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Emergency contraception knowledge, utilization and its determinants among selected young females in Addis Ababa, Ethiopia

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Abstract

Background Emergency Contraceptives (EC) can play an important role in public health by preventing unwanted pregnancy and unsafe abortion, thereby reducing associated health risks and social and economic problems. In Ethiopia, early initiation of sex coupled with inadequate awareness and lower utilization of EC highlights the need for studies to assess knowledge and utilization of EC and its determinant factors.

Objectives This study aims to assess the knowledge and utilization of emergency contraception and identify the factors that influence its use among young females in Addis Ababa, Ethiopia.

Design and methods A community-based cross-sectional study was conducted among selected young women in Addis Ababa, Ethiopia from July to September 2021. Participants were selected using convenience sampling. A single proportion formula was used to calculate the sample size. A self-administered structured questionnaire was used, and quantitative data was collected using Google Forms. Collected data was cleaned, entered, and analyzed using SPSS 26.

Results The response rate of the study was 87.7%. Almost all the participants were aware of EC (98.8%), but only 57.7% of them had good knowledge. Of the 261 participants who had sex, 240(91.2%) used EC. Factors associated with good knowledge about EC included attending university or college (AOR: 1.070, CI: 0.392–2.924, P-value = 0.002) and using EC every time they had sexual intercourse (AOR: 0.171, CI: 0.062–0.474, P-value = 0.001). Additionally, females with good knowledge about EC were 68.1% more likely to use EC compared to those with poor knowledge (AOR: 0.319, CI: 0.114–0.888, P-value: 0.029). Factors positively associated with EC utilization included having good knowledge of EC (AOR: 0.319, CI: 0.114–0.888, P-value: 0.029) and preferring to obtain EC services from pharmacy professionals (AOR: 0.246, CI: 0.072–0.847, P-value = 0.026).

Conclusion This study highlights the need for more information, education, and communication efforts to improve awareness and use of EC.

Keywords Emergency Contraception (EC), Knowledge, Utilization, Ethiopia

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Introduction

Unplanned pregnancies are a global public health concern, accounting for 44% of all pregnancies with 74 million in developing countries [1], 45 million of which result in abortion; this is primarily due to condomless sex, which is the second leading cause of disability and death in the world's poorest communities [2]. In Ethiopia, a recent meta-analysis showed that the overall unintended pregnancy was 28% and indicated that it is more likely due to failure to use the family planning method [3]. Another meta-analysis showed that the pooled prevalence of termination of pregnancy in Ethiopia was 21.52%, with one in five women terminating their pregnancies [4].

Sexual intercourse does not always occur in a planned and controlled context. Poor access and awareness of current means of contraception, failure, and imperfect use of contraceptives [5], are the main reasons for the high prevalence of unplanned and undesired pregnancies. Furthermore, determining the infertile time of the cycle with accuracy is challenging. As a result, regardless of the cycle or day of exposure, any woman concerned about her risk of pregnancy should have access to emergency contraception [2].

Emergency contraception (EC) is a contraceptive method used to prevent pregnancy after unprotected sexual intercourse, inappropriate contraceptive use, concerns about likely contraceptive failure, and sexual assault when contraception coverage is not available [6]. Two methods of EC are copper-bearing intrauterine devices (IUDs) and emergency contraceptive pills (ECPs). The World Health Organization (WHO) recommends ulipristal acetate, levonorgestrel, or combination oral contraceptives (COCs) containing ethinyl estradiol and levonorgestrel as emergency contraceptive pills [7]. ECPs taken within 72 h of unprotected sexual intercourse can prevent pregnancy by 75–85%, whereas IUCDs inserted within 5 days of unprotected sex can prevent unwanted pregnancies by as much as 99%. ECPs are the most common EC available in Ethiopia due to their affordability and its accessibility [8].

