

Ever Used Contraception, Sexual Abstinence, and Infants Breastfeeding among Women in Ghana

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ABSTRACT

Background: Infants breastfeeding, when delayed after birth, the consequences can be life-threatening – and the longer newborns are left waiting, the greater their risk of death. **Objective:** Based on this assertion, the study attempts to investigate the extent to which ever used contraception and sexual abstinence influences infants breastfeeding among women in Ghana. **Methods:** Data for the study were extracted from the 2022 GDHS data. Data extracted revolved ever used contraception, sexual abstinence, and infants breastfeeding. SPSS version 27 was used to process the data and were analysed with frequency distribution, chi-squared test, and binary logistic regression. The frequency distribution was used to summarise participants' responses into proportions. The chi-squared test was used to test the hypotheses postulated in the study to either approve or disprove the null hypotheses. However, the binary logistic regression was used to determine the influence ever used contraception and sexual abstinence exert on infants breastfeeding among Ghanaian women. **Results:** The study found that ever used contraceptive within the calendar period, and sexual abstinence were positively correlated with infants breastfeeding. Also, it emerged that only 23% of women were practicing infants breastfeeding prior to the study. **Conclusion:** The findings of the study suggest that reproductive behaviours such as contraceptive use and sexual abstinence are major predictors of infants breastfeeding practices among Ghanaian women. Therefore, the study recommends that any public health strategy that would be instituted by Ghana Health Service to promote infants breastfeeding should integrate family planning education and culturally sensitive support for postpartum sexual health practices.

Keywords: Abstaining from Sexual Activity, Babyhood Feeding, Ever Used Birth Control.

INTRODUCTION

From birth to 6 months of age, feeding infants nothing but breastmilk guarantees them a food source that is uniquely adapted to their nutrient needs, while also being safe, clean, healthy and accessible, no matter

Vol No: 07, Issue: 03

Received Date: July 14, 2025

Published Date: October 16, 2025

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Citation: Boakye AE, et al. (2025). Ever Used Contraception, Sexual Abstinence, and Infants Breastfeeding among Women in Ghana. Mathews J Nurs. 7(3):64.

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where they live [1-3]. Putting newborns to the breast within the first hour of life – known as early initiation of breastfeeding – is critical to newborn survival and to establishing breastfeeding over the long term [4]. Infants breastfeeding, when delayed after birth, the consequences can be life-threatening – and the longer newborns are left waiting, the greater their risk of death [1-3].

Globally, exclusive breastfeeding of infants under age six months has reached 48%, close to WHO 2025 target of 50% [2]. However, regarding the collective targets for the global rates in 2030 which are 70% for initiation in the first hour, 70% for exclusive breastfeeding, 80% at one year, and 60% at two years; the rates of breastfeeding remain lower than what is required to protect the health of women and children [2]. For instance, in 2016-22, it was noted that only 46% of newborns-initiated breastfeeding within one hour of birth against the target of 70%. While 71% of women continue to breastfeed their infant for at least one year, by two years of age, breastfeeding rates decline to 45% [2].

However, in the West and Central Africa Regions (WCAR), evidence suggests that exclusive breastfeeding rates are among the lowest in the world at 37% [5]. In Ghana, early initiation and exclusive breastfeeding of young children are vital components of Ghana's Infant and Young Child Feeding Strategy [6]. Yet, only 56% of Ghanaian infants initiate breastfeeding within the recommended one hour post-delivery. Further, only 52% of infants below 6 months are exclusively breastfed. The duration of exclusive breastfeeding has been progressively declining over the past decade [6].

Our literature search could not locate peer-reviewed or published studies that simultaneously examined all three variables—ever using contraception, postpartum sexual abstinence, and infant breastfeeding—together among women in Ghana. However, available evidences suggest that previous studies investigated these themes in pairs; and reveal remarkable discrepancies when findings are compared [7-11]. Hence, a research gap. Based on this assertion, the study attempts to investigate the extent to which ever used contraception and sexual abstinence influence infants breastfeeding among women in Ghana.

Specifically, the study seeks to:

- 1) Examine whether ever used contraceptive influences infants breastfeeding among women in Ghana;

- 2) Assess if sexual abstinence influences infants breastfeeding among women in Ghana.

