

Knowledge of Emergency Contraceptive Methods among Female Undergraduate Students at Arbaminch University, Ethiopia

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Abstract

Information about women's knowledge of emergency contraceptives plays a major role in the reduction of unwanted pregnancy. This study aimed to assess Arbaminch University female students' knowledge of emergency contraceptive methods. A cross-sectional study design was employed from January 1/2014-March, 2014, on 821 regular undergraduate female students. Multi stage stratified sampling was used with SRS technique. Data were entered on EPI info version 3.5.1 and analyzed using SPSS version 16.0. Multivariable logistic regression was used. P-value less than 0.05 at 95% CI was taken for statistical significance. With regard to awareness of respondents on emergency contraceptives, 475 (57.9%) heard about emergency contraceptives, 313 (38.1%) mentioned oral pill, 124 (15.1%) identified both methods, 34 (4.1%) participants heard IUCD. Only 387 (47.1%) study subjects were knowledgeable for emergency contraceptive methods. Finally, after controlling other variables place of origin [AOR=1.84, 95% CI : 1.31-2.58], ever use of contraception [AOR=2.51, 95% CI : 1.65-3.78] and accept the importance of family planning [AOR=2.61, 95% CI : 1.56-4.39] were significantly associated. This study demonstrated lack of awareness and detail knowledge of emergency contraceptives among female undergraduate students. Thus, there is a need to educate adolescents about emergency contraceptives with emphasis on the correct time limit for use.

Keywords: Emergency contraceptive, University, Female students

1. Introduction

Emergency contraceptive (EC) is largely underutilized in the world. It has been regarded as one of the best kept "secrets" in Reproductive Health [1]. In many low income countries, the lack of awareness about and the access to emergency contraceptive has resulted in women resorting to unsafe abortions. The World Health Organization (WHO) estimates that 84 million unwanted pregnancies occur annually worldwide [2]. Global estimates also indicate that over 46 million abortions take place every year and out of which 19 million abortions are performed under unsafe conditions [2]. Unsafe abortions account for 13% maternal deaths and nearly all unsafe abortions 98% occurred in developing countries, mainly in sub-Saharan Africa. [2]

Ethiopia is one of the developing countries with the highest maternal mortality ratio (MMR) in the world. According to EDHS 2011, maternal mortality rate is estimated at 676 per 100,000 live births [3].

Unsafe abortions are a major public health problem in Ethiopia and responsible for 32% of all maternal deaths in Ethiopia [4]. In Ethiopia 2008, 101 unintended pregnancies occurred per 1,000 women aged 15-44, and 42% of all pregnancies were unintended [5]. Contraceptive utilization among young people, particularly university students appears very low and most unwanted pregnancies resulting from unprotected sex result in unsafe induced abortions.

Thus, understanding of knowledge of emergency contraceptive is important for countries like Ethiopia to curb maternal mortality by reducing unintended pregnancy. Therefore, the results of this study will indicate the scope of the problem in Arbaminch University and information gathered from this study will provide baseline data for further study. Furthermore, this study will provide baseline data to assist policy makers in developing appropriate evidence based strategies to promote the use of emergency contraceptive pills in Ethiopia.

2. Methods

2.1. Study setting

Arbaminch University is located in Arbaminch, Ethiopia, about 505 km south of Addis Ababa. Before its inauguration as a university, it was known as Arab Minch Water Technology Institute (AWTI) offering qualified course in water resource planning, design and development. AWTI was established in 1986 with the objective of creating a skilled and qualified manpower vital for the effective utilization and exploration of water resources for various aspects of national development. A total of 15,109 (M= 10,923 and F= 4186) Students enrolled in the regular undergraduate program and also Arbaminch is the capital city of the Gamo Gofa zone and the zone has 15 woredas and two administrative towns. According to Population Statistics Office, there are an estimated of 1,957,395 people live in the zone in 2006. As to the zonal governmental health structure the zone has one

general hospital and two district hospitals and 68 health centers, making the health coverage of 83% in the zone. In Arbaminch town there are three private colleges, including social science education and one technical, vocational and educational college /TVET/ which educate in diploma programs. And this study carried out between January to 2014 to March, 2014 G.C at Arbaminch. The reason for selection was previously no research undertaken on this topic plus its convenient access to the investigator