EC use can play an important public health role in preventing unwanted pregnancy and unsafe abortion, thereby reducing associated health risks and social problems, particularly in adolescents who began sexual activity before beginning to use ongoing contraception and whose sexual behavior is rather unplanned, erratic, and irregular [2, 9]. However, studies in middle and lower-income nations revealed that the percentage of EC utilization was 50.5% in Congo, 13.3% in Nigeria, and 39.9% in Ghana [1, 10, 11].

The Ethiopian Mini Demographic and Health Survey (EDHS) 2019 report indicated that the contraceptive prevalence rate among Ethiopian women aged 15–49 is 28%. Additionally, the use of emergency contraceptives among sexually active unmarried women is less than 1% [12]. Studies has shown that the practice of emergency contraceptive utilization among female university students in Ethiopia varies from 4.9% to the highest 78% [13]. A recent meta-analysis found that the overall prevalence of emergency contraceptive use is 34.5% [11]. In a study conducted among women who sought post-abortion care, only 8.6% had ever used emergency contraceptives [14]. The majority of studies in Ethiopia have focused on university, college, and high school students [5, 15–17], while little attention has been given to the general population of women with varying educational levels and socio-demographic status. Education is one of the factors associated with emergency contraceptive utilization, and studies among female university and higher school students may not accurately represent all women [11]. In Ethiopia, early initiation of sex coupled with inadequate awareness and lower utilization of EC underlines the need for rigorous studies to assess EC knowledge and practice among all women [18]. Therefore, this study aimed to assess knowledge and utilization of EC and its determinant factors among selected young women in Addis Ababa, Ethiopia.

Methods and materials

Study area

This study was carried out in Addis Ababa, the capital city of Ethiopia. It currently has a population of 4.8 million people in the urban area [19]. At the time of the study period, the administrative structure of Addis Ababa is divided into 10 sub-cities [20]. Women between the ages of 15–24 account for 21.5% of the female population. The study sampled women aged 15–35, which represents a significant portion of the reproductive age group. This range is relevant as it includes both younger and more mature women, capturing a comprehensive picture of EC knowledge and utilization across different stages of reproductive life [21].

Study design & study period

A community-based cross-sectional quantitative study was employed. The data collection took place from August to September 2021. A quantitative structured questionnaire was used, and data were collected online using Google Forms.

STROBE statement

Adherence to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement [22] was ensured in this cross-sectional study. This study followed the STROBE statement as a guide to report the study design, methods, and findings accurately.

Source population

The source population for this study included all reproductive-age females living in Addis Ababa, Ethiopia.

Study population

The study population consisted of females residing in Addis Ababa who met the following inclusion criteria during the study period from July to September 2021.

Eligibility criteria

Inclusion criteria

Females who are residents of Addis Ababa within the age group 15–35 years and who have access to the internet and were willing to engage in the study were considered.

Sampling size determination and sampling technique

Sample size determination

The sample size was determined using the single population proportion formula with the assumption of a 95% confidence interval and a margin of error of 50%. Since previously published work was not available on knowledge and its source of emergency contraception among female Addis Ababa residents for the age groups 15–35 years, 50% of the population proportion was used to determine the sample size. Then by adding a non-response rate of 10%, a sample of 423 was determined. Convenience sampling was employed to select 372 females in Addis Ababa.

The sampling of young women with access to the internet was chosen for practicality and feasibility, as online data collection allowed us to reach a larger number of participants efficiently. However, we acknowledge that this method may introduce bias toward higher education levels and socioeconomic status. Individuals with internet access are more likely to be more educated and have higher incomes. This bias could affect the generalizability of our findings, as previous research has shown that higher education levels are associated with better knowledge and utilization of emergency contraception. To mitigate this bias, we attempted to reach a diverse population by distributing the survey link through various platforms frequented by individuals of different backgrounds.

