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Knowledge, Attitude, Utilization and Barriers to Emergency Contraception among Reproductive-Age Women Between 15 and 24 Years in Ghana’s Poor and Low-Resource Settings: The Case of East-Gonja Municipality

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| **Abstract:** Improving access and use of modern contraceptive methods such as emergency contraceptive (EC) has been suggested, among other healthcare continuum, as the solution to the global population dilemma. However, there is a paucity of data on modern contraceptive use and associated factors in Ghana’s impoverished and low-resource settings. This study sought to examine the level of knowledge on EC, attitude towards EC, utilization, and barriers to EC among reproductive-age women between 15 and 24 years in the East-Gonja Municipality of Ghana. The study was conducted in Salaga, the administrative capital of the East-Gonja Municipality, using a school-based, descriptive cross-sectional study design. The study population comprised of female students from the Salaga Senior High School (SHS). Data were collected using structured, self-administered questionnaires. Analysis was done using Statistical Package for Social Sciences version 25. About 62% of the respondents had inadequate knowledge on EC. More than half (56.5%) of the sample who reported prior awareness of EC showed a negative attitude toward EC. Less than half (48.5%) of the respondents who indicated had ever engaged in vaginal intercourse reported ever-use of EC. The major reason for EC non-use was fear of stigma (62.0%). Although the majority of the respondents were aware of EC, most of them demonstrated inadequate knowledge and poor attitude toward EC, the former being a major reason for EC non-use. Our findingssuggest the need for comprehensive Sexual and Reproductive Health (SRH) education and improved access to modern contraceptives among adolescents and youth in the East-Gonja municipality. |

**Keywords:**Knowledge; attitude; utilization; barriers; emergency contraceptive.

1. **INTRODUCTION**

Despite being one of the least developed regions in the world, Africa’s population is growing faster than any other continent (Ahinkorah *et al*., 2020; Wilmoth *et al*., 2022), a situation which has a potentially far-reaching negative impact on the region’s socio-economic development (Kaba, 2020). Improving access and use of modern contraceptives has been suggested, among other healthcare continuum, as the solution to the global population dilemma (Kaba, 2020). For instance, findings from recent global population studies suggest that addressing all unmet needs for modern contraceptives could reduce the incidence of unplanned pregnancies and childbirths by approximately 75% (Ndayizigiye *et al*., 2017), one of the greatest developmental milestones the world would have witnessed in the 21st century. At the time when several contraceptive methods are available on the market, emergency contraceptive (EC) remains an irreplaceable method of family planning. EC is a family planning method that can be used after failure of barrier contraceptive methods, sexual assault, and/or missed oral contraceptive pills to prevent pregnancy (Hussain & Kavanaugh, 2021).

However, recent studies have found a strong correlation between residence in an impoverished community and lack of access and utilization of sexual and reproductive healthcare (SRH) services including family planning (Hellwig *et al*., 2021), which has resulted in several unintended and unwanted pregnancies (Asamoah & Agardh, 2018). Contemporary evidence proves that this inequality often exist within and between-country in sub-Saharan Africa (SSA) (Jko *et al*., 2020). Consequently, there is persistently high number of unplanned pregnancies among adolescents and youth in the region (United Nations Population Fund [UNFPA], 2010).

