

Is There Any Psychological Harm During IUD Insertion among Egyptian Women? A Multi-Centric Cross-Sectional Study

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ABSTRACT

Background: Intrauterine device (IUD) is one of the widely adopted contraceptive methods all over the world, especially in developing countries such as Egypt. The study aimed to assess the psychological effects and pain in Egyptian females on their first use of IUD.

Subjects and Methods: Multicenter longitudinal cross-sectional study, started from June 2018 till July 2022, in the tertiary hospitals in 7 Egyptian governorates. About 553 participants were subjected to a pre-designed validated questionnaire including data on pain and psychological effect of IUD insertion with its different forms.

Results: Psychological effects of IUD were felt more at insertion but later on they changed greatly from marked to not being detected, however, there was a slight increase in pain and discomfort later on after insertion ($P < 0.001$). The absence of knowledge about IUD insertion was present in 44.3% of the participants. Knowing how IUD is inserted was associated with the presences of these psychological effects ($P = 0.014$ and < 0.001 respectively). There was an association between male doctor gender and less psychological effects and pain ($P < 0.001$).

Conclusion: There were negative psychological effects and pain among Egyptian women during the insertion of IUDs. Also, there was a low level of awareness about the IUD in most of the females.

Keywords: Epidemiology; Psychological effects; Pain; IUD; Insertion.

INTRODUCTION

Unintended pregnancy is one of the major problems of many countries, which reaches 50%^[1]. Worldwide, 63% of women of reproductive age are using contraception methods, intrauterine device (IUDs) comes in second place by 15%, and this percentage decreases unintended pregnancy^[2].

In Egypt, nearly 60% of married women were using contraceptive methods with a prevailing IUDs users in 36% of them^[3]. This is in concordance with the Department of Economic and Social Affairs report that exhibited 17.4% of women of reproductive age in developing countries were using IUD in comparison to 9.2% in developed countries^[4].

Some studies found a growing use of the IUD in the last few years even in developed countries such as United States^[5], which could be explained by its ease of insertion, high reliability and availability of its sources^[6,7].

Thus few studies had been conducted discussing its efficacy^[8,9]. Although it is highly effective with a failure rate of less than 1%^[10,11], it must be inserted by skilled doctors to avoid its complications^[12].

Clinical trials were conducted to control pain and psychological effects of IUD insertion, but failed^[13]. Many studies were conducted to assess its safety, efficacy, side effects especially pain during insertion, discontinuation rate and level of satisfaction^[6,9,14-16]. But

none of these studies assessed the psychological effects and the pain of insertion of IUD in the world, especially in the developing countries like Egypt that is characterized by high rate of usage of the IUD, or assessed the association between the psychological effects and other factors as gender of the doctors...etc.

So, this study was conducted to assess the psychological effects and the pain between Egyptian women as barriers to IUD usage during IUD insertion. And to show the associations between the psychological effects and the pain with multiple factors including doctor gender, the participants' previous awareness of IUD insertion, and the participants' previous awareness of its mechanism of action. And the effect of the duration elapsed after insertion on their levels and the future usage of family planning methods. This would clarify if the psychological effects and the pain deserve the focus of study or not, to improve the patient care and respect their psychological feelings.

SUBJECTS AND METHODS

A multi-centric cross-sectional study was conducted in obstetrics and gynecology (OB/GYN) clinics of the medical school hospitals in 7 of 27 Egyptian governorates; (Menoufia, Kaliobia, Cairo, Alexandria, Bani Swaif, Mansura and Gharbia), which were chosen

randomly by computer system. This study was conducted in a 50 months' time frame from the beginning of June 2018 to the end of July 2022 on 13,989 participants who came seeking-out for IUD insertion. Eligible criteria for participation were first users in the reproductive age group (15-49 years) and admitted to the healthcare setting during the time of the study. Previous IUD users were excluded because previous insertion would eliminate or diminish any "embarrassment" due to adaptation to the procedure. Also, those with IUD insertion immediately post labor, whether vaginal or caesarean mode of delivery, were excluded because anesthesia, whether general or local, would hinder the patient pay attention to any other psychological harm.

