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Gynecology

Effect of one-to-one versus group counseling on uptake of postpartum contraception in selected hospitals in Ghana: A prospective cohort study

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Abstract

Objective: To compare the effect of one provider to one client counseling and one provider to a group client counseling on the uptake of postpartum contraception.

Methods: This was a hospital-based prospective cohort study among women attending a postpartum clinic at Korle-Bu Teaching Hospital and Greater Accra Regional Hospital. Postpartum mothers were recruited daily from April 1, 2017 to November 28, 2017. Mothers from this cohort that used a contraceptive method within a year postpartum were determined at 3, 6, 9, and 12 months after recruitment. A *P* value of less than 0.05 was considered statistically significant for all analyses.

Results: Of 982 women surveyed, contraceptive uptake among women who received one-to-one counseling was 306/600 (51.0%) and that for women who received group counseling was 48/382 (12.6%) ($P < 0.001$). Factors associated with contraceptive uptake during postpartum period were: one-to-one counseling (adjusted odds ratio [aOR] 7.05, 95% confidence interval [CI] 4.94–10.07), mothers' age (aOR 0.95, 95% CI 0.91–0.98), being single (aOR 0.54, 95% CI 0.35–0.85), cohabiting (aOR 0.39, 95% CI 0.22–0.69), and previous use of contraception (aOR 1.55, 95% CI 1.12–2.15).

Conclusion: One-to-one counseling was associated with a significantly greater uptake of contraception during the postpartum period compared with group counseling. Other factors associated with uptake were age, marital status, and history of contraceptive use.

KEYWORDS
contraceptives, counseling, family planning, group, one-to-one, postpartum

1 | INTRODUCTION

Contraception has been reported to impact positively on individuals, society, nations, and the world at large. The Sustainable Development Goal 3, target 7 stipulates that, by 2030, there should be universal access to sexual and reproductive healthcare services, including family planning, information, and education, and the integration of reproductive health into national strategies and programs.[1] An important intervention to accelerate the achievement of this goal is the promotion of the use of modern contraceptive methods. The uptake of modern contraceptive methods is, however, low in sub-Saharan Africa and this is associated with a high incidence of

unwanted pregnancies, unsafe abortions, unplanned deliveries, and maternal mortalities.[2,3]

Eighty-five million pregnancies, representing 40% of all pregnancies worldwide, were unintended in 2012. Of these, 50% ended in abortion, 13% ended in miscarriage, and 38% resulted in an unplanned birth.[4] Although knowledge of contraception and family planning in Ghana is universal, the contraceptive prevalence rate is 31%, comprising 25% modern contraceptives and 6% natural. Unmet need for family planning in Ghana is 30% (17% for spacing and 13% for limiting family size). In addition, 33% of births are unplanned with Ghana's total fertility rate being 3.9, which is above the total fertility rate target of 3 per woman.[5,6]

To be able to meet the total fertility rate target, all available opportunities, including effective counseling, to increase the uptake of modern contraception would have to be explored. Several international institutions, including WHO, have recently proposed a statement for collective action for all programs that reach women during the first year following a birth to integrate postpartum family planning counseling and services into their programs.[7]

Postnatal care is an integral part of the health delivery system in Ghana and a viable option to be explored to reduce the low uptake of contraception in Ghana. Counseling of mothers during the postpartum phase has been reported to significantly increase the uptake of modern contraception.[8–10] In Ghanaian health institutions, group counseling is the main method of family planning counseling used at the postnatal clinic. With this method of counseling, many postpartum mothers may not be bold enough to express their concerns, thereby defeating the intended purpose of the counseling. One-to-one counseling for family planning has been recently introduced at the postnatal clinic at Ghana's foremost hospital, the Korle-Bu Teaching Hospital. It is unclear to what extent these two methods of counseling affect postpartum family planning uptake. This study sought to determine the uptake of modern contraceptive methods during the postpartum period at the Korle-Bu Teaching Hospital and Greater Accra Regional Hospital and the effects of the two counseling methods on the uptake of these modern methods.