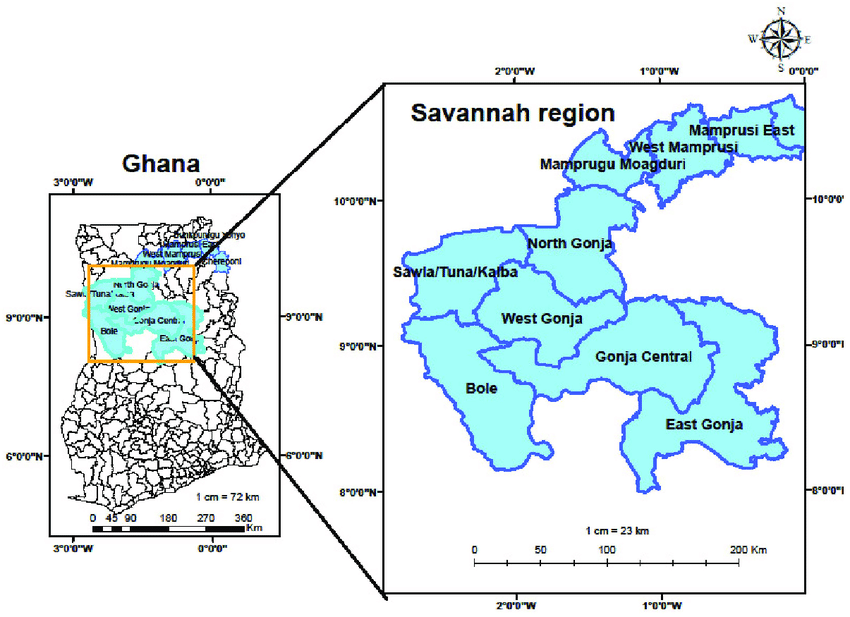
Although specific programs like the Adolescent Health Service Policy and Strategy (AHSPS) (Ghana Health Service [GHS], 2016) have resulted in decreased incidence of adolescent pregnancy in Ghana, the progress has been uneven. For instance, following the implementation of the AHSPS, the incidence of adolescent pregnancy in the Savannah region of Ghana rose by 13.3% between 2018 and 2020, despite a 5.7% reduction at the national level (Lartey, 2021). Similar disparities are evident in other countries in Africa (Bamiwuye, *et al*., 2013; ; Ndayizigiye *et al*., 2017; Ahinkorah *et al*., 2020; Hellwig *et al*., 2021), reflecting the existing inequity in access to SRH services in the region and the need for an effective intervention (Duran *et al*., 2016).

Unfortunately, little is known about the knowledge, awareness, attitude, utilization and barriers to EC among reproductive-age women in one of Ghana’s most impoverished and low-resource settings, the East-Gonja Municipality. This study, therefore, sought to fill the existing knowledge gap by assessing the knowledge on EC, attitude toward EC, utilization and barriers to EC among adolescents and youth in Salaga, the administrative capital of the East-Gonja Municipality in the Savannah Region of Ghana. The findings from this study could help to inform SRH policy development at the local and national levels.

1. **Materials and methods**

**Study design and study area**

We used a descriptive cross-sectional study design. The study was conducted in Salaga, the administrative capital of the East-Gonja municipality in the Savannah region of Ghana. The East-Gonja municipality is located at the eastern part of the Savannah Region. According to report from the 2021 population and housing census, the municipality has a population of 117,755 (third highest in the Savannah Region). Males constitute 51.1% (60,199) of the total population. More than half of the population live in rural communities (n = 85216; 72.4%) (Ghana Statistical Service, 2021). The Municipality is divided into seven (7) sub-municipals – Salaga North, Salaga South, Kafaba, Kayereso, Makango, Buma and Aboromase (East Gonja Municipal Health Directorate, 2022). There is one (1) hospital, one (1) polyclinic, four (4) health Centers/Clinics and twenty-six (26) functional CHPS zones in the East-Gonja Municipality (Ministry of Finance - Ghana, 2021). A recent report by the Ghana National Household Registry (GNHR) and Data Dissemination showed that the East Gonja municipality has the second highest poverty rate in the Savannah region (70.0%), after North East Gonja district (Laari, 2021). There are two second-cycle institutions in the municipality offering co-education for both resident and non-resident students – Salaga SHS, and T. I. Ahmadiya SHS, the former being the oldest and most populous.

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**Fig. 1** Map of the Savannah Region of Ghana showing the study area - East Gonja municipality. Source:Seglah *et al.* (2022)**.**

**Study population and sampling method**

The target population comprised of students of the Salaga SHS. Data obtained from the institution’s academic office showed that at the time of the study, the school had 1,559 student populations, comprising 857 females and 702 males. Based on this, the sample size for the study was determined using the Yamane (Yamane, 1967) simplified formula with the following assumptions; a 95% Confidence Interval (CI), and a 5% absolute precision (e). The estimated sample size (n ≥ 268) was increased by 10% to take care of non-response and incomplete questionnaires. Thus, the total sample size for the study was estimated as 295.

**Data collection**

Structured, self-administered questionnaires were used to collect data for the study. The instrument was adapted from the literature (Semero *et al*., 2015; Mishore *et al*., 2019; Shakya & Ghimire, 2020; Menene *et al*., 2020; Mesfin, 2020; Mamuye *et al*., 2021) and modified to suit the specific objectives of this study. The first component of the instrument assessed respondents’ socio-demographic data. The other sections contained questions on respondents’ knowledge on EC, attitude toward EC, utilization and barriers to EC. Data were collected in July 2019, at the Salaga SHS. Two probability sampling techniques – stratified and systematic sampling techniques were used to recruit respondents for the study. Inclusion criteria were; female gender, age (15-24 years), current student of the Salaga SHS, and prior registration at the school’s academic office. Following recruitment of study participants, the research objectives and the significance of the study were explained extensively to the respondents and written informed consents and assents were obtained. The study questionnaires were distributed to the respondents and were allowed 30 minutes to respond to the questionnaires. After the time allotted for the data collection, the questionnaires were retrieved from the respondents for data analysis.