Participants who were under narcotics or addicts were also excluded in addition to those who refused to share in the study. Finally, 553 participants were eligible to share in the study.

The participants were subjected to a pre-designed questionnaire based on advanced literature review^{18,171}. A pilot study was carried out for a month on 55 participants attending to OB/GYN clinics in Menoufia University Hospitals to assess the clarity of the questions and to evaluate the efficacy of the questionnaire to be adjusted if needed. The validity of the questionnaire was evaluated by experts in Departments of Public Health and Community Medicine and Obstetrics and Gynecology in Menoufia Faculty of Medicine. The result of the pilot study wasn't added to the statistics because of modification of the questionnaire after it. Cronbach's alpha was 0.82.

The questionnaire included data about socio-economic standard, obstetric history, pain and psychological effects of IUD insertion with its different forms; especially embarrassment, fear, and discomfort during IUD insertion, and the participants' previous awareness of IUD insertion. Add to this the effect of the psychological effects on the participants' future usage of family planning methods. After a week from the IUD

insertion participants were asked two main questions one for the psychological effects and the pain, and the second one what would she chose as contraceptive method in the future. All of the questions of both questionnaires were asked in interviews with the patients by medical student after illustration of the questionnaires to the patients first. Data collection was done by medical students under the supervision of OB/GYN physicians in every chosen governorate and all the data were added to SurveyGizmo by codes to ignore the name of participants.

Ethical considerations:

Ethical approval, in accordance with Helsinki Declaration, was obtained from Institutional Review Boards (IRB) of Menoufia University and OB/GYN clinics of different medical school hospitals. Patients signed an informed consent for acceptance of participation in the study after explanation of all aspects.

Statistical analysis

The results were statistically analyzed by SPSS version 22 (SPSS Inc., Chicago, IL, USA). Data were presented as frequency and percentage and were compared by Chi-squared (χ^2) test. Marginal homogeneity was used to compare between 2 related qualitative groups. P value was set at 0.05 to be significant.

RESULTS

Participants' age ranged from 18-49 years; and they were distributed according to socioeconomic status (SES) into moderate SES 38%, high SES 33.5%, and low SES 28.6%. Regarding the obstetric history; multiparous women were in the first place between other women who asked about IUD by 55.3%, the uniparous women came in the second place by 41% and 2.4% for grand-parous women. About 59.7% of parous woman reported having spontaneous vaginal delivery, and 40.3% reported having caesarian delivery (Table 1).

Table 1: Distribution of the studied participants regarding their characteristics and obstetric history.

Characteristics	(n=553)	%
Governorate		
Menoufia	151	27.3
Kaliobia	71	12.8
Cairo	118	21.4
Alexandria	73	13.2
Bani Swaif	86	16
Mansura	22	4.0
Gharbia	32	5.8
Participant's education		
Read and write	88	15.9
Basic	83	15.0
Secondary	233	42.1
University	149	26.9
Husband's education		
Read and write	82	14.8
Basic	68	12.3
Secondary	247	44.7
University	156	28.2
SES		
Low	158	28.6
Moderate	210	38.0
High	185	33.5
Parity		
Nullipara	7	1.3
Unipara	227	41.0
Multipara	306	55.3
Grandpara	13	2.4
Mode of delivery		
SVD	330	59.7
CS	223	40.3
Suitability of the clinics		
Suitable	245	44.3
Unsuitable	308	55.7

SES : Socioeconomic status.

SVD : Spontaneous Vaginal Delivery.

CS : Cesarean Section.

Majority of woman attending the healthcare setting were not using a contraceptive method before IUD; however, the contraceptive pills were chosen by 34.7%. Absence of knowledge about IUD insertion was higher than the presence of knowledge (44.3%). Knowing the mechanism (20.1%) was four times lower than those who did not know it (79.9%). The copper type was eighteen times more prevalent than the other types by 94%. IUD was nearly two times more wanted method than the other methods. The preferable physician gender was nearly seven times towards male gender than female one by 87.3% who preferred male gender. Major source of making females chose the IUD was the doctors by 39.2%, then in the second place the friend came by 23.3% (Table 2).

