ORIGINAL RESEARCH ARTICLE

Impact of an Antenatal Counseling on Use of Modern Family Planning Methods in the Postpartum in Rural Guinea

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Abstract

In Guinea, family planning (FP) uptake remains low. The objective of this study was to compare the impact of two types of antenatal counseling on modern FP uptake in the postpartum in rural Guinea. This was a two-group non-equivalent study comparing the impact of a reinforced antenatal counseling (intervention) to the routine antenatal counseling (control). The study included 404 pregnant women at five rural health centres in Forécariah district, Western Guinea. Each woman was followed up until the ninth month postpartum. The study was conducted from October 12, 2013 to December 30, 2014. Findings showed that at the ninth month postpartum, use of modern FP was significantly higher in the intervention group than in the control group (5.7% and 1.1%, respectively; p=0.024). However, 67.6% and 65.7% of women in the intervention group and the control group, respectively, abstained from sexual intercourse at the sixth month postpartum and had the intention to do so until the child walks. At the ninth month postpartum such women represented 70.5% and 59.5%, respectively. Therefore, a longer study period is recommended to assess the effect of antenatal counseling on use of modern FP in the postpartum in Guinea. *(Afr J Reprod Health 2018; 22[4]: 16-25).*

Keywords: Antenatal counseling; Family planning; Postpartum; Rural; Guinea

Résumé

En Guinée, l'utilisation de la planification familiale (PF) reste faible malgré l'objectif du développement durable qui vise à accroître l'utilisation de la PF d'ici 2030. L'objectif de cette étude était de comparer l'impact de deux types de conseil prénatal sur la prise en charge moderne de la PF au post-partum en Guinée rurale. Il s'agissait d'une étude non équivalente à deux groupes comparant l'impact d'un conseil prénatal renforcé (intervention) au conseil prénatal de routine (contrôle). L'étude comprenait 404 femmes enceintes qui assistent à des consultations prénatales dans cinq centres de santé ruraux du district sanitaire de Forécariah, en Guinée de l'ouest. Chaque femme a été suivie jusqu'au neuvième mois du post-partum. L'étude a été menée du 12 octobre 2013 au 30 décembre 2014. Les conclusions de l'étude ont montré qu'au sixième mois après l'accouchement, l'utilisation de la PF moderne dans le groupe d'intervention n'était pas statistiquement différente de celle du groupe témoin (4,6% et 3,2%, respectivement) p = 0,893. Au neuvième mois du post-partum, l'utilisation de la PF moderne était significativement plus élevée dans le groupe d'intervention que dans le groupe témoin (5,7% et 1,1%, respectivement; p = 0,024). Cependant, 67,6% et 65,7% des femmes du groupe d'intervention et le groupe témoin, respectivement, se sont abstenues des relations sexuelles au sixième mois du post-partum et avaient l'intention de le faire jusqu'à ce que l'enfant se promène. Au neuvième mois du post-partum, ces femmes représentaient respectivement 70,5% et 59,5%. Par conséquent, une période d'étude plus longue est recommandée pour évaluer l'effet du conseil prénatal sur l'utilisation de la PF moderne après l'accouchement dans le contexte guinéen. *(Afr J Reprod Health 2018; 22[4]: 16-25).*

Mots-clés: Consultation prénatal; planification familiale; post-partum; rural; Guinée

Introduction

Family planning (FP) is part of target 3.7 of the Sustainable Development Goals (SDGs) by 2030[1]. FP use is known as an important means to reduce maternal and child mortality, especially in low income countries where unwanted pregnancies and unsafe abortions are common[2–4].