**Data analysis**

The primary data were analyzed using Statistical Package for Social Sciences (SPSS) version 25. We first conducted a descriptive analysis, tabulating the distribution of respondents’ socio-demographic characteristics. The level of knowledge on EC was measured using seven closed-ended questions. Each question had a set of options which respondents were to choose from. Each correct answer was awarded a specific mark (ranging from 1-4) and a wrong answer, zero (0). The total score for every respondent was calculated as the summation of the individual scores. The minimum and maximum possible scores were zero and thirteen, respectively. Every individual’s overall score was converted into a percentage and respondents who had 50.0% or more were graded as having “adequate knowledge” on EC and those who scored below 50.0% were graded as having “inadequate knowledge” on EC (Mishore *et al*., 2019; Menene *et al*., 2020; Mesfin, 2020). Attitude toward EC was evaluated using a 5-item Likert scale. There were seven questions, six positively worded and one negatively worded, with responses ranging from one to five. One represented strongly disagree, and five represented strongly agree. Three questions were reversed during the data analysis because they required disagreement to be awarded the highest score of five. The total score for every respondent was calculated as the summation of the individual scores. The minimum and maximum possible scores were zero and thirty-five, respectively. Every respondent’s overall score was converted into a percentage and those who had 50.0% or more were graded as having a “positive attitude” toward EC whereas those who scored below 50.0% were graded as having a “negative attitude” toward EC (Mishore *et al*., 2019; Menene *et al*., 2020; Mesfin, 2020). Utilization of EC was computed as the number of respondents who reported ever using EC after sexual intercourse to prevent pregnancy (Mishore *et al*., 2019; Menene *et al*., 2020; Mesfin, 2020). Reasons (barriers) for EC non-use among sexually active respondents were grouped into six themes; fear of stigma, cost of EC, non-availability of commodity, lack of knowledge about EC, fear of side effects of EC, and current use of other contraceptive methods. Because respondents could report more than one barrier, each response category was analyzed separately.

**Ethical consideration**

Ethical approval for the study was obtained from the Research and Ethics Review Committee of the College of Health, Yamfo, Ghana. Permission was also obtained from the management of the Salaga SHS to conduct the study in their institution. Written informed consent and assent were obtained from the respondents before the data collection. Participation was voluntary and the participants were informed that they could withdraw from the study at any stage of the data collection, if they wanted to, without any penalty or explanation. The study questionnaires were anonymized with unique codes and respondents were fully assured of their confidentiality and privacy.

1. **RESULTS**

**Socio-demographic characteristics**

Table 1 presents respondents’ socio-demographic characteristics. Two hundred and ninety-five (295) reproductive-age women between 15 and 24 years of age participated in the study. Approximately, the same number of respondents was drawn from each year group. The majority of the respondents were between 15 and 19 years of age (63.7%). About one-third (33.2%) of the respondents were Gonjas by tribe who are natives of the East-Gonja Municipality. A larger proportion of the respondents were Muslims (66.8%). The majority (61.0%) of the respondents were residents in their schools hostels, and more than half (58.0%) of the respondents reported being in an intimate relationship.

**Table 1.** Socio-demographic characteristics of the respondents

| **Variable** | **Frequency (N = 295)** | **Percent (%)** |
| --- | --- | --- |
| Age |  |  |
| 15-19 years | 188 | 63.7 |
| 20-24 years | 107 | 36.3 |
| Tribe/ethnicity |  |  |
| Gonja | 98 | 33.2 |
| Hausa | 63 | 21.4 |
| Dagomba | 56 | 19.0 |
| Akan | 35 | 11.9 |
| Others | 43 | 14.6 |
| Religion |  |  |
| Islam | 197 | 66.8 |
| Christianity | 98 | 33.2 |
| Course year\* |  |  |
| SHS 1 | 98 | 33.2 |
| SHS 2 | 98 | 33.2 |
| SHS 3 | 99 | 33.6 |
| Residence |  |  |
| On school campus | 180 | 61.0 |
| Outside school campus | 115 | 39.0 |
| Relationship status |  |  |
| Single | 124 | 42.0 |
| Intimate relationship | 171 | 58.0 |

\*SHS, Senior High School.

