



Survey of Knowledge and Attitude Toward Emergency Contraceptive Method Among Married Women in Reproductive Age Group

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Abstract

Background: Unwanted pregnancy (UP) is a worldwide problem. UP mainly results from the improper or lack of use of effective contraceptive methods. Hormonal emergency contraceptive (EC) is a method of family planning that reduces UP among women in reproductive age. We assessed the knowledge and attitudes of EC among married women in the reproductive age group.

Methods: In this cross-sectional study, 225 married women aged 15 to 49 years, who were referred to hospitals in Tehran Medical Branch during 2014 and 2015, were studied. Required data were collected through interviews and a questionnaire. The Cronbach's alpha coefficient for internal consistency was 0.85, the validity of the questionnaire was detected using content validity, and its reliability was 0.973. Data were analyzed by SPSS 14.0 statistical software. Statistical significance was set at $P < 0.05$.

Results: Women with a mean age of 27.3 ± 3.2 were studied. Significant statistical differences were found between the respondents' education and awareness ($P = 0.02$). There was a significant relationship between knowledge and current contraceptive method, with a confidence level of 90% ($P = 0.013$). About 38.6% of women were aware of the general perception, whereas 61.4% were not aware of it at all. In the target group, 22.6% and 73.3% had positive and negative attitudes toward the use of EC method, respectively, and 4% were neutral on this issue.

Conclusions: UP is one of the most important problems in Iran. Increasing the quality of family plan counseling in health centers and emphasizing the advantages of EC method to promote positive attitudes among women are highly recommended. Timely prevention may decrease adverse consequences for the mother and child.

Keywords: Contraception, Pregnancy, Knowledge, Attitude

1. Background

Unwanted pregnancy (UP) is defined when a woman gets pregnant without wanting or planning for pregnancy due to improper or lack of use of contraceptive methods (1). Some studies have shown that women with UP are physically and mentally weaker and have a lower level of prenatal care than women with intentional pregnancy. In addition, these women have high-risk behaviors such as smoking, alcohol, and drug abuse (2). Previous studies in Iran have revealed that UP leads to illegal abortion, which is associated with serious complications (3). The level of knowledge in university students' about EC is also low in Iran.

Prevention of UP has an important role in improving physical and mental health of mothers and infants. Emergency contraceptive (EC) method is a type of modern pregnancy prevention after unprotected sexual intercourse (4). EC is divided into 2 major methods including hormonal

and mechanical methods. Oral contraceptive pills (OCPs) are more frequently used among women as a hormonal method and copper intrauterine devices (IUD) as a mechanical method (5). It seems that OCPs are cost-effective and safer and have an important role in preventing unintended pregnancies in both developed and developing countries (6). Yuzpe regimen is the most common method that uses 2 high-dose estrogens (HD) pills (5). Previous studies have shown that this method achieves a success rate of 80% if these pills are consumed 72 hours after unprotected intercourse (7-10). Considering the phase of uterine cycle, OCPs can prevent pregnancy by various mechanisms, such as inhibition or delay of ovulation, disruption of corpus luteum formation, increasing the thickness of endometrial, biochemical changes, and interfering with implantation of ovules in endometrial (10, 11). Despite the efforts of the international community over the past 10

years, using EC method to prevent UP has been faced with restrictions. Huge numbers of women in the low-income countries do not have any information about EC, or have a negative attitude toward it (12). In addition, many evidences demonstrate that although many women are aware of the EC method, insufficient information leads them not to use this method, especially in women with low literacy levels (4, 8, 13, 14). Regardless of physical and mental problems, UP is responsible for 5% to 10% of maternal death, placing a huge economic burden on healthcare system, especially in developing countries. Hence, awareness of EC method can significantly contribute to a decrease in the rate of UP and reduce serious health complications (15, 16). The present study aimed at evaluating the knowledge and attitude of EC among married women in the reproductive age group.