Yet, in Africa, FP uptake remains low, particularly in West Africa where contraceptive prevalence among married women was estimated to 9% in 2010, compared to 25% in East Africa[5]. Between 1991 and 2004, FP use increased by 0.6 percentages per year in West Africa, compared to more than double (1.4 percentages) in East African countries[6]. In West Africa, unmet FP needs have been reported as key obstacle to FP uptake[5]. In Burkina Faso, a population-based survey conducted between October 2013 and March 2014 showed 18% of unmet FP needs[7]. Survey data in previous years from Benin (2006), Burkina Faso (2003) and Mali (2001) showed a proportion of women's unmet needs for FP ranging 41% to 49%[8]. Guinea belongs to the Ouagadougou Initiative for FP in West Africa. In 2011, this initiative gathered eight French-speaking West African countries to identify concrete solutions to meet FP needs in the sub region[5]. The country also adopted a new national FP repositioning plan in 2013 to improve FP indicators[9]. This plan recommends the promotion of postpartum contraception to meet women's needs for FP and reduce maternal morbidity and deaths[9]. However, despite the high proportion of woman having heard about FP (91%) and the integration of FP to routine health services in the country, only 7.8% of married women used a modern FP method in 2016 (2.9% for lactational amenorrhea method (LAM), 2.2% for injectable methods, and 1.7% for pills)[10]. In rural areas, use of modern FP was lower (6.7%) than in urban areas (9.6%). Women with unmet needs for FP represented 27.6% [10]. FP uptake in the postpartum is poorly documented in Guinea; however, this should be low since the global contraceptive prevalence is low.

Given the high fertility rate (4.8 children per woman) and the high maternal and infant mortality (550 deaths per 100,000 births and 44 deaths per 1,000 live births, respectively)[10] in the country, additional interventions are required to meet the SDG for FP by 2030. One strategy for improving these indicators is to improve uptake of FP in the postpartum.

Studies assessing the influence of antenatal counseling on FP use in the postpartum have reported different findings in the African context[11–13]. In Nigeria, repeated one-to-one antenatal contraceptive counseling to clients led to increased use of postpartum FP method (57%) compared to clients attending a single routine one-to-one postpartum contraceptive counseling (35%; P=0.002)[14]. Also in Ghana, a study in 2015 found that discussing FP during antenatal care was associated with FP use in the postpartum [Adjusted Risk Ratio: 1.12; 95% Confidence Interval (CI): 1.07-1.53][15]. However, in Tanzania, an intervention offering contraceptive counseling to antenatal clients was reported to have no influence on FP use in the postpartum, compared to clients receiving routine antenatal counseling [16]. Likewise, in Uganda, another intervention committing Village Health Team members to provide prenatal contraceptive advice to clients through home visits showed no evidence of influence on FP use in the postpartum, compared to clients attending routine antenatal counseling[17].

With regards to these contrasting findings and the limited number of studies on the topic in West Africa, further research is needed to inform strategies improving FP uptake in the postpartum, especially in countries with low contraceptive prevalence like Guinea. Cleland *et al* in their review in 2015, noticed major gap in knowledge concerning demand for, and means of promoting immediate postpartum FP services in African countries[18]. The aim of this study was to assess the impact of a specific (reinforced) antenatal counseling on use of modern FP in the postpartum in rural Guinea.

Methods

Setting

Guinea is located in West Africa and has 10.5 million inhabitants among which 65% live in rural areas, and 67% are illiterate[19]. The country has 33

rural health districts. The study was conducted in the rural health district of Forécariah (western Guinea), precisely at the health centers of Maferinyah, Farmoriah, Kaback, Moussayah and Sikhourou. Forécariah was randomly selected among the districts with lowest facility-based proportions of FP uptake (3.7%)[23]. As for 2012, the district had 403 575 inhabitants, with 94 437 women of childbearing age and 16 143 deliveries expected[22]. The district of Forécariah totalizes 10 health centres. During the study period, the following FP methods were available in the selected health centres: pills, injectable methods, implant, intrauterine device (IUD), male and female condoms.

Study design

This was a two-group non-equivalent study composed of health centres providing reinforced antenatal counseling and health centres providing routine antenatal counseling.

The reinforced antenatal counseling (intervention) consisted of providing, in addition to routine counseling, a specific counseling, that is one session of face-to-face individual counseling with the provider. The specific counseling focused on postpartum FP methods (modern and traditional methods). The session was scheduled to last 15 to 20 minutes and used contraceptive samples and a toolbox to guide the counseling session. It took place in the antenatal care (ANC) unit by the ANC provider who was trained on the study protocol.