2 | MATERIALS AND METHODS

A hospital-based prospective cohort study was conducted among women attending the postpartum clinic at Korle-Bu Teaching Hospital and the Greater Accra Regional Hospital. Women from this cohort who used a contraceptive method within a year postpartum were determined through phone calls at 3, 6, 9, and 12 months after recruitment.

The Korle-Bu Teaching Hospital is situated in Accra, the capital city of Ghana and serves as the main tertiary and referral center for the Greater Accra Region, and surrounding regions. The hospital is also the Teaching Hospital used for clinical training by the University of Ghana Medical School. The facility has about 2000 beds and delivers approximately 9215 women annually.[11] The total bed capacity of the Obstetrics and Gynecology Department is 375. The Reproductive Health and Family Planning Unit offers a wide range of family planning methods. Clients attending the clinic are counseled about the various family planning methods available and they are helped to make an informed choice of method. The postnatal clinic attendance at the hospital is about 974 per month. The Reproductive Health and Family Planning Unit records attendance of about 1329 patients a month with 268 of them being new users.[11]

The Greater Accra Regional Hospital is located within the Accra Metropolitan area. The Obstetrics and Gynecology unit has 87 beds. The total annual number of deliveries is 8432. The hospital has an annual postnatal attendance of about 9061. The monthly postnatal clinic attendance is about 755. The family planning unit of the Greater Accra Regional Hospital is manned by five midwives and auxiliary staff. Obstetrician gynecologists and some medical officers assist with the management of the cases.

The study population included all clients who had benefited from postpartum family planning counseling at postpartum clinics in the two hospitals during the study period. Women reporting for their first postnatal clinic attendance and who received postpartum family planning counseling at the two hospitals were qualified to participate in the study.

The study compared two populations; patients attending the postnatal clinic who received one-to-one counseling and those who received group counseling on modern contraceptive methods. The sample size was estimated using the uptake of modern contraception among patients who receive group counseling (p_2 = 47.8%).[12] The uptake after one-to-one counseling (p_1 = 57.8%). At a significance level of 5%, $Z_{1-\alpha}$ = 1.96, power of 80%, and 20% loss to follow up, the minimum sample size was determined to be 936. The sample size was calculated using the formula:

$$N = 2 \cdot \left[z_{\text{crit}} \sqrt{2\bar{p}(1-\bar{p})} + z_{\text{pwr}} \sqrt{p_1(1-p_1) + p_2(1-p_2)} \right]^2 / D^2,$$

where N is sample size, p_1 is uptake of family planning with one-to-one counseling, p_2 is uptake of family planning after group counseling, Z_{crit} is $Z_{1-\alpha}$, Z_{pwr} is Z_{β}, $D = p_1 - p_2$, and $\bar{p}$ represents the average of p_1 and p_2 and is 0.528.

A consecutive sampling approach was used to sample the women for the study. Every mother reporting for the first postpartum clinic attendance who met the inclusion criteria was enrolled into the study. The number of mothers recruited from each facility was determined using a proportionate to size sampling approach. Based on the total number of first-time postpartum attendants at the Greater Accra Regional Hospital, 420 mothers were allocated. Also, using the total number of first-time postpartum attendants at Korle Bu Teaching Hospital, 516 mothers were allocated. The mothers were recruited daily from April 1, 2017 to November 28, 2017. These mothers had their folders tagged after participating in the

postpartum counseling sessions to prevent double sampling. They were numbered sequentially until 530 women were enrolled at the Greater Accra Regional Hospital and 720 at the Korle-Bu Teaching Hospital.

Data were collected from the participants using a structured questionnaire. The questionnaires were administered by the principal investigator and four trained research assistants. The questionnaire was structured to capture information on the following areas: sociodemographic characteristics and obstetric and gynecologic history including choice and timing of family planning method. The questionnaire was pretested at the postnatal unit of the La General Hospital in the Greater Accra Region of Ghana. Postpartum family planning counselors in both facilities were retrained with a checklist to ensure that the information given to postpartum mothers at both the Korle-Bu Teaching Hospital and Ridge Regional Hospital was similar and consistent. At the Greater Accra Regional Hospital, all first-time postnatal attendees were put in a group and counseled together using the postpartum family planning checklist whereas at the Korle-Bu Teaching Hospital all first-time postnatal attendees were counseled as individuals on postpartum family planning with the same check list. Telephone calls were made to the women 3, 6, 9, and 12 months after each was recruited to determine whether they had been using a method of family planning, the method they chose, the number of months into the postpartum period when they started using the method, and where the method was given.