Table 2: Distribution of the studied participants regarding their knowledge and practice about IUD.

Knowledge and practice	(n=553)	%	χ^2	P value
Knowing about IUD insertion	245	44.3	7.17	0.007*
Knowing mechanism of IUD action			198.12	<0.001*
Yes	111	20.1		
No	442	79.9		
Type of IUD in usage			918.05	<0.001*
Copper	520	94.0		
Silver	27	4.9		
Hormonal	6	0.11		
Choosing IUD by yourself			1.52	0.217
Yes	291	52.6		
No	262	47.4		
Based on what sources you choose IUD			446.0	<0.001*
Friends	129	23.3		
Doctor	217	39.2		
Husband	12	2.2		
Media (magazines, net, etc.)	5	0.9		
Nurse	24	4.3		
The methods used before IUD			1146.63	<0.001*
None	346	62.6		
Contraceptive pills	192	34.7		
Barrier methods	4	0.7		
Fertility awareness	4	0.7		
Emergency contraceptive pills	1	0.2		
Monthly injection	6	1.1		
The preferable doctor gender			308.44	<0.001*
Male	483	87.3		
Female	70	12.7		
Physician gender			285	<0.001*
Male	78	14.1		
Female	475	85.9		
Preferring anesthesia			1.74	0.187
Yes	261	47.2		
No	292	52.8		

*significant

IUD : Intrauterine Device.

There was a great change in pain and psychological feeling towards IUD at insertion and late after insertion. At insertion pain and other psychological feelings (embarrassment- discomfort- fear) were felt more but late after insertion they dropped more greatly from marked to no pain and other psychological feelings (embarrassment- discomfort- fear) however there was slight increase in moderate pain and discomfort late after insertion. Also, there was great change in mind towards the method that would be used in future, which was in favor of IUD (Table 3).

Table 3: Distribution of the studied participants regarding their pain and psychological feeling about IUD immediately and late after insertion.

	IUD				Test of sig	P value
	At insertion		Late			
Pain sensation					Marginal Homogeneity test	<0.001*
No	70	12.7	360	65.1		
Mild	107	19.3	152	27.5		
Moderate	176	31.8	28	5.1		
Marked	200	36.2	13	2.4		
Embarrassment sensation						<0.001*
No	131	23.7	332	60.0		
Mild	162	29.3	141	25.5		
Moderate	115	20.8	74	13.4		
Marked	145	26.2	6	1.1		
Discomfort sensation						<0.001*
No	185	33.5	343	62.0		
Mild	157	28.4	169	30.6		
Moderate	135	24.4	34	6.1		
Marked	76	13.7	7	1.3		
Fear						<0.001*
No	70	12.7	406	73.4		
Mild	107	19.3	106	19.2		
Moderate	176	31.8	32	5.8		
Marked	200	36.2	9	1.6		
After IUD removal, the method used will be:					<0.001*	
I'll use IUD again	431	77.9	464	83.9		
Contraceptive pills	74	13.4	55	9.9		
Barrier methods	10	1.8	9	1.6		
Fertility awareness	1	0.2	1	0.2		
Permanent contraception	6	1.1	5	0.9		
Monthly contraceptive injection	12	2.2	4	0.7		
None	19	3.4	15	2.7		