To avoid selection bias and ensure the representativeness of the survey sample, participants were approached through various online platforms, including social media groups (such as Facebook), community forums, and email lists. Ads and survey links were posted on these platforms, targeting groups and pages frequented by women aged 15–35. The survey also included a question confirming that respondents resided in Addis Ababa. Only those who confirmed Addis Ababa as their location were included in the analysis. Ages were self-reported, and only those between 15 and 35 years were included. Additionally, the survey link was distributed at different times and on different days to reach a wider audience. Diversification was achieved by targeting diverse groups and forums that cater to women of varying educational and socioeconomic backgrounds. This approach helped to gather responses from a broad segment of the population, minimizing the risk of selection bias. The response rate of 87.7% was calculated based on the number of fully completed surveys compared to total link clicks. No incentives were offered for submitting the survey.

Data collection procedure

Following an extensive literature review, a structured self-administered questionnaire was prepared [14, 23–25]. Initially, the questionnaire was prepared in English and then translated into Amharic. To maintain participant confidentiality, all data collected was anonymous, with no personal information disclosed. Data collection was conducted using an Amharic version of the questionnaire, which was distributed online through Google Forms.

Validity and reliability of study instruments

The study advisors confirmed the face validity of the study instrument. To ensure the reliability of the data collection instrument, it was pretested on 15 young women living in Addis Ababa, Ethiopia who were not part of the actual study. The reliability of the study instrument using Cronbach's alpha coefficient (α) was found to be 0.83.

Data processing, analysis, interpretation & reporting

Once all the necessary data had been gathered, it was exported to an Excel file and filtered to remove any invalid entries, such as responses from individuals under the age of 15 or those with more than 90% of unanswered questions. This filtered data was then imported into the IBM-SPSS software (version 23) for further analysis. The findings were presented using descriptive statistics, including frequencies and cross-tabulations. Additionally, a binary logistic regression was performed, as the dependent variables in this study were dichotomous in nature. Initially, a univariate binary logistic regression was performed and a p-value threshold of ≤ 0.20 was used to determine which variables would be included in the multivariable analysis. Finally, a p-value of < 0.05 was considered statistically significant in the multivariable model, and the associations were presented as adjusted odds ratios with 95% confidence intervals.

Model fitness was tested using the Hosmer-Lemeshow goodness-of-fit test. Multicollinearity among variables for the final model was assessed using variance inflation factors and no significant multicollinearity was detected among the variables included in the multivariable analysis. Adjusted odds ratios with 95% confidence intervals were calculated to determine the strength of

Table 1 Socio-demographic characteristics of participants ($n=372$)

Variable	*N* (%)
Age (in years)	
15–19	115 (30.4)
20–25	162 (43.5)
25–30	95 (25.1)
Educational status	
Secondary school	114 (30.6)
University/ college student	203 (54.6)
Degree holder	55 (14.8)

associations, and a p-value < 0.05 was considered statistically significant.

To assess the level of knowledge among females regarding emergency contraception (EC), seven knowledge evaluation questions were administered. These questions were derived from previous study on EC knowledge [26]. Each correct response to a knowledge assessment question was assigned a value of "1," while incorrect responses were assigned a value of "0." The scores were then added up, and individuals who scored above the mean were categorized as having "good" knowledge, while those who scored below the mean were categorized as having "poor" knowledge.

Irrespective of usage, five important questions were presented to participants, and each question was analyzed and interpreted separately. Additionally, three basic questions were included to explore participants' opinions and concerns, regardless of their attitude toward the information source or their concerns about emergency contraception.

Operational definitions

Knowledge of EC: To assess the level of knowledge among females regarding EC, seven knowledge evaluation questions were administered [26].

Practice of EC:

To assess the practice regarding EC utilization, participants were asked about their actual use of EC,

Results

Out of the total 423 women, 372 completed and returned the questionnaire, resulting in a response rate of 87.7%. The majority of participants in the study were between the ages of 20 and 24. Regarding their educational status, more than half of the women were attending university or college (54.6%) (Table 1).

Sexual experience of respondents

70.3% of women had sexual intercourse and 38.5% of them had only one sexual partner. Nearly 60% of respondents had their first sexual encounter between the ages of 14 and 19 years, with a mean (± SD) age of 19.7(± 2.61) years. Less than one-fourth of women who had sex had an unintended pregnancy. 48.9% of women cited forgetting to take contraception after sex and 31.1% cited a lack of knowledge about EC at the time as the cause. The majority dealt with unintended pregnancies by having abortions (84.5%). Furthermore, 93.5% had no history of sexually transmitted diseases (STDs) (Table 2).

