Research Article

Emergency Contraceptives: Knowledge and Practice towards Its Use among Ethiopian Female College Graduating Students

Kirubel Minsamo Mishore 1, Abebaw Demissie Woldemariam, 2 and Solomon Assefa Huluka 3

1 School of Pharmacy, Haramaya University, Harar, Ethiopia
2 Department of Anesthesia, Harar Health Sciences College, Harar, Ethiopia
3 Department of Pharmacology and Clinical Pharmacy, School of Pharmacy, Addis Ababa University, Addis Ababa, Ethiopia

Correspondence should be addressed to Solomon Assefa Huluka; solomon.assefa@aau.edu.et

Received 25 July 2018; Revised 19 November 2018; Accepted 29 November 2018; Published 1 January 2019

Academic Editor: Stefania A. Nottola

Copyright © 2019 Kirubel Minsamo Mishore et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Introduction. Ethiopia has a high incidence of unwanted pregnancies and incomplete and unsafe abortions, particularly among adolescents. This can be avoided by using different contraceptive methods including emergency contraceptives (EC). This study aimed to assess the knowledge and practice of EC among female college graduating students in Harar, Eastern Ethiopia. Methods. Institution based cross-sectional study was conducted on 214 female students selected from two randomly selected colleges. Data was collected using a self-administered questionnaire and analyzed using SPSS for Windows version 20.1. Level of significance was taken at $P < 0.05$. Results. The mean ($\pm$SD) age of the participants was 21.06 ($\pm$2.14) years. Of the 200 (93.5%) study participants who had ever heard of ECs, 140 (70.0%) had good knowledge. Among the 214 graduating female students, 66 (33.0%) had ever used EC. Being above the age of 20 years old, father’s and mother’s literacy were found to be determinants of knowledge of EC. Moreover, knowledge was the only determinant factor of practice of EC. Conclusion. Most of the respondents had relatively good knowledge of EC. The study revealed that female students of older age and higher educational status of parents had higher knowledge and practice of EC.

1. Introduction

Unintended pregnancy and unsafe abortion can be prevented by access to contraceptive methods including emergency contraceptives (EC). EC is a method used to avoid pregnancy after unprotected sexual intercourse. It is used before the potential time of implantation, unlike the regular contraceptive methods that are administered before the act [1]. EC can reduce the risk of unintended pregnancy by 75% to 99% if taken within 72 hours of sexual intercourse [2, 3]. ECs are cost-effective, medically safe, and highly effective to be used for the prevention of unplanned pregnancy and subsequently avoid unsafe abortion and other consequences [4].

An estimated 80 million unintended pregnancies occurred in 2012 in the developing world, resulting in 40 million abortions and 10 million miscarriages [5]. About one-third of unintended pregnancies each year result from the incorrect use or failure of contraceptives [6]. World Health Organization (WHO) estimates that every year, nearly 5.5 million African women have unsafe abortions. Moreover, 59% of all unsafe abortions in Africa are among young women aged 15-24 years [7].

Unsafe abortion due to an unplanned pregnancy is one of the main causes of maternal morbidity and mortality in Ethiopian women [8, 9]. Several studies in the country have revealed that women who tend to undergo induced abortions are below the age of 30 and above the secondary educational level [10–12]. Young people today start sex before marriage. Thus, they face a greater risk of unintended pregnancy [13].

Studies conducted in Ethiopia [1, 14–16] indicated that awareness of EC is less than 50% and utilization is below 10%. These limited studies conducted on the issue of EC in the country were mostly focused on university students, who are believed to have better overall knowledge than
college students [17]. Studies conducted in college students were not specific to their year of study, which was found to be determinant of knowledge of EC among female college students [18]. Thus, the aim of the present study was to assess determinants of knowledge and practice of ECs among female college graduating students in Harar town, eastern Ethiopia.

