FACTORS AFFECTING KNOWLEDGE OF EMERGENCY CONTRACEPTION AMONG ADDIS ABABA UNIVERSITY FEMALE STUDENTS, ADDIS ABABA, ETHIOPIA

Yitbarek Fantahun Mariye, MD, MPH[1], Nebiyou Fasil, MPH[2]
Mekedem Hailemariam Bisrat, MD[1], Eskinder Kebede, MD[1]

ABSTRACT

BACKGROUND: The prevalence of unintended pregnancy is very high in Ethiopia and young adolescent girls are the major group affected by it. Lack of knowledge of emergency contraception method is one of the contributing factors for increase in the prevalence of unintended pregnancy.

OBJECTIVES: To assess the level of knowledge, as well factors affecting knowledge of emergency contraception among female students.

METHODS: An institution based cross-sectional study was conducted in Addis Ababa University. The sample size calculated was 648. Data was collected by self-administered questionnaire and data was entered, cleaned and analyzed using SPSS version 21. Descriptive statistics were performed to get frequency and percentages. Logistic regression and Chi square analysis were used to identify predictors of the outcome variable.

RESULT: A total of 648 students were included in the study giving a response rate of 100%. One hundred eleven (17%) of the respondents were sexually active. Four hundred thirty nine (68%) have ever heard about emergency contraception and 158 (24.5%) have ever used emergency contraception methods. From those respondents who ever heard of emergency contraceptive methods 265 (60%) (95% CI: 58%, 62%) were found to have good knowledge. The study has showed that field of study (AOR, 7.24; 95% CI: 4.103, 12.772, $P < 0.000$) and ever use of emergency contraceptive methods (AOR, 2.075; 95% CI: 1.234, 3.490, $P < 0.006$) were significantly associated with having a good knowledge of emergency contraceptive methods.

CONCLUSION AND RECOMMENDATION: The level of knowledge about emergency contraception is fair. This study showed faculty of study and ever use of emergency contraception is found to have significant association with good knowledge of emergency contraceptive methods. Even though the knowledge of the respondents is fair, much has to be done to improve their knowledge on the different methods by preparing a reproductive health education lesson especially for students in non-medical faculty who may have been unaddressed.

KEY WORDS: Addis Ababa University, emergency contraception, female, knowledge.

(The Ethiopian Journal of Reproductive Health; 2023; 15;11-20)

1 Department of Obstetrics & Gynecology,College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia
2 School of public health, Addis Continental Institute of Public Health, Addis Ababa, Ethiopia

INTRODUCTION

Unintended pregnancy is a pregnancy that occurs when no children are desired or a pregnancy occurred earlier than planned; it is either unwanted or a mistimed pregnancy. It has multiple impacts on the health of the mother and the newborn. The rate of unintended pregnancies and the rate of unintended birth are still high at 44% and 23 % respectively. Of all the pregnancies, 21.6 million were in Africa with 8.85 million occurring in Eastern Africa. [1,2]

Emergency contraceptives are methods of contraception used to prevent pregnancies after sexual intercourse. It is recommended that they should be used as early as possible after sexual intercourse, but can be effective within 5 days. When properly used, contraceptive will prevent over 95% of unwanted pregnancies if taken within 5 days of sexual intercourse. Contraceptive methods range from hormonal pills like dedicated emergency contraceptive pills containing ulipristal acetate or levonorgestrel, progestin only pills with Levonorgestrel or Norgestrel, or combined oral contraceptive pills to copper bearing intrauterine devices. [3]

Different studies have shown that the non-use, misuse, and lack of knowledge about emergency contraceptives is one of the cause for unintended pregnancy worldwide. Knowledge of emergency pregnancy has shown to be highly associated in preventing unintended pregnancy. [4,5]

In Ethiopia, the national figure suggested that 38% of pregnancies are unintended and further studies showed that there is high prevalence of unintended pregnancy or child birth putting a burden heavily on young, multiparas, unmarried, ethnic majority and those with only primary or no educational background women. University students are also one of the most vulnerable groups for having unintended pregnancies and studies showed that there is high prevalence of unintended pregnancy among university students. This calls the policy makers and health professionals to provide comprehensive reproductive health and contraception services to fulfill the unmet needs of university students.[6,7]