SPSS Statistics for Windows version 20 (IBM Corp., Armonk, NY, USA) was used for data analysis. Descriptive statistics: frequency, proportions and mean ± standard deviation were used for demographic and patients' characteristics. Binary logistic regression and multivariable modeling was used to test the strength of the association between counseling methods and contraception uptake using adjusted odds ratios (aOR) at 95% confidence intervals (CI). A χ^2 test was used to test the association between the uptake of modern contraception and the type of counseling method. In all statistical analyses, a P value less than 0.05 was considered statistically significant.

Ethical clearance for the study was obtained from the Korle-Bu Teaching Hospital Institutional Review Board (KBTH-IRB/0004/20917) and the KBTH Scientific and Technical Committee (KBTH-STC/0004/2017). Permission was also obtained from the Department of Obstetrics and Gynecology of the Korle-Bu Teaching Hospital and the Greater Accra Regional Hospital to carry out the study in the departments. Written informed consent was obtained from all participants before enrollment. All methods were carried out in accordance with the Declaration of Helsinki.

3 | RESULTS

A total of 982 questionnaires were analyzed. Six hundred of the respondents were from Korle-Bu and 382 were from the Greater Accra Regional Hospital. Among the 982 respondents, 360 (36.7%) had had education up to Junior High School, 747 (76.1%) were married, and 643 (65.5%) had fewer than three living children (Table 1).

There was no significant difference between the mean age of mothers in the groups receiving one-to-one counseling and group counseling ($P = 0.082$). Mothers who received one-to-one counseling differed significantly from those who received group counseling with respect to religion, ethnicity, and previous history of family planning (Table 1).

A χ^2 test of association revealed a statistically significant association between type of counseling ($P = 0.001$), participant age ($P = 0.035$), marital status ($P = 0.048$), mode of delivery ($P = 0.007$), and previous use of family planning ($P = 0.001$) and the uptake of contraceptive method. A greater proportion (306/600; 51.0%) of the women who received one-to-one counseling took up a method of contraception during the one-year postpartum period compared with the women who received group counseling (48/382; 12.6%). However, level of education, occupation, religion, ethnicity, parity, latest pregnancy planning, planned future, and sex resumption were not significantly associated with the uptake of contraception among the women (Table 2).

The total contraceptive uptake among the 982 women who were surveyed during the study was 354/982 (36.05%). The contraceptive uptake within the 1-year postpartum period among women who received one-to-one counseling (306/600; 51.0%) was significantly higher than that of women who received group counseling (48/382; 12.6%) ($P < 0.001$).

With regards to uptake of contraception within 1 year postpartum after adjusting for possible confounders, women who received one-to-one contraceptive counseling had seven times the odds of women who received group counseling for taking up a method of contraception. This was a significant finding (aOR 7.05, 95% CI 4.94–10.07, $P < 0.001$). For every additional increase of a year in age, there was a reduction in the odds of uptake of postpartum contraception within a year by 5% after controlling for the other variables (aOR 0.95, 95% CI 0.91–0.98, $P < 0.002$). After adjusting for possible confounders, single women had a decrease of 46% in the odds of taking up contraception within the 1-year postpartum period compared with married women (aOR 0.54, 95% CI 0.35–0.85, $P < 0.001$). Women with a history of previous contraceptive use had 55% increased odds of uptake of contraception within a year postpartum compared with women with no history of contraceptive use (aOR 1.55, 95% CI 1.12–2.15, $P < 0.008$) (Table 3).

4 | DISCUSSION

The study aimed to assess the effect of one-to-one counseling and group counseling on the uptake of postpartum contraception.