2. Methods

2.1. Study Setting. The study was conducted in Harar town, eastern Ethiopia, which is located 525 kilometers east of Addis Ababa. There are eight colleges (private and governmental) in the city. Harar Health Science College (HHSC), Harar Poly Technique College, and Harar Teachers Training College are governmental colleges. Rift Valley University Harar Campus (RVUHC), AferenQallo College, Horn International College, Dakmas College, and Lucy University College are privately owned colleges. Two of the colleges, namely, HHSC and RVUHC, were selected by simple random sampling methods from the list.

2.2. Study Design and Data Collection. An institution based cross-sectional study was conducted in June 2016 among graduating female college students from selected colleges in Harar town. Sample size was determined using the simple proportion formula for cross-sectional study and taking the proportion of 21.9% for good knowledge of EC [18]. The multistage sampling techniques were used to approach the participants. Since the source population was less than 10,000, finite population correction was made, which brought the sample size to 214. Then, the sample size to each selected college and respective departments was then allocated proportionally using total number of female graduating students. Finally, the study participants were selected randomly (Figure 1). The study was conducted by means of a self-administered questionnaire survey. The questionnaire included questions on demographic variables, sexual practice, and knowledge and practice of EC.

2.3. Data Analysis. Following data collection, a unique code was assigned to each questionnaire. Data was then entered, cleaned, and imported to SPSS version 20.1 for analysis. Both bivariate and multivariate analysis techniques were applied to identify the factors associated with knowledge towards EC. The variables that were significant in the bivariate analysis were reexamined using stepwise binary logistic regression, to identify the significant predictors after controlling for other variables. P values less than 0.05 were considered as statistically significant.

The respondent's knowledge scores were aggregated and ranged 0–9. Based on the cumulative score, respondents who scored 5 (mean score) and above were considered to have "good knowledge", while those who scored below the mean score were considered to have "poor knowledge". Practice was determined based on every use of EC after exposure to unprotected sexual intercourse to prevent unintended pregnancy.

2.4. Ethical Consideration. The study was carried out after obtaining ethical clearance from Institutional Ethical Clearance Board of Harar Health Science College and permission from the dean offices of selected colleges. All participants were informed about the objectives and their right to leave the study at any time they wished. A verbal consent was obtained from all participants. Confidentiality of the participants was maintained at all times. To further maintain anonymity, no forms of identifiers were in the questionnaires, as code numbers were used and only data collector and supervisor were involved in the data collection and supervision process.

3. Results

3.1. Sociodemographic Characteristics. A total of 214 female students of the graduating class participated in the study. The mean (±SD) age of the participants was 21.06 years (± 2.14). Ninety (42.1%) of them were midwifery students followed by nursing students (16.4%). As it is shown in Table 1, most of the respondents 164 (76.6%) were urban residents. Nearly three fourths (74.3%) of the respondents were unmarried. The majority (132; 61.7%) of the participants were living with their parents (Table 1).

3.2. Knowledge of Emergency Contraceptives. Majority of the participants (93.5%) reported that they had heard about EC. Only those respondents who had heard of EC (200) were further analyzed for having knowledge and practices. The overall summary index for knowledge disclosed that 140 (70.0%) of the study participants had good knowledge about EC (Figure 2). The main sources of information about EC were college (40.5%) followed by healthcare workers (29%) and mass media (24.5%). Most of the respondents 130 (65.0%) could identify the correct timing for administration of emergency contraceptive pills after unprotected sex. However, only 54 (27.0%) could tell the correct timing of insertion of the intrauterine contraceptive device (IUCD) (Table 2).

3.3. Practice of Emergency Contraception and Sexual Activity. Among female graduating college students who had ever heard of EC, almost one-third (33.0%) of them had ever used EC Pills (Figure 2). However, none of the women had ever used IUCD. Pills missed, failed withdrawal, timing miscalculation, and condom slippage were the commonly stated reasons for using EC each accounted for 15 (22.7%), 9 (14.0%), 9 (13.6%), and 8 (12.1%), respectively. Seventy-one (55.9%) of participants started sex below age of 20 years. Among the sexually active students, 30 (23.6%) had an experience of pregnancy. Unintended pregnancy were observed in 20 (15.7%) of participants (Table 3).