Lack of knowledge about emergency contraceptives is found to be one of the major barriers to widespread use of emergency contraception and hence high unintended pregnancy rates. Studies also showed that using emergency contraceptives is one of the most important and a second chance at preventing unintended pregnancy in adolescents. [8,9]

The knowledge of emergency contraceptives varies significantly from country to country. The reported knowledge levels vary significantly from poor knowledge to moderate and accurate. Different studies have showed that university students in India have a variable level of knowledge about emergency contraceptives. Even though most students heard about methods of pregnancy prevention, they lack the proper and accurate knowledge on emergency contraceptive methods. [10,11]

In this study we explored the level of awareness and factors affecting the knowledge of emergency contraception in one of the most vulnerable groups of our society, university students.

METHODS

The study was an institution-based cross-sectional study design undertaken at Addis Ababa University (AAU). Addis Ababa University is the oldest and the largest higher education institution of learning and research in Ethiopia. The university had 48,673 students; (33,940 undergraduate, 13,000 graduate, and 1733 Ph.D. students) and 6043 staff (2,408 academics and 3,635 support staff) in its 14 campuses in the 2019/2020 academic year. The university currently has 13,489 regular undergraduate students of which 3,528 are females.[12]

The sources of population were all female students in Addis Ababa University that were enrolled in 2022. The study population was 3351 female undergraduate students in Addis Ababa University who are currently attending courses.

The sample size was 648. Included in the study were all Addis Ababa University undergraduate female students who were currently enrolled and those students who were willing to be part of the study. Excluded were those who were not enrolled in regular day studies, those who were absent from class as at the time of data collection, and those who were not sexually active.

The study employed a two-stage sampling method. At first, participants were taken from all 11 colleges and participants were allocated to each college or institute proportionally. Secondly, participant students were selected from each college proportional to their year of study using a simple random sampling technique.

A pretested questionnaire which was designed in English was self–administered to the student. The questionnaire was pretested using students who were then exempted from the study. The data was cleaned and entered in SPSS version 21 for statistical analysis. The results were expressed as frequency and percentage.

Bivariate analysis was done to determine statistical association between dependent and independent variables; those dependent variables with less than 0.25 p-values were entered into multivariable binary logistic regression controlling the possible effect of confounders. Those variables with significant associations with a p-value of less than 0.05 were identified as significant variables based on the odds ratio (OR), with a 95% confidence interval.

Ethical clearance was obtained from the Institutional Review Board (IRB) of College of Health Sciences of the Addis Ababa University. The required information was collected after obtaining written consent from each participant. The right was given to the study participants to refuse or discontinue participation at any time they wanted and the opportunity to ask any question about the study was offered. For anonymity, the participant's name was not to be used at the time of data collection and all other personal information was kept entirely anonymous and confidentiality throughout the study period.

RESULT

Six hundred and forty-eight (648) participants were included in the study giving a response rate of 100% with the mean age of respondents 20.7±1.3. Majority of the respondents 575 (88.7) were Christians with most respondents 604 (93.2%) having no partner like boyfriend or husband. Most of the respondents 492 (75.5%) were from non-medical field of study. A good number of students were first year students followed by second year and third year (232 (35.8), 227(35) and 189(29.2)) respectively (Table 1).

Table 1. Sociodemographic, academic of Addis Ababa university female undergraduate students, 2022

Variable	Category	Frequency (n = 648)	Percent
Age group (year)	≤20	313	48.3
	>20	335	51.8
Religion	Christian	575	88.7
	Muslim	73	11.3
Marital status	No partner	604	93.2
	With partner	44	6.8
Field of study	Medical	156	24.5
	Non-medical	492	75.5
Year of study	Year I	232	35.8
	Year II	227	35
	Year III and above	189	29.2

Sexual and reproductive characteristics

Regarding to respondents' reproductive history, most of the respondents 537(82.9%) were not sexually active and only 439 (67.7%) of the participants had heard about emergency contraceptives methods prior to this study. Among all the participants only 357 (55.1%) had taken lessons on sexual education. Among all the participants only 159 (24.5%) used emergency contraception methods (Table 2).

