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Anthony Edward Boakye *

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Research Article

Breastfeeding Practices, Family Planning Exposure, and Women's Emergency Contraceptive Use in Ghana

Anthony Edward Boakye [1]*, Rita Tekpertey [2]

[1]Department of Health, Physical Education and Recreation, University of Cape Coast, Cape Coast, Ghana, Contribution: Conceptualise the study, methodology, formal analysis, data curation, Writing – original draft, proof reading and writing – review & editing.

[2]Department of Biostatistics and Epidemiology, University of Health and Allied Sciences, Ho, Ghana. Contribution: Conceptualise the study, data curation, formal analysis and Software, Writing – original draft, Software and proof reading.

***Corresponding Author:** Anthony Edward Boakye, University of Cape Coast, Cape Coast, Ghana.

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Abstract

Background: Emergency contraception (EC) decreases the chance of pregnancy after one episode of unprotected intercourse, including when the act occurs near the time the egg is released (ovulation)—when conception is most likely. Objective: Based on this, the study aimed to investigate how breastfeeding practices, and family planning exposure interplay to influence EC use among Ghanaian women.

Methods: Data for the study were extracted from the 2022 GDHS data. It was provided by Measure DHS Program/Initiative through the link https://dhsprogram.com/data. SPSS version 27 was used to processed the data and was analysed with frequency distribution, chi-squared test, and binary logistic regression. The frequency distribution was used to summarise participants responses into proportions. The Pearson's chi-squared test of independence was used to test the hypotheses postulated in the study to either accept or reject the null hypotheses. However, the binary logistic regression was used to determine the effects of the IVs on the DV.

Results: The study found that both breastfeeding practices, and family planning exposure were less significantly related to women's EC use in Ghana. It was revealed that 8664(92.6%) of the women never used EC in the past 12 months prior to the study.

Conclusion: The study results show that EC use among Ghanaian women was not significantly correlated with nursing behaviours or exposure to family planning services. This implies that although exposure to family planning and nursing are crucial aspects of postpartum reproductive health, they might not be the only factors influencing EC use.

Key words: breastfeeding; emergency contraceptive use; family planning exposure; ghana; women

Introduction

Although emergency contraception (EC) infrequently talked about openly, yet, it is more widely used than many might think [1,2]. The safest way to prevent pregnancy after unprotected sex is the use of EC [3]. This is used to prevent pregnancy for a short period of time after unprotected sex [4]. Using an EC correctly after having an unprotected sex makes it much less likely that a woman would become pregnant [5,6]. It has been established that an EC usage is safer hence, it does not cause any long-term side effects, and do not affect a woman's ability to become pregnant in the future [7,8]. Overall, the chance of pregnancy is about 5% after one episode of unprotected sex, but closer to ovulation, it is about 20 to 30% [4]. EC decreases the chance of pregnancy after one episode of unprotected intercourse, including when the act occurs near the time the egg is released (ovulation)—when conception is most likely [4]. EC can be used up to 5 days (120 hours) after unprotected sex [5,9]. However, it is most effective within the first 12-24 hours and it is intended for emergency situations and does not protect against sexually transmitted infections [9]. Thus, out of 100 women who have unprotected intercourse mid-cycle, approximately 8 would become pregnant. With the use of EC pills, only 2 of the 100 women would become pregnant [5,10].

Available options for EC include medications taken by mouth and a copper intrauterine device (IUD) [11,12]. These medications (the so-called morning-after pills) include levonorgestrel, ulipristal acetate, and combination oral contraception (estrogen plus levonorgestrel). They inhibit or delay ovulation. They are more commonly used as EC than are IUDs, even though a copper intrauterine device is the most effective form of EC. The copper IUD prevents the fertilised egg from implanting in the uterus [11,12].

Any woman or girl of reproductive age might need EC to avoid an unplanned pregnancy. Hence, there are no absolute medical contraindications, and there are no age limits to the use of EC [12]. However, the eligibility criteria that

applies for general use of a copper IUD also applies for the use of a copper IUD for emergency purposes [12]. Evidence suggests that globally, the use of EC has embraced an increase over the past eight years from 22% in 2015-2017 to 33% in 2022-2023 [13].