3.4. Determinants on Knowledge and Practice of EC. Sociodemographic factors, age and educational status of the respondents' parents, showed a significant association with good knowledge of EC in multivariate logistic regression analysis. Females who were older (>20 years) were 6.09 times more likely to have good knowledge of EC than their younger
Table 1: Sociodemographic characteristics of female college graduating students in Harar town, eastern Ethiopia, 2016 (N=214).

| Variable           | Category                  | Frequency | Percent |
|--------------------|---------------------------|-----------|---------|
| **Age group (year)** | ≤20                       | 108       | 50.5    |
|                    | 21-24                     | 93        | 43.5    |
|                    | 25+                       | 13        | 6.1     |
| **Residence**      | Urban                     | 164       | 76.6    |
|                    | Rural                     | 50        | 23.4    |
| **Religion**       | Christian                 | 133       | 62.1    |
|                    | Muslim                    | 81        | 37.9    |
| **Marital status** | Single                    | 159       | 74.3    |
|                    | Ever married              | 55        | 25.7    |
| **Field of study** | Midwifery                 | 90        | 42.1    |
|                    | Comprehensive nurse       | 35        | 16.4    |
|                    | Information technology    | 30        | 14      |
|                    | Accounting                | 27        | 12.6    |
|                    | Pharmacy                  | 19        | 8.9     |
|                    | Health informatics        | 11        | 5.1     |
|                    | Medical laboratory        | 2         | 0.9     |
| **Living with**    | Parents                   | 132       | 61.7    |
|                    | Alone                     | 34        | 15.9    |
|                    | Husband                   | 26        | 12.1    |
|                    | Friends                   | 22        | 10.3    |
| **Father’s Education** | Nonliterate              | 28        | 13.1    |
|                    | Completed primary school  | 44        | 20.6    |
|                    | Completed secondary school| 59        | 27.6    |
|                    | Completed tertiary school  | 83        | 38.8    |
| **Mother’s Education** | Nonliterate              | 34        | 15.9    |
|                    | Completed primary school  | 51        | 23.8    |
|                    | Completed secondary school| 72        | 33.6    |
|                    | Completed tertiary school  | 58        | 27.1    |
Table 2: Knowledge of emergency contraceptives among graduating female college students of Harar, eastern Ethiopia, 2016 (N=200).

| Characteristics                                      | Category          | Frequency | Percent |
|-------------------------------------------------------|-------------------|-----------|---------|
| Ever heard of EC                                      | Yes               | 200       | 93.5    |
|                                                       | No                | 14        | 6.5     |
| Source of information                                 | College           | 81        | 40.5    |
|                                                       | Healthcare workers| 58        | 29      |
|                                                       | Mass media        | 49        | 24.5    |
|                                                       | Others            | 12        | 6       |
| Method reported used as EC                            | Pills             | 124       | 62.0    |
|                                                       | IUCD              | 18        | 9.0     |
|                                                       | Pills and IUCD    | 29        | 14.5    |
|                                                       | Implants and Injectable | 29 | 14.5 |
| Places where a woman can obtain EC                    | Hospital /health center | 109   | 54.5 |
|                                                       | Pharmacy          | 59        | 29.5    |
|                                                       | Don't know        | 10        | 5.0     |
|                                                       | Others            | 22        | 11.0    |
| Indication of EC                                      | After unprotected sexual intercourse | 114 | 57.0 |
|                                                       | When unwanted pregnancy occurs | 62 | 31.0 |
|                                                       | As regular method of contraceptive | 24 | 12.0 |
| Drug strength in EC pills compared to regular pills   | The same strength | 92        | 43.0    |
|                                                       | Higher dose in the same hormones | 35 | 16.4 |
|                                                       | Don't know        | 73        | 34.1    |
| Maximum time limit for taking ECPs                    | Within 72 hours   | 130       | 65.0    |
|                                                       | Within 48 hours   | 9         | 4.5     |
|                                                       | Within 24 hours   | 10        | 5.0     |
|                                                       | Within 12 hours   | 18        | 9.0     |
|                                                       | Don't know        | 33        | 16.5    |
| Maximum time limit for having an IUCD after unprotected sex | Within 5 days | 54 | 27.0 |
|                                                       | Within 72 hours   | 30        | 15.0    |
|                                                       | Within 48 hours   | 12        | 6.0     |
|                                                       | Don't know        | 104       | 52.0    |
| Effectiveness of EC methods in preventing pregnancy when used within the specified time limit | <75% | 20 | 10.0 |
|                                                       | ≥75% but < 100%    | 113       | 56.5    |
|                                                       | Not sure          | 67        | 33.5    |
| How safe do you think EC are for most women?          | Safe              | 138       | 69.0    |
|                                                       | Unsafe            | 28        | 14.0    |
|                                                       | No response       | 34        | 17.0    |