Table 2. Sexual and reproductive characteristics of Addis Ababa university female undergraduate students, 2022

Variable	Category	Frequency (n = 648)	Percent
Are you sexually active	Yes	111	17.1
	No	537	82.9
Ever heard about emergency contraceptive	Yes	439	67.7
	No	209	32.3
Have you ever had sexual education lesson	Yes	357	55.1
	No	291	44.9
Have you ever used emergency contraception	Yes	159	24.5
	No	489	75.5

Knowledge of respondents about emergency contraceptive methods

Regarding knowledge, among the 439 respondents who had heard about emergency contraception methods, 365 (85.4%) knew at least one method of emergency contraception and 99 (22.6%) knew both IUD and emergency pills. Three hundred and eighty-eight of these respondents knew where they can get the methods. Only 278 (65.4) of the participants knew the right indication for using the methods.

While 259 (59%) and 85 (19.4%) of the participants knew the maximum time for use of emergency contraceptive pills and IUCD respectively. Most of the participants 216 (49.2%) correctly knew the effectiveness of the emergency contraceptive methods. (Table 3).

Table 3. Knowledge of emergency contraceptive methods of Addis Ababa university female undergraduate students who have heard about ECM, 2022

Variable	Category	Frequency (n = 439)	Percent
Methods used as emergency contraceptives	Pills	247	56.3
	IUCD	17	3.9
	Pills and IUCD	99	22.6
	Implants	12	2.7
	Injectables	13	3
	I don't know	51	11.6
Where can a women obtain emergency contraceptives	Heath facility	178	40.5
	Pharmacy	210	47.8
	I don't know	51	11.7
What is the indication for using emergency contraceptives	After unprotected intercourse	278	65.4
	When pregnancy occurs	49	11.2
	As a regular method of contraceptives	43	9.8
	I don't know	60	13.7
How much do you think is the time to use emergency contraception pills to prevent pregnancy	72 hours	259	59
	48 hours	27	6.2
	24 hours	39	8.9
	12 days	20	4.6
	I don't know	94	21.4
What is the time to use IUCD to prevent pregnancy	72 hours	146	33.3
	48 hours	32	7.3
	24 hours	51	11.6
	5 days	85	19.4
	I don't know	125	28.5
How much effective do you think is the emergency contraceptive methods	Less than 75%	85	19.4
	Greater than 75%	216	49.2
	I don't know	138	31.4

According to our study, 265 (60.4%) (95% CI: 58%, 62%) of the respondents were found to have good knowledge about emergency contraceptive method, (Figure 1).