Surprisingly, breastfeeding is recognized to have up to 98% effective as a method of contraception [14,15]. Hence, it works as a form of birth control by delaying the return of a woman's menstrual periods. However, its only effective, if it is frequent and regular. Particularly, breastfeeding as a contraceptive works only if: a woman's baby is younger than 6 months old; menstrual periods have not returned; and the baby is exclusively breastfed on demand, night and day (that is, a minimum of 6 long breastfeeds every 24 hours, without a gap of more than 4 hours between feeds) [14,15]. However, once any of these factors change, breastfeeding cannot be relied on for preventing pregnancy and alternate contraception is recommended [16]. This indicates that a woman who is breastfeeding still stand the chance of becoming pregnant, therefore, they need to proactively apply safe contraceptive measures [17]. EC for breastfeeding mothers containing the active ingredient mifepristone 10mg are contraindicated [17]. Therefore, women who are breastfeeding can use the drug containing the active ingredient levonorgestrel, Postinor 1 or Postinor 2, without fear of affecting their baby. Although an emergency contraceptive pill for breastfeeding mothers only contains a small amount of progestin, it is not too harmful [17].

In Ghana, a significant approach for regulating the population is noted to be family planning methods [18,19]. Due to this, EC usage has become an essential fragment of family planning services to stop conception resulting from unprotected sexual intercourse or a contraceptive failure [18,19]. Despite family planning methods are effective in regulating and controlling unwanted pregnancies, yet, about 37.9% of pregnancies in Ghana are unplanned, with 14% being unwanted and 23% being mistimed [20]. As a result, thousands of pregnancies are terminated and over 300,000 babies are born due to unwanted pregnancies [20]. Studies have established that unwanted pregnancies are a major public health concern since their occurrence varies by region and socioeconomic category [21-23].

Evidence suggests that breastfeeding can stimulate a woman's decision to use EC, mostly in the situation of family planning exposure [24,25]. Women may still seek EC to avoid unwanted pregnancies even when nursing can serve as a natural form of contraception [14]. This is particularly true if they have had unprotected intercourse or had contraceptive failure [26,27]. Research conducted in Ghana has examined how women of reproductive age know about and use EC [28-37], as well as the impact of breastfeeding and family planning exposure [24,38,39]. This suggests that none of the studies have examined the three variables combined. Therefore, understanding how breastfeeding practices, exposure to family planning, and EC usage interrelate is essential for developing targeted interventions. Based on this, the current study aimed to investigate how breastfeeding practices, and family planning exposure interplay to influence EC use among Ghanaian women.

Specifically, the study seeks to:

1. Analyse if breastfeeding practices influence EC use among women in Ghana;
2. Assess whether family planning exposure influence EC use among women in Ghana.

The study further hypothesized that there is no statistically significant relationship between breastfeeding practices, family planning exposure and EC use among women in Ghana.

Methods

Data Source

Data for the study were extracted from the 2022 GDHS data. It was provided by Measure DHS Program/Initiative through the link https://dhsprogram.com/data. Data extracted revolved breastfeeding, exposure to family planning, and EC use.

Measures

In the study, the independent variables (IVs) are breastfeeding practices, and exposure to family planning while the dependent variable (DV) is EC use. The IVs were carefully chosen hence, studying the effect of breastfeeding, and exposure to family planning on women's EC use in Ghana is necessary to bring to bear how these variables interplay to influence women's reproductive health choices and outcomes [40-47]. However, EC being the DV was chosen because studying it would help provides critical insights into reproductive health behaviours, unmet contraceptive needs, and the effectiveness of family planning services among women in Ghana. Further, studying its use will help identify how well women are able to access and use EC when needed—particularly after missed pills, condom breakage, or sexual assault [48-51].

Data Processing and Analysis

SPSS version 27 was used to processed the data and was analysed with frequency distribution, chi-squared test, and binary logistic regression. The frequency distribution was used to summarise participants responses into proportions. The Pearson's chi-squared test of independence was used to test the hypotheses postulated in the study to either accept or reject the null hypotheses. However, the binary logistic regression was used to determine the effects of the IVs on the DV.