Table 2 Sexual experience of respondents

Variable	*N* (%)
Ever had sex ($n=372$)	
Yes	261(70.3)
No	111(29.8)
Used contraceptive at intercourse(history of unprotected sex) ($n=261$)	
Yes	212(81.2)
No	49(18.8)
Age of first sexual intercourse	
14–19	151(57.9)
20–24	91(38.9)
≥ 25	19(3.2)
Number of sexual partner ($N=261$)	
1 partner	143(38.5)
1–3 partners	78(21)
≥ 4 partners	40(10.8)
History of unintended pregnancy? ($n=261$)	
Yes	45(17.2)
No	216(82.8)
Reason for Pregnancy	
Forgot to take contraceptives after sex	22(48.9)
Wrong EC use	3(6.7)
Condom breakage	6(13.3)
Lack of knowledge about EC at the time	14(31.1)
How was the unintended pregnancy managed? ($n=45$)	
Delivery	7(15.5)
Abortion	38(84.5)
Ever had STD? ($n=261$)	
Yes	17(6.5)
No	244(93.5)

Respondent's knowledge of emergency contraception

Of the total 372 respondents, almost all had heard of EC (98.7%), with ECP being the most commonly known method (60.4%). More than three-quarters of those who were aware of emergency contraception correctly identified the time at which ECP should be taken (75.7%), and 207 (56.6%) knew the recommended time interval between the two pills. Furthermore, the majority of respondents (65.8%) correctly identified the reason for taking EC as following unprotected sexual intercourse, and nearly 90% of them (88.1%) recognized EC cannot prevent STD. Regarding the EC in preventing pregnancy, 36.9% of the respondents stated that it is highly effective, while 51% stated that it is effective. The knowledge summary index shows that the majority of respondents (57.7%) had good knowledge of ECPs (Table 3).

Table 3 Respondents' knowledge about emergency contraceptives ($n = 372$)

Variable	*N* (%)
Heard about Emergency Contraception(EC)	
Yes	366(98.7)
No	6(1.6)
Type of EC you know(heard about)	
Emergency Contraceptive Pills (ECP)	224(60.4)
Intrauterine Devices (IUD)	6(1.6)
Both	116(31.3)
Time at which ECPs should be taken after unprotected sex	
Even after a missed period	15(4)
Within 24 h after sex	37(10.1)
Within 4–6 days after sex	12(3.4)
Within 72 h after sex	277(75.7)
I don't know	25(6.8)
Time between EC pills	
12 h apart	207(56.6)
24 h apart	77(21)
I don't know	82(22.4)
Reason for use of ECs	
After unprotected sexual intercourse	241(65.8)
As a regular method of contraception	23(6.3)
Don't know	26(7.1)
When unwanted pregnancy occurred	76(20.8)
ECs can prevent STD	
No	323(88.3)
Yes	43(11.7)
Effectiveness of EC in preventing Pregnancy	
Effective 75–89%	187(51)
Highly effective (> 95%)	135(36.9)
I don't know	30(8.2)
Less effective (< 10%)	8(2.2)
Not effective at all	6(1.7)
Side effects of EC	116(31.7)
Infertility	212(57.9)
Nausea, vomiting and irregular menstrual cycle	11(3)
Headache	27(7.4)
Nausea and vomiting	
Knowledge of EC	
Good knowledge	211(57.7)
Poor knowledge	155(42.3)

Source of information about emergency contraception

Among women who reported having heard about EC, 150 (40.4%) mentioned that their first source of information was friends, followed by school at 94 (25.3%) and mass media at 87 (21%) (Fig. 1).

