Emergency contraception: knowledge, attitudes and practice of the pharmacy staff in Aydın, Turkey

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Summary

Objectives: This study aimed to explore the knowledge, attitudes, and practices related to emergency contraception (EC) among pharmacy staff. *Methods*: This descriptive and cross-sectional survey was conducted among 143 pharmacy staff in Aydın city centre who agreed to participate. Data was collected thorough questionnaires that were filled in by face to face interviews between April and June 2007. *Results*: Remarkably most of the participants (n = 110) did not know the action mechanism of these pills. Forty-four participants reported that these drugs caused mostly hormonal side-effects. Only four participants knew all indications of EC pills. According to 72 participants, contraceptive pills should not be available without a prescription. The number of pharmacy staff who reported giving counseling to clients about family planning methods was low (n = 12). *Conclusions*: The current study revealed that pharmacy staff in the region had inadequate knowledge on EC. Pharmacy staff may play a crucial role in women's access to EC, and there is a need for new interventions to improve and update their knowledge on, and to improve their attitudes toward EC methods.

Key words: Emergency contraception; Pharmacy staff; Knowledge; Attitude.

Introduction

Unintended pregnancies still continue to be an important and worldwide problem even though there are available contraceptive methods [1].

In developing countries like Turkey where the use of modern contraceptive methods is limited, the problem of unintended pregnancies is much more important [2]. According to the Turkish Demographic and Health Survey of 2003, 46% of all pregnancies are unintended and a significant portion of these pregnancies end in elective termination [3].

Emergency contraception (EC) is used to prevent unwanted pregnancy following unprotected sexual intercourse. EC, even if less effective than other contraceptive methods, may be the only alternative when women experience a contraceptive failure or when contraception has not been used [4]. EC has the advantage of preventing a significant percentage of unintended pregnancies, and this is much more important in societies where pregnant teenagers are abundant [5].

However despite efforts, the use of EC is limited in almost all countries. According to a recent study conducted in the region only 9.7% of reproductive-aged women have used it [6].

In recent years, most countries have facilitated the use of EC pills in an effort to prevent unintended pregnancies [4,7-9]. Washington state in the US was the first place where women could have EC pills without a prescription [7]. In the United Kingdom and France, EC pills have been available in pharmacies without a prescription since 1999 [4, 8]. EC pills are allowed to be sold in pharmacies in Turkey without a prescription [10].

There are two pre-packaged pharmaceutical forms of hormonal EC available in pharmacies in Turkey: one is Preven (Biomeks - Ankara, Turkey). The other is levonorgestrel in only pill form Norlevo. Both forms of EC were available at the time the present study was conducted, but the distribution of Preven raw since been terminated.

Contraceptive accidents generally happen on weekends or at night when it is nearly impossible to contact a physician. Since most pharmacies are often in easily reachable areas of the city and have longer business hours than physician's offices and health institutions – which are closed at night and on weekends except for emergency departments – pharmacists can play a crucial role in women's access to EC. Moreover, teenagers in risk groups might hesitate to obtain EC pills from physicians [11].

In Turkey, inadequate data are available concerning EC use. Most studies on this issue have aimed to investigate knowledge and attitudes of healthcare providers in primary care and family planning healthcare settings [12, 13]. However only a limited number of studies have evaluated the knowledge, attitudes and practices of Turkish pharmacists and pharmacy staff.

Therefore in the current study we aimed to explore the knowledge of, attitudes to, and practices related to emergency contraception among pharmacy staff.

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Methods

Design and participants

Aydın is a city located in the Aegean part of Turkey and the most important source of income is agriculture. The Aydın province has a population of 246,467 women between the ages of 15 and 49 years. The survey was conducted in the city centre because of time and cost constraints. We listed all pharmacies in the city centre of Aydın. One hundred and three pharmacies on the list were all included in the study. All pharmacies were visited till both the pharmacist and pharmacy workers from each pharmacy were reached. Participation was on a voluntary basis.

In Turkey, pharmacies are private enterprises being audited by the Ministry of Health. A pharmacist is responsible for the pharmacy and has one or more staff working in the pharmacy.

Questionnaire and interview

A questionnaire was developed in line with the aim of the study by taking into consideration similar studies in the literature and also the socio-cultural features of our country. The questionnaire consisted of questions that aimed to collect information on the socio-demographic features of the pharmacists and pharmacy workers, and to explore their knowledge, attitudes and practices related to EC.