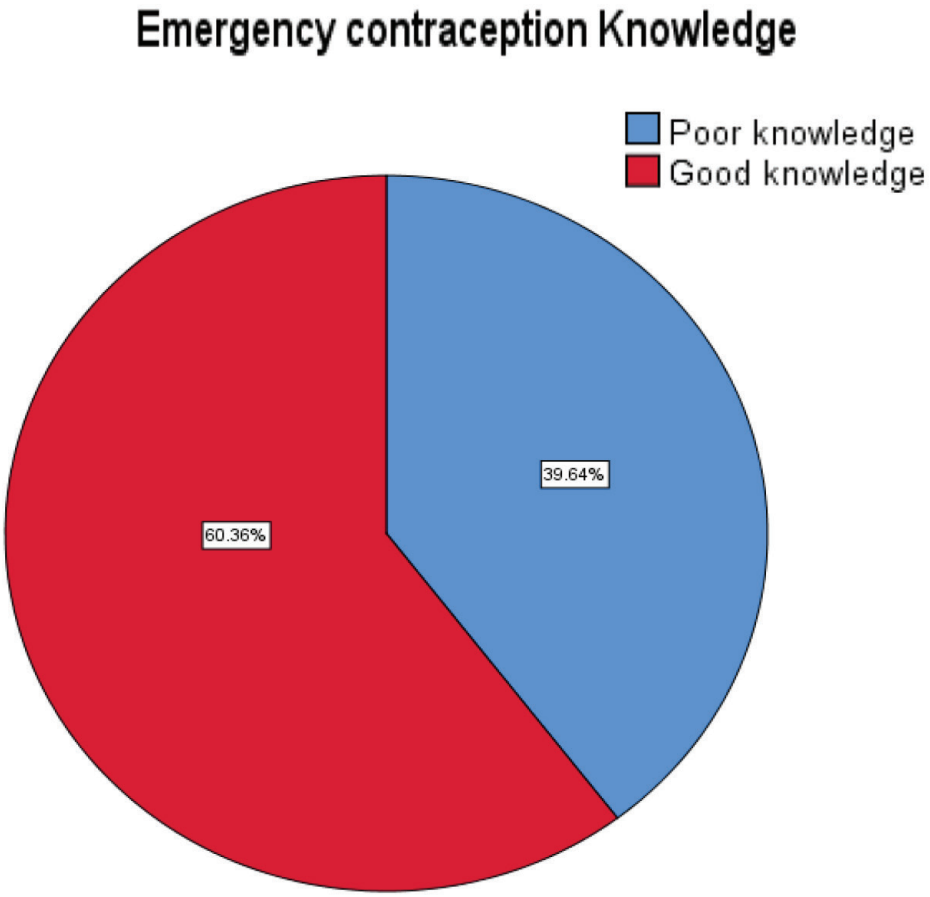

Figure 1. Knowledge of emergency contraceptive methods of Addis Ababa university female undergraduate students, 2022 (n = 439)

Determinants of knowledge of emergency contraception

On bivariate analysis, faculty of study and year of study variables were found to have statistically significant association and after controlling confounders using multivariable logistic regression analysis, faculty of study and ever heard of emergency contraceptive methods were found to have statistically significant association.

Female students who are enrolled in medical faculty are 7 times higher odds of being knowledgeable than those respondents who are enrolled in non-medical field (AOR: 7.24, 95% CI: 4.103, 12.772, P < 0.000). Respondents who had used emergency contraception method also have 3 times higher odds of being knowledgeable than those who have never used contraceptive methods (AOR: 2.07, 95% CI: 1.234, 3.49, P < 0.000). (Table 4)

Table 4. Association between socio demographic, academic and sexual and reproductive characteristics and knowledge of emergency contraceptive methods of Addis Ababa university female undergraduate students, 2022 (n = 439)

Variable	Knowledge of EC		COR (95%CI)	P value	AOR (95%CI)	P value
	Good Knowledge n(%)	Poor Knowledge n(%)				
Age						
≤20	31(51.7)	29(48.3)	0.662(0.383, 1.145)	0.14	0.864(0.449, 0.662)	0.661
>20	234(61.7)	145(38.3)	1		1	
Religion						
Christian	234(54.4)	160(40.6)	0.660(0.341, 1.281)	0.22	0.815(0.388, 1.709)	0.588
Muslim	31(68.8)	14(31.1)	1		1	
Marital status						
No partner	246(60)	158(40)	1		1	
Has partner	19(54.3)	16(45.7)	1.311(0.655, 2.626)	0.445	1.216(0.563, 2.623)	0.619
Faculty of study						
Medical	117(86.7)	18(13.3)	6.85(3.973, 11.814)***	0.000	7.24(4.103, 12.772)	***0.000
Non-medical	148(48.7)	156(51.3)	1		1	
Year of study						
Year I	73(53.3)	64(46.7)	1		1	
Year II	89(58.5)	63(41.5)	0.520(0.322, 0.842)**	0.008	0.760(0.424, 1.362)	0.356
Year III and above	103(68.7)	47(31.3)	0.645(0.402, 1.034)	0.069	1.04(0.611, 1.774)	0.882
Are you sexually active						
Yes	45(52.3)	41(47.7)	0.664(0.413, 1.067)	0.090	0.780 (0.446, 1.363)	0.383
No	220(62.3)	133(37.7)	1		1	
Have you ever had sexual education lesson						
Yes	181(59.2)	125(40.8)	0.845(0.555, 1.285)	0.43	0.762(0.464, 1.252)	0.284
No	84(63.2)	49(36.8)	1		1	
Have you ever used EC						
Yes	91(65.5)	48(34.5)	1.373(0.904, 2.085)	0.137	2.075(1.234, 3.490)	**0.006
No	174(58)	126(42)	1			

