

Research Article

Level of Awareness about Emergency Contraception among Primary Health Care Centers Physicians in Prince Sultan Military Medical City, Riyadh, Saudi Arabia, 2019

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Introduction

Unintended pregnancy (both unplanned and unwanted) is a frequent public health problem worldwide [1,2]. It is estimated that in the Middle East and North Africa (MENA) region, one in four pregnancies is unintended. It is leading to unsafe abortions and jeopardizing the health and wellbeing of women and their families [3,4]. Dramatically, the World Health Organization (WHO) estimated that one woman dies every eight minutes due to unsafe abortion in developing countries [5]. Emergency contraception (EC) plays a vital role in preventing unintended pregnancy on 98% of occasions if applied correctly. Consequently, it helps to reduce unintended childbearing and unsafe abortion, which are major problems affecting maternal health [6]. The knowledge about back-up support and use of emergency contraception (EC) is the most important factor to prevent unplanned or mistimed pregnancies. EC is a type of contraception which is indicated after unprotected intercourse, following sexual abuse, misuse, or nonuse of contraception [7]. It includes the use of Emergency sexual Contraceptive Pills (ESCP), and/or the insertion of Intrauterine Device (IUD) [8]. Emergency contraception pills (ECPs) are also known as 'the morning after pill', 'interception', 'post-coital contraception' or 'vacation pill'. ECPs include the use of a high dose of combined oral contraceptive pills (COCs) containing Ethinyl estradiol and levonorgestrel (the Yuzpe regimen) or the use of a high dose of Progestin-Only Pills (POPs) containing levonorgestrel. ECPs are effective only if used within 72 hours after unprotected sex. The effectiveness of ECP is 75% in the case of COCs and 85% in the case of POPs. ECPs can prevent pregnancy by delaying or inhibiting ovulation, prevent implantation, fertilization or transport of the sperm or ovum. ECPs do not interrupt or abort an established pregnancy. Once implantation has occurred, ECPs are not any more effective. Thus, ECPs do not cause any form of abortion or bring about menstrual bleeding [9–11]. Insertion of the intrauterine device (IUD) within seven days of unprotected intercourse has been reported as a highly successful method of post-coital emergency contraception. It prevents fertilization through the effect of Cu ions on sperm function and prevents endometrial receptivity [12,13]. Over the past years,

contraceptives are available and well known in the Arab region [14]. However, emergency contraception is not widely known, and it not very commonly used. Most of the international studies focused on women's attitudes towards and barriers to EC use [15,16]. Only a few studies have been conducted in developing countries, especially the Muslim world [17,18]. The first step towards understanding the use of EC is assessing local physicians' knowledge of the methods and willingness to prescribe them. Based on this, we conducted this study to assess the knowledge, attitudes, and practice of primary health care centers physicians towards EC use.

Literature Review

In a study published from Egypt in 2012, by Shaaban et al., it was found that specialists' knowledge was significantly high regarding the three most commonly used methods of EC: combined oral contraceptive method, progesterone-only pills (plan B) method and IUCD. The results of this study showed that only 39.5% of obstetrics and gynecology specialists and 24.0% of GPs/family physicians' specialists and GPs/family physicians had a favorable attitude toward EC. 39.5% of specialists and 26.6% of GPs/family physicians reported ever prescribing EC. The combined oral contraceptive method was the most commonly prescribed method by specialists at 31.5% and GPs/family physicians at 27.0%. Age and years of experience significantly affected the three outcome measures [19].

In a teaching hospital in Karachi, Pakistan 2009, Abdulghani et al. reported that majority (71%) of the Family Physicians, including faculty physician, residents, and medical officers were familiar with emergency contraception, while 42% were not sure about the mechanism. Barriers to EC use were identified as religious/ethical reasons, liability, teratogenicity, and inexperience. Overall attitudes regarding emergency contraception were positive [20]. Another study conducted in 2005 by Sahin et al., in Maternal-Child Health/Family Planning Centers located in the European region of Istanbul, it showed that 82.9% of the family-planning providers including physicians, nurses and midwives were aware of emergency contraception correct description, time of administration and correct dosage of different

method. 60% of them had accurately described the intrauterine device as emergency contraception. Most participants reported positive attitudes towards the need and use of Emergency contraception [21].

