



Intrauterine Device Knowledge and Practices among Obstetrics and Gynaecology Residents in Western Region of Saudi Arabia

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Abstract

Background:

There observed underuse of intrauterine device among Saudi women. This partly related to the information that women receive from their healthcare providers. Therefore, this survey aimed to evaluate the knowledge and counselling practices of obstetrics and gynaecology residents in the Western region of Saudi Arabia.

Methods: This cross-sectional study conducted in several Saudi hospitals in western region throughout four months. Obstetrics and gynaecology residents across all five years of residency randomly selected to fill out a web-based questionnaire.

Results: Among 206 residents, 101 of them completed the questionnaire. Overall, respondents were least likely (4%) to correctly answer the question 'Mechanism of action of IUD'. Only 29.7% correctly responded with '10 years' as the answer for the question 'Maximum years of use for copper IUD', and "Paragard (Copper T380A) IUD" as the answer for the question "Emergency contraception." Only 2.0% of respondents knew the prophylactic use of levonorgestrel IUD against endometrial hyperplasia and malignancy. Knowledge of the respondents about the routine use of IUD in patients that reported a history of deep vein thrombosis or pulmonary embolism was deficient (25.7%). Forty-two percentages of participants reported their usual recommendation of IUD to patients younger than 20 years old, immediately after delivery of the placenta, and to patients who have never been pregnant.

Conclusion: These findings explored a substantial lack of IUD knowledge and counselling practices among the participating residents. Also emphasises the need to develop our residency syllabuses. Additionally, provision of Ryan programs in the Saudi Obstetrics & Gynecology residency programs recommended..

Keywords: Obstetrics & gynaecology residents, intrauterine device, knowledge, counselling practices, survey, Saudi Arabia.



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Introduction:

Intrauterine devices (IUDs) considered the most effective long-acting reversible contraceptives (LARCs) forms available, although their uptake has been slow (1). In the USA, unintended pregnancy increased nearly by half a rate that has increased recently contracted with a worldwide decline (2, 3). This fact is due to decrease adoption of using long-acting reversible contraception's (4).

Some studies showed that the total fertility rate of a population inversely related to the prevalence of contraception adoption rate (5). Despite that, IUD has higher user contentment and effect to decrease unplanned pregnancies and prevent abortions (4, 6). Also, to reduce the adoption, clinician misconception plays a significant contributor to underuse IUD (4).

For a proper decision making, All women should be counselled and informed regarding all different types of contraception in a way that permits them to do so(7). Obstetrics and gynaecology residency training programs they put all their efforts on women's health, that is why they are considered one of the most well taught about family planning, but their contraception practice exposure is different and is not standard over residency programs (8).

Another reason behind the underuse is the lack of the knowledge about IUD's (9). A study in the USA showed that 29% of clinicians stated that IUD's causes an increased risk of PID but most answered "strongly agreed" or "agreed" that IUD's was safe (98.5%) (10). Another study in the USA concluded that insufficient knowledge about IUD would influence the physician's ability to provide contraception care that will prevent an unplanned pregnancy (11). Therefore, our study aimed to assess the knowledge and practice of IUD use among obstetrics and gynaecology residents in the western region, Saudi Arabia.

Materials and methods:

A cross-sectional study conducted in several hospitals in the Western region of Saudi Arabia. The questionnaire distributed to residents in obstetrics and gynaecology across all five years of residency training to assess the knowledge and practice of IUD among them.

Participants randomly selected. Eligibility criteria included current enrolment in a Saudi residency program and agreed to participate in the study. All participants signed a consent



explaining that participation was voluntary, and the data collected anonymously and kept confidentially

The valid questionnaire designed with Google forms and distributed to them by E-mail as a link with a description of the survey.

