore reject the null hypothesis because our findings showed that the PBF approach (home visit) had an effect on cultural approval, partner's approval, side effects, perceived cost of MMC and gender options regarding service providers.

4. DISCUSSION

Our study, set in the Kumbo East Health District (KEHD), a rural region of Cameroon, aimed at determining the comparative advantage, on the one hand, of PBF home visits and, on the other hand, the absence of such home visits in overcoming barriers to the use of modern methods of contraception (MMC). PBF visits enabled healthcare professionals to provide family planning counseling and referral to health centres for contraception delivery.

The Kumbo East Health District is a low socio-economic region. About 44,7% of the study population had secondary education or less, and over 50% were Catholics. Many studies have shown religion to constitute a great barrier to contraception use. Most religions formally prefer natural methods to MMC. However, more recent studies have shown that some religions have now become more tolerant to contraceptive use [21–23]. The mean age of women was similar in both groups 30.40 (SD 8.57) versus 30.49 (SD 7.84) years.

We first of all found that home visits did not enhance knowledge of MMC. This contradicted findings by Quinlivan and colleagues, who conducted a study with teenage mothers and found a significant association between home visits and knowledge of MMC [24]; and findings by Katz and colleagues in a study conducted in Mali and which found that home visits increased knowledge of MMC [25]. This difference can possibly be explained by the fact that the quality of information on MMC provided to women was not checked in KEHD, as opposed to the study of Katz and colleagues where project activities and community-based distributors were interviewed to ensure the project's effectiveness.

Participants having benefited from home visits had more information on MMC. This information availability could have a positive impact on a rural, less educated population battling with other socio-economic pressures. It is also likely, in the long term, to increase the possibility of birth spacing and reduce the unwanted pregnancy rate and subsequently maternal morbidity and mortality. These likelihoods corroborate the study by David L Olds and coll. on women and their children after delivery. They found that rates of birth spacing were increased and child violence was reduced in populations with home visiting [26]. Cameroon has a population of close to 22 million, about 43% of which is young, less than 15 years old [27]. The average household size in 2001 was 5 and in 2004 it was 4.4 [27]. In the KEHD the average family size is 6 [20]. There is need for the KEHD to reduce this family size. Unfortunately, we did not find women's motivation to avoid pregnancy consistent with other studies [28]. Stakeholders should focus on strategies to encourage women to stop or postpone childbearing. Only about 15% of Cameroon's population has a family head with a

salaried job [27]. The majority of the population of the KEHD live on subsistence agriculture, with the large family sizes providing cheap and abundant labor. Farming in the area is not mechanized. This may explain why women did not want to reduce the size of their families.

We did not find any cultural or religious barriers to MMC. The major religions in the KEHD were Christianity (mainly Catholic and Protestant) and Islam, with Catholicism being the dominant faith. We did not find radical religious factions in this region. Religious influences depended on individual cases. These findings are consistent with studies carried out by others [21–23]. However, the USAID report on Rwanda saw religious opposition as a major challenge faced by community health workers in educating women on MMC, with or without home visitation intervention [29,30].

This study found male partner dominance in family settings in the KEHD. The decision of the male partner was discovered to be of paramount importance in the decision on MMC use. Involving men during the home visitation campaign thus increased the chances of male partner approval of MMC. These findings corroborate those of Terefe and Larson in Ethiopia [31,32].

Studies conducted in Bukuuku, Uganda, by USAID reported that participants feared the side effects of MMC and home visitation was effective in improving misconceptions about side effects of MMC [33]. We did not find any association between fear of side effects and home visitation. This difference could possibly be explained by the fact that the village health team in Bukuuku identified misconception in the community regarding MMC and then came up with counseling strategies to address those misconceptions.

There was no significant association between time taken to get to health facilities and MMC use. Participants from both groups had to get to health facilities usually by trekking given the poor road network and the hilly terrain of the KEHD. This was consistent with studies in Malawi which showed that with multivariate logistic regression analysis, after controlling for background variables traditionally associated with use of modern contraception, access to health facilities could not be shown to explain use of modern contraception in Malawi [34]. Home visitation also improved the perception of cost of MMC

among participants, contrary to the study in Malawi that showed that fertility was higher and the use of MMC was lower among women in the poorest than among their counterparts in the richest wealth quintile. Ensuring availability of MC at little or no cost may bridge the gap in contraceptive use between women in the poorest and richest wealth quintiles in Malawi [35].

The KEHD is a rural area with a vulnerable population whose family heads depend on informal occupations for subsistence; mostly farming and other non-agricultural trades. This category of people make up about half the population. Sexuality and contraception are therefore sensitive issues to discuss with women in such a socio-cultural context. These women tended to confide more easily in female healthcare service providers as shown in this study. This is consistent with Douthwaite et al. in Pakistan who showed the efficacy of the lady healthcare worker program where women who were served door to door by female health workers during home visitation were more likely to use MMC [36].

5. STUDY LIMITATIONS

- This study relied on the home visit intervention that was implemented by the PBF pilot project. The quality of this intervention was therefore based on the effectiveness of health personnel carrying out this activity. Therefore, it was possible that some women might not have been visited by the nurses at home to provide information on MMC. However, only women who admitted having been visited by a nurse were included in the study.
- There was potential for selection bias because we could not collect personal information from the participants until they consented to be part of the study. Also, some women refused to participate and others were difficult to reach. It was also possible that those who chose to participate were more likely to have shown a reduction in the barriers, hence an increase in the use of MMC, regardless of the intervention.
- There might have been an increase in contraceptive use in the non-PBF implementing health areas because they had copied some of the strategies used in the PBF implementing health areas. Some respondents in health areas not

implementing home visit said they heard about MMC from home-based councilors.

- HIV prevention campaigns conducted within all health areas might have caused an increase in the use of MMC, such as male and female condoms.
- The research assistants might have altered the information collected from participants.
- All participants were aware that they were participating in a study addressing contraceptive use; as a result, they might have reported greater contraceptive use.

6. CONCLUSION

Home visits have a significant association with cultural approval, partner's approval, side effects and cost of contraceptives. This means that home visits are effective in overcoming barriers to the use of MMC. Understanding the barriers to the use of MMC is important because it helps in maintaining the health of women by preventing unwanted pregnancies and abortion and consequent maternal morbidity and mortality.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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