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Research Article

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The Impact of Women-Centered Counseling on Intrauterine Contraceptive Device Satisfaction and Continuation

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ABSTRACT

The intrauterine contraceptive device (IUCD) is the world's most widely used spacing method which can be considered as the reversed birth control. Client-centered contraceptive counseling has expressed the adverse uses of this device in meeting the request for contraception and keeping the human rights safe. The goal of this research was to assess the impact of women-centered counseling on intrauterine contraceptive device satisfaction and continuation. A Quasi-experimental design was selected in carrying out this study, and a purposive sample of 200 women (100 received the women-centered counseling program about IUD, and 100 received the routine care of the health agency) were recruited for this study. Data collection consisted of : a structured interview sheet, assessment of women knowledge about IUCD sheet, assessment of believed rumors or misconceptions about IUCD sheet, the schedule of the follow up at the third and six months sheet, and women satisfaction scale. Results revealed that the higher percentage of women in both the study and control groups was among the ages of 25 to less than 35 years (50.0% and 41.0%). The difference observed was not statistically significant. The implementation of women-centered counseling program was successful in improving their knowledge, and the correction of believed rumors of IUD was compared to the pretest. The study group suffered from lesser side effects and complications during the follow-up phases than the control group. Also, backache and genital tract infections were more popular in the control group in comparison with the study group with a statistical significant difference. The vast majority of women (93.0%) in the study group had continuous use of IUD until the six month compared to 68.0% in the control group with a statistical significant difference. The most considerable majority of the female in the study group were highly satisfied with the provided services, the service providers, and the method itself (92.0%, 100.0% and 82.0% ; respectively). It could be concluded that, women who received counseling program on IUCD showed better satisfaction and continuation than those who did not extradite it. The study recommended that, counseling program can be recommended for females because it increases IUD uptake, decreases early removal of IUD, and increases the continuation and satisfaction for IUD use.

Key words: *Intrauterine device, Counseling, Satisfaction, Continuation.*

INTRODUCTION

Overpopulation and unplanned population growth cause major socioeconomic consequences, and increase the expenditure on family planning policies in the country. Overpopulation impedes the socioeconomic development, hinders prosperity, and threatens the health condition of community members. Overpopulation in Egypt goes on to danger the country's materials and commitment to obtain possible evolution in harmony with Egypt's being developed seeing 2030 [1]. The intrauterine devices (IUDs) is an effective long-acting reversible contraception (LARCs), which is long-acting, credible, safe, low cost and has other non-contraceptive benefits for a wide range of women who would like spacing or limiting styles of contraception, hence, failure ratios are very low. Moreover, this method does not need to be controlled on compliance or user commitment, and does

not need daily attention or use at the time of intercourse; therefore, it is also appropriate for women with medical troubles [2].

In Egypt, IUDs are available in two types; the copper-containing IUD and the hormonal IUD. The copper IUD Pragard (TCu380A), commonly used in multipara. It consists of a T-shaped frame made from low-density polyethylene with barium sulphate added for X-ray opacity. Levonorgestrel intrauterine device (LNG-IUD) has four types which include : Mirena, Skyla, Liletta, and Kyleena [3].

The copper-containing IUD releases copper ions that accumulate throughout the epithelium of the uterine cavity and fallopian tubes where the concentrations are high enough to be toxic to both gametes and fertilized embryos. Copper ions also, cause an inflammatory response that disturbs the endometrial lining of the implantation site. Meanwhile, the local increase of prostaglandins increases the contractility of both the fallopian tubes and the myometrium, white blood cells, and changes the normal fluids present in the uterus and fallopian tubes [4]. The incidence of IUCD use has been only 7.6% of women in developed countries, and 14.5% in developing countries [5]. The proportions of women using IUCD in Africa have been very low in the sub-Saharan (0.9%), Eastern (1.1%), Middle (0.3%), Southern (1.1%) and Western regions (0.9%), whereas they have been high in Northern Africa (16.1%), with "hot spots" for IUC use in Tunisia and Egypt [6]. According to Egypt DHS, (2005) nearly one-third of the women (33.1%) used IUD as a method of contraception [7]**.** In 2014, 30.0% of the currently married women used IUCD [8], with a lower rate in Upper Egypt (15.5%).