Permission was acquired to use the questionnaire from Tang et al.[12] The questionnaire contained eight multiple choice questions. Besides the demographic data, the questionnaire included 8 recall questions about prior IUD experience and family planning training, 20 questions to assess IUD knowledge, 13 clinical vignettes were constructed to assess practices for counselling candidates about the IUD, and 1 open-ended question asking "What more do you wish that you knew about the IUD?". The clinical practice vignettes represent a wide range of contraceptive counselling scenarios. The respondents asked to answer the 13 practices questions by choosing one of the following responses: "recommend routinely", "recommend if other options are unacceptable", "never recommend", or "not sure.

The Institutional Review Board of King Abdulaziz University Medical College approved this study. The data were statistically analysed using descriptive statistics by Statistical Package for the Social Sciences (SPSS) v20. Categorical variables summarised as frequencies, percentages.

Results:

Among 206 resident at western region of Saudi Arabia, 101(49%) of them completed the entire survey, of which 64 (63.4%) were female. Residents from all five years of training completed the survey (Table 1). The majority (86.1%) planned to specialise. Almost half (47%) reported that they did not complete family planning rotation because they opted out of the rotation. Twelve per cent reported having a Ryan program in their residency. Moreover, 76 of the participants (75.4%) placed an IUD during their residency. Meanwhile, less than fourth (23.8%) of respondents had never placed a copper IUD during residency, whereas 24.8% had never placed a levonorgestrel IUD (Table 2). Six of the 21 chief resident respondents (28.6%) had placed e40 total IUDs. Twenty-five per cent of respondents had never attended a didactic lecture on the IUD, including 3 (14.3%) of chief resident respondents. The majority of the 20 knowledge questions, a higher proportion of residents in postgraduate years 4 and 5 responded with the correct answer in comparison with residents in postgraduate years 1, 2 and 3 (Table 3).

Overall, respondents were least likely (4%) to correctly answer the question "Mechanism of action", which may have resulted from a misunderstanding of the question. Only 29.7% correctly responded with "10 years" answering the question "Maximum years of use for copper IUD", and "Paragard (Copper T380A) IUD" as the answer for the question "Emergency contraception." Among the questions concerning the non-contraceptive benefits of the levonorgestrel IUD, only 2.0% responded they knew it could lead to "Could offer protection from endometrial hyperplasia and cancer" and 2.0% "Improvement of pain and bleed from adenomyosis", and 6.9% knew that it "Improvement of pain from endometriosis." For the 13 counselling practices questions, residents from postgraduate years 1 and 2 were, in general,



more likely than residents in postgraduate years 3, 4 and 5 to 'recommend routinely.' The IUD to patients in the vignettes (Table 4).

Respondents were least likely (25.7%) to 'recommend routinely' patient with a history of DVT or pulmonary embolism. Even when the responses were expanded to include 'recommend if other options are unacceptable', only 35.6% would ever recommend (data not shown). Forty-two per cent of respondents would routinely recommend the IUD to patients in the following categories: younger than 20 years old, postpartum (G48 h) after delivery of the placenta, and a patient who has never been pregnant. More than half 58.4% of respondents would 'recommend routinely' the IUD to the patient who has had no deliveries.

Discussion:

It has been reported that Saudi women show the considerably low attitude towards IUD use for family planning throughout different regions of the kingdom (13, 5). One of the contributing factors to the observed underuse of IUD is the information that women receive from their providers about contraceptive methods (11). Therefore, this survey was the first to evaluate the level of knowledge and clinical skills acquired by residents practicing obstetrics and gynecology in the Western region of Saudi Arabia.

This study revealed a substantial lack of IUD knowledge and counselling practices among the participating residents. Remarkably, correct information about how IUD prevent the occurrence of pregnancy, the maximum years where copper IUD can be used, other known benefits of the hormonal IUD than birth control or the specific IUD type that can be used as an emergency contraceptive were significantly deficient. Additionally, senior contributors from the last three post-graduate years unexpectedly showed improper counselling practices. More than half of these residents did not routinely recommend the IUD to appropriate candidates, and they incorrectly restricted the IUD use in young nulliparous women, patients with a history of DVT or pulmonary embolism and immediately after delivery.