A study published in Saudi Arabia titled “One other side Emergency contraception: Awareness, attitudes, and barriers of Saudi Arabian Women” by Karim et al., conducted among 242 women showed that only 6.2% of the participants had some knowledge of EC and only two of them had ever used it. Health care professionals were the least reported source of EC information (6.6%, 1/15). The majority (73.3%) had a negative attitude toward EC being available over-the-counter without a prescription. The most common barriers to EC use were concerns about possible health effects. Only two women (13.3%) considered religious belief as a major hindrance to EC use. This study revealed that Health care professionals were the least reported source of information, which is a cause for concern. The major barriers identified for this were concerns of women about the possible side effects of EC and its health consequences. The authors in this study recommended that health care professionals should be encouraged to provide appropriate counseling services related to reproductive health in their consultations tailored to the country-level characteristics, in light of the social norms and religious values [22]. Another study from Saudi Arabia aimed to determine the knowledge, attitude, and practice of EC among Saudi women of childbearing age. This study included 370 women, with a mean age of 32.3 ± 6.3 years. Of these, 31.6% knew how to prevent pregnancy after unprotected sex, and 62 knew about EC, 67.7% thought EC should be widely advertised, and 48.4% thought it should be made available even without a prescription. Almost 76% said that they were not shy to ask for EC, and 59.7% claimed that both partners should decide about the use of EC. The most common reason for not using EC was medical concerns. The authors in this study concluded that among Saudi women, knowledge, awareness, and EC use remain low, although a positive attitude for future EC use exists [23].

In Iran, there is a study that reported EC knowledge and attitude scores of 69.4 ± 11.8 and 70.1 ± 12.8 , respectively among health care providers. The providers’ knowledge score was good only in 35%, but the vast majority (95.7%) had positive attitudes [24].

Aims and Objectives

In this study, we aimed to assess the Knowledge, attitude, and practice of health care centers physicians about the commonly used types of emergency contraception (EC) methods.

Methods

This was a descriptive cross-sectional study that has been conducted in 11 Primary Health Care Centers in Prince Sultan Military Medical City, which is in Riyadh at the center of Saudi Arabia. The study population included Primary Health Care Physicians who worked at Prince Sultan Military Medical City, Irrespective of nationality, gender, age or type of education.

The sample size was calculated by using the equation:

$$N = \frac{(z)^2 (p)(1-P)}{\sigma^2}$$

With considering a confidence level of 95 and a confidence interval of 5, the total population approximately 182. The sample size was 110, and by adding 10% of non-response or missing data, it ended with a sample size of 121. Data were collected by two methods: self-administered questionnaire and online Google form. The study was conducted during the period from February to March 2019 by using the random sampling technique. The questionnaire was developed by the researcher and supervisor after reviewing the previous similar researches. The questionnaire consists of five parts; the first part includes questions regarding personal data and occupation history (age, gender, marital status, nationality, job position, and the number of years in practice). The second, third, and fourth parts include questions about emergency contraception knowledge, practice, and attitude; respectively. The fifth part includes perceived barriers.

The questionnaire was reviewed for validation by three expert consultants in Family Medicine. A pilot study was done among 20 primary healthcare physicians to assess the understanding of questions and feasibility of the questionnaire. The knowledge questions were scored 1 for a correct answer and 0 for an incorrect answer for each question, and the total knowledge was converted to a percentage score where it was considered satisfactory if $> \text{or} = 70\%$ and unsatisfactory if $< 70\%$. For attitude questions; they were scored on a scale from 1 to 5; where strongly disagree was scored 5 and strongly agree was scored 1. The total score was converted to a percentage score where it was considered positive if $> \text{or} = 70\%$ and negative if $< 70\%$.

Statistical Analysis

SPSS statistical package for the social sciences software, version 25 was used for the statistical analysis. All categorical variables were expressed as frequencies and percentage and continuous variables were expressed as mean and standard deviation (SD). Appropriate statistics were used for categorical and continuous data, by chi-square and student t-Test. To study the relation between knowledge, attitude, and practice, and also to analyze the relationship between knowledge, attitude and practice of EC with demographic characteristics and occupational history of physicians (e.g.; age, gender, nationality, number of years in practice and area covered by physicians). A p-value of < 0.05 was considered statistically significant.