**Level of knowledge on EC**

Although more than half of the respondents indicated they had ever heard about EC, overall, the majority of them (62.0%) had inadequate knowledge on EC (Figure 1), according to our specified criteria.

**Fig 2. Respondents**’ level of knowledge on EC, results from a descriptive analysis. N = 295.

**Attitude towards EC**

Also, based on our specified criteria, more than half (56.6%) of the 181 respondents who indicated had ever heard about EC showed a negative attitude toward this contraceptive method (Figure 2).

**Fig 3.** Study participants’ attitude towards EC, results from a descriptive analysis. N = 181.

**Utilization of EC**

As shown in Table 2 below, of the 295 respondents, 52.5% reported ever engaging in vaginal intercourse with a man and were, therefore, considered potential users of EC. However, only 48.0% of them reported ever-using EC. The main reason for using EC was unprotected sexual intercourse (57.5%). The commonest method of EC reportedly used by the respondents was the oral contraceptive pill (OCP) (98.6%). Drug store/pharmacy was the main access point for the purchase of EC for most of the individuals (78.1%) who reported ever-using EC.

**Table 2**. Sexual behaviour and emergency contraceptive use among the respondents

| **Variable** | **Frequency (n)** | **Percent (%)** |
| --- | --- | --- |
| Ever had sexual intercourse\* |  |  |
| Yes | 152 | 51.5 |
| No | 143 | 48.5 |
| Ever used EC\*\* |  |  |
| Yes | 73 | 48.0 |
| No | 79 | 52.0 |
| Last time EC was used\*\*\* |  |  |
| 0-1 month | 38 | 52.1 |
| 2-6 months | 25 | 34.2 |
| > 6 months | 10 | 13.7 |
| The main reason for using EC\*\*\* |  |  |
| Unprotected sexual intercourse | 42 | 57.5 |
| Incorrect use of other contraceptive methods | 18 | 24.7 |
| Possible contraceptive failure | 7 | 9.6 |
| Sexual assault without contraceptive coverage | 6 | 8.2 |
| Time interval between the sexual act and EC use\*\*\* |  |  |
| 0-24 hours | 39 | 53.4 |
| 25-48 hours | 17 | 23.3 |
| 49-72 hours | 12 | 16.4 |
| After 72 hours | 5 | 6.8 |
| Method of EC used\*\*\* |  |  |
| Oral contraceptive pill | 72 | 98.6 |
| Intrauterine contraceptive device | 1 | 1.4 |
| Source of EC\*\*\* |  |  |
| Pharmacy shop/drug store | 57 | 78.1 |
| Community clinic/hospital | 7 | 9.6 |
| Others | 9 | 12.3 |

\*N= 295; \*\*N = 152; \*\*\*N = 73. EC, emergency contraceptive.

**Barriers to EC**

Figure 3 presents reasons for EC non-use among respondents who reported ever engaging in vaginal intercourse with a man. The result indicates that several factors including fear of stigma (62.0%), non-availability of EC (59.5%), cost of EC (57.0%), lack of knowledge about EC

(54.4%), current use of other contraceptive methods (50.6%), and fear of side effects of EC (43.0%) were the reasons for EC non-use among persons who reported had ever engage in vaginal intercourse with a man.

**Fig 4.** Reasons (barriers) for EC non-use among study participants who reported prior sexual intercourse with a man. N = 79. EC, emergency contraceptive.

1. **DISCUSSION**

In an institutionally representative sample of women aged 15-24 years, we observed a low level of knowledge on EC although the majority of them reported prior EC awareness. While this finding differs from those of single-site studies in southern Ghana (Yeboah, Appiah, & Kampitib, 2022), southern Ethiopia (Mesfin, 2020), and northern Tanzania (Dangat & Njau, 2013), the current finding mirrors observations of previous studies in low-resource settings of Nepal (Pradhan *et al*., 2020), Nigeria (Babatunde *et al*., 2016), and India (Relwani *et al*., 2012) that measured female adolescents’ knowledge on EC. Reproductive-age women from impoverished communities and low-resource settings often have limited access to SRH services (including accurate information and education) than those from high-resource settings (Staveteig *et al*., 2018), a disparity that may have resulted in the current observation. Adequate knowledge on EC among reproductive-age women enhances EC utilization (Deressa & Yang, 2021) and potentially reduces the number of unplanned and unwanted pregnancies (Staveteig *et al*., 2018). Therefore, an important implication of the current finding is that unplanned pregnancies among the target population may continue to rise. The current finding, while preliminary, suggests the need for comprehensive SRH education in the East-Gonja Municipality.