Saudi Obstetrics & Gynecology residency training programs dictate that trainee should know the advantages, disadvantages, statistical effectiveness, side effects and complications of contraceptive methods, and should learn to integrate the physician recommendations and the women's desires for proper contraceptive use. However, almost half (47%) of the study respondents reported that they did not complete their family planning rotation because they were opted out. Moreover, only a few residency programs as indicated by twelve per cent of the participants implemented a Ryan program. These educational and curricula defects might elucidate the detected deficiencies in the levels of the respondents.

In comparison with our findings, healthcare providers in various United States (US) universities also showed restricted prescription and placement of IUD in comparable categories of women including adolescents, nulliparous women and immediately after delivery or abortion and in the presence of a history of sexually transmitted infections (14-16). Besides, Buhling et al. (17) surveyed health care providers in eight European countries and Canada, and they reported an



apparent lack of knowledge and misconceptions particularly towards the use of IUD in nulliparous women.

A similar web-based survey recruited 699 obstetrics and gynecology residents from different residency programs in the US carried out (14). They concluded a comparable lack of knowledge and counselling practices among their respondents. However, our study detected a lower percentage of correct answers regarding the acceptable use of "copper IUD" for emergency contraception (29.7% compared to 53%). Moreover, our respondents were less likely to provide sound knowledge regarding other therapeutic uses of the hormonal IUD for pain and bleeding control in cases of endometriosis and adenomyosis and as a protection against endometrial hyperplasia and cancer. Furthermore, compared to the US residents, a higher percent of our senior residents did not recommend the routine use of IUD for many appropriate cases. These findings reflect greater defects in our resident's educational program. Only 75.4% of our respondents had placed IUD during their residency compared to 94% of their American counterparts. In addition, 25% of Saudi residents did not join the educational IUD lectures paralleled to only 12% of the American ones. All these might explain the missing of sound updated evidence-based knowledge and the improper counselling practices.

This study has the advantage of covering different regions in Saudi Arabia across several hospitals. Despite this, low response rate and small sample size considered a significant limitation. In addition, the random selection of the residents might convey unequal participation of experienced and inexperienced residents.

In conclusion, Saudi residents throughout the five years of obstetrics and gynecology residency showed significant deficiencies in their IUD knowledge and clinical practices. Therefore, this emphasizes the necessity to develop our syllabuses to provide sufficient IUD information and methods. Thereby, these physicians could provide proper counselling and do not act as barriers against IUD use. Therefore, the involvement of more evidence-based lectures about IUDs, and the endless searching for the updated guidelines on the best IUD practices could do this. Besides, we recommend more provision of family planning rotations and Ryan programs in the Saudi obstetrics and gynecology residency programs.

Conflict of interest statement:

The authors report no disclosures or financial conflicts of interest or support.

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Table (1) Respondent characteristics and prior family planning experience:

Variable	N	%
Residency year		
1.00	33	32.7
2.00	27	26.7
3.00	14	13.9
4.00	6	5.9
5.00	21	20.8
Gender		
Male	37	36.6
Female	64	63.4
Planned subspecialty		
general OB/GYN	14	13.9
Urogynecology	10	9.91
Undecided	12	11.9
Gynecologic Oncology	15	14.9
Maternal-Fetal Medicine	21	20.8
Reproductive Endocrinology and Infertility	23	22.8
Minimally Invasive Gynecologic Surgery	3	3.0
Pediatric and Adolescent Gynecology	2	2.0
Other	1	1.0



Table (2) Prior IUD experience by postgraduate year:

Variable		1 st year N %	2 nd year N %	3 rd year N %	4 th year N %	5 th year N %	Total N %
No. copper IUDs placed during residency	0	15 45.5%	5 18.5%	2 14.3%	0 0.0%	2 9.5%	24 23.8%
	1-2	15 45.5%	9 33.3%	3 21.4%	0 0.0%	2 9.5%	29 28.7%
	3-5	3 9.1%	8 29.6%	4 28.6%	1 16.7%	1 4.8%	17 16.8%
	6-10	0 0.0%	2 7.4%	2 14.3%	0 0.0%	3 14.3%	7 6.9%
	11-20	0 0.0%	3 11.1%	3 21.4%	3 50.0%	6 28.6%	15 14.9%
	21-40	0 0.0%	0 0.0%	0 0.0%	0 0.0%	1 4.8%	1 1.0%
	>40	0 0.0%	0 0.0%	0 0.0%	2 33.3%	6 28.6%	8 7.9%
No. levonorgestrel IUDs placed during residency	0	16 48.5%	5 18.5%	1 7.1%	1 16.7%	2 9.5%	25 24.8%
	1-2	15 45.5%	13 48.1%	2 14.3%	0 0.0%	1 4.8%	31 30.7%
	3-5	2 6.1%	7 25.9%	4 28.6%	1 16.7%	5 23.8%	19 18.8%
	6-10	0 0.0%	2 7.4%	3 21.4%	1 16.7%	5 23.8%	11 10.9%
	11-20	0 0.0%	0 0.0%	2 14.3%	1 16.7%	2 9.5%	5 5.0%
	21-40	0 0.0%	0 0.0%	2 14.3%	0 0.0%	2 9.5%	4 4.0%
	>40	0 0.0%	0 0.0%	0 0.0%	2 33.3%	4 19.0%	6 5.9%
No. didactic lectures on IUD	0	13 39.4%	6 22.2%	4 28.6%	0 0.0%	3 14.3%	26 25.7%
	1	15 45.5%	8 29.6%	2 14.3%	0 0.0%	4 19.0%	29 28.7%
	2	5 15.2%	9 33.3%	4 28.6%	3 50.0%	2 9.5%	23 22.8%



	3	0 0.0%	4 14.8%	4 28.6%	0 0.0%	7 33.3%	15 14.9%
	≥ 4	0 0.0%	0 0.0%	0 0.0%	3 50.0%	5 23.8%	8 7.9%

Table (3) Number and percentage of correct answers for 20 knowledge questions by postgraduate year:

Variable	1 st year N %	2 nd year N %	3 rd year N %	4 th year N %	5 th year N %	Total N %
<i>1-year IUD failure rate</i>	13 39.4%	17 63.0%	7 50.0%	6 100.0%	17 81.0%	60 59.4%
<i>Maximum years of use for copper IUD</i>	2 6.1%	9 33.3%	6 42.9%	5 83.3%	8 38.1%	30 29.7%
<i>Maximum years for levonorgestrol IUD</i>	9 27.3%	14 51.9%	12 85.7%	4 66.7%	14 66.7%	53 52.5%
<i>Return to fertility</i>	20 60.6%	17 63.0%	6 42.9%	2 33.3%	18 85.7%	63 62.4%
<i>Discontinuation rate</i>	14 42.4%	15 55.6%	7 50.0%	4 66.7%	14 66.7%	54 53.5%
<i>Expulsion rate</i>	19 57.6%	15 55.6%	8 57.1%	4 66.7%	20 95.2%	66 65.3%
<i>Emergency contraception</i>	13 39.4%	13 48.1%	2 14.3%	1 16.7%	1 4.8%	30 29.7%
<i>Mechanism of action</i>	2 6.1%	1 3.7%	0 0.0%	0 0.0%	1 4.8%	4 4.0%
<i>Ectopic pregnancy risk</i>	11 33.3%	12 44.4%	3 21.4%	5 83.3%	13 61.9%	44 43.6%
<i>Pelvic inflammatory disease risk after 20 d</i>	19 57.6%	18 66.7%	8 57.1%	3 50.0%	15 71.4%	63 62.4%
<i>Antibiotic use before insertion</i>	6 18.2%	9 33.3%	7 50.0%	6 100.0%	19 90.5%	47 46.5%
<i>Cervical culture results before routine insertion</i>	3 9.4%	9 33.3%	3 21.4%	4 66.7%	13 61.9%	32 32.0%
<i>Wait until next menses before routine insertion</i>	3 9.1%	8 29.6%	5 35.7%	3 50.0%	12 57.1%	31 30.7%
<i>Improvement of bleeding from menorrhagia</i>	5 15.2%	6 22.2%	3 21.4%	0 0.0%	0 0.0%	14 13.9%