Results

(Table 1) Slightly more than half (51.2%) of the sample were males, and around half (43.8%) were in the age group of 20–29. Around three quarters (76%) of the sample were Saudi, and (14%) were Egyptians. The majority (66.1%) were married and around a quarter (26%) of the sample were junior residents, while 21.5% were senior registrar, and 19.8% were senior residents. The highest percent (77.7%) had national highest qualification while 13.2% had international, but not Western qualification and only 9.1% had Western qualification. More than half of the sample (54.5%) had 0–5 years of experience, while around the third (28.1%) had 6–10 years. Around half of the sample (43%) had 6–7 sessions per week, while 39.7% had 8–10 sessions, and only 17.4% had 0–5 sessions. More than 94% of the sample mostly cover the General Clinic GB, while 58.7% mostly cover the General Clinic GW. Data is shown in table one.

Table 1. Demographic characteristics and occupational history of the studied physicians (n = 121).

Items	No.	%
Age(years):		
20–29.	53	43.8
30–39.	44	36.4
40–49.	13	10.7
>=50.	11	9.1
Gender:		
Male.	62	51.2
Female.	59	48.8
Nationality:		
Saudi.	92	76.0
Egyptian.	17	14.0
Sudanese.	8	6.6
Bengalis, Pakistan, Jordanian, Syrian.	4	3.4
Marital status:		
Single.	39	32.2
Married.	80	66.1
Widow.	2	1.7
Position in the medical profession:		
Consultant.	11	9.1
Senior registrar.	26	21.5
Registrar.	22	18.2
Senior house officer.	6	5.0
Senior resident.	24	19.8
Junior resident.	32	26.4
Highest qualification achieved in:		
National.	94	77.7
International, but not Western.	16	13.2
Western.	11	9.1
Years of experience:		
0–5.	66	54.5
6–10.	34	28.1
11–20.	12	9.9
>20.	9	7.4
The number of sessions per week:		
0–5.	21	17.4
6–7.	52	43.0
8–10.	48	39.7
The area covers most of the times:		
General booked Clinic (GB).	114	94.2
General walk-in Clinic (GW).	71	58.7
Chronic Disease Clinic (CDC).	36	29.8
Antenatal Clinic (ANC).	36	29.8
Well Women Clinic (WWC).	11	9.1
Variable:		
	Mean	Standard deviation (SD)
Age:	33.60	9.08
Year of experience:	7.19	7.64

(**Table 2**) Nearly all (97.5%) of the studied sample heard about EC. The EC method most heard about was the Levonorgestrel method (plan B method) and the IUCD copper method with 84.3% followed by the Levonorgestrel method (split method) with 72.7% while the method least heard about was Ulipristal method with 28.1% of the participants. Data is shown in table two.

Table 2. Hear about emergency contraception and its methods among the studied sample (n = 121).

Hear about:	Yes.		No.	
	No.	%.	No.	%.
Emergency contraception.	118	97.5	3	2.5
Yuzpe method.	81	66.9	40	33.1
Levonorgestrel method (plan B method).	102	84.3	19	15.7
Levonorgestrel method (split method).	88	72.7	33	27.3
Ulipristal method.	34	28.1	87	71.9
IUCD copper method.	102	84.3	19	15.7

(**Table 3**) The most available EC method was the IUCD copper method with 60.3%, while the least available method was the Ulipristal method with only 5%. More than half of the sample was not sure about the availability of all methods. Data is shown in table three.

Table 3. Availability of emergency contraception methods.

Availability of emergency contraception methods:	Yes		No		Not sure	
	No.	%	No.	%	No.	%
Yuzpe method.	23	19.0	24	19.8	71	58.7
Levonorgestrel method.	39	32.2	26	21.5	53	43.8
Ulipristal method.	6	5.0	32	26.4	80	66.1
IUCD copper method.	73	60.3	15	12.4	30	24.8

(**Table 4**) The highest scored reasons for EC indication were unprotected sexual intercourse by 90.9%, followed by Condom breakage by 83.5% of the participants. The Majority (77.7%) of the participated physicians know the correct time of initiating oral EC methods, and most of them have never been trained on the use and application of EC. Data is shown in table four.