In the current study, less than 40% of the women had used contraception within a year after delivery. This is less than the postpartum contraceptive rate of 47.8% recorded in a rural setting in

TABLE 1 Characteristics of women who had one-to-one counseling compared to those who received group counseling.[a]

Characteristics	One-to-one counseling	Group counseling	All	*P* value
Age of participant, year				0.041
<20	28 (4.7)	5 (1.3)	33 (3.4)	
20–24	58 (9.7)	34 (8.9)	92 (9.4)	
25–29	208 (34.7)	130 (34.0)	338 (34.4)	
30–34	193 (32.2)	132 (34.6)	325 (33.1)	
35–39	91 (15.2)	72 (18.9)	163 (16.6)	
40+	22 (3.7)	9 (2.4)	31 (3.2)	
Mean ± SD	29.8 ± 5.4	30.4 ± 4.9	30.4 ± 5.2	0.082
Educational level				0.775
None	33 (5.5)	16 (4.2)	49 (5.0)	
Primary	30 (5.0)	18 (4.7)	48 (4.9)	
Junior High School	214 (35.7)	146 (38.2)	360 (36.7)	
Senior High School	178 (29.7)	105 (27.5)	283 (28.8)	
Tertiary	145 (24.2)	97 (25.4)	242 (24.6)	
Occupation				0.090
Student	9 (1.5)	1 (0.3)	10 (1.0)	
Unemployed	80 (13.3)	60 (15.7)	140 (14.3)	
Public sector	48 (8.0)	44 (11.5)	92 (9.4)	
Private sector	73 (12.2)	44 (11.5)	117 (11.9)	
Trader	182 (30.3)	124 (32.5)	306 (31.2)	
Artisan	202 (33.7)	107 (28.0)	309 (31.5)	
Others	6 (1.0)	2 (0.5)	8 (0.8)	
Partner's occupation				<0.001
Student	10 (1.7)	1 (0.3)	11 (1.1)	
Unemployed	7 (1.2)	12 (3.1)	19 (1.9)	
Public sector	86 (14.3)	51 (13.4)	137 (14.0)	
Private sector	162 (27.0)	163 (42.7)	325 (33.1)	
Trader	134 (22.3)	75 (19.6)	209 (21.3)	
Artisan	186 (31.0)	79 (20.7)	265 (27.0)	
Others	15 (2.5)	1 (0.3)	16 (1.6)	
Marital status				0.059
Married	442 (73.7)	305 (79.8)	747 (76.1)	
Single	106 (17.7)	47 (12.3)	153 (15.6)	
Cohabiting	52 (8.7)	30 (7.9)	82 (8.4)	
Religion				0.032
Christian	534 (89.0)	322 (84.3)	856 (87.2)	
Muslim	66 (11.0)	60 (15.7)	126 (12.8)	
Ethnicity				0.009
Akan	292 (48.7)	167 (43.7)	459 (46.7)	
Ewe	86 (14.3)	82 (21.5)	168 (17.1)	
Ga	127 (21.2)	63 (16.5)	190 (19.4)	
Others	95 (15.8)	70 (18.3)	165 (16.8)	
Parity				0.257
1	158 (26.3)	122 (31.9)	280 (28.5)	
2	152 (25.3)	80 (20.9)	232 (23.6)	

TABLE 1 (Continued)