Study participants' level of utilization of emergency contraception

Of the 261 participants who had sex, 240 (91.2%) had used EC. Nearly half of the participants did not recall the frequency (47.1%) of EC use, whereas nearly one-third reported using it whenever they had sexual intercourse (32.1%). Alarmingly, more than three-fourths of respondents (76.3%) reported that they did not begin regular contraception after using EC, and more than half (52.9%) preferred using EC instead of condoms. When asked who should provide EC services, the majority of respondents (54.5%) suggested pharmacists or pharmacy technicians, followed by other healthcare workers (32.1%) (Table 4).

Determinants of emergency contraception knowledge

A bivariate analysis was conducted, and variables with a p-value of less than or equal to 0.2 were included in multivariable logistic regression. Women who attended university or college were associated with a more than a four-fold increase in the likelihood of having good knowledge compared to those who did not pursue a university/college education (AOR: 4.478 CI: 1.744–11.499, P-value 0.002). The study revealed that women who had not engaged in sexual activity had a 60.5% higher likelihood of having poor knowledge about emergency contraceptives compared to those who had engaged in sexual intercourse (AOR: 0.395 CI: 0.249–0.627, P-value 0.000).

On the other hand, women who claimed to consistently use emergency contraceptives with every instance of sexual intercourse had an 82.9% higher probability of having poor knowledge, in contrast to those who were unable to recall their frequency of emergency contraceptive use (AOR: 0.171, CI: 0.062–0.474, P-value 0.001) (Table 5).

Determinants of emergency contraception utilization

Study participants with good knowledge of EC were 68.1% more likely to use it compared to those with poor knowledge (AOR: 0.319, CI: 0.114–0.888, P-value: 0.029). Furthermore, participants who preferred obtaining EC services from pharmacy professionals were 86.5% more likely to use EC (AOR: 0.246, CI: 0.072–0.847, P-value: 0.026). Similarly, those who reported receiving EC from peers had a 75.4% higher likelihood of using it compared to participants who preferred obtaining EC from healthcare workers. These findings highlight the influence of knowledge and source preferences on EC utilization (Table 6).

Discussion

Unintended pregnancy and its associated negative outcomes, such as unplanned childbirth, abortion, and depression could be avoided with proper use of EC within the right time interval and a reliable and trustworthy information source in the correct setting [27]. This study has tried to analyze the knowledge and use of emergency contraception by females in Addis Ababa with a focus on emergency contraceptive sources and associated factors.

In the current study, nearly all of the participants (98.7) had heard of EC. This finding is consistent with the findings of research conducted in Mekelle (90.7%) and Harar

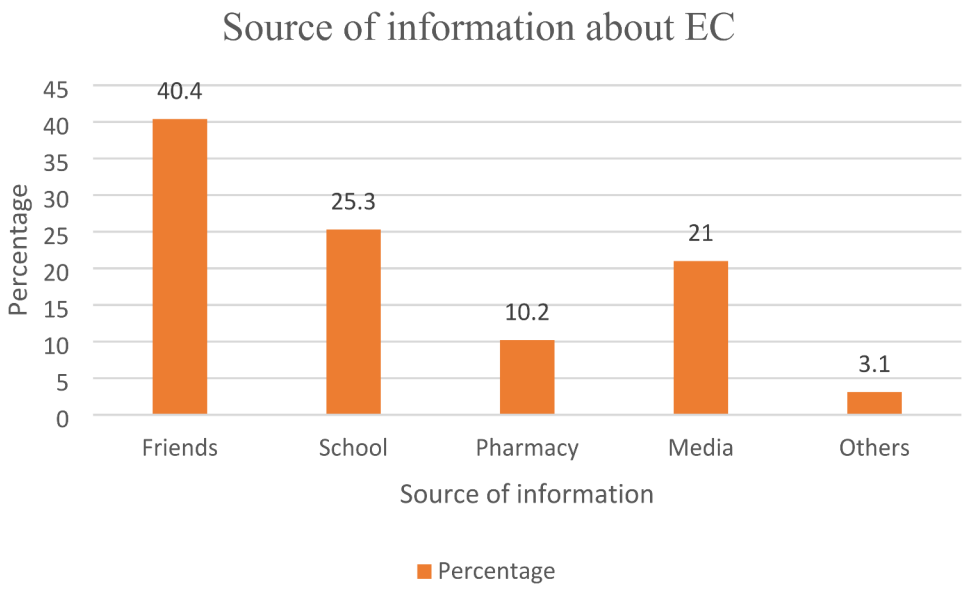

Fig. 1 Source of information about emergency contraception, Addis Ababa, 2021, ($n=372$)