(**Table 5**) The results of the current study revealed that more than two thirds (67.8%) of the studied sample had unsatisfactory Knowledge about EC, while only 32.2% (less than the third) had satisfactory knowledge. Data is shown in table five.

(**Table 6**) As shown in table six, most (87.6%) of the studied sample had not prescribed EC before, while only 12.4% did so. All those who prescribed EC before have prescribed it rarely. More than half of the sample (53.7%) have never done so, while 28.1% were not sure, and only 18.2% prescribed EC.

(**Table 7**) As shown in table seven, the item with the highest positive attitude was “Are you interested in learning more about EC with 57.9% strongly agree, and 33.9% agree, followed by benefits of EC

outweigh the risks with 31.4% strongly agree, and 57% agree. On the other hand, the item with the highest negative attitude was “are you satisfied with your current knowledge of EC” with only 1.7% strongly agree and 13.2% agree. Most of the studied sample (38% strongly agree, and 43% agree) are in favor of the use of EC, and only 19% were either strongly agree or agree that they are uncomfortable with prescribing EC for religious/ethical reasons.

Table 4. Knowledge about emergency contraception among the studied sample (n = 121).

Knowledge items:	Correct answer		Incorrect answer	
	No.	%	No.	%
1. Pregnancy test necessary before prescribing EC.	56	46.3	65	53.7
2. Per-vaginal (PV) examination necessary before prescribing EC.	80	66.1	41	33.9
3. The (EC) acts as an abortifacient.	96	79.3	25	20.7
4. Indications of EC:				
Condom breakage.	101	83.5	20	16.5
Rape.	91	75.2	30	24.8
Missed contraceptive pills.	82	67.8	39	32.2
Unprotected sexual intercourse.	110	90.9	11	9.1
Unintended pregnancy.	36	29.8	85	70.2
Failure of contraceptive use.	43	35.5	78	64.5
5. The correct time for the initiation of oral EC methods.	94	77.7	27	22.3
6. Oral EC that has proven effective for late intake.	17	14.0	104	86.0
7. EC method that interferes with fertilization and prevents implantation.	74	61.2	47	38.8
8. EC use discourages regular contraceptive-use.	88	72.7	33	27.3
9. Have you been trained in the use of and application of EC?	23	19.0	98	81.0

Table 5. Levels of Knowledge about emergency contraception among the studied sample (n = 121).

Levels of knowledge:	No.	%
Satisfactory.	39	32.2
Unsatisfactory.	82	67.8

Table 6. Practices regarding emergency contraception among the studied sample (n=121).

Practices regarding emergency contraception	Answers	No.	%
Have you ever prescribed an EC?	Yes.	15	12.4
	No.	106	87.6
If you have prescribed it before, how often typically prescribed the method?	Rare.	15	100.0
Would you refer a case to a gynecologist for the prescription of EC?	Yes.	22	18.2
	No.	65	53.7
	Not sure.	34	28.1

(Table 8) Overall, most (67.8%) of the studied sample had a positive attitude towards EC, while only 32.2% (less than the third) showed a negative attitude, as shown in table eight.

(Table 9) There was a statistically significant difference between health care providers’ knowledge and attitude towards EC with a p-value of 0.002. Among those with unsatisfactory knowledge level, 41.5% have a negative attitude towards EC, while 58.5% showed a positive attitude. For those with a satisfactory level of knowledge, the percent of negative attitude was only 12.8%, while the majority (87.2%) have a positive attitude. Data is shown in table nine.

(Table 10) As shown in table ten, there was no statistically significant difference between health care providers’ knowledge and practice of EC with the p-value was 0.2. Among those with satisfactory knowledge level, the percent of prescribed EC was only 17.9%, while the majority (82.1%) have not prescribed EC. For those with unsatisfactory knowledge level, 9.8% prescribed EC while 90.2% have not prescribed EC.