2.2. Study design, Participants and Sample selection

An institution based cross - sectional study design was conducted to assess knowledge of Emergency contraceptives among female students at Arbaminch University from January to 2014 to March, 2014 G.C. All university female students in Arbaminch town who were attending their education during the study period were the source population. All regular voluntary female university students were included as a study population and these students were selected randomly. The sample size was estimated using single population proportion formula, considering 95% confidence level, power of 80% ,5% degree of precision, students who were aware of Emergency Contraceptive was 45%. [Haftom Gebrehiwot*, 2011] and adding non response rate of 10%, a design effect of 1.5. Sample size calculated by using EPI-Info version 3.5.1 . Therefore, the final calculated sample size was 891.

Sampling technique, the multistage stratified sampling was considered in all schools of the college and departments in Arbaminch University. There were six colleges in which there were 4186 female regular students and from them 891 Study participants were selected by applying simple random sampling technique. Probability proportional to size was applied to determine the sample size in each department and/or school and students in each year. For this study, a self-administered and structured questionnaire was used to collect data. The questionnaire is pre-coded and contains a few open-ended questions in addition to the major closed-ended questions. It is developed from similar study conducted in Ethiopia and modified by the investigator and includes sections about socio demographic information, and knowledge about emergency contraceptives. It was prepared in English and translated to Amharic. The Amharic questionnaire was back translated into English to check for its consistency. Data collectors trained and recruited for data collection process. The study participants had participated based on their willingness in the study. Adequate information was given on how to fill the questionnaire. The principal investigator was participated on supervision during data collection process and ensured set standard procedures as followed.

2.3. Data Management and Analysis

Data was checked, cleaned and edited for completeness, outliers and missing values and entered to EpiData version 3.5.1 and exported to SPSS windows version 16.0 for analysis. Data presented by using frequencies, percentages of table and associations between variables were assessed by using odds Ratio, 95% Confidence Intervals. Multiple logistic-regressions used to adjust for possible confounding variables. To ascertain the level of female university students' knowledge about emergency contraceptive the following were done. Eight knowledge assessment questions were provided for those respondents who heard about emergency contraceptive. These respective series of questions adopted from previous similar studies concerning knowledge about Emergency Contraceptives.

In order to get the summarized extent of knowledge of female students of Arbaminch University, knowledge assessment question response was recorded into the value '1' for correct answers and the value '0' for the incorrect answers in the first place. Then respondents' correct responses to the questions aggregated and ranged from 0 – 8. And based on the cumulative correct responses score, the study subjects was classified as not knowledgeable and knowledgeable about emergency contraceptive. Bivariate and multivariable logistic regression analysis was employed to identify association between outcome and predictor variables.

Statistical significance was declared at P value <0.05 on final model. The strength of association was interpreted using the adjusted odds ratio and 95% CI.

2.4. Operational Definitions

Emergency contraceptive: is a form of oral contraception and IUCD contraception method that can be used immediately or in the first few days after sexual intercourse but before pregnancy is established.

Knowledge of Emergency contraceptive (EC): That include heard about EC, type of EC, identify time limit to be taken EC after unprotected sex within 72 / 120 hours and occasions when EC used/ not used.

Knowledgeable: From the knowledge questions on emergency contraception who respond correctly above the median value of 12 knowledge questions.

Not knowledgeable: Those who scored less than or equal to the median value of 12 knowledge questions.

2.5. Ethical Clearance

Ethical approval and clearance was obtained from Addis Continental Institute of Public Health Institution of

Ethical Review Board (ERB) of Wolaita Sodo University. Informed consent obtained from the study participants by informing the purpose of the study, its procedure and confidentiality prior to data collection.