The intrauterine device is recommended for multiparous women who do not wish to take combined oral contraceptive pills, nulliparous women who are unable to use other methods of contraception, elder women coming off pills and the women who see their husbands sporadically [9]. Regarding IUCD contraindication, this included: known or suspected pregnancy, undiagnosed abnormal uterine bleeding, suspected malignancy of the genital tract, active PID, previous ectopic pregnancy, and uterine fibroid. Moreover, severe uterine deformities and anomalies, as cervical stenosis, large fibroids, or a uterine septum, can make insertion more complicated and may increase the risk of expulsion [10]. The side effects and complications of IUCD included: changes in bleeding patterns especially in the first 3 to 6 months in the form of: heavy or prolonged period, inter-menstrual bleeding, pre-or post-menstrual bleeding and post-insertion bleeding. Other complications included: expulsion, pain, pelvic infection, pregnancy and lost threads or lost device [3].

Counseling is a key component of family planning services. The time dedicated to talking with clients can help the occurred right use of and contentment with a selected contraceptive method. Moreover, there has been a necessity for the nurse to induce, know and make people understand the significance of FP and usages of IUCD as a long term method. Her connection and counseling cleverness have to be enhanced, as these are the major contributing factors in IUCD approval. Nurses could successfully remove the superstition connected with IUCD, and reassure the clients about the safety of the IUCD during counseling. To decrease unintended pregnancy and to excess contraceptive continuation and contentment, the quality contraceptive IUD counseling has been specified as a potential means [11].

The definition of patient centered contraceptive counseling is an intervention in which, following the rules of patient centered medicine, the woman with regard to the contraception is explored, that is her sensation, confidence, wishes and anticipation with regard to contraception along with the environmental, cultural and observation agents that effect these [12]. Women-centered counseling pattern aimed to create a cooperative connection between the counselor and the woman. It supported women to build confidence and self-efficacy, heartening them to design their own plans to variation. Moreover, women's intrinsic motivation for behavior change was elicited by using skills such as; open-ended questioning, reflective listening, empathic statements and the exploration of ambivalence [13]. Excessive bleeding, pain, irregular bleeding and health concerns have been the major causes for discontinuation among the IUCD acceptors. This conformed to the findings of Bangladesh and Vietnam studies [14]. Nonetheless, a large proportion of women (about >80%) would still be interested in IUCD, as long as they get quality counseling and follow ups [15].

Significance of the study

Family planning is the want of the hour to dominance the population explosion in Egypt. Therefore, it is essential to reach people who need it the greatest and who need long term, cheap and safe birth spacing using reversible contraceptive method (LRCM) that represent 36.0% usage in Egypt, so that it is adopted willfully [16]. There is a need to motivate and educate people, and make them understand the significance of FP and usages of IUCD as a long-term method. The side effects, misconception, rumors and fears affect uptake,

continuation and satisfaction of IUCD. The quality of counseling by a maternity nurse should be ensured at each level of health care delivery to prevent discontinuation of IUCD, build women's trust, enhance service responsiveness, and increase women satisfaction.

Aim of the study was to assess the impact of women-centered counseling on intrauterine contraceptive device satisfaction and continuation.

Research hypothesis: The women who received counseling program on intrauterine contraceptive device showed better satisfaction and continuation than those who did not receive it.

SUBJECTS AND METHODS

To fulfill the aim of this study and answer the research hypothesis, the methodology was presented under the following four designs including: technical, administrative, operational and statistical designs.

I.Technical design:

It included the description of the research design, study setting, subjects and sample and tools for data collection.

Research design:

A Quasi experimental design.

Setting:

The study was carried out in El-Ahrar Hospital, Al-Nahal Medical Centre and Ghazala Unit which have been affiliated to the Ministry of Health and Population in Zagazig City.

Subjects and sample:

The sample size was estimated by using an average effect size of counseling intervention program in improving females' satisfaction = 0.5; assuming the prevalence of having any complications = 35.0%, would provide the study power of 85.0% using alpha error = 0.05 with loss of follow-up rate = 10.0% [17]. Thus the total recruited sample size was 200 women who attended the selected centers fulfilling the inclusion criteria. The study subjects were randomly divided into two equal groups of 100 women as follows:

Study group:

Comprised one hundred women who received the intervention program i.e women-centered counseling program about IUD.

Control group: Comprised one hundred women who received the routine care of the health agency.

A purposive sampling technique was used attending the above mentioned study setting during the time of the study, "one year" was eligible for inclusion in the study sample if she fulfilled the following **inclusion criteria:**

- Women who had no contraindications for the use of a copper IUD (according to WHO criteria).
- Women accepting to use copper IUD as a contraceptive method.