(Table 11) There was no statistically significant difference between health care providers’ practice of and attitude towards EC since the p-value was 0.09. Among those with a Positive attitude, the percent of prescribed EC was only 15.9%, while the majority (84.1%) have not prescribed EC. For those with a negative attitude, 5.1% prescribed EC while 94.9% have not prescribed EC. Data is shown in table eleven.

(Table 12) As shown in table twelve, there was no statistically significant difference in levels of EC Knowledge by gender, nationality, marital status, position in the medical profession, place of highest qualification achieved and area covered by physicians since the p-value was more than 0.05.

(Table 13) As shown in table thirteen, Statistically significant results were obtained between the practice of EC with nationality (chi-square=17.13), position in the medical profession (chi-square=14.34), highest qualification achieved (chi-square=7.72), and area of specialization; being the highest among Non-Saudis, registrars, those with Western high qualifications, covering general walk-in clinic GW (chi-square=8.48), Antenatal clinic ANC (chi-square=7.63), and Well Women Clinic WWC (chi-square=6.40) with p-values of <0.05. The percentage of primary health care physicians who prescribed emergency contraception was 15/121 (12.4%). The percentages of Non-Saudi physicians and Saudi physicians who prescribed EC were 34.5% and 5.4%; respectively.

(Table 14) There was no statistically significant difference between attitude towards EC by gender, nationality, marital status, position in the medical profession, highest qualification, area covered (general booked clinic GB and Chronic Disease Clinic CDC) age, years and number of sessions per week since all p-values were >0.05. In contrast, a statistically significant difference (p-value <0.05) has been found between attitude towards EC and General Clinic walk-in GW (chi-square=5.40), Antenatal Clinic ANC (chi-square=4.86), Well Women Clinic WWC (chi-square=5.75). The percentages of primary health care physicians with a positive attitude who were covering General walk-in Clinic GW, Antenatal Clinic ANC, Well Women Clinic WWC were 76.1%, 89.5 %, and 100% respectively. Physicians with a positive

attitude had a borderline (t-test=1.91, P 0.052) statistically significant higher mean (\pm SD) of years of experience compared to those with a

negative attitude at 8.09+8.279 vs. 5.28+5.730; respectively. Data is shown in table fourteen.

Table 7. Attitude towards emergency contraception among the studied sample (n = 121).

Attitude items:	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. The benefits of emergency contraception (EC) outweigh the risks.	38	31.4	69	57.0	13	10.7	1	0.8	0	0.0
2. Emergency contraception (EC) appropriate for discussion at routine consultation.	25	20.7	38	31.4	35	28.9	22	18.2	1	0.8
3. Are you satisfied with your current knowledge of emergency contraception?	2	1.7	16	13.2	42	34.7	39	32.2	22	18.2
4. Are you interested in learning more about emergency contraception (EC)?	70	57.9	41	33.9	8	6.6	2	1.7	0	0.0
5. Do you think emergency contraception (EC) should be more widely advertised?	26	21.5	49	40.5	41	33.9	3	2.5	2	1.7
6. Do you feel uncomfortable prescribing emergency contraception (EC) for religious/ethical reasons?	9	7.4	14	11.6	38	31.4	35	28.9	25	20.7
7. Are you concerned about legal liability when you prescribe emergency contraception (EC)?	14	11.6	35	28.9	37	30.6	28	23.1	7	5.8
8. Are you with the use of emergency contraception (EC)?	46	38.0	52	43.0	20	16.5	3	2.5	0	0.0

Table 8. Levels of attitude among the studied sample (n = 121).

Levels of attitude:	No.	%
Positive	82	67.8
Negative	39	32.2

Table 9. Relation between knowledge and attitude towards emergency contraception among the studied sample (n=121).

Levels of knowledge:	Levels of attitude:				Chi-square	p-value
	Positive.		Negative.			
	No.	%	No.	%		
Satisfactory.	34	87.2	5	12.8	9.92	0.002*
Unsatisfactory.	48	58.5	34	41.5		

*significant at p-value <0.05

Table 10. The relation between knowledge and practice of emergency contraception among the studied sample (n = 121).

Levels of knowledge:	The Practice of EC:				Chi-square:	p-value:
	YES		NO			
	No.	%	No.	%		
Satisfactory.	7	17.9	32	82.1	1.63	0.2
Unsatisfactory.	8	9.8	74	90.2		

Table 11. The relation between practice of and attitude towards emergency contraception among the studied sample (n=121).