The study further hypothesised that there is no statistically significant relationship between ever used contraceptive, sexual abstinence, and infants breastfeeding among women in Ghana.

METHODS

Data Source and Measures

Data for the study were extracted from the 2022 GDHS data which was provided by Measure DHS program/initiative. Data extracted revolved ever used contraception, sexual abstinence, and infants breastfeeding. In the study, ever used contraceptive, and sexual abstinence were the independent variables (IVs) while infants breastfeeding was the dependent variable (DV). The variables were chosen because evidences suggest that studying them (ever used contraception, sexual abstinence, and infant breastfeeding) together is essential; hence, they jointly determine women's risk of unintended pregnancy [7,10,12-17].

Sample and Sampling Procedure

The 2022 GDHS made use of a nationally stratified representative sample of 18,450 households which was selected in 618 clusters and resulted in 15,014 interviewed women age 15–49 and 7,044 interviewed men age 15–59 (in one of every two households selected). However, the 2022 GDHS employed an updated sampling frame prepared by Ghana Statistical Service (GSS) based on the 2021 Population and Housing Census [18]. Also, the sampling procedure used in 2022 GDHS is a stratified two-stage cluster sampling which was designed to yield representative results at the national level, for urban and rural areas, and for each of the 16 regions, for most DHS indicators. In the first stage, 618 target clusters were selected from the sampling frame using probability proportional to size (PPS) for urban and rural areas in each region. Then the target number of clusters was selected with equal probability, systematic random sampling of the clusters selected in the first phase, for the urban and rural areas in each region. In the second stage, after selection of the clusters, a household listing and map updating operation was carried out in all the selected clusters, to develop a list of all the households in the cluster. This list served as a sampling frame for selection of the household sample [18].

Questionnaire and Fieldwork

The 2022 GDHS made use of four questionnaires including the Household Questionnaire, the Woman's Questionnaire, the Man's Questionnaire, and the Biomarker Questionnaire. These questionnaires were adapted to reflect the population and health issues relevant to Ghana [18]. The 2022 GDHS data collection commenced on 17th of October 2022 and ended on 14th January 2023. In all, three months were used to collect the data from the field [18].

Data Processing and Analysis

Data extracted from the 2022 GDHS were processed with SPSS version 27 and were analysed with frequency distribution, chi-squared test, and binary logistic regression. The frequency distribution was used to summarise participants' responses into proportions. The chi-squared test was used to test the hypotheses postulated in the study to either approve or disprove the null hypotheses. However, the binary logistic regression was used to determine the influence ever used contraception and sexual abstinence exert on infants breastfeeding among Ghanaian women.

Ethical Consideration

To undertake the survey in 2022, GSS obtained ethical approval/clearance from both Ethical Review Committee (ERC) of the Ghana Health Service and the ICF Institutional Review Board (IRB). The dual ethical approval assured that the survey procedures were in accordance with Ghana, US and international ethical research standards.

RESULTS

To identify breastfeeding women in Ghana triggered data extraction on a single item (currently breastfeeding) used by the 2022 DHS for analysis. After the analysis, the results revealed that 11618(77.4%) of women intimated they are not currently breastfeeding while 3396(22.6%) of them reported that they are currently breastfeeding.

To ascertain women who had ever used contraception instigated data extraction on a single item (ever used anything or tried to delay or avoid getting pregnant) used by the 2022 DHS for analysis. After the analysis, the results revealed that 7256(48.3%) of the women answered in affirmative by saying they used in calendar while 1220(8.1%) of women also answered in affirmative by saying they used but outside calendar (See Table 1).

Table 1. Ever Used Contraceptive among Women in Ghana

Variable	Frequency	Percentage
Ever used anything or tried to delay or avoid getting pregnant		
No	6538	43.5
Yes, used outside calendar	1220	8.1
Yes, used in calendar	7256	48.3
Total	15014	100.0

Source: GDHS (2022).