Our finding also indicates that the majority of the reproductive-age women who reported prior awareness of EC showed a negative attitude toward EC. Although this result differs from observations made in some published studies (Abrha *et al*., 2014; Thapa *et al*., 2015; Semero *et al*., 2015; Shakya & Ghimire, 2020; Mamuye *et al*., 2021)**,** there are similarities between the attitude expressed by respondents in this study and those reported in some previous research (Bajpai, 2015). In these studies (Abrha *et al*., 2014; Thapa *et al*.,2015; Semero *et al*., 2015; Shakya & Ghimire, 2020; Mamuye *et al*., 2021), the majority of the respondents had good or fair knowledge on EC, although none of the studies measured the association between the two variables. It may be the case, therefore, that the relatively poor attitude toward EC, expressed by the majority of respondents in our study, was due to the inadequate level of knowledge on EC. The poor knowledge and attitude towards EC meant that most sexually experienced women could be exposed to a myriad of SRH risks and associated consequences such as unintended and unplanned pregnancies, and therefore suggests a need for intervention.

Close to half of the reproductive-age women in our study reported using EC. This is encouraging, comparing our observation with those reported earlier in the literature (Semero *et al*., 2015; Mamuye *et al*., 2021). It is somewhat surprising, especially for the fact that the majority of respondents in these studies (Abrha *et al*., 2014; Thapa *et al*.,2015; Semero *et al*., 2015; Shakya & Ghimire, 2020; Mamuye *et al*., 2021), demonstrated adequate knowledge and a positive attitude toward EC, yet, the use of EC was relatively low compared with our findings. This rather contradictory result may be explained, in part by the possibility that most of the respondents in the previous studies were correctly using other contraception methods at the time of the study and therefore did not need to use EC. However, similar disparities have been reported in other countries in SSA (Bamiwuye *et al*., 2013; Ndayizigiye *et al*., 2017; Ahinkorah *et al*., 2020; Hellwig *et al*., 2021), which may reflect inequity in access to SRH services and indicate a need for intervention. Our investigation further revealed that most of the sexually active women used EC because they had unprotected sexual intercourse, however, we did not explore the frequency of EC use. With the scope of the current study, it remains unclear whether providing comprehensive SRH counseling and unrestricted access to other modern contraceptive methods would improve their use and potentially limit the frequency of EC use.

Our research found five major reasons for the non-use of EC. These were fear of stigma, non-availability of EC, cost of EC, lack of knowledge on EC, and fear of side effects of EC. Concerns for user privacy and fear of stigma, non-availability of EC, cost of EC, lack of knowledge on EC, and fear of side effects of EC have been reported in the literature as barriers to EC among reproductive-age women Milkowski *et al*., 2021; Kwame *et al*., 2022). In particular, fear of stigma may be heightened in settings where contraceptive users perceive or experience threats to client privacy and confidentiality (Milkowski *et al*., 2021), where issues related to sex and reproductive health are hardly discussed in the open and often adolescents are deprived of the chance to benefit from public discussions with their parents and adult members of the same neighborhood on topics related to sexuality and reproductive health (Planned Parenthood Association of Ghana [PPAG], 2016). Our study did not investigate the perceived need for or willingness to use other contraceptive methods. It may be the case, therefore, that, in the face of other barriers, the low EC use reflects differences in this potentially underlying factor.

1. **CONCLUSION**

Our study was able to unearth important contemporary issues related to EC among reproductive-age women in one of Ghana’s highly impoverished and low-resource settings. The current findings, while preliminary, suggest the need for comprehensive SRH education and improved access to modern contraceptives for adolescents and youth in the East-Gonja Municipality. A major limitation of this study is that the study did not address the underlying drivers of the observed sexual behaviours and EC use. We also could not determine the sexual partner’s role in EC use or non-use. Further research is, therefore, needed to examine the potential differences within and between groups (age, relationship status, and socio-economic groups), concentrating particularly on structural factors and existing inequities.

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Volume 09, Number 1 Page no.