counterparts (AOR: 6.09, 95% CI: 2.89-12.86, P≤0.001). On the other hand, respondents with a literate father were 3.5 times more likely to have good knowledge of EC compared to those with a nonliterate father (AOR: 3.50, 95% CI: 1.12-10.94, P=0.031). Similarly, respondents whose mother was literate were 2.84 times more likely to be knowledgeable (AOR: 2.84, 95% CI: 1.02-7.88, P=0.046) compared to their counterparts (Table 4). Among variables, which showed association with bivariate logistic regression analysis, only having good knowledge of EC showed a significant association with student's ever utilization or practice of EC in multivariate analysis. Accordingly, students who had good knowledge of EC were 2.53 times more likely to practice EC than those who had poor knowledge of EC (AOR: 2.53, 95%CI: 1.29, 4.92) (Table 5).
Table 3: Practice of emergency contraception and sexual activity among female college graduating students, Harar, eastern Ethiopia, 2016 (N=200).

| Variables                | Category   | Frequency | Percent |
|--------------------------|------------|-----------|---------|
| Ever use of EC           | Yes        | 66        | 33      |
|                          | No         | 134       | 67      |
| Frequency of use         | Once       | 30        | 15      |
|                          | Twice      | 14        | 7       |
|                          | Three times| 7         | 4       |
|                          | Not specified | 15    | 8       |
| Recommended by           | Friends    | 20        | 10      |
|                          | Partner    | 18        | 9       |
|                          | Health professional | 23 | 12      |
|                          | Not specified | 5   | 3       |
| Reasons for using        | Timing miscalculation | 9   | 5       |
|                          | Condom slippage/breakage | 8   | 4       |
|                          | Pills missed | 15  | 8       |
|                          | Forced sex  | 6         | 3       |
|                          | Failed withdrawal | 9   | 5       |
|                          | Not specified | 19  | 10      |
| History of sexual practice | Yes       | 127       | 75      |
|                          | No         | 73        | 45      |
| Age at first sex         | 15-19      | 71        | 48      |
|                          | ≥20        | 47        | 31      |
|                          | Not specified | 9  | 6       |
| History of pregnancy     | Yes        | 30        | 27      |
|                          | No         | 97        | 73      |
| Was the pregnancy planned?| Yes       | 10        | 10      |
|                          | No         | 20        | 10      |

Table 4: Univariate and multivariate analysis of factors associated with knowledge of EC among female college graduating students, Harar, eastern Ethiopia, 2016 (N=200).