Tools of data collection:

1. **Structured interviewing questionnaire (Appendix I):** It included the following:
   - Socio-demographic data such as; women's age and family income.
   - Obstetrics history included data about parity and presence of unintended pregnancy.
2. **Assessment of women knowledge about IUCD (Appendix II):** Knowledge regarding IUD was designed to involve close and open questions assessing women's knowledge about IUD. It was used for the pre, immediate intervention, at 3months and 6 months from time of insertion (Follow up I&II). It assessed the data about the following knowledge;
   - Definition & Effectiveness.
   - Types & Action.
   - Indications and contraindications.
   - Side effects and complications.
3. **Assessment of believed rumors or misconceptions about IUCD (Appendix III):** It was used to record data pertaining to believed rumors or misconceptions about IUCD.
4. **The schedule of the follow up at the third and six months (Appendix IV):** It included data about side effects and complications during the insertion, after three months and six months as well as the time of discontinuation, and reasons of them.

5. **Women satisfaction scale (Appendix V):** It included three domains of satisfaction;the provided services, the providers of the services and IUCD itself.

Scoring:

The topics' separate scores for information were collected together, then the sum of scores for each dimension, and the total score was calculated by summing the scores given to the responses.Then, the scores were calculated and categorized as satisfactory or adequate for scores more than or equal to 60.0%, and unsatisfactory or inadequate for scores less than 60.0%. The items' separate scores for contentment were summed together, then, the sum of scores for each dimension and the total score were calculated by summing the scores given to the responses. Score were categorized to poor for those which were < 50.0%, moderate if scores ranged from 50.0% to < 75.0%, or high if they were more than 75.0%.

II. Administrative Design:

Official permission was obtained by the subordination of an official letter from the Faculty of Nursing to the responsible authorities of the study setting to get the authorization for data collection.

Ethical consideration:

All ethical cases were taken into careful thought during all phases of the study; the research preserved the anonymity and exclusiveness of the subjects. The researcher introduced herself to the women and briefly explained the nature and aim of the study to every woman before the involvement, and the women were enrolled voluntarily after the verbal agreement.Women were also confirmed that the knowledge obtained during the study would be confidential and used for the research purpose only.

III. Operational Design:

Preparatory phase:

The researcher undertook a review of past and current available literature relevant to the study topics in order to acquire in-depth theoretical knowledge of the various aspects of the problem. This was done using textbooks, articles in scientific periodicals and magazines, and internet search. This helped in the selection of the pertinent, and validated data collection tools.

Pilot study:

A pilot study was completed on 10.0% (20 women) who were eliminated from the sample.The main purpose of the pilot study was to estimate the clarity, feasibility, applicability of the result combination tools, configurations of the items, and the assessment of the time required for each form.

Field study:

Following this pilot study, the process of result collection and implementation of the counseling program lasted one year from the first of June 2017 to the end of May 2018. **The data was collected according to the following five phases:**

1) **Interviewing Phase:**Verbal agreement to participate was secured from each participant after the full explanation of the aim of the study. Data collection was done during the following 4 days : Saturday, Sunday, Wednesday and Thursday from 9 AM to 2 PM). The process of sampling selection was done. Women fulfilling the eligibility criteria were invited to participate in the study, and women in both groups were interviewed using appendix I.
2) **Assessment Phase:** In this phase, the researcher used **Appendix II** to assess women's knowledge about IUD for both the study and the control groups (Pre-test).
3) **Women-centered counseling program** was designed and implemented for the study group. On the other hand, the control group was left to the routine care of the health agency.

The aim of the current program was to: increase women's satisfaction and continuation of IUCD use.

The objectives of this program were to:

1. Upgrade women's knowledge pertaining to intrauterine contraceptive device.
2. Build good human relation with the women and enhance personal communications between the researcher and the woman to seek immediate medical consultation for side effect or complication.
3. Clear up all rumors or misconceptions about IUD.
4. Identify medical conditions or problems that interfere with the satisfaction and continuation of IUD use.
5. To encourage women to seek counseling independent of the accepted routine visits.

To fulfill the above objectives, the researcher used the following six parts:-

1. RESPECT Model Process
2. Woman assessment checklist (Checklist for screening women who want to initiate using the Copper IUD)
3. IUCD-Specific Counseling
4. Pre insertion counseling and infection prevention practices
5. Post insertion counseling.
6. Follow up counseling.