Ethical Consideration

The 2022 GDHS program obtained ethical clearance for the survey from both Ethical Review Committee of the Ghana Health Service and ICF Institutional Review Board. The ethical clearance assure that the survey procedures were in accordance with Ghana's ethical research standards and US and international ethical research standards.

Results

To identify the number of women who use EC in Ghana instigated data extraction on a single item used by the DHS thus (used EC in the past 12 months) for analysis. After the analysis, the results revealed that 8664(92.6%) of the women never used EC in the past 12 months while 689(7.4%) answered in affirmative.

In order to unravel the number of women who breastfeed in Ghana triggered data extraction on a single item used by the DHS thus currently breastfeeding for analysis. After the analysis, the results revealed that 5158(55%) of the women were breastfeeding while 4195(45%) of them were not breastfeeding.

Table 1 presents the outcome of Pearson's chi-squared test of independence on breastfeeding practices and EC use among women in Ghana. This analysis was necessary hence, it was used to test the hypothesis there is no statistically significant relationship between breastfeeding practices and EC use among women in Ghana. Statistically significant relationship was found between breastfeeding practices [$\chi 2=37.527$, $p<0.001$] and EC use among women in Ghana.

Variable	No (%)	Yes (%)	Total n (%)	χ^2	P-value
Currently breastfeeding				37.527	<0.001
No	90.8	9.2	4195(100.0)		
Yes	94.1	5.9	5158(100.0)		

Table 1: Relationship between Breastfeeding Practices and Emergency Contraception Use among Women in Ghana

Note: Row percentages in parenthesis, Chi-square significant at (0.001), (0.05), (0.10)
No: never used **Yes:** used

Source: GDHS (2022).

Further analysis was conducted with binary logistic regression on breastfeeding practices and EC use among women in Ghana. This analysis was done to ascertain the effect breastfeeding practices have on women's EC use in Ghana (See Table 2). After processing the data, the logistic regression model was significant at -2LogL = 4882.778; Nagelkerke R2 of 0.10; χ2= 37.286; p<0.001 with correct prediction rate of 92.6%. Significantly, the Model Summary which shows a Nagelkerke R2 of 0.10 suggests that the model explains 10% of variance in the likelihood of women's EC use in Ghana. With this percentage contribution to the entire model, the results confirmed the whole model significantly predict women's EC use in Ghana.

It emerged in Table 2 that currently breastfeeding was significantly related to women's EC use at p=0.001, (OR=0.616, 95%CI ([0.527-0.720]). This factor labels those women to have 0.61times less likely to use EC compared with their counterparts who intimated they are not breastfeeding (see Table 2).

Variable	B	Wald	Sig.	Exp(B)	95CI	
Currently breastfeeding (No=1.0)						
Yes	-0.485	36.949	0.000	0.616	0.527	0.720
Constant	**-2.289**	**1836.817**	**0.000**	**0.101**		

Table 2: Binary Logistic Regression Results on Currently Breastfeeding and Emergency Contraception Use in Ghana

Source: GDHS (2022). Significant at 0.05.

To ascertain the proportion of women who are exposed to family planning instigated data extraction on a single item used by the DHS thus exposure to need for contraception (definition 3) for analysis. After analysis, the results revealed that 62.3% of the women are fecund while 2.4% are infecund, menopausal **(See Table 3).**

Variable	Frequency	Percentage
Exposure to need for contraception (definition 3)		
Fecund	5823	62.3
Pregnant	839	9.0
Postpartum amenorrheic	2467	26.4
Infecund, menopausal	224	2.4
Total	**9353**	**100. 0**

Source: GDHS (2022).

Table 4 presents the outcome of Pearson's chi-squared test of independence on exposure to family planning and women's EC use in Ghana. This analysis was conducted to test the hypothesis there is no statistically significant relationship between exposure to family planning and women's EC use in Ghana. Statistically significant relationship was found between exposure to family planning [χ2=120.723, p<0.001] and women's EC use in Ghana.