3. Result

3.1. Socio- Demographic Characteristics

Information was obtained from 821 study subjects this made the response rate to be 92%. 511(62.2%) subjects were within the range of age group of 20-24 years and ranged from a minimum of 17 years to the maximum of 30 years. 349(42.5%) subjects were from the Amhara ethnic group, 622(75.8%) had urban background and the rest from rural 199(24.2%).

With regard to residence 792(96.5%) study subjects were living inside campus and 29(3.5%) were living out of campus.

Regarding to marital status a total of 763(92.9%) were not married at present, 58(7.1%) were married. Majority 550 (67%) of the subjects were followers of the orthodox Christianity followed by Muslim and protestant which accounted 161 (16.6%) and 88(10.7%) respectively. The study subjects on the basis of their level of education 355(40.8%) were attended first year, 258(31.4%) and 228(27.8%) were second year, and third year and above respectively.

Table 1 Socio -demographic characteristics among female undergraduate students at Arbaminch University, March, 2014

Variables(n=821)	Frequency	Percent
Age(Years)		
15-19	297	36.2
20-24	511	62.2
>25	13	1.6
Place of origin		
Rural	199	24.2
Urban	622	75.8
Marital status		
Unmarried	763	92.9
Married	58	7.1
Residence		
Outside campus	29	3.5
Inside campus	792	96.5
Religion		
Orthodox	550	67
Protestant	88	10.7
Muslim	161	19.6
Catholic and others	22	2.7
Ethnicity		
Amhara	349	42.5
Oromo	148	18
Tigre	103	12.5
Others	221	26.9
Year of study		
Year -1	355	40.8
Year-2	258	31.4
Year-3 & above	228	27.8
Study College		
Institute of technology college	332	40.2
Natural science college	182	22.2
Business and Economics college	120	14.6
Social and Humanity college	91	11.1
Health science college	59	7.2
College of Agriculture	37	4.5

3.2. Family planning knowledge of participants

Regarding family planning knowledge 794(96.7%) students in the study area had ever heard of regular modern contraceptives and only 27(3.3%) were never heard about any family planning method. Concerning awareness of modern contraceptives 526 (64.1%) of subjects well-knew injectable, 513(62.5%), condom, 499(60.8%) oral pills, 440(53.6%), Implants 289(35.2%), calendar method 247(30.1%) IUCD and 3(0.4%) knew that other type of modern family planning method.

Regarding source of information 433(52.7%) obtained from mass media, 241(29.4%) from health institution, 222(27%) from school, friend & family accounted 68(8.3%), 59(7.2%) respectively.

3.3. Knowledge of emergency contraceptive awareness of participants

With regard to awareness of subjects on emergency contraceptives 475(57.9%) heard about emergency

contraceptives and from this 313(38.1%) mentioned oral pill ,and 124 (15.1) identified both methods ,and 34(4.1%) said IUCD s and 4(0.5%)followed by others.

From the study subjects who were aware of emergency contraceptives, 355(40.8%) correctly mentioned the recommended time to be taken, within 72 hours after unprotected sex. 197(24%) correctly answered the effectiveness of ECPs in preventing in unwanted pregnancy, 111(13.5%) and 211(25.7%) of the study subjects identified the recommended number of doses and the recommended time between the doses respectively. When asked about when to use emergency contraception, participants mentioned forced sex 237(28.9%), breakage of condom 232(28.3%), missed pills 129(15.7) and contraception failure 63(7.7%) to use emergency contraceptives to prevent unwanted pregnancy.

Concerning IUCD as emergency contraception, among subjects who were aware of emergency contraception, 100 (12.2%) correctly mentioned time of administration after unpredicted sexual contact and 185(22.5%) appropriately identified its effectiveness in preventing unintended pregnancy.

After computing a composite variable was created for knowledge about emergency contraceptives (12 knowledge questions),the mean 'knowledge' score was 3.95 ± 2.83 and the median score was 4. The median score was used as the cutoff point for classifying as knowledgeable or non-knowledgeable of emergency contraceptives. As a result, 434 (52.9%) scored 4 or less and were categorized as non-knowledgeable (Table-2).