This program was based on scientific background and in the light of the needs identified in the pre-test assessment. The researcher used detailed counseling checklist (Competency-Based Checklist for IUD Counseling Skills) and the ***RESPECT*** model in the counseling process [9].

During the follow up phase; women in the study group were in continuous contact with the researcher during their follow up appointment or in between. Problems encountered were solved either by the researcher or through referral to medical advice. Appropriate treatment of the complication or side effects was undertaken.

4) **Implementation phase:** The program consisted of 6 parts. Time allowed in applying women screening, IUCD-specific counseling, pre insertion counseling and infection prevention practices, post insertion counseling and follow up counseling were 10 mintues,40 minutes ,45 minutes,15 minutes ,15 minutes and 45minutes ; respectively. The parts were conducted in the morning, started at 9 pm. Different and suitable teaching methods were used including discussion, demonstration, and re-demonstration. Simulation model and various visual aid materials were utilized by the researcher during the counseling process. A self-learning booklet was prepared by the researcher, and its contents were validated by the specialists in Obstetrics and Gynecological Nursing. It was submitted to every woman in the study group to be used as a guide for self-learning, and enhancing their knowledge to IUD. IUCD-specific counseling part was conducted together with a demonstration and re-demonstration for each step. At the beginning of the first session, an orientation to the program was done, the rationale, purpose, importance of the problem, contents, activities, time and logistic preparation were elaborated. The program was conducted in Arabic language to be easily understood in the previously mentioned settings.
5) **Evaluation phase:** The evaluation of women's knowledge of IUD and continuation rate was done for both the study "after the end of the program" and the control group "after the routine care received". This was done in the immediate post-test, then repeated at three months (follow up I) and at 6 months (follow up II). The women's satisfaction was evaluated at the end of six months.

IV. Statistical analysis:

After the results were collected, they were coded and fed to statistical software IBM SPSS version 20. The given graphs were constructed using Microsoft excel software. All statistical analysis was done using two tailed tests, and alpha error of 0.05. P value less than or equal to 0.05 was considered to be statistically significant. Due to the repeated comparisons (different study phases), P value was adjusted using benforroni correction method to avoid the inflation of type I error.

RESULTS

Table 1 presents the distribution of the studied women according to their characteristics. The highest percentage of women in both the study and control groups was between the ages of 25 to less than 35 years (50.0% and 41.0%). Meanwhile, they were more likely to have insufficient family income. The differences observed were not statistically significant (P =0.886).The mean parity of the study group was nearly similar to those in the control group *(*2.4 ± 1.2vs. 2.5 ± 1.2 ; respectively) and the difference observed was not statistically significant.The same table also revealed that approximately one fifth of both the study and control groups (19.0% and 18.0% ; respectively) were exposed to unintended pregnancy.

Table 2 shows statistically significant improvements in favor of the study group at both the immediate post intervention and follow-up phases in all areas of tested knowledge about IUD. During the pre-intervention phase, women in both the study and control groups obtained a close score of knowledge regarding the action of the IUD, advantages, indications, and side effects (4.0% vs. 3.0%, 12.0% vs. 12.0%, 4.0% vs. 6.0% and 9.0%

vs. 10.0% ; respectively). Immediately after the intervention, the majority of women in the study group obtained a higher score of knowledge compared to the control group. At the follow up phase, some decline was observed but still they retained some satisfactory knowledge with statistically significant differences.

Table 3 shows statistically significant improvement in clearing up all the misconceptions related to the IUD that existed among women in the study group in immediate post intervention and during the follow up phases in comparison to women in the control group whose rumors remained nearly stationary during the study phases. Differences observed were highly significant.

Table 4 shows that women in the study group suffered from lesser side effects and complications during the follow up phases compared to the control group (87.0% vs. 92.0% and 76.0% vs. 97.6% ; respectively). Also, backache and genital tract infections were more common in the control group in comparison with the study group with statistical significant differences.Menstrual problems associated with IUD were also presented in table 4. Thus, women in the study group were less likely to have heavy menstrual bleeding, lesser menstrual period and amount of bleeding (58.0% vs 78.0%, 1.1% vs. 2.5%, 20.2% vs. 44.3% ; respectively) during the second follow up phase at the six month, in comparison to the control group. The differences observed were statistically significant.