Attitude	The Practice of EC:				Chi-square:	p-value:
	Yes		No			
	No.	%	No.	%		
Positive.	13	15.9	69	84.1	2.8	0.09
Negative.	2	5.1	37	94.9		

(Table 15) The results of the current study highlighted that 82.6% of physicians participated in the current study perceived lack of knowledge as the most important barrier of EC. Cultural issues came in second place with 64.5% while patients' acceptance was next with 35.5% and side effects of methods with 22.3%. Only 1.7% perceived unavailability in pharmacies as a barrier. Data is shown in table fifteen. Although nearly all the studied sample (97.5%) heard about EC, the knowledge about EC was moderate, with total knowledge of 58.5% and less than one-third of the sample had a satisfactory knowledge level. Participated physicians mostly did not hear about some EC methods such as the Ulipristal method.

Discussion

The results of the current study are in accordance with previous similar studies [25–28], which have shown clear gaps in knowledge regarding emergency contraception among healthcare providers, including physicians. This might have an effect on the provision of emergency contraception as they are involved in management, and incomplete knowledge could delay timely scheduling or

administration. On the other hand, such findings were in contrast with what has been reported from Lagos [29], where a high degree of awareness of and a largely favorable disposition toward emergency contraceptives among health care providers was shown. The copper IUD, being the most available EC method according to physicians participated in the current study, is by far the most effective option for EC; since a review of 42 studies showed that the pregnancy rate after insertion of the copper IUD for EC is less than 0.1% [30].

Table 12. Demographic characteristics and occupational history According to Knowledge of emergency contraception among the studied sample (n = 121).

Items:	Level of knowledge				P-value:
	Satisfactory		Unsatisfactory		
	No.	%	No.	%	
Gender:					
Male.	20	32.3	42	67.7	0.99
Female.	19	32.2	40	67.8	
Nationality:					
Saudi.	27	29.3	65	70.7	0.227
Non-Saudi.	12	41.4	17	58.6	
Marital status:					
Single.	8	20.5	31	79.5	0.084
Married.	31	38.8	49	61.3	
Widow.	0	0	2	100	
Position in medical profession:					
Consultant.	1	9.1	10	90.9	0.066
Senior registrar.	13	50.0	13	50.0	
Registrar.	10	45.5	12	54.5	
Senior house officer.	2	33.3	4	66.7	
Senior resident.	6	25.0	18	75.0	
Junior resident.	7	21.9	25	78.1	
Highest qualification achieved in:					
National.	28	29.8	66	70.2	0.518
International, but not Western.	7	43.8	9	56.3	
Western.	4	36.4	7	63.6	
The area covers most of the times:					
General booked Clinic GB.	36	31.6	78	68.4	0.403
General walk-in Clinic GW.	23	32.4	48	67.6	0.562
Chronic Disease Clinic CDC.	21	33.3	24	66.7	0.513
Antenatal Clinic ANC.	6	31.6	13	68.4	0.588
Well Women Clinic WWC.	4	36.4	7	63.6	0.498
Age (years) Mean+ stander deviation.	34.36+8.264		33.24+9.475		0.530
Years of experience Mean+ stander deviation.	7.179+6.613		7.195+8.125		0.992
Number of sessions per week Mean+ stander deviation.	6.821+2.846		6.988+2.401		0.737

Table 13. Demographic characteristics and occupational history According to the practice of emergency contraception among the studied sample (n = 121).