A pilot study was conducted and the questionnaire was pretested for applicability by applying it to pharmacists and senior pharmacy workers of ten pharmacies in a small town 10 km away from Aydın city centre. The questionnaire was modified in accordance with the suggestions from the pilot test survey.

This descriptive and cross-sectional study was conducted between April and June, 2007 (three months). Data was collected by face to face interviews. After providing information about the study and obtaining written consent, both the pharmacist and one senior staff were interviewed separately. Each interview lasted about 30 minutes.

Ethics of research

The study was approved by the local ethics committee. The Aydın Directorate of Health also granted administrative approval for the survey. Written informed consent was obtained from all participants. No financial support was provided from any institution for the study.

Analysis

An appropriate database was formed and statistical analyses were performed by using SPSS for Windows (SPSS Inc., Chicago, IL, USA), version 13.0. Descriptive characteristics such as frequency and summary characteristics were calculated for variables of interest.

Continuous variables were compared using the Student's t-test. Differences between categorical variables were analyzed using the chi-square test and Fisher's exact test. A level of $p < 0.05$ was considered statistically significant.

Results

Characteristics of the sample

Participants of this study were pharmacists and senior pharmacy workers of the pharmacies in Aydın city centre. Our goal was to include all the pharmacists and all senior workers from each pharmacy which amounted to 206 participants. However at the end a total of 143 pharmacy staff participated in the study and completed the questionnaire. In 19 pharmacies neither the pharmacist nor the senior worker agreed to participate in the survey. In 25 pharmacies only the pharmacist or senior worker agreed to participate. In the remaining 59 pharmacies both the pharmacist and senior worker agreed to participate. The response rate was 69.4%.

Table 1. — *Characteristics of the participants*.

	Pharmacy staff	Mean ± sd	n	%
Age	Pharmacists	41.3 ± 11.3	74	51.7
	Senior pharmacy workers	29.4 ± 6.5	69	48.3
	Total	35.6 ± 11.0	143	100
Gender	Women	79	55.2	
	Men	64	44.8	
Marital status	Single	45	31.5	
	Married	98	68.5	
Educational status of pharmacy workers	Primary school	7	10.1	
	Secondary school	19	27.6	
	High school	36	52.2	
	University	7	10.1	

Table 2. — *Characteristics of the clients (statements of the participants)*.

Characteristics		n	%
Gender (Who is applying?)	Woman	43	30.1
	Man	31	21.7
	Woman and man together	65	45.5
	I don't pay attention to gender	4	2.7
Age distribution	≤ 20	11	7.7
	Between 21 – 30 years	113	79.0
	Between 31 – 40 years	18	12.6
	> 40	1	0.7
Ways of asking for EC pills*	Morning after pill	117	81.8
	Intercourse after pill	26	18.2
	Emergency contraception pill	2	1.4
	Abortion pill	3	2.1

* Total percentage exceeds 100% because some participants reported multiple statements.

The senior pharmacy workers (29.4 ± 6.5) who participated in this study were younger than the pharmacists (41.3 ± 11.3) ($p < 0.001$) and less educated ($p < 0.05$). Almost half of the pharmacy workers had a high school education (Table 1).

Nearly half of the EC sales were made when both partners (male and female) were present (45.5%). According to the statements of the participants, the age distribution of the clients is shown in Table 2.

Knowledge of the participants

Eighty-six (60.1%) participants knew that EC pills should be taken within 72 hours after unprotected intercourse. The majority of the participants (n = 110/76.9%) stated that they did not know the action mechanism of the

Table 3. — *Knowledge of the participants about EC*.

	Pharmacist*		Pharmacy worker*		Total*		
	n	%	n	%	n	%	*p* value
Time of effectiveness							
In the first 24 hours after intercourse	22	15.4	16	11.2	38	26.6	
In the first 48 hours	11	7.7	5	3.5	16	11.2	ns
In the first 72 hours	39	27.3	47	32.9	86	60.1	
No idea	2	1.4	1	0.7	3	2.1	
Action mechanism							
Don't know	49	66.2	61	88.4	110	76.9	
Partially know	23	31.1	7	10.1	30	21.0	0.007
Completely know	2	2.7	1	1.4	3	2.1	
Side-effects*							
Gastrointestinal	19	25.7	14	20.3	33	23.1	ns
Neurological	14	18.9	5	7.2	19	13.3	0.034
Hormonal	29	39.2	15	21.7	44	30.8	0.018
Other	0	0.0	1	1.4	1	0.7	ns
Requesting frequency of EC pills							
Not frequently or continuously	62	83.8	53	76.8	115	80.4	
Frequently or continuously	3	4.1	6	8.7	9	6.3	ns
No opinion	9	12.2	10	14.5	19	13.3	
Administration indications of EC							
Know	2	2.7	2	2.9	4	2.8	
Partially know	32	43.2	30	43.5	62	43.4	ns
Don't know	40	54.1	37	53.6	77	53.8	

* Pharmacists (n) = 74; Pharmacy workers (n) = 69; Total = 143.
* Total percentage is under 100% because some participants did not report any statements.