Table 5 presents the comparison between study and control groups regarding the utilization of the IUD. The great majority of women (93.0%) in the study group had continuous use of IUD until 6 month, compared to 68.0% in the control group with statistical significant difference (p=0.001*). Discontinuation was mainly after the second month in the study group in contrast to the control group where the discontinuation occurred mainly by the end of the six months. Heavy and irregular bleeding as well as backache and genital tract infections were the most common reasons for the discontinuation followed by the spontaneous expulsion.

Concerning women's satisfaction with IUD, **Figure 1** shows that the vast majority of women in the study group were highly satisfied with the provided services, the service providers, and the method itself (92.0%, 100.0% and 82.0% ; respectively) compared with the control group, with a statistical significant difference (p=0.001*).

T**able 1:** Distribution of the studied women according to their characteristics (n=200):

Women characteristics		Groups				X^2 (P)
		Study (n=100)		Control (n=100)		
		No	%	No	%	
Age in years	17-	24	24.0	23	23.0	2.5 (.283)
	25-	50	50.0	41	41.0	
	35-45	26	26.0	36	36.0	
Mean ± SD		30.1 ± 7.0		30.9 ± 7.3		
Parity	Primipara	25	25.0	24	24.0	0.85(0.985)
	Multipara	75	75.0	76	76.0	
Mean ± SD		2.4 ± 1.2		2.5 ± 1.2		
Family income	In depth	18	18.0	20	20.0	0.24(.886)
	Just meet their life expenses	37	37.0	34	34.0	
	In sufficient	45	45.0	46	46.0	
Presence of unintended pregnancy	No	81	81.0	82	82.0	.03 (.856)0
	Yes	19	19.0	18	18.0	

X^2: Pearson X^2test.

Table 2: Percent Distribution of the Studied Women According to their knowledge about IUD during the Study Phases (n=200)

Knowledge area	Study (n=100)				MHP	Control (n=100)				MHP
	Pre-Intervention	Immediate post intervention	After 3 months	After 6 months		Pre-Intervention	Immediate post intervention	After 3 months	After 6 months	
	%	%	%	%		%	%	%	%	
General Knowledge	9.0	100.0	100.0	100.0	0.001*	10.0	11.0	14.0	17.0	0.448
Actions	4.0	95.0	90.0	88.0	0.001*	3.0	3.0	3.0	2.0	0.964

Advantages	12.0	96.0	93.0	90.0	0.001*	12.0	12.0	9.0	8.0	0.709
Indications	4.0	94.0	92.0	85.0	0.001*	6.0	6.0	5.0	4.0	0.907
Contraindications	3.0	94.0	87.0	79.0	0.001*	9.0	9.0	3.0	3.0	0.094
Insertion time	5.0	93.0	85.0	79.0	0.001*	3.0	3.0	2.0	2.0	0.938
Side effects	9.0	93.0	87.0	84.0	0.001*	10.0	10.0	12.0	8.0	0.828
Complications	6.0	90.0	84.0	79.0	0.001*	3.0	3.0	3.0	3.0	1.000

MH: Probability of Marginal Homogeneity test. * P < 0.05 (significant).

Table 3: Percent Distribution of the Studied Women According to their Believed Rumors Regarding IUD in Immediate Post Intervention and Follow up Phases (n=200):

Phase	Rumors	Groups		P
		Study (n=100)	Control (n=100)	
		%	%	
Immediate post intervention	IUD causes discomfort during sexual intercourse.	0.0	66.0	0.001*#
	Travel inside a woman's body.	0.0	75.0	0.001*#
	Embedded in the baby's forehead if pregnancy occurs.	0.0	34.0	0.001*#
	Rots in the uterus after prolonged use.	0.0	58.0	0.001*#
	Causes ectopic pregnancy.	0.0	56.0	0.001*#
	Acts as abortifacients.	0.0	61.0	0.001*#
	Causes infertility	0.0	35.0	0.001*#
	Woman can conceive with IUD.	0.0	69.0	0.001*#
After 3 months	IUD causes discomfort during sexual intercourse.	0.0	66.0	0.001*#
	Travel inside a woman's body.	0.0	75.0	0.001*#
	Embedded in the baby's forehead if pregnancy occurs.	0.0	34.0	0.001*#
	Rots in the uterus after prolonged use.	0.0	58.0	0.001*#
	Causes ectopic pregnancy.	0.0	56.0	0.001*#
	Acts as abortifacients.	0.0	61.0	0.004*#
	Causes infertility	0.0	35.0	0.001*#
	Woman can conceive with IUD.	0.0	69.0	0.001*#
After 6 months	IUD causes discomfort during sexual intercourse.	0.0	66.0	0.001*#
	Travel inside a woman's body.	0.0	75.0	0.001*#
	Embedded in the baby's forehead if pregnancy occurs.	0.0	34.0	0.001*#
	Rots in the uterus after prolonged use.	0.0	58.0	0.001*#
	Causes ectopic pregnancy.	0.0	56.0	0.001*#
	Acts as abortifacients.	0.0	61.0	0.004*#
	Causes infertility	0.0	35.0	0.001*#
	Woman can conceive with IUD.	0.0	69.0	0.001*#

