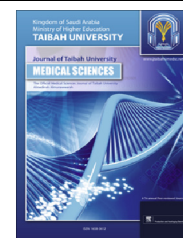




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## Clinical Study

# Awareness and use of emergency contraception among women of childbearing age at the family health care centers in Alexandria, Egypt

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### المخلص

**أهداف البحث:** على الرغم من أن وسائل منع الحمل في حالات الطوارئ كانت متاحة ومسجلة لفترة طويلة في مصر وبعض البلدان الأخرى في الشرق الأوسط، إلا أنها لا تزال مجهولة نسبياً وتتم مناقشتها بشكل مثير للجدل في هذه البلدان. ونظراً لأهمية وسائل منع الحمل في حالات الطوارئ، في منع الحمل غير المرغوب فيه، فقد أجريت هذه الدراسة للتحقق من مدى الوعي بوسائل منع الحمل في حالات الطوارئ، ومدى استخدامها بين السيدات في سن الإنجاب والمترددات على مراكز الرعاية الصحية للأسرة في الإسكندرية بمصر.

**طرق البحث:** تم تطبيق دراسة مقطعية وصفية على 151 سيدة في سن الإنجاب (19-49 سنة) من المترددات على مركزين صحيين للأسرة تم اختيارهما بطريقة عشوائية. استخدمت المقابلة السابقة التجهيز لجمع البيانات المطلوبة التي تضمنت 4 مقاطع وهي: الخصائص الاجتماعية، والديموغرافية للسيدات المشاركات بالبحث، وتاريخ الحمل غير المرغوب فيه، ومعرفتهن بوسائل منع الحمل في حالات الطوارئ، واتجاهتهن نحو وسائل منع الحمل في حالات الطوارئ وأخيراً مدى استخدامهن لوسائل منع الحمل في حالات الطوارئ.

**النتائج:** معظم السيدات الخاضعات للدراسة (75.5%) لم يكن لديهن أية معلومات عن وسائل منع الحمل في حالات الطوارئ، وهناك نسب متساوية تقريباً (78.8% و 79.4% على التوالي) من عينة الدراسة ذكرن أن وسائل منع الحمل في حالات الطوارئ يمكن أن تستخدم في حالة حدوث الجماع دون وقاية وفي حالة فشل الأساليب العادية. فقط 21.5% من عينة الدراسة ذكرن أنهم استخدموا وسائل منع الحمل أثناء الطوارئ.

**الاستنتاجات:** أوضحت الدراسة الحالية أن الغالبية العظمى من السيدات في سن الإنجاب ينقصهن الوعي بوسائل منع الحمل في حالات الطوارئ وأيضاً لم يستخدمن هذه الوسيلة من قبل.

**الكلمات المفتاحية:** منع الحمل في حالات الطوارئ؛ الوعي بطرق منع الحمل؛ استخدام وسائل منع الحمل؛ سن الإنجاب.

### Abstract

**Objective:** Despite the fact that emergency contraceptive (EC) methods have been available and registered for a long time in Egypt and some other Middle Eastern countries, EC remains relatively unknown and is discussed controversially in such countries. Considering the importance of EC in preventing unintended pregnancies, this study was conducted to investigate the awareness and use of EC methods among women of childbearing age at the family health care centers in Alexandria, Egypt.

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**Methods:** A descriptive cross sectional study was carried out on 151 women of child-bearing age (19–49 years) attending two family health centers who were randomly selected. An interview schedule was used to collect the desired data in 4 domains: socio-demographic characteristics and history of unwanted pregnancy; knowledge about EC; attitude toward EC; and uses of EC.

**Results:** Most of the study subjects (75.5%) did not know EC, approximately an equal proportion (78.8% and 79.4%) stated that EC could be used after unprotected intercourse and in case of failed regular methods respectively. Only 21.5% ever used EC.

**Conclusion:** The current study revealed that the majority of women in reproductive age, had a lack of awareness about EC methods and also did not use it before.