EC pills. Forty-four participants (30.8%) said that the drug caused mostly hormonal side-effects. The majority of the participants (n = 77/53.8%) declared that they did not know the indications of EC pills (Table 3).

Only a minority of the participants (n = 22/15.4%) claimed that they had received education on EC. Among these, 15 participants (65.2%) gathered the information through the education from pharmaceutical companies. The majority of the participants were aware of their knowledge deficit and willing to receive education (n = 106/74.1%) on EC.

Attitudes towards EC pills

One hundred and thirteen participants declared that they did not ask the clients why they had requested EC.

According to majority of the participants (n = 72/50.3%), hormonal EC should not be available without prescription. The reasons for their attitudes are shown in Box 1. Almost all of the participants (97.2%) thought that the public should be informed about EC. Only four participants were against this view as they thought that increased availability of EC pills would decrease the use of other regular contraceptive methods and increase unprotected and unsafe sexual intercourse. Views of the participants about this issue are shown in Box 2.

When pharmacists and senior pharmacy workers were compared, it was found that pharmacists had significantly more knowledge about the action mechanisms (p = 0.007), and neurological (p = 0.040) and hormonal (p = 0.026) side-effects of EC pills. There was no significant difference between pharmacists and senior pharmacy workers for other variables (Table 3).

Box 1

Participants' reasons why EC pills should not be available in pharmacies (n = 72):

- Education and consultancy should be given by doctors (31 participants),
- Availability of EC pills without a prescription would increase frequent use and misuse (20 participants),
- Inadequate knowledge of the pharmacists and pharmacy workers (15 participants),
- In general, medicines should not be given without a prescription (5 participants),
- Increased availability of EC pills would increase promiscuity (1 participant).

Participants' reasons why EC pills should be available in pharmacies:

- There will be no problem when pharmacists and pharmacy workers have adequate knowledge (15 participants),
- These medicines do not need to be prescribed (13 participants),
- Pharmacies are the easiest places to reach for emergency cases (12 participants),
- People who need EC pills could not apply to a doctor because of economical conditions (7 participants) or because of hesitation and confidentiality (8 participants)
- These medicines should be reached easily, and pharmacies are available at any time and everywhere. (6 participants),
- Increased availability of EC pills would decrease unintended pregnancies (4 participants),
- The conditions in Turkey are suitable to allow receiving EC pills without a prescription (3 participants).

*Some participants did not report any beliefs.

Box 2

Views of the participants about why the public should be informed about EC (n = 139):

- To prevent misuse, to decrease frequent use, and to let them know the correct timing in using EC pills (58 participants),
- To prevent unintended pregnancies and medical abortions (37 participants),
- The inadequate knowledge of the public about EC pills (31 participants),
- For healthy generations (13 participants).

We also compared the knowledge, attitudes and practice of pharmacy staff in terms of gender, age and marital status. Female pharmacy staff provided more consultancy about EC pills than male participants (p = 0.039). Pharmacy staff under the age of 40 provided more information about EC pills than those above 40 years (p = 0.001). For all other variables there was no significant difference between the groups of age, gender and marital status.

The majority of the participants did not provide counselling on EC (n = 116/81.1%). A minority of the pharmacy staff reported that they talked about future family planning options with the clients (n = 12/8.4) (Table 4).

Table 4. — *Practices of the participants*.

Approaches	Yes		No		Optional	
	n	%	n	%	n	%
Are information booklets about EC pills available for the applicants?	18	12.6	123	86.0	2	1.4
Do you give consultation about EC pills?	20	14.0	116	81.1	7	4.9
Do you talk about future family planning methods?	12	8.4	70	49.0	61	42.6

Discussion

In the current study we aimed to explore the knowledge, attitudes, and practices related to EC among pharmacy staff. The current study demonstrated that the pharmacists and senior pharmacy workers had inadequate knowledge and various barriers and misconceptions about EC.

Every woman has the right to be fully informed about indications, contraindications, the mechanism and safety of EC to make a fully informed decision [14].