P: Pearson X2 test #: Fisher exact probability * P < 0.05 (significant).

Table 4: Percent Distribution of the Studied Women According to the Side effects and Complications and Menstrual Profile Encountered during the 3rd and 6th months after IUD Insertion (n=200):

Side effects or complications of IUD		Groups					
		At 3months			At 6months		
		Study (n=100)	Control (n=100)	X^2 (P)	Study (n=100)	Control (n=100)	X^2 (P)
		%	%		%	%	
Side effects or complications of IUD		87.0	92.0	0.249	76.0	97.6	0.001*
Intrauterine pregnancy		0.0	0.0	-	0.0	6.1	0.029*^
Backache		60.9	91.3	0.001*	61.8	92.7	0.045*
Genital infections		60.9	83.7	0.001*	61.8	92.7	0.001*
Heavy menstrual Bleeding		70.0	76.0	0.339	58.0	78.5	0.005*
Presence of dysmenorrhea		46.0	64.0	0.011*	28.7	54.4	0.001*
Duration of bleeding (days)	**< 4**	1.0	2.0	0.747	1.1	2.5	0.758#
	4 -	43.0	46.0		53.2	53.2	
	7 +	56.0	52.0		45.7	44.3	

Number of pads per day	**2**	11.0	14.0	0.305	12.8	12.7	0.003*
	3	30.0	30.0		64.9	39.2	
	4	35.0	42.0		20.2	44.3	
	5	24.0	14.0		2.1	3.8	

#: Mont Carol Exact probability ^: Fisher exact probability * P < 0.05 (significant)

Table 5: Number and Percent Distribution of the Studied Women According to Discontinuation of IUD Use (n=200).

Discontinuation data		**Groups**				X^2 **(P)**
		Study (n=100)		**Control (n=100)**		
		No.	**%**	**No.**	**%**	
Do you discontinue using IUCD	Yes	7	7.0	32	32.0	19.9 (0.001)*
		(n =7)		**(n =32)**		
Time of discontinuation per month	<2	1	14.3	4	12.5	^{MC}P=0.037*
	2-	5	71.4	9	28.1	
	4-	0	0.0	3	9.4	
	6	1	14.3	16	50.0	
		(N =7)		**(N =32)**		
Reason for discontinuations						0.208
• **Wanted another child**		0	0.0	0	0.0	
• **Heavy bleeding**		6	85.7	20	62.5	
• **Weight gain**		0	0.0	0	0.0	
• **Backache**		6	85.7	20	62.5	
• **Irregular bleeding**		4	57.1	14	43.8	
• **Lack of sexual satisfaction**		0	0.0	0	0.0	
• **Method failed/Get pregnant**		0	0.0	5	15.6	
• **Infection or increase discharge**		6	85.7	20	62.5	
• **Spontaneous expulsion**		1	14.3	5	15.6	

MCP: Mont Carol Exact probability. * P < 0.05 (significant) Total is not exclusive.