<i>Improvement of pain from endometriosis</i>	2 6.1%	2 7.4%	1 7.1%	1 16.7%	1 4.8%	7 6.9%
<i>Improvement of bleeding and pain from adenomyosis</i>	1 3.0%	1 3.7%	0 0.0%	0 0.0%	0 0.0%	2 2.0%
<i>No improvement of bulk symptoms from fibroids</i>	0 0.0%	1 3.7%	2 14.3%	0 0.0%	0 0.0%	3 3.0%
<i>No improvement of pain from ovarian cysts</i>	0 0.0%	2 7.4%	0 0.0%	0 0.0%	0 0.0%	2 2.0%
<i>Endometrial hyperplasia and cancer protection</i>	1 3.0%	0 0.0%	0 0.0%	0 0.0%	1 4.8%	2 2.0%

Table (4) Number and percentage of correct answers for 13 counseling practices questions by postgraduate year:

<i>Variable</i>	<i>1st year</i>	<i>2nd year</i>	<i>3rd year</i>	<i>4th year</i>	<i>5th year</i>	<i>Total</i>
<i>A patient who has never been pregnant</i>	11 33.3%	10 37.0%	8 57.1%	3 50.0%	14 66.7%	46 45.5%
<i>A patient who has had no deliveries</i>	14 42.4%	19 70.4%	9 64.3%	3 50.0%	14 66.7%	59 58.4%
<i>Patient who has had Q1 deliveries</i>	16 48.5%	14 51.9%	5 35.7%	0 0.0%	4 19.0%	39 38.6%
<i>Immediately after a first trimester abortion</i>	15 45.5%	11 40.7%	7 50.0%	2 33.3%	5 23.8%	40 39.6%
<i>Immediately postpartum (G48 h) after delivery of placenta</i>	19 57.6%	11 40.7%	6 42.9%	3 50.0%	4 19.0%	43 42.6%
<i>A patient G20 years old</i>	19 57.6%	10 37.0%	5 35.7%	1 16.7%	6 28.6%	41 40.6%



<i>A patient who has 1 sexual partner</i>	14 42.4%	9 33.3%	8 57.1%	1 16.7%	5 23.8%	37 36.6%
<i>A patient who has 91 sexual partner</i>	15 45.5%	13 48.1%	7 50.0%	4 66.7%	2 9.5%	41 40.6%
<i>Patient with history of ectopic pregnancy</i>	13 39.4%	10 37.0%	5 35.7%	2 33.3%	10 47.6%	40 39.6%
<i>Patient with history of STI that has been treated</i>	13 39.4%	9 33.3%	5 35.7%	1 16.7%	8 38.1%	36 35.6%
<i>Patient with history of PID 93 mo ago</i>	12 36.4%	8 29.6%	4 28.6%	1 16.7%	7 33.3%	32 31.7%
<i>Patient with HIV that is well controlled on antiretrovirals</i>	5 15.2%	4 14.8%	0 0.0%	1 16.7%	8 38.1%	18 17.8%
<i>Patient with a history of DVT or pulmonary embolism</i>	10 30.3%	8 29.6%	3 21.4%	1 16.7%	4 19.0%	26 25.7%