EC is able to prevent undesired pregnancies up to a significant percent if used correctly. EC has the potential to reduce unintended pregnancies which put a significant burden on women, family and the healthcare system [15].

EC pills are mostly needed on weekends and holidays. Since most health institutions are closed except for emergency departments on weekends, nights and holidays and pharmacies have longer business hours and EC pills are available without prescription, pharmacy staff can play a crucial role in women's access to EC [11].

The percentage of pharmacy staff who knew that EC pills should be taken within 72 hours after unprotected intercourse changes between 10% and 29% in several studies [16, 17]. In our study, a higher proportion of the participants knew the correct timing for administration of EC pills.

Most of the participants (76.9%) have stated that they did not know the action mechanism of EC pills. The number of participants who knew the administration indications is low as well (2.8%). The majority of the participants were aware of their knowledge deficit and stated that they wished to have further education.

In this study we have found that the pharmacy staff mostly knew the hormonal and gastrointestinal side-effects. In the study by Bennet *et al*., the pharmacists mostly have stated that EC pills cause nausea and vomiting [16]. Actually, the most common side-effects of EC pills are nausea and vomiting which are related to the gastrointestinal system.

A small number of the pharmacy staff questioned the reasons for taking EC pills, provided informative booklets and consultancy about EC, gave information, and talked to the clients about future family planning methods. This might be due to poor knowledge of pharmacy staff about EC. In Hariparsad's study [4] 91% of the pharmacists stated that they did not give any booklets and consultancy. In the study by Van Ripper and Hellerstedt [18] 34% of the pharmacists reported that they were comfortable in counselling women for EC. When the lack of knowledge is considered, distributing informative booklets would contribute to enlightening the public. EC consultancy could prevent repeated EC usage and provide the use of regular family planning methods. Therefore, education of pharmacists and pharmacy workers is of importance.

Concerning their knowledge, attitudes, and practices about EC pills very few differences were found between the subgroups of the study population. As expected that pharmacists had more knowledge on EC pills. Variables like age, gender, and marital status did not seem to affect knowledge, attitudes, and practice of the pharmacy staff.

In Hariparsad's study [4], 96% of the pharmacists stated that EC pills should be available without a prescription and 67% of them believed that giving knowledge to the public is an important issue. In our study, as demonstrated in Boxes 1 and 2, pharmacy staff had different views about public education and providing EC pills without a prescription.

The prescription-free shipping of EC pills however was not found to have a negative effect on sexual and reproductive health behavior [19, 20] in countries where EC pills are available upon request from pharmacies.

Pharmacy staff views were mostly related to the aim of increasing the awareness and knowledge of women about EC pills which could decrease unintended pregnancies. It seems that pharmacy workers think positively about EC pills.

There might be several reasons for the low requests for EC pills in our study. Inadequate knowledge of women

about EC pills might be the most important reason. It has been reported in several studies in Turkey that both women [6] and family planning healthcare providers had inadequate knowledge about EC pills [13]. In the study of Beckman *et al*., the increase seen in the number of EC pills prescribed in one year after a comprehensive education for healthcare providers was 20% [21].

In the study the number of requests for EC pills by teenagers was found to be low. The reason might be that sexual relationships among teenagers before marriage is generally not accepted in the population. In the region where the study was conducted, the average marriage age is 20.4 years and requests for EC pills have mostly been made by these newly married couples. This might be due to the fact that newly married couples either do not use other regular family planning methods or they experience contraceptive failures.

Limitations

One of the strengths of the current study we believe is the face to face administration of the questionnaires.

There are some limitations however of the study. The survey was undertaken in the city centre because of time and cost constraints. This should be taken into consideration while interpreting the results of the study, though the results of the study can be generalized to a limited extent.

Future investigations, especially using qualitative research methods are suggested to understand prejudices and barriers, to determine the lack of knowledge of the pharmacy staff in detail, and to improve healthy attitudes.

Effective educational interventions are likely to improve pharmacists' and pharmacy workers' knowledge on EC. Further research to evaluate the cost effectiveness of a postgraduate education on EC should be performed.

Conclusion

The current study demonstrated that the pharmacists and senior pharmacy workers had inadequate knowledge about EC. The majority of the participants were aware of their knowledge deficit and stated that they wished to have further education.

The pharmacists' and senior pharmacy workers' knowledge deficit should be improved and their knowledge should periodically be updated by means of continuous education on EC methods so they are able to provide detailed information to users. In addition to having knowledge, unprejudiced behavior is necessary for successful EC counselling as well. Pharmacy staff are in a key position to provide information on EC.

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