Counseling in the control group consisted of routine antenatal counseling provided at health centres in Guinea. It consisted of collective information sessions (regardless woman's age or the age of pregnancy), held at every ANC visit, in the waiting room of the health centre. Each session covered different topics including nutrition, childbirth preparedness, immunization and family planning. The counseling in the control health centres were not directed by the research team.

Study population and sampling

The study population included pregnant women attending ANC visits in one of the five selected health centres. These health centres were randomly selected from the list of health centres in Forécariah health district and were randomly assigned to the two study groups (two intervention centres and three control centres). The intervention zones (catchment areas of the health centres) and the control zones were separated by two neutral zones.

Sample size: Basing on the number of women attending at least one ANC visit in Forécariah health district in 2012 (n = 12705) [22], a 95% confidence level and a 5% error margin, at least 373 women were needed for the study, half of them expected to come from each group.

Inclusion in the study: the study included only women who had at least six months of pregnancy and agreed to participate in the study and stay at their current residence during the study period.

Follow-up on participants: each woman included in the study was followed up until the ninth month postpartum. Women were met in the health centres or in the community for the follow-up interviews at the sixth month postpartum and at the ninth month postpartum.

Outcomes of interest

The primary outcome of interest of the study was the proportions of women using a modern FP method at the sixth month and the ninth month postpartum. The intervention was considered beneficial if a statistically significant increase in use of modern FP was observed in the intervention group compared to the control group.

The secondary outcomes of interest included i) the proportion of women in each group using any FP method (either modern or traditional), ii) the proportion of women with the intention to use FP in the postpartum , and iii) women's knowledge on FP.

Data collection and study variables

Data were collected using structured and standardized questionnaires, administered in local languages. The questionnaires and the data collection procedure were validated through a pre-test in a neighboring health district. Information collected included baseline characteristics *(age,*

education level, religion, occupation, marital status, spouse's education level, number of children alive, number of children desired, if the woman has ever heard about FP, if the woman has ever used an FP method, if the woman wanted the current pregnancy, if the woman was using an FP method during the period she got the current pregnancy), woman's intention to use FP in the postpartum, and FP use in the postpartum. Unmet need for FP was referred to as when a pregnant woman did not want the current pregnancy, however, was not using FP[24]. Data on the intention to use FP were collected just after the counseling session at the time of inclusion in the study, at the sixth month postpartum and at the ninth month postpartum. Data on FP use in the postpartum were collected at the sixth month and at the ninth month postpartum. FP methods were categorized into two groups: modern methods (pills, injectable, LAM, IUD, implant, and condom) and traditional methods (periodic abstinence, withdrawal method, traditional herbs/strings). ANC providers in the target health centres and two trained physicians collected the data.

A written informed consent was obtained from each study participant prior to the inclusion. The study protocol was approved by the National Ethics Committee for Health Research, Guinea.

Statistical analysis

The study variables were presented as proportions or means [standard deviations (SD)]. The proportions of women using FP as well as the other key variables were compared between the intervention and the control groups using Pearson's Chi square, Fischer or Student t tests with a significance level set at 5%.

Data were entered using Epi Data software version 3.1 (Epi Data Association, Odense, Denmark) and analyzed using STATA software version 13 (STATA Corporation, College Station, TX, USA).

Results

Of the 422 pregnant women contacted, 404 were included in the study and 381 were considered for analysis (Figure 1). Among those included in the analysis, 194 women received the reinforced counseling and 187, the routine counseling. There was no difference in the baseline characteristics of women excluded from the study and those included in the analysis.

Baseline characteristics of the sample

Women's socio-demographic characteristics were similar across the intervention and the control groups (Table 1). They had a mean age of 25.7 (SD: 6.8) years in the intervention group and 25.2 (SD: 5.9) years in the control group. They had in majority no education level, were housewives, Muslims and married. Women desired on average 5.9 (SD: 2) children in the intervention group and 5.6 (SD: 1.8) children in the control group. However, there was a statistically significant difference in their levels of knowledge on FP. More women in the intervention group had heard about condoms, lactational and amenorrhea method (LAM) and abstinence than in the control group; however, fewer women in the intervention group had heard about other traditional methods than in the control group. Both groups were similar in terms of previous FP use (19.6% in the intervention group and 23% in the control group). There were more unmet needs for FP in the intervention group (63.9%) than in the control group (51.9%, $P < 0.05$).