2. Methods

This cross-sectional study was performed on 225 married women, aged 15 to 45 years, who were selected through simple random sampling from 500 women who had attended the gynecology clinics of Boo-Ali and Javaheri hospitals for routine check-ups in Tehran, Iran, from November 2014 to November 2015. The ethical committee of Azad University approved the study, and written informed consent was obtained from the participants. Exclusion criteria included pregnancy, psychosomatic disorders, hypothyroidism or hyperthyroidism, diabetes, smoking, alcoholism, and kidney or liver failure. Data were collected using 2 detailed questionnaires. Demographic characteristics consisted of age, race, education, geographic region, ethnicity, marital status, number of child, history of UP, and contraceptive method. To evaluate EC awareness and attitude, we used a self-administered questionnaire that was previously translated to Farsi by Delaram (The Cronbach's alpha coefficient for internal consistency was 0.85, the validity of the questionnaire was detected by content validity, and reliability was 0.973) (13).

The questionnaire, besides compiling a limited sociodemographic profile, asked questions with yes, no and do not know options. Knowledge of EC was assessed through 5 questions that reflected common misconceptions regarding effectiveness, availability, safety, and mechanism; attitudes were assessed through 12 questions with yes and no options that reflected common deterrents to EC use. All the participants were examined by a gynecologist, and then they were educated about the EC face-to-face at the time of recruitment. Patients completed the questionnaires. Illiterate women participated in an interview conducted by 2 experienced authors. Analysis was done using

Pearson correlation coefficient and logistic regression in SPSS 14.0; significance level was set at $P < 0.05$.

3. Results

A total of 225 women aged 15 to 49 years, who were in reproductive age, participated in this study. The average age of women was 27.3 ± 3.2 . The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic Characteristics of the Population Study (N = 225)

Characteristics	No.	Percentage, %
Mean age in years	27.3 + 3.2	
Occupation		
Working	34	15.1
House wife	191	84.8
Education		
Primary and high school educated	115	51.1
Bachelor of science (BS)	72	32
Master of science (MS) and doctorate	38	16.8
Age, y		
15 - 19	9.3%	9.3
20 - 29	132	58.6
30 - 39	60	27.1
40 - 49	12	5.3
Number of children		
None	14	6
One or two	145	64.6
Three or more	66	29.4

There were nearly equal numbers of patients with primary and high school education (51.1%) and college education (48.9%). Of the study population, 84.8% were housewives and the others were working (

The frequency distribution of current contraceptive methods and awareness is presented in Tables 2 and 3. The highest awareness (100%) was among those using contraceptive methods, whose husbands were condom users, and the lowest awareness was among those using IUD. With respect to the relationship between awareness and age between groups, the most awareness was found in those aged 20 to 29 years. Among 132 individuals of this group, 33 (34.2%) had good awareness, however, the relationship between knowledge and age of the participants was not significant ($P > 0.05$).

Attitudes toward the method were predominantly negative. With respect to the attitude of women in using EC

Table 2. Frequency Distribution by Awareness of Using EC Pills (N = 225)

Awareness of Using EC Pills	No.	Percentage, %
Various aspects of using EC pills	73	32.5
Number of times to take pills	74	32.8
Correct distance between the two dose pills	148	65.7
Deadline for applying EC	141	62.6
Number of tablets per dose	166	73.7

Table 3. Frequency Distribution by Current Contraceptive Method and Awareness (N = 225)^a

Current Method	Awareness	
No method	29 (12.8)	19 (68.9)
Oral contraceptive	83 (36.8)	52 (62.6)
Injectable	35 (15.5)	12 (34.2)
IUD	44 (19.5)	13 (29.5)
Male condom	13 (5.7)	13 (100)
Withdrawal	21 (9.3)	7 (33.3)

^aValues are expressed as No. (%).