| Variable                  | Category   | Knowledge Good | Knowledge Poor | COR (95% CI)       | P value* | AOR (95% CI)       | P value* |
|---------------------------|------------|----------------|----------------|--------------------|----------|--------------------|----------|
| Age                       | ≤20        | 52             | 441.00         | 4.65(2.39-9.07)    | 0.001    | 6.09(2.89-12.86)   | 0.001    |
|                           | >20        | 88             | 16             | 1.00               | 1.00     | 1.00               | 1.00     |
| Marital Status            | Unmarried  | 96             | 50             | 2.29(1.06-4.94)    | 0.034    | 1.83(0.64-5.26)    | 0.261    |
|                           | Ever married | 44            | 10             | 2.1(1.06-4.12)     | 0.034    | 1.87(0.82-4.3)     | 0.14     |
| Field of Study            | Health     | 113            | 40             | 1.00               | 1.00     | 1.00               | 1.00     |
|                           | Not Health | 27             | 20             | 1.00               | 1.00     | 1.00               | 1.00     |
| Fathers’ Education        | Nonliterate | 10            | 16             | 1.00               | 1.00     | 1.00               | 1.00     |
|                           | Literate   | 130            | 44             | 4.73(1.99-11.18)   | 0.001    | 3.50(1.12-10.94)   | 0.031    |
| Mothers’ Education        | Nonliterate | 16            | 19             | 1.00               | 1.00     | 1.00               | 1.00     |
|                           | Literate   | 124            | 41             | 3.59(1.69-7.63)    | 0.001    | 2.84(1.02-7.88)    | 0.046    |

COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval.
* P value < 0.05 indicates statistically significant association.

4. Discussion

Unlike other contraceptive medicines, EC is not given regularly. It is given in cases of unprotected sexual relations, which carry the risk of undesired pregnancy [16]. Awareness of the accessibility and being taken within the defined time period are necessary for appropriate and effective use of EC [19, 20]. Majority (94%) of the study participants included in the study were aged 24 or below, which is considered a sexually active age group [21]. This finding is also in line with a similar study done in Nigeria [22]. The overall prevalence of awareness among the study participants was 93.5%. This finding is higher as compared to studies done in different parts of Ethiopia: Haramaya (47.6%) [14], Adama [15] (46.8%),
Table 5: Univariate and multivariate analysis of factors associated with practice of EC among female college graduating students, Harar, eastern Ethiopia, 2016 (N=200).

| Variable       | Category       | Practice | COR (95% CI) | P value* | AOR (95% CI) | P value* |
|----------------|----------------|----------|--------------|----------|--------------|----------|
| Age            | ≤20            | 30       | 1.00         |          | 1.00         |          |
|                | >20            | 36       | 2.14(1.22-3.77) | 0.008    | 1.29(0.66-2.54) | 0.449    |
| Marital Status | Single         | 43       | 1.00         |          | 1.00         |          |
|                | Ever married   | 23       | 2.36(1.22-4.57) | 0.011    | 1.84(0.87-3.89) | 0.113    |
| Knowledge      | Good           | 53       | 2.96(1.57-5.56) | 0.001    | 2.53(1.29-4.92) | 0.006    |
|                | Poor           | 13       | 1.00         |          | 1.00         |          |

COR: crude odds ratio; AOR: adjusted odds ratio; CI: confidence interval.
* P value <0.05 indicates statistically significant association.

Figure 2: Frequency distribution of knowledge and practice of emergency contraceptive among female college graduating students of Harar, eastern Ethiopia, 2016 (N=200).

Jimma (41.9%) [16], Ambo (80.7%) [17], Arba-Minch (42.5%) [18], Hosanna (43%) [23], and Debre-Markos (71.1%) [24]. However, this finding is comparable to the result of studies in Mekele (90.7%). Similar levels of awareness prevalence were also recorded in India (92.7%) [25, 26]. In the present study, the major source of information about EC was college, unlike a study done in Addis Ababa [27] whereby participants relied on friends and family for knowledge of EC.