Use of a modern family planning method in the postpartum

At the sixth month postpartum, the proportion of women using a modern FP was low and similar in the two groups [4.6% (n=9) in the intervention group and 3.2% (n=6) in the control group) (Table 2). Condoms and pills were the main methods used. As reasons for the non-use of modern FP methods, most women said they preferred to abstain from sexual intercourse till their child walks (67.6% in the intervention group and 65.7% in the control group). In addition, in the intervention group, 22.7% of women blamed the unavailability of the FP method they sought for, compared to 1.1% in the control group ($P<0.001$). Other reasons included the facts that the husband

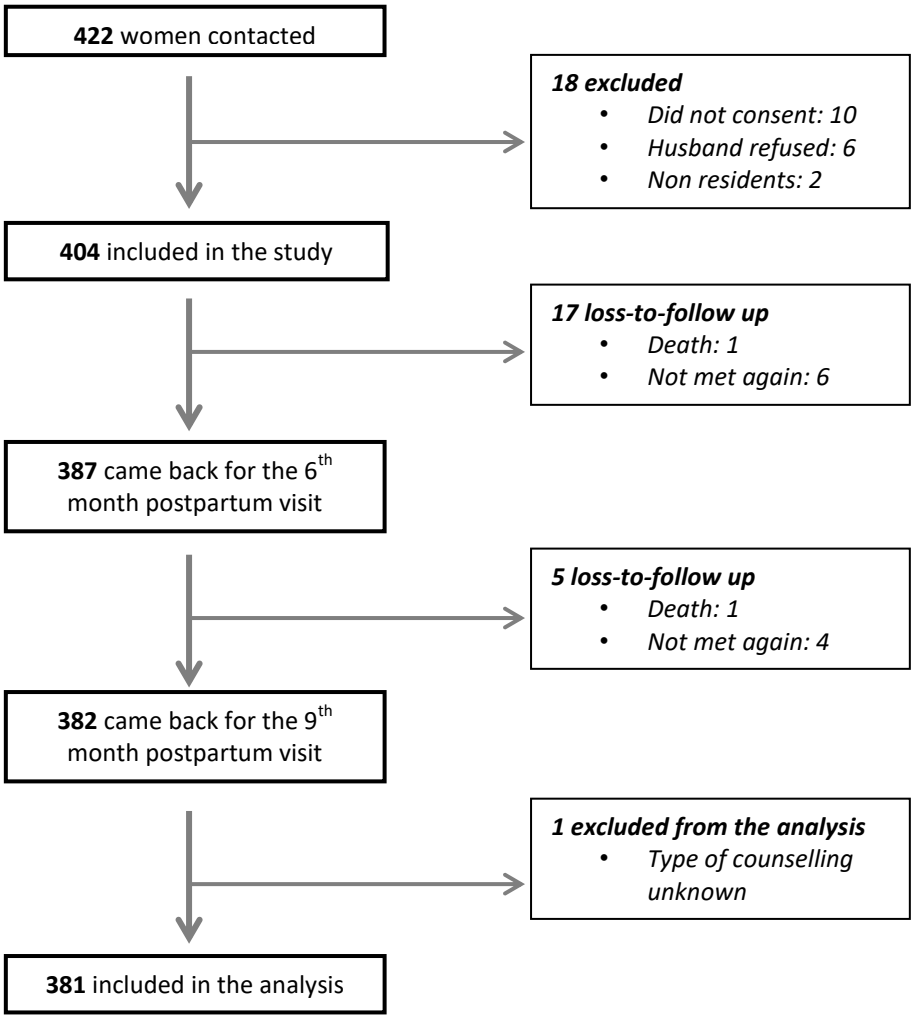

Figure 1: Flow chart of women's inclusion in the study, October 2013-December 2014, Forécariah, Guinea

did not want it, their desire for another child, and the side effects of modern method FP.