Table 4 Study participants' level of utilization of emergency contraception

Variable	*N* (%)
Ever used EC (*n* = 261)	
Yes	240(91.2)
No	21(8.8)
How often do you use EC (*n* = 240)	
Every time I have sexual intercourse	77(32.1)
Not often since I use the regular method of birth control	50(20.8)
I don't remember	113(47.1)
Did you start using a regular contraceptive after using EC	
Yes	57(23.7)
No	183(76.3)
I prefer using EC to using a condom	
Agree	134(52.9)
Disagree	127(47.1)
Who would you like to provide Emergency contraceptive services	
Health workers	119(32.1)
Pharmacist/pharmacy technician	202(54.5)
Social media	43(11.6)
Peers	7(1.9)

(93.5%) [15, 16]. In comparison to studies in Mizan (73.3%) and Fiche town (34.1%), participants of this study had a better awareness of EC [17, 25]. The observed difference could be attributed to the increased availability of information and media coverage of EC in the capital city. Participants in this survey are also much more aware than those in Nepal (63%), Botswana (52.8%), and Cameroon (63.7%) [28–30]. This could be attributable to robust educational programmes and communication efforts about EC in Ethiopia [27].

It is important to note that being aware of EC doesn't guarantee that respondents would have adequate knowledge. In this study, 98.7% of respondents were about EC, yet only 57% of them had good knowledge. This lack of knowledge could be partly explained by inadequate provision of information by healthcare professionals who are afraid to inform about EC for fear of repeated use and irresponsible sexual behavior [31].

Out of those who have heard about EC, the majority of the participants are aware of Emergency contraceptive pills (ECPs) (60.4%), whereas nearly one-third of them reported knowing both types of EC (ECPs and IUDs) (31.3%). A relatively lower percentage of participants in Arba Minch (54.9%) and Wolayita (27.3%) identified ECPs as a possible method of EC [5, 27].

Three-fourths of the participants correctly indicated the timing at which ECPs should be used. This is almost similar to research conducted in Arbaminch (87.4%) and higher than Hawassa (21.9%) and Diredawa (15.1%). This figure is also higher than those obtained in Ghana (10%) and Nigeria (18%) [5, 32, 33].

When asked if EC protects against STI, a much higher proportion of respondents accurately answered no. Similarly, in a Brazilian study, 96% of those polled were aware that EC does not protect against STI [31].

In general, the findings of this study revealed that slightly more than half of the survey participants have good knowledge of EC. This is greater than the findings of previous studies in Arbaminch (21.9%), Haramaya (25.7%), Mizan (34.6%), and Nigeria (27.8%) [5, 11, 17, 34]. However, knowledge levels are lower as compared to studies done in Mekelle (75.7%), Harar (70%), and India (60.1%) [15, 16]. The disparities in knowledge discovered

Table 5 Determinants of emergency Contraception Knowledge

Variables		Knowledge		AOR (CI)	*P*-value
		Poor	Good		
Age (in years)					
	15–19	28	66	1.00	
	20–25	60	99	0.785 (0.425–1.450)	0.440
	25–30	67	45	1.070 (0.392–2.924)	0.895
Educational status					
	Didn't joined university	71	42	1.00	
	Did Joined university	84	169	4.478 (1.744–11.499)	0.002*
Ever had sexual intercourse					
	Yes	93	167	1.00	
	No	62	44	0.395 (0.249–0.627)	0.000*
Unprotected sex					
	Never	23	25	1.00	
	Sometimes	32	64	0.284 (0.060–1.354)	0.114
	Most of the times 7	37	57	0.507 (0.115–2.233)	0.369
How often you use EC					
	I don't remember	37	81	1.00	
	Every time I have sexual intercourse	34	43	0.171 (0.062–0.474)	0.001*
	Not often since I use regular methods	10	40	0.625 (0.270–1.451)	0.274