Nearly three quarters (70.0%) of the respondents had good knowledge of EC in this study, which is superior to the result obtained in the studies conducted among Ethiopian colleges and university female students in Haramaya (25.7 %)[14], Arba-Minch (21.9%) [18], and Debre-Markos (62.5%) [24], Mizantepi [28] and elsewhere in India [26] and Nepal [29]. This difference might be attributed to a better free discussion on sex and sexuality among female students in Harar. However, the finding is unexpectedly lower than a study conducted among female preparatory students in Mekelle where 75.7% of the students had good knowledge of EC[25]. Moreover, in this study 130 (65%) of the participants correctly identified the time limit of EC pill use, which is superior to a study done by Abate et al., 18.5% [30]. This could be due to the high health promotion and availability of EC in pharmacies found [31] in Harar.

The finding showed that unintended pregnancies were observed in 20 (15.7%) of the respondents, which is slightly lower than study conducted in northwest Ethiopia (16.5%) [31]. However, it is much lower than the result reported in the national figure EDHS 2011 (24%) [32], and Ganjo Woreda (27%) [33]. In the present study, about a third (33.0%) of the respondents had ever used EC. This finding is higher than the study conducted in Dilla (20.9%) [34]. It is also higher than EC use reported in Nigeria and India [26, 35]. This may be explained by wide availability of EC in Ethiopia particularly in major cities [30] and longer college stay.

In this study, age of the student showed a statistically significant association with good knowledge of EC. In agreement with this study, multiple studies [14, 24, 25] have reported a significant association between older age and good knowledge of EC. However, other study done by Melkam et al. [19] reported a contrary finding. This study, furthermore, revealed that EC knowledge was significantly higher for respondents whose parents were literate compared to those with nonliterate parents. This finding is consistent with the conclusion made by different researchers [18, 24], in which literacy improves one's access to information and facilitates discussion of reproductive health issues in the household.

The present study also showed that female students who had adequate knowledge of EC were more likely to use EC than their counterparts, which was in agreement with studies from Ethiopia and other countries [18, 24, 26, 36].

5. Conclusion and Recommendation

In this study, respondents’ knowledge of EC is found to be acceptable. This study revealed that age and parents’ literacy showed statistically significant association with good knowledge of EC and in turn good knowledge of EC was the only determinant of using EC. To prevent unintended pregnancy among sexually active female college students, sexual education given at high school or counseling provided to college students is highly recommended.

Abbreviations

AOR: Adjusted odds ratio
CI: Confidence interval
Acknowledgments

Authors would like to thank participants of the study. We are also grateful to the colleges that facilitated the study.

References

[1] W. Tamire and F. Enquerieslassie, "Knowledge, attitude, and practice on emergency contraceptives among female university students in Addis Ababa, Ethiopia," Ethiopian Journal of Health Development, vol. 21, no. 2, pp. 111–116, 2007.

[2] M. E. Hoque and S. Ghuman, "Knowledge, practices, and attitudes of emergency contraception among female university students in KwaZulu-Natal, South Africa," PLoS ONE, vol. 7, no. 9, 2012.

[3] J. L. Lenjisa, Z. Guliia, and N. Legese, "Knowledge, attitude and practice of emergency contraceptives among ambo university female students, West Showa, Ethiopia," Research Journal of Pharmaceutical Sciences, vol. 2, no. 11, pp. 1–5, 2013.

[4] A. Mir and R. Malik, "Emergency contraceptive pills: Exploring the knowledge and attitudes of community health workers in a developing Muslim country," North American Journal of Medical Sciences, vol. 8, pp. 359–364, 2010.

[5] S. Singh and E. J. Darroch, Adding It Up: The Costs and Benefits of Contraceptive Services; Estimates for 2012, Guttmacher Institute, New York, NY, USA, 2012.

[6] Population Reference Bureau, World Population Data Sheet, 2010.