At the ninth month postpartum, use of modern FP was significantly higher in the intervention group (5.7%; n=10) than in the control group (1.1%; n=2; *P*=0.024) (Table 3). The injectable methods represented the main methods used. The primary reason for the non-use of modern FP method was women's preference to abstain from sexual intercourse till their child walks; however, this proportion was significantly higher in the intervention group (70.5%) than in the control group (59.5%; *P*=0.027). Another reason was the fact that the husband did not want them to use a modern FP method (8.2% in the intervention group and 4.3% in the control group).

Use of any family planning method in the postpartum

At the sixth month postpartum, there was no statistically significant difference between the proportions of women using any FP method in the two groups (5.7% in the intervention group and 4.8% in the control group) (Table 2). At the ninth month postpartum, an increase in FP uptake in the intervention group (6.7%) was observed, whereas this decreased in the control group (2.7%); however, no statistically significant difference was seen between both groups in terms of FP use.

Table 1: Baseline characteristics of women receiving two types of antenatal counseling in five rural health centres, Forécariah health district in Guinea, October 2013-December 2014 (N = 381)

	Routine counseling (control)	Reinforced counseling (intervention)	
Variables	**N=187 (%)**	**N=194 (%)**	***P***
Age, mean (SD)	25.2 (5.9)	25.7 (6.8)	0.052
Education level			
None	125 (66.8)	142 (73.2)	0.177
Primary or higher	62 (33.2)	52 (26.8)	
Religion			
Muslims	187 (100.0)	191 (98.5)	0.262
Christians	0 (0.0)	3 (1.5)	
Occupation			
Housewives	139 (74.3)	146 (75.3)	0.835
Others	48 (25.7)	48 (24.7)	
Marital status			
Married	180 (96.3)	186 (95.9)	0.848
Unmarried	7 (3.7)	8 (4.1)	
Spouse's education level			
None	126 (67.4)	122 (62.9)	0.361
Primary or higher	61 (32.6)	72 (37.1)	
Number of children alive, mean (SD)	2.4 (2.1)	2.4 (2.1)	0.998
Number of children desired, mean (SD)	5.6 (1.8)	5.9 (2.0)	0.148
FP methods known by the woman (N=359)			
Pills	139 (79.4)	142 (77.2)	0.605
Injectable	141 (80.6)	156 (84.8)	0.291
Intrauterine Device	4 (2.3)	3 (1.6)	0.659
Implant	6 (3.4)	2 (1.1)	0.133
Condom	5 (2.9)	16 (8.7)	0.018
LAM	0 (0.0)	9 (4.9)	0.003
Abstinence	1 (0.6)	10 (5.4)	0.008
Traditional methods	21 (11.2)	10 (5.4)	0.030
Has ever used a modern FP method			
Yes	43 (23.0)	36 (18.6)	0.452
No	132 (70.6)	148 (76.3)	
Undetermined	12 (6.4)	10 (5.1)	
FP unmet needs			
Yes	90 (48.1)	70 (36.1)	0.017
No	97 (51.9)	124 (63.9)	

SD: Standard déviation LAM: Lactational and Amenorrhea Method

Intention to use an FP method in the postpartum

Women with postpartum FP intention were more represented in the intervention group at the sixth month postpartum (88%) than in the control group (69%; $P<0.01$), as well as at the ninth month postpartum (78% and 54%, respectively, $P<0.001$). However, these proportions were similar at the time of inclusion just after the counseling session (Figure 2).

Knowledge on family planning at end line

At the ninth month postpartum, women cited more FP methods in the intervention than in the routine group (Table 3). Pills, intra-uterine device, implant and traditional methods were the methods more cited.

Table 2: Use of family planning method at the sixth month postpartum among women receiving two types of antenatal counseling in five rural health centres, Forécariah health district in Guinea, October 2013-December 2014 (N = 381)