Characteristics	One-to-one counseling	Group counseling	All	*P* value
3	151 (25.2)	94 (24.6)	245 (25.0)	
4	73 (12.2)	40 (10.5)	113 (11.5)	
5+	66 (11.0)	46 (12.0)	112 (11.4)	
No. of living children				0.904
<3	392 (65.3)	251 (65.7)	643 (65.5)	
3+	208 (34.7)	131 (34.3)	339 (34.5)	
Median (IQR)	2 (2)	2 (2)	2 (2)	0.333
Latest pregnancy planning				0.007
Planned	313 (52.2)	233 (61.0)	546 (55.6)	
Unplanned	287 (47.8)	149 (39.0)	436 (44.4)	
Mode of delivery				<0.001
Spontaneous vaginal	373 (62.2)	187 (49.0)	560 (57.0)	
Cesarean section	227 (37.8)	195 (51.1)	422 (43.0)	
Plans for future delivery				<0.001
Delay childbirth	428 (71.3)	258 (67.5)	686 (69.9)	
Completed childbirth	143 (23.8)	122 (31.9)	265 (27.0)	
Other	29 (4.8)	2 (0.5)	31 (3.2)	
Previous history of family planning				<0.001
Never used family planning	342 (57.0)	293 (76.7)	635 (64.7)	
Ever used family planning	258 (43.0)	89 (23.3)	347 (35.3)	
Previous method of family planning				<0.001
LAM	9 (3.5)	2 (2.3)	11 (3.2)	
Pills	33 (12.8)	10 (11.2)	43 (12.4)	
Injectable	91 (35.3)	55 (61.8)	146 (42.1)	
Condoms	43 (16.7)	2 (2.3)	45 (13.0)	
IUD	7 (2.7)	8 (9.0)	15 (4.3)	
Implant	44 (17.1)	8 (9.0)	52 (15.0)	
Emergency contraception	18 (7.0)	2 (2.3)	20 (5.8)	
Withdrawal	3 (1.2)	0 (0.0)	3 (0.9)	
Other	10 (3.9)	2 (2.3)	12 (3.5)	
Reason for no previous family planning				<0.001
Fear of side effects	78 (22.8)	69 (23.6)	147 (23.2)	
Desired to get pregnant again	4 (1.2)	101 (34.5)	105 (16.5)	
Partner objection	6 (1.8)	10 (3.4)	16 (2.5)	
Religious objection	2 (0.6)	0 (0.0)	2 (0.3)	
Fear of losing fertility	3 (0.9)	10 (3.4)	13 (2.1)	
Indecision	8 (2.3)	2 (0.7)	10 (1.6)	
Other reason	38 (11.1)	9 (3.1)	47 (7.4)	
No reason given	203 (59.4)	92 (31.4)	295 (46.5)	
Total	600 (100.0)	382 (100.0)	982 (100.0)	

Abbreviations: IQR, interquartile range; IUD, intrauterine device; LAM, lactational amenorrhea method; SD, standard deviation.

[a]Data are presented as number (percentage), mean ± standard deviation or as median (interquartile range).

Ghana.[12] This difference is consistent with general trends in the use of contraceptives in Ghana where the contraceptive prevalence rates are higher in rural settings compared with urban centers.[5,6] The overall contraceptive prevalence rate at 1 year postpartum in this study compares favorably with studies carried out in Ethiopia.[13] This recorded figure of total contraceptive use as at 1 year postpartum

TABLE 2 χ^2 test of association between uptake of contraception and participant characteristics.[a]

Characteristics	Contraceptive method		P value
	Not taken	Taken	
Age, year	30.3 ± 5.3	29.6 ± 5.2	0.035
Education			0.602
None	30 (61.2)	19 (38.8)	
Primary	33 (68.8)	15 (31.3)	
Junior High School	238 (66.1)	122 (33.9)	
Senior High School	181 (64.0)	102 (36.0)	
Tertiary	146 (60.3)	96 (39.7)	
Occupation			0.042[b]
Student/Unemployed	88 (58.7)	62 (41.3)	
Public sector	62 (67.4)	30 (32.6)	
Private sector	89 (76.1)	28 (23.9)	
Trader	190 (62.1)	116 (37.9)	
Artisan	195 (63.1)	114 (36.9)	
Other	4 (50.0)	4 (50.0)	
Partner's occupation			0.452[b]
Student/Unemployed	19 (63.3)	11 (36.7)	
Public sector	89 (65.0)	48 (35.0)	
Private sector	211 (64.9)	114 (35.1)	
Trader	142 (67.9)	67 (32.1)	
Artisan	156 (58.9)	109 (41.1)	
Others	11 (68.8)	5 (31.3)	
Marital status			0.048
Married	465 (62.3)	282 (37.8)	
Single	101 (66.0)	52 (34.0)	
Cohabiting	62 (75.6)	20 (24.4)	
Religion			0.778
Christian	546 (63.8)	310 (36.2)	
Muslim	82 (65.1)	44 (34.9)	
Ethnicity			0.094
Akan	278 (60.6)	181 (39.4)	
Ewe	116 (69.1)	52 (30.9)	
Ga	131 (69.0)	59 (31.0)	
Others	103 (62.4)	62 (37.6)	
Parity			0.214
1	191 (68.2)	89 (31.8)	
2	142 (61.2)	90 (38.8)	
3	157 (64.1)	88 (35.9)	
4	64 (56.6)	49 (43.4)	
5+	74 (66.1)	38 (33.9)	
No. of living children			0.503
<3	416 (64.7)	227 (35.3)	
3+	212 (62.5)	127 (37.5)	
Latest pregnancy planning			0.912
Planned	350 (64.1)	196 (35.9)	
Unplanned	278 (63.8)	158 (36.2)	
Mode of delivery			0.007
Spontaneous vaginal	338 (60.4)	222 (39.6)	
Cesarean section	290 (68.7)	132 (31.3)	
Plans for future delivery			0.245
Delay childbirth	447 (65.2)	239 (34.8)	
Completed childbirth	165 (62.3)	100 (37.7)	
Other	16 (51.6)	15 (48.4)	
Resumed sex after delivery			0.626
Not resumed	251 (64.9)	36 (35.1)	
Resumed	373 (63.3)	216 (36.7)	
Previous history of family planning			<0.001
Never used	445 (70.1)	190 (29.9)	
Ever used	183 (52.7)	164 (47.3)	
Type of counseling			<0.001
One-to-one (Korle-Bu)	294 (49.0)	306 (51.0)	
Group (Ridge)	334 (87.4)	48 (12.6)	