*variables with statically significant association

Table 6 Determinants of emergency contraception utilization

Variables		Ever used EC		AOR (CI)	*P*-value
		Yes	No		
Partners					
	Only 1	120	22	1.00	
	1–3	65	12	3.508 (0.380-32.424)	0.269
	> 4	39	1	4.748 (0.494–45.624)	0.177
Unprotected sex					
	Never	33	14	1.00	
	Sometimes	89	7	3.013 (0.965–9.412)	0.058
	Most of the times	82	11	0.518 (0.153–1.751)	0.290
Knowledge category					
	Poor	74	21	1.00	
	Good	21	13	0.319 (0.114–0.888)	0.029*
Who would you like to provide EC services					
	Health workers	71	11	1.00	
	Pharmacists/pharmacy technicians	132	9	0.135 (0.037–0.498)	0.003*
	Peers	5	1	0.246 (0.072–0.847)	0. 026*
	Social media	18	10	0.665 (0.048–9.152)	0.760

*variables with statically significant association

may be explained by the availability of information or not, access to the internet and media coverage, and the popularity of the EC method at all levels of the healthcare system in the cities and different countries.

In this study, the primary source of EC knowledge was friends, followed by schools, similar to the findings of the Wolkite and Debretabor study, in which women obtained EC information through friends [2, 27]. In contrast, findings from research conducted in Harar, Arbaminch, and Hawassa revealed that healthcare professionals and the media were the major sources of EC information [5, 16, 32]. Meanwhile, the main source of information in the studies done abroad was comparable to the findings of this study, with Congo and Brazil citing peers and friends as their primary source of EC information [10, 31]. It is concerning that the majority of respondents learned about EC from friends, as information conveyed in this manner may be inaccurate.

When surveyed on who should provide Emergency Contraceptive (EC) services, a majority of respondents suggested that pharmacists or pharmacy technicians followed by healthcare workers would be most

appropriate. This aligns with a study conducted in Spain, which found that 68.8% of females recommended pharmacies or healthcare facilities as preferred locations to access EC [35]. EC pills can be acquired from pharmacies and healthcare facilities through straightforward verbal requests, without the need for a medical prescription. This accessibility allows individuals to obtain ECPs along with accurate information and guidance on their use, which is essential for encouraging responsible usage and decreasing the chances of unintended pregnancies. It is important to avoid depending on informal sources of ECPs, such as friends, family, or non-pharmacy outlets, as these can often be unreliable and may spread misinformation.

The study revealed that a significant proportion (91.2%) of respondents had used EC at some point in their lives, far surpassing the utilization rates observed in previous studies conducted in Mizan (31.7%), Harar (34.8%), Arbaminch (58.8%), and Mekelle (60.5%) [5, 15–17]. Furthermore, compared to other countries like Nigeria (15.2%), Congo (50.5%), and Nepal (51.8%), the utilization of EC in this study was much higher [10, 11, 28]. One possible reason for the elevated prevalence of EC use in this study may be the fact that it can be purchased from over-the-counter drug retail outlets without requiring a medical prescription, thereby making it more accessible.

The present study showed that 47.1% of the women surveyed were unable to recall how often they used EC, while 32.1% of them used it each time they had sexual intercourse. This indicates that a significant number of women have used ECP more than once. The fact that 52.9% of females in the study preferred to use EC instead of condoms further supports this finding. Similar results were observed in Spain and other European countries where three out of ten women reported using ECP more than once [35]. These results emphasize the importance of providing accurate information on contraceptive methods and promoting their appropriate use to prevent recurrent use of EC.