Table-2.Knowledge concerning the time and dosage of emergency contraceptives among female under graduate students at Arbaminch University, March, 2014

Knowledgeassessment questions(N= 475)	Frequency	%
Conditions that emergency contraceptive to be taken		
If condom ruptured during intercourse	232	28.3
When there is missed pills	129	15.7
When forced to have sex	237	28.9
When there is failure of contraception	63	7.7
I don't know	127	15.5
Recommended time to take ECPs		
Within 24 hours after sex	156	19
Within 72 hours after sex	355	40.8
Within 4-6 days after sex	15	1.8
Even after a missed period	26	3.2
I don't know the time	287	35
Other, specify	2	0.2
Recommended time to take IUCD		
Within 24 hours after sex	124	15.1
Within 72 – 120 hours / 5 days	100	12.2
After a missed a period	44	5.4
I don't know the time	535	65.2
Other, specify	18	2.2
Effectiveness of emergency Contraceptive preventing pregnancy		
Highly effective (>95%)	223	27.2
Effective 75-89%	197	24
Less effective (<10%)	72	8.8
Not effective at all	14	1.7
I don't know	315	38.4
Effectiveness of IUCD in preventing pregnancy		
Highly effective (>95%)	185	22.5
Effective 75-89%	123	15
Less effective (<10%)	44	5.4
Not effective at all	22	2.7
I don't know	447	54.4
Recommended number of dose of ECPs		
One dose	124	15.1
Two dose	111	13.5
Three dose	33	4
I don't know	553	67.4
Recommended time between the ECP doses are?		
12 hours apart	211	25.7
24 hours apart	109	13.3
I don't know	501	61
Knowledge of EC(composite)		
Not knowledgeable	434	52.9
Knowledge	387	47.1

Table – 3: Associated Factors of knowledge of emergency contraception among female under graduate students in Arbaminch University March, 2014.

Variable	Knowledge of EC			
	Not Knowledge	Knowledge	COR(95% CI)	AOR(95% CI)
Age (years)				
15-19	159(53.5%)	138(46.5%)	1	
20-24	269(52.6%)	242(47.4)	1.06(0.81,1.38)	
>25	6(46.2%)	7(53.8%)		
Place of Origin				
Rural	124(62.3%)	75(37.7%)	1	1
Urban	310(49.8%)	312(50.2%)	1.67(1.20,2.30)*	1.84(1.31,2.58)*
Marital status				
Unmarried	412(54%)	351(46%)	1	
Married	22(38%)	36(62%)	1.92(1.11,3.33)	
Residence				
Outside campus	11(38%)	18(62%)	1	
In campus	423(53.4%)	369(46.6%)	1.66(1.20,2.31)	
Religion				
Orthodox	284(52%)	266(48%)	.89(.76,1.04)	
Protestants	46(52%)	48(48%)		
Muslim	87(54%)	74(46%)		
Catholic & Others	17(77%)	5(23%)	1	
Study year				
Year-one	175(52%)	160(48%)	1	
Year-Two	129(50%)	129(50%)	.91(.78,1.09)	
Year-Three & above	130(57%)	98(43%)		
Ever heard of FP				
NO	338(98%)	8(2%)	1	
Yes	96(20%)	379(80%)	1.54(.69,3.34)	
Believe FP methods preventing Pregnancy				
No	54(61%)	35(39%)	1	
Yes	380(52%)	352(48%)	1.43(.91,2.24)	
Importance of FP				
No	59(72%)	23(28%)	1	1
Yes	375(51%)	364(49%)	2.45(1.51,4.11)*	2.61(1.56,4.39)*
Ever used contraception				
No	390(57%)	299(43%)	1	1
Yes	44(33%)	88(67%)	2.61(1.77,3.87)	2.51(1.65,3.78)*

To determine the association between independent and dependent variable multivariate logistic regression was done to control confounders. Consequently, after controlling other variables place of origin, those students with urban background more likely to have knowledge towards EC than rural background students. [AOR=1.84, 95% CI 1.31, 2.58]. Those students who had urban backgrounds were found to be 1.84 times more likely to be aware of EC.