[7] World Health Organization, Unsafe Abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2003, WHO, Geneva, Switzerland, 5th edition, 2007.

[8] Y. Berhan and A. Berhan, "Causes of maternal mortality in Ethiopia: a significant decline in abortion related death," Ethiopian Journal of Health Sciences, vol. 24, pp. 15–28, 2014.

[9] B. E. Kwast, R. W. Rochat, and W. Kidane-Mariam, "Maternal mortality in Addis Ababa, Ethiopia," Studies in Family Planning, vol. 17, no. 6, pp. 288–301, 1986.

[10] F. Hassen, "Analysis of factors for unwanted pregnancy among women in the reproductive age group attending health institutes in Jimma town," Report, 2000.

[11] S. Kebede, C. Jirra, and W. D. Mariam, "A survey of illegal abortion in Jimma Hospital; South West Ethiopia," Ethiopian Medical Journal, vol. 38, pp. 35–42, 2000.

[12] Y. Melkamu, F. Enquselassie, and A. Ali, "Fertility awareness and future pregnancy intention of postabortion patients in Addis Ababa, Ethiopia," Ethiopian Journal of Health Development, vol. 17, no. 3, pp. 167–174, 2003.

[13] H. Rahaman, P. Renjhen, A. Kumar, S. Pattanshetty, A. Sagir, and H. Dubey, "A study on emergency contraceptive practice among nursing staff in Sikkim, India - A cross sectional study," Australasian Medical Journal, vol. 3, no. 10, pp. 667–671, 2010.

[14] B. Desta and N. Regassa, "Emergency Contraception among Female Students of Haramaya University, Ethiopia: Surveying the Level of Knowledge and Attitude," Educational Research, vol. 2, no. 4, pp. 1106–1117, 2011.

[15] D. Tilahun, T. Assefa, and T. Belachew, "Knowledge, attitude and practice of emergency contraceptive among Addama University female student," Ethiopian Journal of Health Sciences, vol. 20, no. 3, pp. 195–201, 2010.

[16] N. Tajure, "Knowledge, Attitude and Practice of Emergency Contraception among Graduating Female Students of Jimma University, Southwest Ethiopia," Ethiopian Journal of Health Sciences, vol. 20, no. 2, 2011.

[17] J. L. Lenjisa, M. A. Woldu, and D. Ulfina, "Knowledge, Attitude and Practice of Emergency Contraceptives among Ambo TVET College Female Students , Ethiopia," IJMCH, vol. 16, no. 1, pp. 1–11, 2014.

[18] A. Worku, "Knowledge, attitude and practice of emergency contraceptives among female college students in Arba Minch town, Southern Ethiopia," Ethiopian Journal of Health Development, vol. 25, no. 3, pp. 176–183, 2012.

[19] W. Melkam, G. Teklemariam, S. Abrha, and A. Kahsu, "Knowledge and Practice on Emergency Contraceptives among females who Came for Abortion at Mekelle General Hospital, Mekelle, Ethiopia," IJMN, vol. 2, no. 2, pp. 234–239, 2015.
[20] C.-X. Meng, K. Gemzell-Danielsson, O. Stephansson, J.-Z. Kang, Q.-F. Chen, and L.-N. Cheng, “Emergency contraceptive use among 5677 women seeking abortion in Shanghai, China,” Human Reproduction, vol. 24, no. 7, pp. 1612–1618, 2009.

[21] A. C. Richard, J. D. Ralph, M. W. Gina et al., “Angela: Oral contraceptive use may not preclude condom use: a study of non-pregnant African-American adolescent females,” Sexually Transmitted Infections, vol. 83, pp. 216–218, 2007.

[22] A. I. Ajayi, E. E. Nwokocha, O. V. Adeniyi, D. Ter Goon, and W. Akpan, “Unplanned pregnancy-risks and use of emergency contraception: a survey of two Nigerian Universities,” BMC Health Services Research, vol. 17, no. 1, p. 382, 2017.