method, 19.1% agreed to use it, 75.5% disagreed, and 4.4% had no opinion about it. In case of the probability risk for fetal disability in EC method users, 79.1% expressed their disagreement in using it and 11.1% agreed. Of the participants, 47.1% agreed that they had nausea and vomiting after taking the pills, and 35.2% agreed that this method may have serious complications (negative attitude). However, 45.7% of the participants believed in using EC despite its side effects (positive attitude). The most negative attitudes were seen in the manner of 21 (9.3%) patients aged 15 to 19 years. A total of 20 (8.8%) patients had a negative attitude. There was no significant relationship ($P > 0.05$) between attitude and age groups. With respect to the correlation between attitude and respondents' number of children, the most positive attitude was found among groups with 1 and 2 children in 162 members of this group, and 43 (26.5%) individuals had positive attitude, which constituted 19.1% of the total participants. However, there was no significant relationship between the attitude and the number of children of the respondents in this study. There was a correlation between awareness and education of the participants, with a confidence level of 95% ($P = 0.02$), meaning that women with higher education levels are more aware of the EC method. Also, there was a significant relationship between awareness and prevention of pregnancy, with a confidence level of 90% ($P = 0.03$). There was no significant correlation between awareness and number of children of the

participants ($P > 0.05$). However, in 12 mothers who had no children, 9 (75%) had proper knowledge of EC method compared to those mothers with 1 and 2 and 3 and 4 children, which were 56.7% and 47%, respectively. The most common source of information of women was health professionals, so 88.4% of women's information about EC was obtained from midwives and physicians, while this percentage by friends and acquaintances, media, and academic courses was 5.3%, 3.1%, and 2.2%, respectively.

4. Discussion

Findings of this study revealed that attitude and awareness among women using EC method, which mainly consists of combined oral contraceptive pills, was relatively low. Thus, 38.6% of women under study were aware of the method (both correct and incorrect), and about 61.4% had no knowledge about it. Our participants' awareness was lower than what has been reported in several developed countries including Sweden, USA (Boston), and Canada (17-19) and was higher than some developing countries including India, Nigeria, Kuwait, and Kenya (20-22). These results may be due to the higher socioeconomic level of the developed countries compared to developing countries. This study suggests that the education level of women increases their awareness toward EC. In this regard, a study in South Africa, as well as another study in Honduras, found a significant relationship between level of education and awareness among women (23, 24). Garcia et al. (23) showed that age is an effective factor in determining the level of women's awareness. In this study, age also played an important role in increasing women's awareness. So those with the maximum amount of information, with more than 50%, were aged 20 and 29 years. The present study examined the role of health personnel, academic courses, friends, and media in educating emergency pregnancy prevention methods. In our study, a large proportion of women had been counseled about EC by health professionals, and fortunately, it shows the sufficient knowledge of healthcare providers about EC and prescribing regimes, and this result is comparable with the study of Meyer et al. (2007) (24), in which the role of clinic was low (27%).

We found an obvious gap in the role of academic courses, in which only 2.7% of women gained information and this is similar to Myre et al. (2007) (24) research in South Africa with 5%. In the study of Langille and Delaney in Canada (19), girls obtained their EC information by classmates, sexual health education classes at school, and school's health center. These results show the role of health education classes in improving the knowledge of EC. The role of media was also less frequently in our study. However, in the study of Aneblom in Sweden (17),