**Keywords:** Childbearing age; Contraception awareness; Contraception use; Emergency contraceptives

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## Introduction

Emergency contraception (EC) in the past two decades had been proven to be effective and well tolerated. Counseling and advance provision and prescription of emergency contraception have been embraced by professional organizations in practice guidelines in the developed countries for its potential to reduce the number of unintended pregnancies and abortions.<sup>1</sup> Dramatically, the World Health Organization (WHO) estimated that one woman dies every eight minutes due to unsafe abortion in the developing countries.<sup>2</sup> These clandestine abortions are among the five leading causes of maternal mortality globally.<sup>3</sup> However, in the developing world; an estimated five million women who survive the unsafe abortions require hospitalization annually.<sup>4</sup> Unsafe abortion has much ill effects on women's health; millions of women end up with many complications including severe infection and bleeding; this could be immensely reduced by using Emergency contraception (EC).<sup>5,6</sup>

Emergency contraception is a type of contraception which is indicated after unprotected sexual intercourse, following sexual abuse, misuse or nonuse of contraception.<sup>7</sup> Emergency contraception plays a vital role in preventing unintended pregnancy on 98% of occasions, if applied correctly, which in turn helps to reduce unintended childbearing and unsafe abortion, which are major problems affecting maternal health.<sup>8</sup> Emergency contraception includes the use of Emergency Contraceptive Pills (ECP), and/or the insertion of Intrauterine Device (IUD).<sup>9</sup>

Emergency contraception pills (ECP) are also known as 'the morning after pill', 'interception', 'postcoital contraception' or 'vacation pill'. ECP includes the use of an increased dose of combined oral contraceptive pills (COCs) containing ethinyl estradiol and levonorgestrel (the Yuzpe regimen) or the use of high dose of progestin only pills (POPs) containing levonorgestrel. ECP are effective only if used within 72 h after unprotected sex. Effectiveness of ECP is said to be 75% in case of COCs and 85% in case of POPs. ECP can prevent pregnancy by delaying or inhibiting ovulation, prevent implantation, fertilization or transport of the sperm or ovum. ECP do not interrupt or abort an established pregnancy. Once implantation has occurred, ECP are not any more effective. Thus, ECP do not cause any form of abortion or bring about menstrual bleeding.<sup>10–12</sup>

Insertion of intrauterine device (IUD) within 7 days of unprotected intercourse has also been reported as a highly successful method of postcoital emergency contraception.<sup>13</sup> The

Copper Intrauterine Device (Cu IUD) prevents fertilization through the effect of Cu ions on sperm function. In addition, if fertilization has already occurred, Cu ions influence the female reproductive tract and prevent endometrial receptivity.<sup>14</sup>

Despite the fact that EC has been available and registered for a long time in Egypt and some other Middle Eastern countries as Algeria, Lebanon, Libya, Mauritania, Morocco, Tunisia, and Yemen, EC remains relatively unknown and is discussed controversially in such countries, and the problem of unintended pregnancy still exists. These countries are examples of societies that have strong religious beliefs and social traditions. Having an induced abortion in such a setting is extremely difficult and is associated with tight regulation.<sup>15</sup>

A study performed in Iran reported EC awareness to be as low as 8% among 250 married women of childbearing age.<sup>16</sup> A similar study from Kuwait also showed a low level of awareness (6.1% out of 66 married women).<sup>17</sup> Most of the research in this area has been conducted with the healthcare providers as subjects rather than the target population of users.<sup>18</sup> Considering the importance of EC in preventing unintended pregnancies, we aimed in this study to investigate the awareness and use of emergency contraceptives among women of childbearing age (19–49) at the family health care centers in Alexandria, Egypt.

## Materials and Methods

A descriptive cross sectional study design was applied at two randomly selected family health centers (FHCs) affiliated to the Ministry of Health in Alexandria city.

In this study 151 participants were randomly selected and included out of 160 women of childbearing age (19–49 years) invited to share in this study; giving a response rate of 94%. The single reason explained for refusal to share in the study was lack of time. The researchers attended each of the selected FHCs two days per week from 9.00 am to 1.00 pm. After introducing themselves to the selected women, the purpose and nature of the study were explained, and then women's informed consent was obtained. Before starting the interview a brief clarification about the meaning and types of EC methods available was given to each of the study participants to make it clear that we are asking about EC and not regular contraceptives. Each interview lasted between 25 and 30 min, with a weekly interview of about 18–20 women. The field work lasted for two months from July to August 2012.

The tool used for data collection was adopted from the tool used in the Emergency Contraception Survey in California 2003, which was prepared by Princeton Survey Research Associates for the Henry J. Kaiser Family Foundation.<sup>19</sup> Some modifications on the interview schedule and translation into Arabic language were done by the researchers to suit the Egyptian culture. The tool included four main parts; the first part was concerned with the socio-demographic characteristics of the respondents as the level of education, occupation, residence, family income, marital status, and history of unwanted pregnancy. The second part of the tool included questions about respondents' knowledge regarding the emergency contraception, the third part measured the attitude of the respondents toward emergency contraception, while the last part dealt with the respondents' current or previous use of emergency contraception. The study tool was pre-tested on a random sample of 15 women of child-bearing age who were selected from the previously mentioned centers to assess the reliability and applicability of the tool, and were excluded from the study sample, therefore, the rewording or rephrasing of statements was done.