*significant

An association between doctor gender and participants' pain and psychological feeling about IUD immediately at and late after insertion was found. At insertion of IUD, pain was felt more with male doctors than female ones, but later pain was felt more with female doctors than male ones but not to the degree of statistical significance. Regarding embarrassment sensation, surprisingly at insertion moderate and mild degrees were higher with female doctors but marked degree was more with male doctors. Late after insertion embarrassment dropped more greatly from marked to no embarrassment with female doctors than with male ones, which drooped greatly to mild degree. For discomfort and fear, both were more marked with male doctors than with female ones at insertion. Late after insertion, both sensations dropped more greatly from marked to no discomfort and fear of female doctors than with male ones, which drooped greatly to mild degree. But there was still some percentage of marked discomfort sensation (1.5%) with female doctors vs. (0.00%) with male doctors. Also, with fear sensation there was still some percentage with marked fear sensation (1.9%) with female doctor vs. (0.00%) with male doctors. After IUD removal, the method that will be used was varied greatly, but regarding the physician gender IUD was the much more chosen method with female doctor than with male ones. Later after insertion the percentage rose from 46.2% to 67.9% with male doctors (Table 4).

Table 4: Distribution of the studied doctor gender regarding participants' pain and psychological feeling about IUD immediately at and late after insertion.

Pain and psychological feeling about IUD	At insertion		χ^2	P value	Late		χ^2	P value
	Doctor gender				Doctor gender			
	Male %	Female %			Male %	Female %		
Pain sensation*								
No	7.7	17.5	13.56	0.004*	70.5	64.2	1.49	0.684
Mild	28.2	40.2			23.1	28.2		
Moderate	39.7	26.9			5.1	5.1		
Marked	24.4	15.4			1.3	2.5		
Embarrassment sensation								
No	9.0	26.1	69.97	<0.001*	19.2	66.7	68.38	<0.001*
Mild	10.3	32.4			56.4	20.4		
Moderate	16.7	21.5			24.4	11.6		
Marked	64.1	20.0			0.0	1.3		
Discomfort sensation								
No	29.5	34.1	44.97	<0.001*	37.2	66.1	27.99	<0.001*
Mild	9.0	31.6			50.0	27.4		
Moderate	25.6	24.2			12.8	5.1		
Marked	35.9	10.1			0.0	1.5		
Fear								
No	3.8	14.1	21.04	<0.001*	59.0	75.8	14.13	0.003*
Mild	7.7	21.3			33.3	16.8		
Moderate	33.3	31.6			7.7	5.5		
Marked	55.1	33.1			0.0	1.9		
After IUD removal, the method used will be:								
I'll use IUD again			68.97	<0.001*			29.61	<0.001*
Contraceptive pills	46.2	83.2			67.9	86.5		
Barrier methods	33.3	10.1			23.1	7.8		
Fertility awareness	9.0	0.6			5.1	1.1		
Permanent contraception	0.0	0.2			0.0	0.2		
Monthly contraceptive injection	2.6	0.8			2.6	0.6		
None	2.6	2.1			0.0	0.8		
None	6.4	2.9			1.3	2.9		

*significant

Also, an association between knowing about the insertion of IUD and participants' pain and psychological feeling about IUD immediately at and late after insertion was found. knowing about how IUD is inserted was obviously associated with pain and psychological symptoms at insertion time, but surprisingly only the marked degree in pain and psychological symptoms was felt more with those without knowledge than those with, but later the absence of pain and psychological symptoms was reported more with those with knowledge than those without. After IUD removal, the method that will be used varied greatly, but regarding the knowledge about IUD insertion where IUD was the main method before insertion but it was still lower in those with knowledge (73.9%) than those without (81.2%). Also, the percentage rose late after insertion in both groups but it was higher in those without knowledge (86.4% vs. 80.8%) (Table 5).

Table 5: Distribution of the studied knowing about the insertion of IUD regarding participants' pain and psychological feeling about IUD immediately at and late after insertion.