Items:	The Practice of EC:				P-value:
	Yes		No		
	No.	%	No.	%	
Gender:					
Male.	4	6.5	58	93.5	0.990
Female.	11	18.6	48	81.4	
Nationality:					
Saudi.	5	5.4	87	94.6	0.000*
Non-Saudi.	10	34.5	19	65.5	
Marital status:					
Single.	1	2.6	38	97.4	0.059
Married.	14	17.5	66	82.5	
Widow.	0	0	2	100	
Position in medical profession:					
Consultant.	3	27.3	8	72.7	0.014*
Senior registrar.	1	3.8	25	96.2	
Registrar.	7	31.8	15	68.2	
Senior house officer.	1	16.7	5	83.3	
Senior resident.	1	4.2	23	95.8	
Junior resident.	2	6.3	30	93.8	
Highest qualification achieved in:					
National.	8	8.5	86	91.5	0.021*
International, but not Western.	3	18.8	13	81.3	
Western.	4	36.4	7	63.6	
The area covers most of the times:					
General booked Clinic GB.	15	13.2	99	86.8	0.305
General walk-in Clinic GW.	14	19.7	57	80.3	0.004*
Chronic Disease Clinic CDC.	7	19.4	29	80.6	0.140
Antenatal Clinic ANC.	6	31.6	13	68.4	0.014*
Well Women Clinic WWC.	4	36.4	7	63.6	0.030*
Age (years) Mean+ stander deviation.	43.666+10.540		32.179+7.934		0.530
Years of experience Mean+ stander deviation.	15.400+10.048		6.028+6.503		0.992
Number of sessions per week Mean+ stander deviation.	8.200+2.144		6.754+2.551		0.737
*significant at p-value <0.05					

Table 14. Demographic characteristics and occupational history according to attitude towards emergency contraception among the studied sample (n = 121).

Items:	Level of attitude:				P value:
	Positive.		Negative.		
	No.	%	No.	%	
Gender:					
Male.	37	59.7	25	40.3	0.065
Female.	45	76.3	14	23.7	
Nationality:					
Saudi.	60	65.2	32	34.8	0.367
Non-Saudi.	22	75.9	7	24.1	
Marital status:					
Single.	22	56.4	17	43.6	0.130
Married.	58	72.5	22	27.5	
Widow.	2	100	0	0	
Position in medical profession:					
Consultant.	7	63.6	4	36.4	0.060
Senior registrar.	23	88.5	3	11.5	
Registrar.	17	77.3	5	22.7	
Senior house officer.	4	66.7	2	33.3	
Senior resident.	12	50.0	12	50.0	
Junior resident.	19	59.4	13	40.6	
Highest qualification achieved in:					
National.	63	67.0	31	33.0	0.782
International, but not Western.	12	75.0	4	25.0	
Western.	7	63.6	4	36.4	
The area covers most of the times:					
General booked Clinic GB.	78	68.4	36	31.6	0.403
General walk-in Clinic GW.	54	76.1	17	23.9	0.017*
Chronic Disease Clinic CDC.	21	58.3	15	41.7	0.110
Antenatal Clinic ANC.	17	89.5	2	10.5	0.021*
Well Women Clinic WWC.	11	100	0	0	0.016*
Age (years) Mean+ stander deviation.	34.52+9.399		31.67+8.154		0.106
Years of experience Mean+ stander deviation.	8.09+8.279		5.28+5.730		0.052
Number of sessions per week Mean+ stander deviation.	7.036+2.550		6.72+2.543		0.522
*significant at p-value <0.05					

Table 15. Perceived barriers of emergency contraception among the studied sample (n = 121).

Perceived barriers of EC:	No.	%
Lack of knowledge	100	82.6
Patients acceptance	43	35.5
Cultural issues	78	64.5
Side effects of methods	27	22.3

Lack of training on the use and application of EC was reported by most of the physicians, which reflects the shortage of dependable information on EC in Saudi Arabia. This was also previously reported from a similar study from Vietnam [31]. It seems that the gaining of EC knowledge during pre- and in-service education of healthcare providers in Saudi Arabia is not served. Additionally, most of the participants reported that they were unsatisfied with their current knowledge of emergency contraception. Proper training is urgently needed to ensure that physicians are knowledgeable enough with different methods of EC to prescribe it when the situation warrants.

A higher knowledge about EC will build up health care professionals' capacity to provide accurate and effective information on EC to prevent unplanned and unwanted pregnancies. Similar studies in Korea and America found a significantly higher knowledge of EC among participants who had received education and formal content on EC [32,33]. As per the results of the current study, EC still remains a mostly underutilized option in unplanned pregnancy prevention. The knowledge gap is almost the main reason for both the health care providers, which can negatively impact the prescribing habits and future promotion of EC, and this is in agreement with the Sharma C study [34]. In disagreement with the Gupta R et al. study from India [35], the highest proportion of primary care physicians in our study "disagree" on the point "didn't feel uncomfortable prescribing EC on religious or ethical grounds".