### Statistical analysis

Data were analyzed using SPSS statistical package version 18. Descriptive statistics was used to calculate percentages and frequencies. Monte Carlo and Chi square tests were used to estimate the statistical significant differences. A significant *P*-value was considered when *P*-value was less than 0.05 and it was considered highly significant when *P*-value was less than or equal to 0.01.

### Results

Table 1 shows more than half (57%) the studied subjects were university graduates, 36.4% had school education (any level) and only 6.6% were illiterate. Concerning occupation, more than half the subjects (52.3%) performed administrative kind of work, 47% were housewives, and only 0.7% were technicians. Most (59.6%) of the study subjects reside in urban areas and 40.4% reside in suburban areas. The majority (58.3%) of the studied subjects had enough family income, followed by 36.4% who had enough income and could save from it, while only 5.3% of them had not enough income. The vast majority (96.7%) were married, while, only 3.3% were separated. Markedly in this table, 65.6% of the study subjects had unwanted pregnancy before the time of the study, and 59.6% of them considered unwanted pregnancy as a big problem, 16.6% considered it a small problem, 19.2% mentioned that unwanted pregnancy is not a problem, and 4.6% did not know how to classify it.

As mentioned in Table 2, most of the study subjects (75.5%) lack the knowledge about EC methods. Regarding their knowledge about EC mechanism of action, 18.8% described EC as abortifacients. When asked about the source of their knowledge about EC, they mentioned TV, newspapers/magazines/internet, friends/family members, during a visit to a health facility, and other sources (respectively, 15.9%, 13.1%, 18.9%, 24.6% and 27.5%). Few (14.6%) of the study subjects mentioned that they discussed the issue of EC with a health care provider. Concerning their knowledge about

**Table 1: Personal characteristics and opinion about unwanted pregnancy among the study subjects.**

Variables	Studied females ( <i>n</i> = 151)	
	No.	%
<b>Educational level</b>		
Illiterate	10	6.6
School (any level)	55	36.4
Graduate	86	57.0
<b>Occupation</b>		
House wife	71	47.0
Administration	79	52.3
Technical	1	0.7
<b>Residence</b>		
Urban	90	59.6
Suburban	61	40.4
<b>Family income</b>		
Enough and save	55	36.4
Enough	88	58.3
Not enough	8	5.3
<b>Marital status</b>		
Married	146	96.7
Separated	5	3.3
<b>Had unwanted pregnancy in the past</b>		
Yes	99	65.6
No	52	34.4
<b>Unwanted pregnancy is considered as</b>		
Big problem	90	59.6
Small problem	25	16.6
Not a problem	29	19.2
Don't know	7	4.6

the legal and ethical objections for using EC methods, 10.6% only mentioned that it is legal to use it in Egypt, 51% stated that it is not legal, and 38.4% did not know. 21.2% of the study subjects mentioned that EC methods were available in Egypt, 6% mentioned unavailable, and the vast majority (72.8%) did not know.

Table 2 also shows that only 21.2% of the study subjects knew that EC methods were available at the pharmacies. Knowledge about the frequency of using EC was measured on a 5 point scale as follows: not at all, sometimes, most of the time, all the time, and don't know (respectively, 36.4%, 6%, 23.8%, 31.8% and 2%). In addition, 53.6% of the study subjects mentioned that they knew different measures could be taken to avoid unwanted pregnancy after unprotected intercourse. Those measures were: contraceptive pills, emergency pills, pills for abortion, and other measures (respectively, 19.2%, 17.2%, 3.3%, and 13.4%).

As presented in Figure 1, about three quarters (74.8%) of the study subjects stated that EC could be used in case of rape, and approximately an equal proportion (78.8%), (79.4%) mentioned that EC can be used in case of unprotected intercourse and failure of regular methods respectively. However, 36.4% mentioned that they would advise other women to use EC, 10.6% of the study subjects already knew other women who used EC before the time of the study, and 21.2% of them believed that EC methods were highly effective.