Table 2 presents outcome of Pearson's chi-squared test of independence on ever used contraceptive and infants breastfeeding among women in Ghana. This analysis was conducted to test the hypothesis there is no statistically

significant relationship between ever used contraceptive and infants breastfeeding among women in Ghana. Statistically significant relationship was found between ever used contraceptive [$\chi^2=144.655$, $p<0.001$] and infants breastfeeding among women in Ghana.

Table 2. Relationship between Ever Used Contraceptive and Infants Breastfeeding among Women in Ghana

Variable	No (%)	Yes (%)	Total n (%)	X ²	P-value
Ever used anything or tried to delay or avoid getting pregnant				144.655	<0.001
No	81.5	18.5	6538(100.0)		
Yes, used outside calendar	80.7	19.3	1220(100.0)		
Yes, used in calendar	73.1	26.9	7256(100.0)		

Note: Row percentages in parenthesis, Chi-square significant at (0.001), (0.05), (0.10)

No: do not breastfeed

Yes: breastfeed

Source: GDHS (2022).

Further analysis was conducted with binary logistic regression on ever used contraceptive and infants breastfeeding among women in Ghana. This analysis was conducted to ascertain the influence of ever used contraception on breastfeeding among women in Ghana (See Table 3). After processing the data, the logistic regression model was significant at $-2\text{LogL}=15908.959$; Nagelkerke R² of 0.015; $\chi^2=144.916$; $p<0.001$ with correct prediction rate of 77.4%. Significantly, the Model Summary which shows a Nagelkerke R² of 0.015

suggests that the model explains 1.5% of variance in the likelihood of women's breastfeeding in Ghana. With this percentage contribution to the entire model, the results confirmed the whole model significantly predict women's breastfeeding in Ghana.

It emerged in Table 3 that yes, in calendar was significantly related to women's breastfeeding at $p=0.001$, (OR=1.614, 95%CI [1.488-1.750]). This variable label those women to have 1.5 times more likely to breastfeed compared with their counterparts who had never used anything or tried to delay or avoid getting pregnant (see Table 3). However, the rest of the variable (yes, used outside calendar) was not significant which could be as a result of chance. This suggests women's breastfeeding in Ghana is not dependent on it (see Table 3).

Table 3. Binary Logistic Regression Results on Ever Used Contraceptive and Infants Breastfeeding among Women in Ghana

Variable	B	Wald	Sig.	Exp(B)	95CI	
Ever used anything or tried to delay or avoid getting pregnant (No=10)						
Yes, used outside calendar	0.047	0.356	0.551	1.048	0.898	1.225
Yes, used in calendar	0.479	133.622	0.000	1.614	1.488	1.750
Constant	-1.480	2163.591	0.000	0.228		

Source: GDHS (2022). Significant at 0.05.

In order to ascertain if sexual abstinence predicts infants breastfeeding among women in Ghana triggered data extraction on a single item (currently abstaining) used by the 2022 DHS for analysis. After the analysis, the results revealed that 13572(90.4%) of the women reported they are not currently abstaining from sexual activity while 1442 (9.6%) of the women intimated they are currently abstaining from sexual activity.

Table 4 presents Pearson's chi-squared test of independence outcome on sexual abstinence and infants breastfeeding among women in Ghana. This analysis was conducted to test the hypothesis there is no statistically significant relationship between sexual abstinence and infants breastfeeding among women in Ghana. Statistically significant relationship was found between sexual abstinence [$\chi^2=3301.080$, $p=0.000$] and infants breastfeeding among women in Ghana.

Table 4. Relationship between Sexual Abstinence and Infants Breastfeeding among Women in Ghana

Variable	No (%)	Yes (%)	Total n (%)	X ²	P-value
Currently abstaining				3301.080	0.000
No	83.8	16.2	13572(100.0)		
Yes	17.2	82.8	1442(100.0)		

Note: Row percentages in parenthesis, Chi-square significant at (0.001), (0.05), (0.10)

No: do not breastfeed

Yes: breastfeed

Source: GDHS (2022).