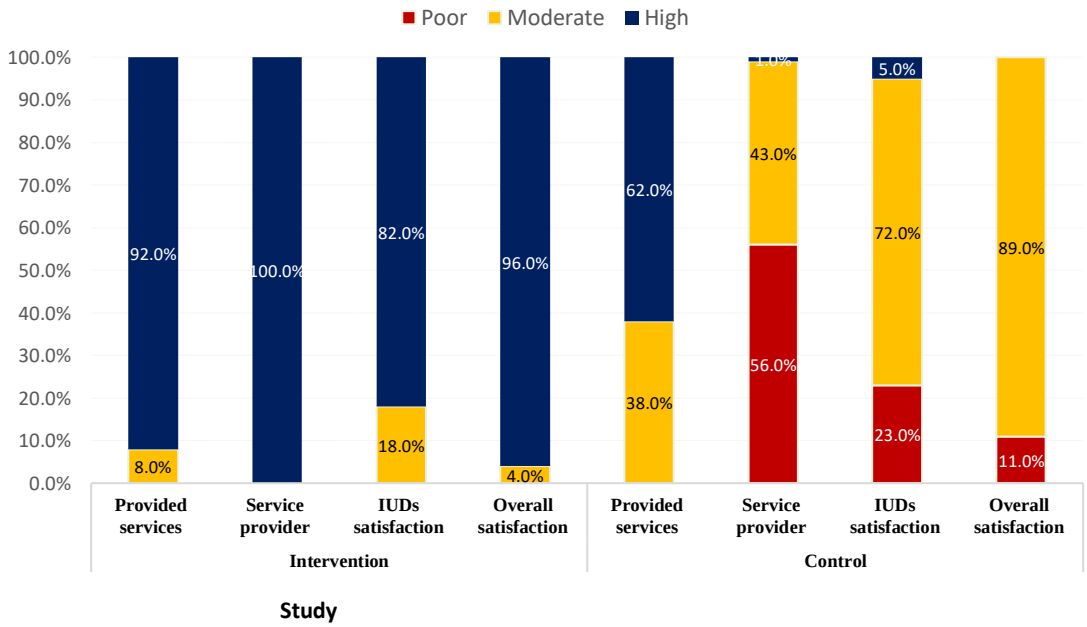

Figure 1: Distribution of the Studied Women According to Their Satisfaction about IUD (n=200).

DISCUSSION

Egypt faces the two biggest dangers; terrorism and population growth. This challenge lowers Egypt's chances of involopment [18]. Overpopulation in Egypt carries on to hazard the country's resources and obligation to realize

the possiblity of being developed in accordance with Egypt's development in 2030 [8]. According to the results of the current study, it could be noticed that both the study and control groups were matching in all of their characteristics. This can be interpreted in the light that most women attending the above mentioned setting were more or less from the same characteristic classes. Generally speaking, this consistent profile of the participants was useful in limiting the extraneous factors, which could interfere with the effect of the intended intervention on continuation and satisfaction of IUD. Similar finding was also reported in South Africa [19], and in India about Pattern Related to Side Effects and Removal of IUCD Usage [20].

After the intervention, a statistically significant improvement was observed in favor of the study group at both the immediate post intervention and follow-up phases in all areas of tested knowledge about IUD ($p = 0.001$).This was consistent with a study done in Iran about the effect of motivational interviewing on using intrauterine device in women at high risk of pregnancy [21]. They found that the mean score of knowledge was almost in the same level of deficiency before the intervention among the two studied groups (56.81 ± 18.11 vs. 54.93 ± 18.03). Post intervention, the mean score of knowledge increased in the study group in comparison with the control group (97.3 ± 3.9 vs. 56.7 ± 17.7 ; respectively) with a highly significant difference ($p < 0.001$).

Furthermore, a study about the knowledge and attitudes of women of childbearing age and girls around puberty about Intrauterine devices, found an increase in the willingness of women to use IUDs by 53.0% [22]. Women of childbearing age stated that the positive feature of IUDs that encouraged them to select IUD was their long-lasting effects (10 years). In the same line**,** a descriptive cross-sectional survey in Cape Town, South Africa about Information and Acceptability of the Intrauterine Device in the Family Planning Services found that women were lacking information about IUD [19]. Similarly, [23] documented the poor knowledge of LARC methods in their study in Cape Town. However, this study was done before the government embarked on the process of promoting the IUCD. In this respect, several factors influenced on the use and discontinuation of IUD in Ghana. Of these, comprehensive contraceptive counseling on the IUD was essential in promoting uptake and knowledge of the intrauterine device at the health facility level [24].