[23] A. Kassa and M. Wolde-Mariam, “Knowledge, attitude and practice of emergency contraceptive pills among female students of Hosanna College of Health Sciences, Hosanna, South Ethiopia,” Journal of Chemical and Pharmaceutical Sciences, vol. 7, no. 3, pp. 185–193, 2014.

[24] M. Tessema and H. Bayu, “Knowledge, Attitude and Practice on Emergency Contraception and Associated Factors among Female Students of Debre-Markos University, Debre-Markos Town, East Gojam Zone, North West Ethiopia,” Global Journal of Medical Research: E Gynecology and Obstetrics, vol. 15, no. 1, pp. 1–7, 2013.

[25] S. Abrha, F. Zeratson, and F. Molla, “Assessment of Knowledge, Attitude and Practice among Regular Female Preparatory School Students towards Emergency Contraceptives in Mekelle, Northern Ethiopia,” IJPSR, vol. 5, no. II, pp. 856–864, 2014.

[26] N. Relwani, A. Saoji, and N. B. Kasturwar, “Emergency Contraception: Exploring the Knowledge, Attitude and Practices of Engineering College Girls in Nagpur District of Central India,” NJCM, vol. 3, no. 1, pp. 14–19, 2012.

[27] R. Both and F. Samuel, “Keeping silent about emergency contraceptives in Addis Ababa: a qualitative study among young people, service providers, and key stakeholders,” BMC Womens Health, vol. 14, no. 1, p. 134, 2014.

[28] B. Z. Shiferaw, B. T. Gashaw, and F. Y. Teso, “Factors associated with utilization of emergency contraception among female students in Mizan-Tepi University, South West Ethiopia,” BMC Research Notes, vol. 8, no. 817, 2015.

[29] S. Subedi, “Knowledge, attitude and practices of emergency contraception among youths of Parabat District,” JHAS, vol. 2, no. 1, pp. 50–53, 2012.

[30] M. Abate, N. Assefa, and T. Alemayehu, “Knowledge, attitude, practice, and determinants emergency contraceptive use among women seeking abortion services in Dire Dawa, Ethiopia,” PLoS ONE, vol. 9, no. 10, 2014.

[31] B. Wasie, Y. Belyhun, B. Moges, and B. Amare, “Effect of emergency oral contraceptive use on condom utilization and sexual risk taking behaviours among university students, Northwest Ethiopia: A cross-sectional study,” BMC Research Notes, vol. 5, article no. 501, 2012.

[32] D. Habte, S. Teklu, T. Melese, and M. G. M. D. Magafu, “Correlates of unintended pregnancy in Ethiopia: results from a national survey,” PLoS ONE, vol. 8, no. 12, Article ID e82987, 2013.

[33] F. T. Teshome, A. G. Haile, and A. N. Teklehaimanot, “Prevalence of unintended pregnancy and associated factors among married pregnant women in Ganzig woreda, west Wollega Oromia region, Ethiopia,” Science Journal of Public Health, vol. 2, no. 2, pp. 92–101, 2014.

[34] M. Soressa, A. Astatkie, Y. Berhane, and S. Mitiku, “Contraceptive Use and Associated Factors among Dilla University Female Students, Southern Ethiopia,” JMCVR, vol. 20, pp. 11–21, 2016.

[35] K. O. Wright, A. O. Fabamwo, and O. I. Akinola, “Emergency contraception: A different perspective on knowledge and use among female undergraduates in a non-residential tertiary institution in Nigeria,” International Journal of Medicine and Medical Sciences, vol. 6, no. 10, pp. 215–223, 2014.

[36] A. O. Aigbiremolen, C. B. Duru, and S. O. Abah, “Contraception among tertiary students: knowledge, use and behaviour of female undergraduates,” Global Journal of Medical Research, vol. 14, no. 2, pp. 1–7, 2014.