the greatest amount of information was obtained by media (50.1%). The tangible lack of media and educational courses in Iran is comparable with that of the developed countries. In another study conducted in the US by Aiken et al. in 2005, it was found that urban young women's knowledge and attitudes towards EC levels was significantly increased (73%) according to the educational intervention. Some researchers have reported similar results (25, 26). In our study, the level of awareness of EC among women without children was more than those with children, which is similar to a study conducted by Noahjah et al. in Iran (27). In both studies, an inverse relationship was found between number of children and education. Thus, as the level of education was increased, the number of children was reduced, which would have been caused by more knowledge of women about EC (27). In our study, the highest level of knowledge about EC was related to women, whose husbands were using condoms, which is similar to the study conducted in Canada by Harvey (28) and in Iran by Noahjah et al. (27). The reason of higher awareness of women about EC in our study and the 2 above-mentioned studies may be due to the coadministration of condom and contraceptive pills that are recommended by many researchers. The majority (73.6%) of women had a negative attitude toward EC. In our study, 41.6% of women, with undergraduate level education and bachelor's degree, had a positive attitude toward EC method. The positive attitude of those with master and doctoral levels was 11.7%. Thus, there was no relationship between educational levels of women and their positive attitudes toward EC method. In a study conducted in Malaysia by Najafi, despite the low information of women about the EC pills compared to women in our study, 88% of women had a more positive attitude towards the EC. More women did not have enough information about the indications for use, mechanism of action, and side effects of taking EC (29).

It is concluded that UP is an important problem in Iran. In case of timely prevention, adverse consequences for the mother and child would be during through pregnancy. Universities, schools, and media have an influential role in educating women, and in case of applying them, they would play an important role in increasing women's awareness and creating positive attitude towards using EC method. Increasing the quality of family plan counseling in health centers and emphasizing the advantages of EC method, such as its safety and not being in contrast with religious believes, to promote positive attitudes are highly recommended. Further studies should be conducted with larger sample sizes and in various populations.