Further analysis was conducted with binary logistic regression on sexual abstinence and infants breastfeeding among women in Ghana. This analysis was conducted to determine the influence of sexual abstinence on infants breastfeeding among women in Ghana (See Table 5). After processing the data, the logistic regression model was significant at -2LogL=13358.783; Nagelkerke R² of 0.250; $\chi^2= 2695.092$; $p=0.000$ with correct prediction rate of

83.7%. Significantly, the Model Summary which shows a Nagelkerke R² of 0.250 suggests that the model explains 25.0% of variance in the likelihood of women's breastfeeding in Ghana. With this percentage contribution to the entire model, the results confirmed the whole model significantly predict women's breastfeeding in Ghana.

It emerged in Table 5 that currently abstaining from sexual activity was significantly related to women's breastfeeding at $p=0.000$, (OR=24.860, 95%CI [[21.522-28.715]]). This variable label those women to have 24.9times more likely to breastfeed compared with their counterparts who intimated they are not currently abstaining from sexual activity (see Table 5).

Table 5. Binary Logistic Regression Results on Sexual Abstinence and Infants Breastfeeding among Women in Ghana

Variable	B	Wald	Sig.	Exp(B)	95CI	
Currently abstaining (No=1.0)						
Yes	3.213	1907.839	0.000	24.860	21.522	28.715
Constant	-1.642	4971.359	0.000	0.194		

Source: GDHS (2022). Significant at 0.05.

DISCUSSION

This study attempted to unravel the interaction between ever used contraceptive, sexual abstinence and infants breastfeeding among women in Ghana. The findings reveal positive association between ever used contraceptive within calendar period and infants breastfeeding. This finding is consistent with a previous study conducted in Indonesia which found that contraceptives are associated with a longer duration of breastfeeding [19]. On the contrary, the finding contradicted a previous study which found that oral contraceptives may reduce breastfeeding duration [20]. The finding suggests an increased awareness or access to family planning services among women who are

currently breastfeeding [21-23]. A plausible explanation to this finding could probably be that breastfeeding women engage with postnatal health services where they are educated/counselled on family planning and perhaps receive contraceptive methods [24]. Further, these breastfeeding women might seek to prevent a closely spaced pregnancy which could encourage timely adoption of contraception [7,19]. Conversely, women who are already using contraception may feel more confident continuing or initiating breastfeeding, knowing that they are protected from unintended pregnancy [25-27].

The study found a positive correlation between women practicing sexual abstinence prior to the study and infants breastfeeding. This finding corroborated with previous

studies conducted across diverse cultural contexts which also found a positive correlation between postpartum sexual abstinence and longer breastfeeding duration [28-33]. The plausible explanation to this finding could probably be that these women do adhere to abstinence—often until weaning—guided by tradition, perceived health benefits, or child spacing goals [34-36]. This finding suggests that women who do abstain from sexual activity during post-delivery may be more devoted to a sustained breastfeeding often due to cultural traditions, health beliefs, and/or desire to space births naturally [34-37].

The study found that relationship exists between ever used contraceptive and infants breastfeeding among women in Ghana. Therefore, the null hypothesis was ignored. This finding corroborated with previous studies which found that prior contraceptive exposure significantly increased the likelihood of current contraceptive use, which in turn was associated with continued breastfeeding at routine child welfare visits [7,10,38-41]. A p-value of <0.001 found is an indication that ever-used contraceptive is a stronger predictor of infants breastfeeding among women in Ghana. This meant that the more and more breastfeeding women continue to use contraceptive, it is the more and more that they would continue to breastfeed their infants. The plausible explanation to this finding could be that breastfeeding women are aware that it is only the breastmilk that guarantees a food source that is uniquely adapted to infants' nutrient needs [1-3].

The research revealed that relationship exists between sexual abstinence and infants breastfeeding among women in Ghana due to this, the null hypothesis was disproved. This finding corroborated with previous studies which found that traditional postpartum abstinence remains a core part of birth-spacing strategies grounded in breastfeeding patterns [10,42]. A p-value of <0.001 found indicates that both explanatory variable (sexual abstinence) and the outcome variable are not independent of each other, hence, interdependence. Further, the relationship found is a testimony that sexual abstinence is a stronger predictor of infants breastfeeding among women in Ghana. Furthermore, the relationship found express that the more and more breastfeeding women practice sexual abstinence, it the more and more that they would continue to breastfeed their infants. The plausible explanation to this finding might be

that breastfeeding women understand that the breastmilk is safe, clean, and healthy for their infants [1-3].