[a]Data are presented as number (percentage) or as mean ± standard deviation.

[b]Fisher exact test.

falls short of the postpartum contraceptive uptake of 51% recorded in Burundi and Rwanda[14] and 80.72% recorded by Elweshahi et al. in Egypt.[15] The study in Egypt however was carried out at infant immunization centers, in contrast to the present study, which interviewed postpartum women at postnatal clinics with subsequent phone calls. Generally, contraceptive uptake rates in high-income countries are higher than in low- to middle-income countries. Hence, it is not surprising that the total postpartum contraceptive rate in the present study is completely at variance with the 73% recorded in Berlin, Germany.[16]

The uptake of postpartum contraception among women who had one-to-one counseling was more than 50%. This is higher than the 47.8% recorded in Kwaebibirem, a rural area, in Ghana.[12] The study in Kwaebibirem however was carried out in Child Welfare clinics whereas this study was carried out at postnatal clinics. In addition, the study in Kwaebibirem was conducted among women who were 18 months postpartum compared with the 1-year follow up in the present study. However, the present study was consistent with the results of a study in Ethiopia where a contraceptive rate of 48.4% was recorded.[17] More women who received one-to-one counseling took up a method of contraception compared with those who received group counseling. This may be attributed to the fact that during one-to-one counseling, women are more likely to ask questions on issues that they do not understand for

TABLE 3 Logistic regression models for relative odds of uptake of postnatal contraceptive use/birth control within 1 year of delivery.

	Unadjusted		Adjusted	
	OR (95% CI)	*P* value	OR (95% CI)	*P* value
Mode of counseling		<0.001		<0.001
Group	Ref		Ref	
One-to-one	7.24 (5.14–10.20)		7.05 (4.94–10.07)	
Age of mother, year	0.97 (0.95–1.00)	0.034	0.95 (0.91–0.98)	0.002
Occupation		0.044		0.086
Student/Unemployed	Ref		Ref	
Public sector	0.69 (0.40–1.18)		0.66 (0.35–1.27)	
Private sector	0.45 (0.26–0.76)		0.40 (0.22–0.73)	
Trader	0.87 (0.58–1.29)		0.78 (0.48–1.28)	
Artisan	0.83 (0.56–1.24)		0.77 (0.48–1.23)	
Other	1.42 (0.34–5.89)		1.10 (0.22–5.50)	
Marital status		0.042		<0.001
Married	Ref		Ref	
Single	0.85 (0.59–1.22)		0.54 (0.35–0.85)	
Cohabiting	0.53 (0.31–0.90)		0.39 (0.22–0.69)	
No. of living children	1.12 (1.00–1.25)	0.044	1.10 (0.94–1.30)	0.223
Mode of delivery		0.007		0.469
Cesarean section	Ref		Ref	
Spontaneous vaginal	1.44 (1.11–1.88)		1.12 (0.83–1.52)	
Previous history of family planning		<0.001		0.008
No history	Ref		Ref	
Have history	2.10 (1.60–2.75)		1.55 (1.12–2.15)	