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References

1. Sedgh G, Bankole A, Oye-Adeniran B, Adewole IF, Singh S, Husain R. Unwanted pregnancy and associated factors among Nigerian women. *Int Fam Plan Perspect*. 2006;**32**(4):175-84. doi: [10.1363/IFPP.32.175.06](https://doi.org/10.1363/IFPP.32.175.06). [PubMed: [17237014](https://pubmed.ncbi.nlm.nih.gov/17237014/)].
2. Khajehpour M, Simbar M, Jannesari S, Ramezani-Tehrani F, Majd HA. Health status of women with intended and unintended pregnancies. *Public Health*. 2013;**127**(1):58-64. doi: [10.1016/j.puhe.2012.08.011](https://doi.org/10.1016/j.puhe.2012.08.011). [PubMed: [23200101](https://pubmed.ncbi.nlm.nih.gov/23200101/)].
3. Erfani A. Levels, trends, and determinants of unintended pregnancy in iran: the role of contraceptive failures. *Stud Fam Plann*. 2013;**44**(3):299-317. doi: [10.1111/j.1728-4465.2013.00359.x](https://doi.org/10.1111/j.1728-4465.2013.00359.x). [PubMed: [24006075](https://pubmed.ncbi.nlm.nih.gov/24006075/)].
4. Ahmed FA, Moussa KM, Petterson KO, Asamoah BO. Assessing knowledge, attitude, and practice of emergency contraception: a cross-sectional study among Ethiopian undergraduate female students. *BMC Public Health*. 2012;**12**:110. doi: [10.1186/1471-2458-12-110](https://doi.org/10.1186/1471-2458-12-110). [PubMed: [22321964](https://pubmed.ncbi.nlm.nih.gov/22321964/)].
5. Brunton J, Beal MW. Current issues in emergency contraception: an overview for providers. *J Midwifery Womens Health*. 2006;**51**(6):457-63. doi: [10.1016/j.jmwh.2006.07.006](https://doi.org/10.1016/j.jmwh.2006.07.006). [PubMed: [17081936](https://pubmed.ncbi.nlm.nih.gov/17081936/)].
6. Trussell J, Calabretto H. Cost savings from use of emergency contraceptive pills in Australia. *Aust N Z J Obstet Gynaecol*. 2005;**45**(4):308-11. doi: [10.1111/j.1479-828X.2005.00417.x](https://doi.org/10.1111/j.1479-828X.2005.00417.x). [PubMed: [16029298](https://pubmed.ncbi.nlm.nih.gov/16029298/)].
7. Abbott J, Feldhaus KM, Houry D, Lowenstein SR. Emergency contraception: what do our patients know?. *Ann Emerg Med*. 2004;**43**(3):376-81. doi: [10.1016/S019606440301120X](https://doi.org/10.1016/S019606440301120X). [PubMed: [14985666](https://pubmed.ncbi.nlm.nih.gov/14985666/)].
8. Glasier A, Baird D. The effects of self-administering emergency contraception. *N Engl J Med*. 1998;**339**(1):1-4. doi: [10.1056/NEJM199807023390101](https://doi.org/10.1056/NEJM199807023390101). [PubMed: [9647872](https://pubmed.ncbi.nlm.nih.gov/9647872/)].
9. Hatcher RA. 10 common questions on emergency contraception. *Contracept Technol Update*. 1998;**19**(1):6. 11-2. [PubMed: [12348214](https://pubmed.ncbi.nlm.nih.gov/12348214/)].
10. Pham A. Emergency contraception (post-coital Contraception). *J Okla State Med Assoc*. 2002;**95**(6):371-4. [PubMed: [12080896](https://pubmed.ncbi.nlm.nih.gov/12080896/)].
11. Pretell-Zarate EA. [Emergency oral contraception policy: the Peruvian experience]. *Rev Peru Med Exp Salud Publica*. 2013;**30**(3):487-93. [PubMed: [24100827](https://pubmed.ncbi.nlm.nih.gov/24100827/)].
12. Westley E, Kapp N, Palermo T, Bleck J. A review of global access to emergency contraception. *Int J Gynaecol Obstet*. 2013;**123**(1):4-6. doi: [10.1016/j.ijgo.2013.04.019](https://doi.org/10.1016/j.ijgo.2013.04.019). [PubMed: [23856676](https://pubmed.ncbi.nlm.nih.gov/23856676/)].
13. Delaram M. Knowledge and perception of emergency contraception of women in Shahrekord-Iran. *J Fam Plann Reprod Health Care*. 2008;**2**(3):143-6.
14. Ezebialu I, Eke A. Knowledge and practice of emergency contraception among female undergraduates in South eastern Nigeria. *Ann Med Health Sci Res*. 2013;**3**(4):541-5. doi: [10.4103/2141-9248.122092](https://doi.org/10.4103/2141-9248.122092). [PubMed: [24380005](https://pubmed.ncbi.nlm.nih.gov/24380005/)].
15. Najafi-Sharjabad F, Hajivandi A, Rayani M. Knowledge, attitude, and practice about Emergency Contraception among health staff in Bushehr state, south of Iran. *Glob J Health Sci*. 2013;**6**(1):52-60. doi: [10.5539/gjhs.v6n1p52](https://doi.org/10.5539/gjhs.v6n1p52). [PubMed: [24373264](https://pubmed.ncbi.nlm.nih.gov/24373264/)].
16. Rahimikian F, Moshrefi M, Mir mohammadali M, Mehran ABAS, Amelvalizadeh M. Effects of emergency contraceptive methods education on the knowledge and attitudes of the health care staff [In Persian]. *Hayat*. 2007;**13**(2):53-9.
17. Aneblom G, Larsson M, Odland V, Tyden T. Knowledge, use and attitudes towards emergency contraceptive pills among Swedish women presenting for induced abortion. *BJOG*. 2002;**109**(2):155-60. [PubMed: [1188097](https://pubmed.ncbi.nlm.nih.gov/1188097/)].