Variable	No (%)	Yes (%)	Total n (%)	χ^2	P-value
Exposure to need for contraception (definition 3)				120.723	<0.001
Fecund	90.5	9.5	5823(100.0)		
Pregnant	94.8	5.2	839(100.0)		
Postpartum amenorrheic	97.2	2.8	2467(100.0)		
Infecund, menopausal	91.5	8.5	224(100.0)		

Table 4: Relationship between Family Planning Exposure and Women's Emergency Contraception Use in

Note: Row percentages in parenthesis, Chi-square significant at (0.001), (0.05), (0.10)
No: never used **Yes:** used
Source: GDHS (2022).

Further analysis was conducted with binary logistic regression on exposure to family planning and women's EC use in Ghana. This analysis was done to ascertain the influence of exposure to family planning on women's EC use in Ghana (See Table 5). After processing the data, the logistic regression model was significant at -2LogL = 4780.887; Nagelkerke R2 of 0.36; χ2= 139.177; p<0.001 with correct prediction rate of 91.4%. Significantly, the Model Summary which shows a Nagelkerke R2 of 0.36 suggests that the model explains 36% of variance in the likelihood of women's EC use in Ghana. With this percentage contribution to the entire model, the results confirmed the whole model significantly predict women's EC use in Ghana.

It emerged in Table 5 that pregnant was significantly related to women's EC use at p=0.001, (OR=0.524, 95%CI ([0.382-0.719]). This factor labels those women to have 0.52times less likely to use EC compared with their fecund counterparts (see Table 5). Further, postpartum amenorrheic was significantly related to women's EC use at p=0.001, (OR=0.277, 95%CI ([0.215-0.356]). This factor labels those women to have 0.28times less likely to use EC compared with their fecund counterparts (see Table 5). However, infecund, menopausal was not significant which could be as a result of chance. This suggests women's EC use in Ghana is not dependent on infecund, menopausal **(see Table 5).**

Variable	B	Wald	Sig.	Exp(B)	95CI	
Exposure to need for contraception (Fecund=1.0)						
Pregnant	-0.646	16.052	0.000	0.524	0.382	0.719
Postpartum amenorrheic	-1.285	98.932	0.000	0.277	0.215	0.356
Infecund, menopausal	-0.130	0.285	0.594	0.878	0.544	1.416
Constant	**-2.248**	**2542.477**	**0.000**	**0.106**		

Table 5: Binary Logistic Regression Results on Family Planning Exposure and Women's Emergency Contraception Use in Ghana

Source: GDHS (2022). Significant at 0.05.

Discussion

This study investigated the interplay between breastfeeding practices, family planning exposure, and EC use among women of reproductive age in Ghana, using recent DHS data. The findings reveal a weak association between breastfeeding practices and EC use among women in Ghana. This finding is consistent with previous studies which found that breastfeeding women with unplanned pregnancies were less likely to have used contraception than women who had weaned [39,52]. The plausible explanation to this finding could be that some women might mistakenly believe that breastfeeding provides complete protection against pregnancy, particularly when breastfeeding is frequent and exclusive (a method called Lactational Amenorrhea Method or LAM) [53-55]. This misconception can lead to decreased use of other contraceptive methods, including EC, even if unprotected sex occurs [39,56]. This finding suggests that women might be convinced that when breastfeeding frequency, duration, or intensity increases, the likelihood of using EC decreases [39,57]. Particularly, when breastfeeding is done exclusively and frequently (as in Lactational Amenorrhea Method - LAM), it can naturally suppress ovulation and reduce the risk of pregnancy [58]. Therefore, women relying on breastfeeding for contraception might not think of EC [39].

The study found that relationship exists between breastfeeding practices and EC use among women in Ghana. Therefore, the null hypothesis is ignored. A p-value of <0.001 found is an indication that breastfeeding speaks more about EC use among women in Ghana. The relationship again expressed that both the explanatory and the outcome variables are not independent of each other. This finding is in line with previous studies which found that breastfeeding intensity and family planning exposure were significantly associated with EC uptake [38,59,60].