	Routine counseling (control)	Reinforced counseling (intervention)	
Variables	**N=187 (%)**	**N=194 (%)**	***P***
Use of any FP method *			0.708
Yes	9 (4.8)	11 (5.7)	
No	178 (95.2)	183 (94.3)	
Use of a modern FP method *			0,473
Yes	6 (3.2)	9 (4.6)	
No	181 (96.8)	185 (95.4)	
Methods used by woman			0.282
Condom	4 (2.1)	4 (2.1)	
Pills	0 (0.0)	4 (2.1)	
Intrauterine Device	1 (0.0)	1 (0.0)	
Injectable	1 (0.0)	0 (0.0)	
Traditional Methods	3 (1.6)	2 (1.0)	
Reasons for the non-use of modern FP method at the 6th month postpartum (N=366)			
Prefer to abstain from sexual intercourse till the child walks	119 (65.7)	125 (67.6)	0.712
The desired FP method not available	2 (1.1)	42 (22.7)	<0.001
Husband does not want	6 (3.3)	8 (4.3)	0.615
Desire for another child	7 (3.9)	3 (1.6)	0.319
Because of the side effects	2 (1.1)	5 (2.7)	0.467
Because of the religion	1 (0.6)	1 (0.5)	1

**Data missing for lactational amenorrhea method (LAM)*

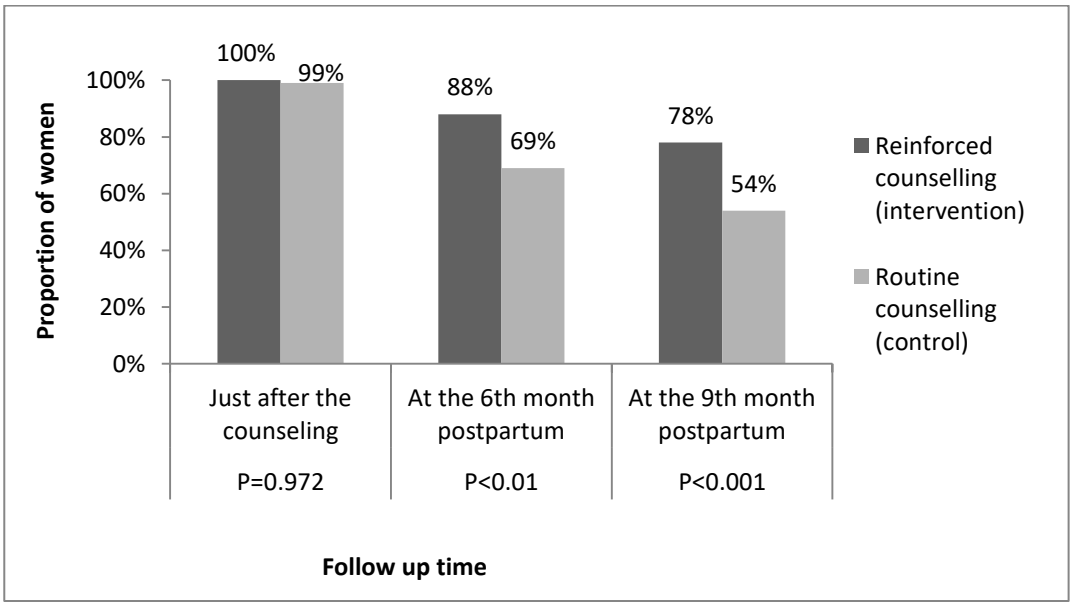

Figure 2: Intention to use an FP method among women receiving two types of antenatal counseling in five rural health centres, Forécariah health district in Guinea, October 2013-December 2014 (N = 381)

Table 3: Knowledge about and use of family planning method at the ninth month postpartum among women receiving two types of antenatal counseling in five rural health centres, Forécariah health district in Guinea, October 2013-December 2014 (N = 381)