The study found that 77% of women were not currently breastfeeding prior to the study. This finding refuted a study conducted in Polokwane, South Africa which found that 94% of the mothers had initiated breastfeeding, at the time of data collection 8% had stopped [43]. This finding implies that a significant proportion of women were not initiating breastfeeding or had already stopped before the study began [44]. The plausible explanation to this finding might be that these women do not want to be tied down, embarrassment, or not liking breastfeeding [44,45]. Further, household tasks, like caring for other children, and societal pressures, such as returning to work or school, also might play a role [46-48]. Furthermore, concerns about milk supply, perceived difficulties with the breastfeeding process, and lack of support from healthcare providers or family can lead to early cessation [49-51].

The study found that only 23% of the women were currently breastfeeding. This finding corroborated with a study conducted in Ile Ife, Nigeria which also found that only 23% of women breastfed their infants exclusively for four to five months while, 5% breastfed exclusively for at least six months [52]. This finding suggests a relatively low rate of breastfeeding among the women included in the research [53]. This highlights a substantial gap between recommended breastfeeding practices and actual implementation, impacting infant health and development [54,55].

The study found that significant proportions of the women surveyed used calendar-based methods as a contraceptive. The finding corroborated with previous studies which also found that calendar-based contraceptive methods are still significantly used among women, particularly where modern contraceptives are less accessible or where cultural/religious norms favour natural methods [10,56]. The high use of calendar-based methods calls for targeted reproductive health education to ensure accurate cycle tracking, especially considering variability in menstrual cycles [10,56]. Further, the few (8.1%) women reporting use "outside the calendar" could benefit from enhanced counselling on more effective contraceptive options or better understanding of fertility signs [57,58]. The plausible explanation to this finding could be that cultural or religious influences do favour natural methods over modern contraceptives [56,58]. Hence, should

be acknowledged and integrated into culturally sensitive public health strategies. Also, with the right support, women already aware of fertility timing can be guided toward combining methods (e.g., calendar + condoms) to improve effectiveness [56,58].

The study found that 90% of the women surveyed were not abstaining from sexual activity. This finding corroborated with previous studies which found that overwhelming majority of women discontinue postpartum sexual abstinence well before six months post-delivery [8,42,59,60]. This is an indication that a large majority of the women in the study were sexually active and suggests that a relatively small proportion of the women were practicing sexual abstinence at the time of the study [60,61]. The plausible explanation to this finding could probably be that the societal norm favour sexual activity during reproductive years and that not all women choose to abstain [62,63]. However, the 10% of the women practicing sexual abstinence prior to the study reason could probably be due to a variety of reasons which might include personal, cultural, or religious beliefs [64-66]. Further, it could be concerns about sexually transmitted infections (STIs) or pregnancy, or a desire to focus on other aspects of life [8]. Furthermore, some women may choose abstinence as a form of birth control or may be abstaining due to a lack of access to or knowledge about other contraceptive methods [8]. This result refuted a previous study which found that a higher proportion (~ 44%) of the respondents was currently abstinent compared to those with met need (~ 25%) [67].

CONCLUSIONS

The findings of the study suggest that reproductive behaviours such as contraceptive use and sexual abstinence are major predictors of infants breastfeeding practices among Ghanaian women. Therefore, the study recommends that any public health strategy that would be instituted by Ghana Health Service to promote infants breastfeeding should integrate family planning education and culturally sensitive support for postpartum sexual health practices.

LIMITATIONS OF THE STUDY

The current study was able to establish only associations but not causal relationships cannot be established hence, the DHS conducted the survey cross-Sectionally were data

were collected at one point in time. Due to this the current study was able to find relationships between ever used contraceptive, sexual abstinence and infants breastfeeding, but could not determine which causes which.

DECLARATION

ABBREVIATIONS

DHS: Demographic and Health Survey; DV: Dependent Variable; EC: Emergency Contraceptive; GDHS: Ghana Demographic and Health Survey; GSS: Ghana Statistical Service; 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.

FUNDING

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.

ACKNOWLEDGEMENTS

We acknowledge measure DHS program for making the datasets available to us on 20th August, 2023.

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