Similarly, the study found frail association between family planning exposure and EC use. This finding corroborated with previous studies which found that formal family planning counselling or institutional family planning exposure was not a significant predictor of EC utilisation and that no clear evidence exists that family planning exposure leads to adoption of other modern methods after EC use [59,61,62]. This suggests a weak link between structured family planning contact and EC uptake [59,61,62]. The plausible explanation to this finding could be that these women might be concerned about the side effects, could either be religious or cultural beliefs, and a lack of access to or knowledge about EC [63-65]. Additionally, some women may not perceive a need for EC, believing they are not at risk of pregnancy or because they prefer other methods of contraception [66-68]. The finding implies that these women might choose other, more regular contraceptive methods or might lack awareness about EC [62,69,70]. Probably, it could also suggest a preference for other methods due to perceived side effects or a belief that regular methods are more effective [62,71].

The study found that relationship exists between exposure to family planning and women's EC use in Ghana. Therefore, the null hypothesis was not confirmed. A p-value of <0.001 found indicates that the relationship that exists between the explanatory and the outcome variables is stronger and that the variables are not independent of each other. This finding corroborated with previous studies which found that exposure to family planning messages has contributed to an increase in contraceptive use among women of reproductive age [72,73].

The study found that while 55% of the women reported breastfeeding and a significant proportion had some form of family planning exposure, yet, EC use remained notably low, with 92.6% of women reporting that they had not used EC in the 12 months preceding the survey. The findings are consistent with other studies which suggests that EC is often used discreetly and is less likely to be discussed openly in community or clinical settings [59,60,62,74]. This disconnects between knowledge and use highlights the importance of improving the quality of contraceptive counselling, particularly in postpartum care [60]. Interventions that integrate EC education into breastfeeding and postnatal services could address this gap and support women in making informed reproductive health decisions [40,75-78].

Conclusion

The results show that EC use among Ghanaian women was not significantly correlated with nursing behaviours or exposure to family planning services. The vast majority of the women (92.6%) had not used EC in the 12 months before to the study, even though more than half of them (55%) reported that they were nursing. This implies that although exposure to family planning and nursing are crucial aspects of postpartum reproductive health, they might not be the only factors influencing EC use. The low prevalence of EC use highlights the need for focused education and integrated postpartum contraceptive services that particularly address EC options and suggests possible gaps in knowledge, access, or counselling efficacy.

Limitations of the Study

The study was unable to establish causality between breastfeeding practices, family planning exposure, and EC use. Hence, the exposure and result data were collected concurrently therefore, it is difficult to determine if one led to the other or if they just happened together. Also, the DHS program mostly relies on self-reported responses, so, the possibility of social desirability or recall bias is high. For example, the validity of results may be impacted by underreporting or erroneous reporting of sensitive subjects including abortion, sexual conduct, or the use of contraceptives including EC and these biases are likely to affect the results of the current study. Therefore, the findings should be interpreted with caution.

Declaration

Abbreviations

- DHS Demographic and Health Survey
- DV Dependent Variable
- EC Emergency Contraceptive
- GDHS Ghana Demographic and Health Survey
- ICF International Coaching Federation
- IVs Independent Variables
- SPSS Statistical Package for the Social Sciences
- US United States

Ethics Approval and Consent to Participate

The GDHS Program obtained ethical approval from both The Ghana Health Service's Ethics Review Committee and The ICF The Institutional Review Board for ethical review. This dual approval process assure that the survey adheres to ethical guidelines and protects the rights of participants.

Consent for publication

Not Applicable

Availability of Data and Materials

The study made used of the 2022 GDHS data. Therefore, it is publicly available online at https://dhsprogram.com/data. This is Measure DHS Initiative or Program.

Competing Interests

No conflict of interest declared.

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The study was self-funded

Authors' Contributions

Anthony Edward Boakye Conceptualise the study, methodology, formal analysis, data curation, Writing – original draft, proof reading and writing – review & editing.

Rita Tekpertey Writing – original draft, Software and proof reading

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