As presented in Table 3, the minority (20.5%) of the study subjects mentioned that they had ever used EC method, and it

**Table 2: Knowledge about emergency contraceptives among the study subjects.**

Knowledge about emergency contraceptives	Studied females (n = 151)	
	No.	%
Ever heard about EC		
Yes	37	24.5
No	114	75.5
EC methods act as abortifacient [n = 69]		
Yes	13	18.8
No	28	40.6
Don't know	28	40.6
Source of knowledge about EC methods [n = 69]		
TV	11	15.9
Newspaper/magazines/internet	9	13.1
Friends/family member	13	18.9
Health facilities	17	24.6
Others	19	27.5
Ever discuss EC methods with health care provider		
Yes	22	14.6
No	129	85.4
Legality of EC in Egypt		
Legal	16	10.6
Illegal	77	51.0
Not known	58	38.4
Availability of EC methods in Egypt		
Available	32	21.2
Unavailable	9	6.0
Not known	110	72.8
EC methods are available at pharmacies without physician prescription		
Yes	32	21.2
No	18	11.9
Don't know	101	66.9
Measures could be taken to avoid unwanted pregnancy after unprotected intercourse		
Contraceptive pills	29	19.2
Emergency pills	26	17.2
Pills for abortion	5	3.3
Others	21	13.9
Don't know	70	46.4

was prescribed by: physician over the phone, physician after examination, pharmacist, and others (respectively, 12.8%, 19.4%, 6.5%, and 61.3%). The vast majority of those who ever

used EC (96.8%) mentioned that there was no difficulty in getting EC when needed and the cost of EC was described as high by most of them (96.8%), while only 3.2% mentioned that they obtained it for free at the FHCs.

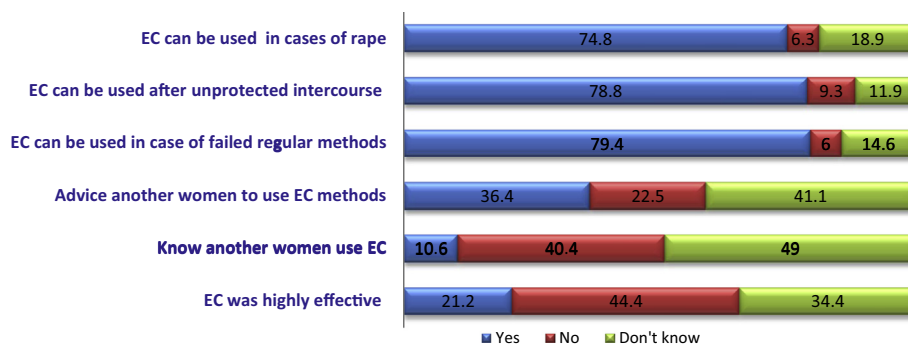
Table 4 shows that there is no significant difference between using EC methods and personal characteristics among the study subjects.

## Discussion

It is well established that women experience a high level of anxiety and fear of unwanted pregnancy in the immediate period after unprotected sex and they practice different methods to avoid pregnancy which shows a level of desperation.<sup>20</sup> However, in Egypt, despite the knowledge about family planning methods which is almost universal among married women in the reproductive age and that 82% of them had used contraceptive methods sometimes during their reproductive life, in addition to the steady decline in fertility rate estimated at 3 birth/woman as mentioned in the 2008 Egypt Demographic and Health Survey (EDHS),<sup>21</sup> findings of this study show that most of these study participants mentioned having mistimed or unwanted pregnancies prior to the time of the study; indicating missed opportunities for emergency contraception use, which emphasizes the importance of this study.

Findings also indicate that the vast majority of these study participants lack the awareness about emergency contraception. These findings came in accordance with the data from other Muslim countries like Kuwait, Turkey and Iran, also developing countries as Mexico and South Africa that reported limited or just wrong information about EC among the majority of their participants,<sup>16,17,22-24</sup> but contradict those of the developed countries.<sup>25,26</sup>

Considering the barrier against the use of EC, results of this study came in line with previous studies which revealed many participants among those ever heard about EC had the misconception that emergency contraception is an abortifacient.<sup>22,23</sup> Knowing that contraception is accepted but abortion is not accepted in the Egyptian society because of religious beliefs, for example that life begins once fertilization occurs,<sup>27,28</sup> it is assumed that many people may have those religious objections toward using EC, mixing between abortion and EC as abortifacient. So, this issue should be considered when planning the educational materials about EC, and should particularly be addressed and made clear. Although, most EC users reported that it was easy to get EC when