DISCUSSION

The study showed that 67.7% of respondents knew the presence of emergency contraceptive methods. Among respondents who have heard about emergency contraception, 60% have adequate knowledge of emergency contraception methods. This study has shown that faculty of study and previous use of emergency contraception are found to have a significant association with good knowledge of ECM. The results of our study revealed that one-fifth of the respondents are currently sexually active with more than two-thirds of the respondents not having heard of ECM, which is less than the findings of studies done in Kenya which showed 86% of the respondents have had heard about ECM. Our study showed higher respondents than a study done in South Africa, which has showed only half of the respondents had heard about ECM.[13,14] When we compare studies done in Ethiopia, it is lower than studies done in Harar and Addis Ababa which was 93.5% and 84.2% of respondents respectively, which could be due to time difference as the study was done a few years back and through time there could be a change in awareness about ECM. Our result is still higher than a study done by Debretabor and Jimma which was 55.5% and 41.9% of respondents respectively. [15-18] These could be also explained by the fact that recently most students enrolled at Addis Ababa University are from Addis Ababa and nearby cities.

Of those who had heard of emergency contraception, only 65.4% of the respondents knew the correct indication of when to use emergency contraception methods. This is comparable to a study done in Jimma and Harar which is 71% and 65% respectively, but higher than the study done in Debretabor which showed 13.9 % of the respondents knowing the correct indications. This is because the respondents in our study have more lessons in sexual and reproductive health and have higher ever use of ECM than the studies done in Debretabor, Hawassa, and Jimma which showed 28.1%, 10.8% and 11% of respondents having ever used emergency contraception methods respectively.[15,16,19] This can be explained by the lack of proper lessons on sexual and reproductive health lessons in high school as well as in the university.

Our study showed that 60% of the respondents have a good knowledge of ECM which is high compared to the study done in Kenya where only 42.6% of participants were found to have good knowledge of ECM and other studies done in India, Kenya, South Africa, and Nigeria also showed an overall low level of knowledge on ECM. [13,14,20,21]

The reason for this could be there is a system of accessing the ECM in clinics and pharmacies without a prescription, unlike in some countries. In other parts of Ethiopia, there are comparable findings with a study done in Harar and Hawassa showing 70% and 72.2% percent of respondents were knowledgeable, while a systematic review done in Ethiopia showed 27.2% of the respondents had good knowledge.[18,19,22] This might be because the university is located in the capital and the students might be exposed to more sexual and reproductive issues, higher rate of use of ECM, and have taken more lessons in sexual and reproductive health than the other studies i. Our study has shown that of all the respondents more than half, 55.1%, had taken sexual and reproduction lesson and 54.1% of the respondents had ever used emergency contraceptives which are higher than the studies done in Debretabor, Hawassa, and Jimma, which showed 28.1%, 10.8% and 11% of respondents have ever used emergency contraception method respectively. [15,16,22]

Our study has revealed that the respondent field of study and ever use of emergency contraception are statistically associated with knowledge of emergency contraception. Unlike the study done in Addis Ababa which found no association between sociodemographic, educational, and reproductive variables of respondents with knowledge of emergency contraceptives, our study found that those whose field of education is medical are found to have 7 times more odds of being knowledgeable

that the counterparts. This finding is in line with the study done in Kenya which showed college of education is associated with the level of knowledge of the responders. This is because those students who have taken a formal lesson in reproductive health are more knowledgeable about the issues of sexual reproductive health. Those respondents who ever used emergency contraception are found to have 2 times more odds of being knowledgeable than their counterparts. Our study is incongruent with the study done in Harar which showed that a history of utilization of ECM is associated with being knowledgeable about ECM.[13,17,23] This is because these individuals have more experience using the methods and have more information than their counterparts.