The findings of this study showed that educational status (AOR: 4.478 CI: 1.744–11.499, P = value 0.002), history of sexual intercourse (AOR: 0.395 CI: 0.249–0.627, P = value 0.000), and frequency of use of EC (AOR: 0.171, CI: 0.062–0.474, P-value = 0.001) had a statistically significant association with knowledge of EC. Females who attended university are four times more likely to be knowledgeable about EC compared to those who did not attend university/college (AOR: 4.478 CI: 1.744–11.499, P = value 0.002). Similar findings from other studies in Haramaya, Fiche town, and Wolkite also supported the idea that senior-class females had greater awareness of EC compared to junior-year students, possibly due to increased exposure to EC-related information through extracurricular activities and relationships [16, 25, 27]. The study findings also indicated that women who reported consistent use of EC with every instance of sexual intercourse had a higher likelihood of having inadequate knowledge. This suggests a trend of using EC as a regular method of contraception, which directly correlates with insufficient information and understanding.

A statistically significant association was also obtained between respondents having good knowledge of EC and EC utilization. Study participants who had good knowledge were 68.1% more likely to use EC as compared to those women having poor knowledge (AOR: 0.319 CI: 0.114–0.888, P = value 0.029). This finding is in line with most of the studies conducted on female university students in Ethiopia [2, 5, 17, 23, 36]. This is probably due to having good knowledge of EC would help women in identifying when, where, and how to use EC in preventing unintended pregnancy and associated effects.

This study has some limitations. First, the study was conducted in Addis Ababa, the capital city of Ethiopia, and include age group 15–35, the result of this study may not represent the opinions and the practice of women in other parts of the country, especially the countryside and older women's whose are in reproductive age. Hence, caution should be taken during generalization. Secondly, since this is an online-based survey, the authors were unable to confirm whether an individual completed the questionnaire more than once. Thirdly, because it is a self-reported study, an information bias cannot be ruled out in the interpretation of the results. Lastly, while this study aimed to include participants from diverse educational and socio-demographic backgrounds, the online survey method may have limited participation by individuals without formal education or those with restricted internet access. This limitation highlights the need for future studies to use mixed-method approaches, such as in-person data collection, to capture data from underrepresented groups.

Conclusion

The study found that the utilization rate of EC among participants was 91.2%, which is higher compared to the rates reported in other studies conducted in Ethiopia and other countries. However, only 57.7% of the participants demonstrated good knowledge of EC, indicating an average level of knowledge. Factors such as educational background, prior sexual experience, and frequency of EC usage were identified as determinants of EC knowledge. Additionally, it was found that higher EC knowledge was linked to increased utilization of the method. This highlights the need for more information, education, and communication efforts to improve awareness and use of EC. This study recommends that future researchers conduct qualitative investigations, utilizing interviews and/or focus group discussions, to explore the knowledge and

use of EC among young women in Ethiopia and offer a deeper understanding of the context.

Abbreviations

AOR Adjusted Odds ratio
CI Confidence Interval
COC Combined Oral Contraceptive
EC Emergency Contraception
ECPs Emergency Contraceptive Pills
IUD Intra Uterine Device SPSS: Statistical Package for Social Science
STD Sexually Transmitted Disease
WHO World Health Organization

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Author contributions
All Authors contributed equally to this work.

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Data availability
No datasets were generated or analysed during the current study.

Declarations

Ethical consideration and consent to participate
Ethical clearance was obtained from the Ethical Review Committee of the School of Pharmacy (ERB/SOP/329/13/2021), Addis Ababa University. The current study complies with the Declaration of Helsinki in that written informed consent was obtained from each participant. This study recognized participants aged 15 to 18 years as capable of providing informed consent for health-related research and having the autonomy to make informed decisions (37, 38). Participants were informed of their right to withdraw from the study at any time. All information gathered was kept confidential, ensuring anonymity throughout the study.

Consent for publication
Not applicable.

Conflict of interest
The author(s) declared no potential conflicts of interest concerning the research, authorship, and/or publication of this article.

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