Abbreviations: CI, confidence interval; OR, odds ratio.

clarification by healthcare providers. This gives room also for the various myths and misconceptions surrounding contraception to be dispelled. On the contrary, during group counseling, the presence of others in the group may serve as a social inhibition to the women from freely asking questions and having their misunderstandings clarified. Some members of a group in their quest to have social conformity may not ask the appropriate questions that would help them to make an informed choice with regard to the uptake of contraception. This however is at variance with the findings of a study by Rawas et al.,[18] which essentially concluded that individuals who are involved in a group-learning environment had a better performance in the area of consolidation of knowledge, its application, and integration.

Compared with married women, this study found that single and cohabiting women had a decreased odds of uptake of postpartum contraception. Single women may not be at risk of resumption of sexual intercourse in the early postpartum period. The situation is however different for married women who, by virtue of the fact that they will be staying with their husbands, are likely to resume sexual intercourse early postpartum. This may be the reason for the above finding from the present study.

The present study has shown that for every additional increase of a year in the age of a postpartum woman, there was a reduction in the odds of uptake of postpartum contraception. This finding is similar to the findings of Rutaremwa et al.[19] in Uganda and Hossain and Khan[20] in Bangladesh. This observation may be attributable to the fact that older women are more likely to have had more previous experiences regarding adverse effects associated with the use of various contraceptive methods compared with younger women. There is a need to pay special attention to women who are at the end of their reproductive years with regards to counseling for postpartum contraception. This will help greatly to reduce unplanned pregnancies among these women.

The study also revealed that women with a previous history of family planning use were more likely to use postpartum contraception within the first year post-delivery compared with those who have no previous history. This finding is in tandem with the findings of Coomson and Manu[21] in their cross-sectional study carried out in a similar urban setting in Ghana, and another study done in Uganda.[22] Women who have used contraceptives in the past and have experienced good outcomes in terms of few adverse effects and also ultimately been able to prevent an unplanned pregnancy will be well motivated to take up a postpartum contraceptive. Those women who

have had first-hand experience with the use of contraceptives will not depend on hearsay, myths, and misconceptions. However, the finding is inconsistent with the results of a study by Adofo and Adofo,[12] where women who had no previous history of contraceptive use were eight times more likely to use postpartum contraception. The disparity in findings could be attributed to the difference in the settings in which these two studies were conducted.

This study was not devoid of limitations. The method and timing of contraceptive uptake were largely based on self-report of clients. Even though there was an attempt to confirm whether clients had taken up methods from various facilities, this verification was limited by the fact that records were available only for clients who used methods that required assistance or input from caregivers at various family planning centers. In spite of the limitations, this study has some strengths, such as its prospective longitudinal design, which makes it possible to establish a temporal relationship between contraceptive uptake and the method of counseling. The uptake of contraceptive was also measured at multiple times within the year to minimize the likelihood of recall bias.

In conclusion, contraception uptake during the postpartum period was low. One-to-one counseling was associated with a significantly greater uptake of contraception during the extended postpartum period compared with group counseling. This has huge potential of serving as a catalyst to bridge the yawning gap in the uptake of postpartum contraception in Ghana. A one-to-one counseling approach should be considered for adoption and implementation by the Ministry of Health across all postnatal units in the country.

AUTHOR CONTRIBUTIONS

Kwaku Asah-Opoku, Kareem Mumuni, and Ali Samba conceptualized and designed the study. Kwaku Asah-Opoku led data collection and analysis under the supervision of Kareem Mumuni, Kobinah Nkyekyer, and Ali Samba. Kwaku Asah-Opoku, Donne Kofi Ameme, and Abdul Gafaru Mohammed drafted the initial manuscript, which was reviewed for intellectual content by Kareem Mumuni, Ali Samba, and Kobinah Nkyekyer. All authors read and approved the final manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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