Unlike the study done in Debretabor which has shown that respondents, whose ages are between 20 and 24 and who are married and divorced are found to be more knowledgeable, and in Harar who showed being older than 20 years were found to be more knowledgeable; our study hasn't shown any association.[15,18] This might be because our study's number of respondents who are married or divorced is small compared to the other studies.

Including a large number of respondents is one of the strengths of this study and the study includes all students from each department / institute and proportionally from each year of study is the other strength. The limitations of our study are first, the study was only done in one setting which might make it difficult to generalize for the country. Secondly, the study uses only a quantitative method of data collection and might not be helpful to know the detailed reason why people have less knowledge of ECM.

CONCLUSION

The level of knowledge about emergency contraception is fair. The study showed area of study and ever use of emergency contraception have significant association with good knowledge of ECM.

Though the knowledge of the respondents is good, much has to be done to improve the knowledge regarding the availability of different methods and the effectiveness of the methods used by giving a reproductive health education especially for students who are enrolled in non-medical areas of study.

ABBREVIATIONS

AAU: Addis Ababa University;
ACIPH: Addis Continental Institute of Public Health;
AOR: Adjusted Odd Ratio;
CI: Confidence Interval;
COR: Crude Odd Ratio;
EC: Emergency Contraception;
ECM: Emergency contraception Methods;
IRB: Institutional Review Board;
IUCD: Intrauterine Contraceptive Device;
IUD: Intrauterine Device; OR: Odds Ratio

DECLARATIONS

Acknowledgement

We would like to thank the institute, ACIPH, and Addis Ababa University registrar, department heads and instructors for the kind facilitation of data collection. Finally, we would like to thank the study participants for their willingness to participate in the study and for the successful completion of this research.

Authors Contribution

YF has developed the idea, wrote the proposal, and collected the data. NF has participated on data collection and analysis. YF and NF wrote the manuscript. EK reviewed the manuscript,reference articles, and wrote the final manuscript. MHB reviewed data analysis, and final manuscript.

Funding

Nil

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Competing interests

The authors declare that this manuscript was approved by all authors in its form and that no competing interest exists.

Conflict of interest

We declare no conflict of interest.

CORRESPONDING AUTHOR

Department of Obstetrics & Gynecology,College of Health Sciences, Addis Ababa University, Addis Ababa, Ethiopia