	Routine counseling (control)	Reinforced counseling (intervention)	
Variables	**N=187 (%)**	**N=194 (%)**	***P***
FP methods known by the woman			
Pills	161 (86.1)	181 (93.3)	0.020
Injectable	156 (83.4)	168 (86.6)	0.385
Intra-uterine device	2 (1.1)	40 (20.6)	<0.001
Implant	5 (2.7)	27 (13.9)	<0.001
Condom	18 (9.6)	11 (5.7)	0.146
LAM	14 (7.5)	15 (7.7)	0.929
Traditional methods	22 (11.8)	37 (19.1)	0.049
Use of any FP method			0,064
Yes	5 (2.7)	13 (6.7)	
No	182 (97.3)	181 (93.3)	
Use of a modern FP method			0,024
Yes	2 (1.1)	11 (5.7)	
No	185 (98.9)	183 (94.3)	
FP method used by the woman			0,058
Pills	0 (0.0)	1 (0.5)	
Injectable	1 (0.5)	10 (5.2)	
Implant	1 (0.5)	0 (0.0)	
Traditional method	3 (1.6)	2 (1.0)	
Reasons for the non-use of a modern FP method at the ninth month post-partum (N=368)			
Prefer to abstain from sexual intercourse till the child walks	110 (59.5)	129 (70.5)	0.027
Because of the side effects	0 (0.0)	4 (2.2)	NA
The desired FP method not available	0 (0.0)	6 (3.3)	NA
Husband does not want	8 (4.3)	15 (8.2)	0.126
Because of the religion	0 (0.0)	1 (0.5)	NA

LAM: Lactational amenorrhea method

Discussion

The objective of this study was to assess the impact of a specific (reinforced) antenatal counseling on use of modern FP in the postpartum in rural Guinea. The reinforced antenatal counseling intervention would be considered beneficial if a statistically significant increase in use of modern FP was observed in the intervention group (women who received the reinforced antenatal counseling) compared to the control group (women who received the routine antenatal counseling).

The findings showed that use of modern FP was low at the sixth month and the ninth month postpartum. At the ninth month postpartum, a statistically significant increase (4.6 percentage points difference; *P*=0.024) in use of modern FP methods was observed among women who received the reinforced antenatal counseling compared to those who received the routine antenatal counseling. However, it is important to note that most women were not sexually active at the sixth month postpartum (67.6% in the intervention group and 65.7% in the control group) and at the ninth month postpartum (70.5% and 59.5%, respectively) since they abstained from sexual intercourse till the child walks. Thus, these women were not in need of modern FP methods. Therefore, it becomes difficult to discern at these stages whether the intervention influenced use of modern FP methods. Nevertheless, we observed that the intervention had improved women's knowledge on FP and increased their postpartum

FP intention. This implies that the intervention could influence use of modern FP method on the long run, that is, if women were followed up until they resume sexual intercourse. However, in Tanzania, Keogh *et al* found that antenatal counseling had an effect on postpartum FP intentions, but not on use[16]. Findings from the present study therefore recommend longer study period, that is, at least two years for postpartum follow up, to assess the effect of antenatal counseling on use of modern FP in the postpartum in the Guinean context.

More FP unmet needs were reported at the time of the inclusion in the study, among women in the intervention group than the control group. The reinforced antenatal counseling might have contributed to overcome some barriers to FP use among women with FP unmet needs. In addition, the relatively high proportion of FP unmet needs (more than one-third of pregnant women) in our study sample shows that FP use can be improved in rural Guinea if more appropriate approaches are locally identified.

This study has several limitations. First, the estimation of use of modern FP at the sixth month postpartum did not take into account use of lactational and amenorrhea method (LAM), due to lack of verification of the LAM criteria[26] during data collection. Second, the timeline for measuring FP use in the postpartum period was short to demonstrate the utility of the intervention. Third, we could not collect data on the number of ANC visits attended by women to adjust the intervention effect for. This might have affected the influence of the intervention on FP use in the postpartum. Finally, the study context, with the emergence of the Ebola outbreak in Guinea and in the study setting, was marked by the dysfunction of many health structures leading to the decline of the use of health services including for family planning [27].

Conclusion

Providing specific individual antenatal counseling to women in rural Guinea with a focus on FP can improve their knowledge on FP and increase postpartum FP intention. This study could not demonstrate the utility of specific antenatal counseling on use of modern FP in the postpartum, given the relatively short follow up period. It therefore recommends longer study period, that is, at least two years for postpartum follow up to assess the effect of antenatal counseling on use of modern FP in the postpartum in the Guinean context.

Conflict of interest

None

Contribution of Authors

BSC, AD and SS were involved with conception and design of the protocol. BSC, AD, PB and MMS were involved with acquisition of data. BSC, AD and SS did the data analysis and all authors were involved with interpretation. All authors have given approval for the final version to be published and are accountable. All authors read and approved the final version.

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