18. Chuang CH, Freund KM, Massachusetts Emergency Contraception N. Emergency contraception knowledge among women in a Boston community. *Contraception*. 2005;**71**(2):157-60. doi: [10.1016/j.contraception.2004.08.007](https://doi.org/10.1016/j.contraception.2004.08.007). [PubMed: [15707568](https://pubmed.ncbi.nlm.nih.gov/15707568/)].
19. Langille D, Delaney M. Knowledge and use of emergency postcoital contraception by female students at a high school in Nova Scotia. *Can J Public Health*. 1999;**91**(1):29-32.
20. Marafie N, Ball DE, Abahussain E. Awareness of hormonal emergency contraception among married women in a Kuwaiti family social network. *Eur J Obstet Gynecol Reprod Biol*. 2007;**130**(2):216-22. doi: [10.1016/j.ejogrb.2006.05.023](https://doi.org/10.1016/j.ejogrb.2006.05.023). [PubMed: [16806651](https://pubmed.ncbi.nlm.nih.gov/16806651/)].
21. Muia E, Ellertson C, Lukhando M, Flul B, Clark S, Olenja J. Emergency contraception in Nairobi, Kenya: knowledge, attitudes and practices among policymakers, family planning providers and clients, and university students. *Contraception*. 1999;**60**(4):223-32. doi: [10.1016/S0010-7824\(99\)00089-X](https://doi.org/10.1016/S0010-7824(99)00089-X). [PubMed: [10640169](https://pubmed.ncbi.nlm.nih.gov/10640169/)].
22. Srivastav A, Khan MS, Chauhan CR. Knowledge, attitude and practices about contraceptive among married reproductive females. *Int J Sci Study*. 2014;**1**(5):2-4.
23. Garcia SG, Lara D, Landis SH, Yam EA, Pavon S. Emergency contraception in Honduras: knowledge, attitudes, and practice among urban family planning clients. *Stud Fam Plann*. 2006;**37**(3):187-96. doi: [10.1111/j.1728-4465.2006.00097.x](https://doi.org/10.1111/j.1728-4465.2006.00097.x). [PubMed: [17002197](https://pubmed.ncbi.nlm.nih.gov/17002197/)].
24. Myer L, Mlobeli R, Cooper D, Smit J, Morroni C. Knowledge and use of emergency contraception among women in the Western Cape province of South Africa: a cross-sectional study. *BMC Womens Health*. 2007;**7**:14. doi: [10.1186/1472-6874-7-14](https://doi.org/10.1186/1472-6874-7-14). [PubMed: [17850659](https://pubmed.ncbi.nlm.nih.gov/17850659/)].
25. Aiken AM, Gold MA, Parker AM. Changes in young women's awareness, attitudes, and perceived barriers to using emergency contraception. *J Pediatr Adolesc Gynecol*. 2005;**18**(1):25-32. doi: [10.1016/j.jpag.2004.11.002](https://doi.org/10.1016/j.jpag.2004.11.002). [PubMed: [15749581](https://pubmed.ncbi.nlm.nih.gov/15749581/)].
26. Beckman LJ, Harvey SM, Sherman CA, Petitti DB. Changes in providers' views and practices about emergency contraception with education. *Obstet Gynecol*. 2001;**97**(6):942-6. doi: [10.1016/S0029-7844\(01\)01365-5](https://doi.org/10.1016/S0029-7844(01)01365-5). [PubMed: [11384700](https://pubmed.ncbi.nlm.nih.gov/11384700/)].
27. Noahjah S, Moradi A, Yaghoubi B, Haghhighizadeh MH. Evaluation of awareness of emergency contraception method of 15-49 years old women in andimeshk health center in 2008 [In Persian]. *Toloo-e-Behdasht*. 2008;**7**:1-10.
28. Harvey SM, Beckman LJ, Sherman C, Petitti D. Women's experience and satisfaction with emergency contraception. *Fam Plann Perspect*. 1999;**31**(5):237-40. 260. doi: [10.2307/2991571](https://doi.org/10.2307/2991571). [PubMed: [10723648](https://pubmed.ncbi.nlm.nih.gov/10723648/)].
29. Najafi F, Rahman HA, Hanafiah M, Momtaz YA, Ahmad Z. Emergency contraception: knowledge, attitudes and practices among married Malay women staff at a public university in Malaysia. *Southeast Asian J Trop Med Public Health*. 2012;**43**(6):1512-20. [PubMed: [23413716](https://pubmed.ncbi.nlm.nih.gov/23413716/)].