Email: Eskinderkebede@yahoo.com

REFERENCES

1. Santelli J RR, Hatfield-Timajchy K, Gilbert B, Curtis K, Cabral R, et al. The Measurement and Meaning of Unintended Pregnancy. Perspectives on sexual and reproductive health 2003 Mar; 1;35:94-101.
2. Bearak J PA, Alkema L, Sedgh G. Global, regional, and subregional trends in unintended pregnancy and its outcomes from 1990 to 2014: estimates from a Bayesian hierarchical model. Lancet Glob Health 2018 Apr; 6(4):e380-9.
3. Asia. WHOROfS-E. Regional Strategic Framework for accelerating universal access to sexual and reproductive health in the WHO South-East Asia Region New Delhi: World Health Organization Regional Office for South-East Asia; 2020 2020; Available from: https://apps.who.int/iris/handle/10665/334229.
4. [Internet] G. Contraceptive Use and Unintended Pregnancy. Available from: http://wwwglowmcom/section-view/heading/contraceptive-use-and-unintended-pregnancy/item/378 [cited 2021 Oct 12].
5. KA G. Unintended childbearing and knowledge of emergency contraception Oregon PRAMS Dataset 1999; 103.
6. Kindie Mitiku Kebede ASB, and Abyot Asres Shetanoa. Prevalence and determinants of unintended childbirth in Ethiopia. BMC Pregnancy and Childbirth 2021 Sep 12; Available from: https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-14-326(doi: 10.1016/j.heliyon.2021.e07869).
7. Ethiopian Demographic and Health Survey. EDHS. Available from: https://dhsprogramcom/pubs/pdf/FR328/FR328pdf 2016 [Internet]. [cited 2021 Sep 12]. .
8. pregrancy.docx T. Teen pregnancy in Arkansas. [Internet] [cited 2021 Sep 12]. Available from: https://www.coursehero.com/file/37797905/Teen-pregrancydocx/.
9. MA. G. Emergency contraception: a second chance at preventing adolescent unintended pregnancy. . Curr Opin Pediatr 1997 Aug; 9(4):300-9.
10. Davis P SM, Krishnan J, Bhat LD, Kodali NK. Knowledge and attitudes about the use of emergency contraception among college students in Tamil Nadu, India. . J Egypt Public Health Assoc 2020 Dec; 95(1):1(doi: 10.1186/s42506-019-0030-9. PMID: 32813100; PMCID: PMC7366310.).
11. R A. Factors affecting awareness of emergency contraception among college students in Kathmandu, Nepal. BMC Women's Health 2009 Dec; 9(1):27.
12. University AA. Seek Wisdom, Elevate your Intellect and Serve Humanity [Internet] Available from: http://wwwaaueduet/ [cited 2021 Sep 20].
13. Nyambura MG KJ, Orang'o O, Okube OT. Knowledge and Utilisation of Emergency Contraception Pills among Female Undergraduate Students at the University of Nairobi, Kenya. Open Journal of Obstetrics and Gynecology 2017 Aug 30; 7(9):989-1005.
14. Hoque ME GS. Knowledge, Practices, and Attitudes of Emergency Contraception among Female University Students in KwaZulu-Natal, South Africa. Medeiros R, editor. PLoS ONE 2012 Sep 26;7(9):e46346.
15. Demissie TW NA, Beyene GM. Assessment of emergency contraceptives utilization and associated factors among female college students at Debre Tabor town. Contracept Reprod Med 2020 Dec;5(1):33.
16. Tajure N PB. Knowledge, Attitude and Practice of Emergency Contraception Among Graduating Female Students of Jimma University, Southwest Ethiopia. Ethiop J Health Sci 2010 Jul;20(2):91-7.
17. Tamire W EF. Knowledge, attitude, and practice on emergency contraceptives among female university students in Addis Ababa, Ethiopia. Ethiopian Journal of Health Development 2007 Nov 12;21.
18. Mishore KM WA, Huluka SA. Emergency Contraceptives: Knowledge and Practice towards Its Use among Ethiopian Female College Graduating Students. International Journal of Reproductive Medicine 2019 Jan 1;2019:e9397876.
19. Tolossa E MB, Abajobir A. . Assessment of level of knowledge and utilization of emergency contraception among female students of Hawassa University, South Ethiopia. . Advances in Reproductive Sciences 2013 Jan 1;01:51-6.
20. Puri S BV, Swami HM, Singh A, Sehgal A, Kaur A. Awareness of Emergency Contraception among Female College Students in Chandigarh, India. Indian journal of medical sciences 2007 Jul; 1;61:338-46.
21. G I. Knowledge, Attitudes, and Practices of Emergency Contraception among Female Undergraduate Health Science Students in Kenya. Annals of Medical and Health Sciences Research 2017; 7(4):5.
22. Yimer B AB, Getaw n. . Knowledge, Attitude, and Practice of Emergency Contraceptives among female university students in Ethiopia: a systematic review and meta-analysis. Ethiopian Journal of Reproductive Health (EJRH) February, 2017 Volume 9
23. [Internet] MOH-E. Adolescent and Youth Health Program. Available from: https://wwwmohgovet/site/initiatives-4-col/Adolescent_and_Youth_Health_Program [cited 2022 Jun 30].