Pain and psychological feeling about IUD	At insertion		χ^2	P value	Late		χ^2	P value
	Yes %	No %			Yes %	No %		
Pain sensation*								
No	14.7	17.2	10.58	0.014*	69.4	61.7	6.72	0.081
Mild	42.0	35.7			26.1	28.6		
Moderate	31.8	26.3			3.3	6.5		
Marked	11.4	20.5			1.2	3.2		
Embarrassment sensation								
No	20.0	26.6	29.50	<0.001*	60.8	59.4	3.04	0.385
Mild	40.8	20.1			26.9	24.4		
Moderate	19.2	22.1			11.8	14.6		
Marked	20.0	31.2			0.4	1.6		
Discomfort sensation								
No	26.1	39.3	21.23	<0.001*	58.8	64.6	2.41	0.491
Mild	37.6	21.1			32.7	28.9		
Moderate	24.5	24.4			7.3	5.2		
Marked	11.8	15.3			1.2	1.3		
Fear								
No	12.7	12.7	34.46	<0.001*	78.4	69.5	6.66	0.084
Mild	29.0	11.7			16.7	21.1		
Moderate	32.7	31.2			3.7	7.5		
Marked	25.7	44.5			1.2	1.9		
After IUD removal, the method used will be:								
I'll use IUD again	73.9	81.2	13.87	0.031*	80.8	86.4	14.74	0.022*
Contraceptive pills	14.7	12.3			10.6	9.4		
Barrier methods	1.6	1.9			2.4	1.0		
Fertility awareness	0.4	0.0			0.4	0.0		
Permanent contraception	1.6	0.6			0.8	1.0		
Monthly contraceptive injection	1.6	2.6			0.0	1.3		
None	6.4	1.2			4.9	1.0		

*significant

DISCUSSION

The IUD usage has been the potential to increase the prevalence of use of intrauterine contraception. The findings showed that at insertion of IUD, the pain and other psychological feelings (embarrassment, discomfort and fear) were felt more but late after insertion they dropped. But the percentage that didn't drop must be taken into consideration to exclude it in the future.

Pain, discomfort and fear were felt differently according to the doctor gender that were responsible for insertion of IUD where it was felt more with male doctors than female ones. Regarding embarrassment sensation, surprisingly moderate and mild degrees were higher with female doctors but marked degree was more with male doctors. This could be explained by that the culture and tradition in the countries in the Middle East like Egypt play a great role, but with statistical evidence, the participants preferred male doctors to female ones; this variation could be explained by that the number of male doctors in the study was lower than females, 14.1% vs.

85.9%. Due to cultural believes, the participants expected more skills from the male doctors, which was so obvious in pain results, which were very low with male doctors.

Knowing about how IUD is inserted was obviously associated with pain and psychological symptoms at insertion time in contrast to the females who did not know. The level of awareness was very poor, in spite of the high level of acceptance. This could be explained by the high level of IUD in usage according to high recommendations from none medical sources because of the fear from side effects of the other contraceptive methods. In this study, majority of the women (42.1%) in the study population had a secondary level of education. Acceptance of IUD was higher among women with secondary and university education (42.1% and 26.9% respectively), than those with no formal or basic education (15.9% and 15% respectively).

This finding confirmed the importance of education in deciding future pregnancy. This is in agreement with a study done in Zimbabwe where women who completed

secondary school were about twice as likely to use modern contraceptive methods as women who did complete primary education^[18]. In another study carried out in Egypt, the women with no formal education had an acceptance of 9.4 %, while those with formal education were 19.4 %^[19].

The acceptance of intrauterine contraceptive device was the most common among multiparous clients (55.3%). In case of uniparous, it was 41%. This finding is contrary to that of the study done in India where they found higher acceptance in primigravida clients (20.73 %). In case of multiparous, it was (13.76 %)^[9]. But it is in agreement with a review article which found that there was higher acceptance in multiparous clients (65.1%) in the usage of the IUD^[20].

Findings on sources on which participants based to choose IUD are surprising. A majority of the participants relied on their doctor; this indicates that they valued advice of doctor. It was obvious that doctors may share with promoting the usage of intrauterine contraception.

CONCLUSION AND RECOMMENDATIONS:

There were negative psychological effects and pain among the Egyptian women during insertion of IUD, which dropped in most of the women a week after insertion. There was a special preference to male physician. Added to this the low level of awareness about the IUD was high between Egyptian women. So, this study recommended developing strategies to increase public awareness of all contraceptive methods, so as to help women to choose the suitable method.

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