**Figure 1:** Attitude toward using emergency contraceptive methods among the study subjects.

**Table 3: Use of emergency contraceptive methods among the study subjects.**

Use of emergency contraceptive methods	Studied females ( <i>n</i> = 151)	
	No.	%
Ever used EC methods		
Yes	31	20.5
No	120	79.5
EC methods prescribed by: ( <i>n</i> = 31)		
Physician by phone	4	12.8
Physician after examination	6	19.4
Pharmacist	2	6.5
Others	19	61.3
Difficult to get EC when needed ( <i>n</i> = 31)		
Yes	1	3.2
No	30	96.8
Cost of the EC methods ( <i>n</i> = 31)		
High	30	96.8
Free at FHCs	1	3.2

needed, the cost was very high, and this should be considered as another awkward for use.

Participants who claimed familiarity with EC mentioned that they first heard of it during a visit to a health facility or from friends and/or family members, followed by media and then other sources, pointing to the important role of the peer educational approach and mass media to disseminate information about EC. Only few of them mentioned that they discussed the issue of EC with a health care provider, this confirms the results of many studies,<sup>9,22-24</sup> but contradicts

the results of Irfan F et al., who found a large proportion of the women who knew EC had been told about it by a health care provider.<sup>29</sup> In this respect we should spot the lights in this study to the limited number of the nurses who knew EC methods in the FHCs. This was discovered by the researchers during the period of data collection, but was not included in the results because the study was concerned with the health care seekers not the providers.

The overwhelming majority of the study participants did not think that EC is available or legal to be used in Egypt, or that they could obtain it from private sector or pharmacies without prescription. On the contrary, some of the study participants showed a slightly positive attitude toward using EC in case of availability at the pharmacies or at their homes, although, they mentioned that they would be concerned about the side effects. However, their attitude was very positive toward using EC in cases of rape, unprotected intercourse, and less positive with failed regular methods or to imitate another woman who uses it, contradicting the findings of the Denmark study.<sup>30</sup>

One of the limitations of our study is that it was based on only women in childbearing age attending only two FHCs. Hence our study may not be a true representative of all women of Alexandria. In fact, this was planned as an exploratory study to evaluate the awareness and use of EC among women and their response to the questionnaire. Further studies are being planned on these aspects. Therefore, deeper aspects of EC were not covered -e.g., disadvantage of EC, thrombotic problem, extra-abdominal pregnancy, consequence of using it frequently, etc.

The strength of our study lies on the fact that it focused on women in childbearing age rather than young females. Many studies have been concerned with college females and health care providers but not with women in childbearing age who

**Table 4: Relation between use of emergency contraceptive methods and personal characteristics among the study subjects.**

Personal characteristics	Ever used EC methods				Significance
	Yes ( <i>n</i> = 31)		No ( <i>n</i> = 120)		
	No.	%	No.	%	
Educational level					$MC P = 0.812$
Illiterate	3	9.7	7	5.8	
Primary education	11	35.5	44	36.7	
Graduate	17	54.8	69	57.5	
Occupation					$MC P = 0.12$
House wife	12	38.7	59	49.2	
Administrator	18	58.1	61	50.8	
Technical	1	3.2	0	0.0	
Residence					$\chi^2 = 0.391 P = 0.532$
Urban	20	64.5	70	58.3	
Rural	11	35.5	50	41.7	
Family income					$MC P = 0.902$
Enough	10	32.3	45	37.5	
Moderate	19	61.3	69	57.5	
Not enough	2	6.5	6	5.0	
Marital status					$MC P = 1.0$
Single	0	0.0	2	1.7	
Married	30	96.8	116	96.7	
Separated	1	3.2	2	1.7	

$MC P$ : Monte Carlo test,  $\chi^2$ : Chi Square test.



are the first and last beneficiary from EC especially in Muslim countries.

### Conclusion

The current study has revealed an inadequate knowledge about emergency contraceptives among women of reproductive age. Most of them had not been offered information or counseling about emergency contraception, but were willing to receive information and use these methods when needed. It is highly recommended that information about emergency contraceptives be made widely available and reach through mass media, health education classes at the health settings and the private health sector. Health care providers be trained and encouraged to discuss the issue of emergency contraceptives with their clients. And ECs should be made available in reasonable prices in all pharmacies, and family planning clinics. Also, strategic plans for EC are recommended.

### Conflict of interest

None declared.

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