According to the United Nations Fund for Population Activities (UNFPA 2013), emergency contraception acts on disrupting ovulation and reduces pregnancy likelihood. It cannot prevent fertilized egg implantation, harm a developing embryo, or end a pregnancy. Additionally, according to the WHO, there is no risk on the fetus if a pregnant woman uses the EC. Based on this, performing a pregnancy test before prescribing these methods is not necessary [36]. However, only less than half (46.3%) of participants in the current study had correct knowledge in this regard, a percentage which is considered lower compared to a rate of 67% that was reported by the study of Abdulghani and colleagues in Pakistan [25], and a rate of 94% in an Iranian study [37].

Nonetheless, the majority (79.3%) of the physicians in this study wrongly agreed that EC is an abortifacient which is far higher than the findings of Lee et al. in America [38], and Delaram and Rafie in Iran [39]. These are alarming findings, given that women seeking to use EC depend on healthcare providers for information. This emphasizes the need to broaden and provide detailed education on EC in medical training schools. Moreover, it was worrying about finding

that the physicians participated in the current study believed EC use discourage usual contraceptives use, which is against the literature that does not support the argument that EC use discourages the use of other methods of contraception [40].

Compared to a previous similar study from Iran which reported that 95.7% of the health care providers had a positive attitude toward EC, the current study showed that 67.8% of the respondents have a positive attitude towards EC [37]. More than half of the participants felt that emergency contraception was an appropriate topic to discuss at routine consultation, a finding which is in contrast to the Pakistani study, where more than half of the participants felt that EC was not an appropriate topic to discuss at routine consultation. The largest percentage of the participants in our study were not uncomfortable because of religious reasons, which is different from the findings of previous research [25,41,42].

Lower levels of EC prescription have been reported from studies from developing countries. In Nairobi, Kenya, 15% of family-planning service providers reported having prescribed EC [43], and 20% of primary healthcare workers EC in Turkey [44,45]. These rates are even considered high compared to what we found in our study, where the prescription rate was 12.4%.

To the best of our knowledge, this is the first study conducted among primary health care physicians in this regard. Previous studies conducted among Saudi women and came up with the findings that the knowledge, awareness, and use of EC among Saudi women was low; however, a positive attitude for future EC use exists [46,47]. Though it is a small study with small sample size, further larger studies, at regional levels, can identify geographic and demographic gaps in EC practices. It would also be recommended to examine the knowledge and practices of other healthcare providers, including nurses and midwives, who may offer education to patients and communities about emergency contraception.

Conclusion

This study showed clear gaps in emergency contraception (EC) knowledge among primary healthcare physicians. Although the vast majority of the participants heard about EC, their knowledge was moderate, and less than one third had a satisfactory knowledge level. Most of the participants showed a positive attitude towards learning more about EC and also showed that they are with the use of EC. Educational programs that enhance and promote physicians' awareness of and attitude toward emergency contraception is highly recommended.

Recommendations

Educational efforts should be focused on training of healthcare providers to improve correct access of women and effective use of different emergency contraception methods. Such educational efforts should focus on providing specific knowledge, with particular attention to correct common misconceptions about the EC methods. Providers should be encouraged to inform all potential users about the methods and to prescribe it to clients who require it. Communication about emergency contraception would also provide opportunities

for counseling on long-term contraceptive needs. Discussion about emergency contraception should be raised during routine health check-up visits of women. Besides the use of different educational methods to enhance awareness and attitudes of providers, barriers for using EC should be identified, and trials to eliminate them should be done. Future research should be directed at implementing interventions to enhance these types of discussions.

Ethical Considerations

Ethical approval of research conduction from the Research Ethics Committee, Medical Services Department for Armed Forces was approved on 7 MARCH 2018 project no: 1043. It was an amendment and has been approved by the Research Ethics Committee on 09 April 2019. The verbal consent was taken from each physician after explained to them the aim and objectives of the study. The study did not include treatment or intervention for participants. Confidentiality was maintained during data collection and usage.

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