After adjusting for other variables ever use of contraception was significantly higher among the subjects than those who didn't experience it [AOR=2.51, 95% CI 1.65,3.78]. Similarly, after adjusting for other variables, those who value or accept the importance of contraception were more likely to know about EC than those who do not value it [AOR=2.61, 95% CI 1.56, 4.39] (Table-3).

4- Discussion

Although emergency contraceptives are not recommended as a regular family planning method, It is the most important group of birth control methods. While used after unprotected intercourse or contraception failure within a defined time [6]. from this study showed that 475(57.9%) of the respondents had heard of the emergency contraceptive method. This is lower than engineering college girls in Nagpur district of central India, 92.7% (7) in Sikkim, India was 86% [8] and lower than Cameroon students 63%. (9). This difference might be due to absence of health clubs, YFS centers and difference in study setting. This finding also lower than Addis Ababa undergraduate students, 84%, Bahidar, 83.5% and Mekelle 67.3%. [10,11,6]. this might be due to difference in the

mechanism of information delivery, the level of the city which might make the students who learn their to be more accessible to information in one or another way and make them free from afraid and use the information when deemed necessary. However, this finding is higher than Jimma 53% and Haramaya 47%. [12, 13]. This difference might be due to origin of place, age, difference the presence and absence of service delivery.

About 511 (62.2%) had ever heard of emergency contraceptive pills. The most common source of information was mass Media (52.7%), health institution (29.4%), school (27%), friends (8.3%), family (7.2%). These findings are similar with that was reported by Haramaya, Addis Ababa and Adama university. [13, 14, 15]. The majority of the study participants had gotten information from mass media according to this study.

Among the respondents who are aware of emergency contraceptive pills, 355 (40.8%) correctly identified the recommended time to be taken within 72 hours after unprotected sex, 197 (24%) correctly answered the effectiveness of emergency contraceptives in preventing unwanted pregnancy 111 (13.5%) and 211 (25.7%) of the study subjects identified the recommended number of doses and the recommended time between the doses respectively.

This study reveals that, knowledge about the correct time for taking emergency contraceptive pills after unprotected sex was 40.8%. This finding is higher than 5.7% reported in Cameroon, [16], 19.1% in Adama [13] and 26.2% Addis Ababa and Unity University [14]. The finding is lower than western Uganda 50% [16] and Jimma 48% [12].

5. Conclusion and recommendations

5.1. Conclusion

This study has shown that 57% of the female undergraduate students have awareness about EC and Even among those who were aware, only 47.1% had detailed knowledge of ECs. The female students' knowledge towards EC was significantly associated with their place of origin and ever use of contraception after adjusting possible confounders. This finding suggests that adequate knowledge of the method is lacking among the female undergraduate students. Hence, there is a need to educate adolescents about ECs with emphasis on the correct time limit for use, the situation when they use it and dosage.

5.2. Recommendation

Thus, there is a need to educate adolescents about ECs, with emphasis on the correct time limit for use, the situation when they use it and correct message about its effect on health. Furthermore, health education program should be set up to the college students to avail right information about emergency contraception and health promotion via mass media, Creating Reproductive Health Clubs and establishing YFS centers, in the college could be the venue for disseminating similar information. Therefore, the above mentioned behavioral change strategies should be considered by Arbaminch University, Ministry of Education, and Ministry of Health and by other stake holders to improve knowledge about emergency contraception.

Authors' contribution

Amare Asefa Anara: conceived and designed the study, performed analysis and interpretation of data

Professor Yemane Berhane Tsehaye: involved in revising the research paper and the manuscript for important intellectual context and approval of the final version to be published and participated in its design and coordination.

Mengistu Meskele Koyira: involved in data analysis, interpretation of the data, revising the research paper and the manuscript for important intellectual context and approval of the final version to be published and participated in its design and coordination.

Niguse Mekonnen Kara: drafting the manuscript, involved in revising the research paper and revising the research paper and the manuscript for important intellectual context. All authors approved the final version before the submission for publication.

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Competing Interest

All authors declare that they have no competing interest

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