A sizable proportion of the studied women believed that IUD might travel inside a woman's body; she might conceive it, IUD acts as abortifacients, causes ectopic pregnancy and rots in the uterus after a prolonged use before the intervention. Similar finding was also reported as the most common misconceptions about IUD were pain during insertion and its ability to move inside the body [25]. After counseling, the above mentioned misconceptions were cleared up among women in the study group with a highly significant differences in favour of the study group ($p=0.001$*). This indicated the value of counselling in improving knowledge and self-efficacy in the study group. In this regard, study in India showed that the educational effort has succeeded in reducing various myths about the IUD such as; IUD travels to different body parts, or it causes dyspareunia and cancers [26]. Moreover, a qualitative study titled Wrong Ideas about Intrauterine Device among People of Isfahan found that, that fear of side effects, pain during insertion, problems with sexual intercourse, and fear of damage to the fetus were the main erroneous beliefs about IUDs. They recommended that providing special counseling to people who intend to use IUDs in the future can reduce the false perceptions in society and increase the use of IUDs by those who need to use this contraception method [27].

Most women who had never used IUD, started a negative impression of the method may be because of fear from rumors and myths they had heard. Some of these rumors included: IUD can cause infertility, offensive discharge, irritation of the genital area, lead to painful intercourse, can be displaced resulting in pregnancy, can fail and one can get pregnant even with the IUD in place and that the device can burn the womb [28]. A possible recommendation of the above finding was provided by [29-31] that developing strategies to overcome the rumors and fear surrounding IUD use could likely lead to higher uptake, satisfaction and continuation. Addressing fears and rumors could lead to the increased use and familiarity, allowing the intervention to become more acceptable to the population. That is why during the current counseling program, the researcher provided women with accurate information tailored to the counteract rumors and misconceptions about IUD. By using high fidelity simulations to enhance knowledge acquisition through repeating the scenario to correct learners' mistakes and feedback. This increased the retention of their knowledge through and after the active simulation training [32].

The present study's results detected that women in the study group suffered from lesser side effects and complications during the follow up phases than the control group. Also, backache and genital tract infections were extra popular in the control group in comparison with the study group with statistical significant differences. This was matching with the possible analytical observational study at Family planning Outpatient

clinic in Ain Shams Maternity Hospital and El-Zahraa primary health care unit. They found that the greatest common complications of IUD were bleeding (36.76%) and infection (26.47%) [33]**.** The present finding was relatively compatible with the descriptive analytical study in Sanandaj [34]. In the study [20], 36.8% women experienced side effects after the insertion. The greatest common side effect was pain with acute bleeding in 30.6% women, pain in 23.8% women and pain with light spotting in 18.4% women. One woman became pregnant after IUCD insertion. While, in Pakistan [15] , it was reported lesser percentage (22.7%) of side effect than [35] in Bangladesh (46.4%). Recently, [36] found that the main side effects were vaginal bleeding (61.5%) followed by abdominal pain (25.6%). Most side effects could be managed by simple interventions from the nurse midwives (for example, by giving oral pills or ibuprofen to IUD users who suffer menorrhagia) while others simply required to give reassurance and correct information to the women. If health providers did not give women the support to both her expectation and management of side effects, the discontinuation or unnecessary method switching might occur. This was consistent with a study done in Turkey about the comparative analysis of copper Intrauterine device impact on female sexual dysfunction subtypes [37].

In the same context, the brief counseling intervention made by [38] increased by 14.0% in the consistent use of effective contraceptive methods at three months in low-income neighborhoods. The above finding was interpreted by the fact that nurses had an impact on IUD continuation by providing pre-insertion counseling and anticipatory guidance about short-and long-term side effects and potential treatment options to help women with these side effects. They found that women perceived simulation carried out during counseling as a valuable tool in order to gain knowledge, skills, and self-confidence required to cope with any problem [39, 40]. The present study's results demonstrated significant relation between the continuation of IUD, time of discontinuation and counseling. In the same line, [33] study in Egypt found that the continuation ratio of IUD use in the first six months was 83.0% and 76.2% in the 12 th month. The finding also illustrated that the greatest common causes for IUD stopping were the side effects (51.7%). The most common complication of IUD use in this study was bleeding (36.76%), and the second important complication of IUD use was infection (26.47%). This was also matching with the present study's results where the foregoing positive effects of frequent return visits to women in the study group made women feel that they still had a sense of family and/or social life, thus encouraged referral for the further treatment and coping with side-effect.

In disagreement with the above mentioned finding, a randomized clinical trial study about the Effect of Intensive Versus non-Intensive Counseling on Discontinuation Rates might cause bleeding disturbances of three long-acting reversible contraceptives. They found that there were no considerable variations among the heavy and routine counseling groups on the stopping rates which might cause unpredictable menstrual bleeding of the three contraceptives under estimation [41]. The discrepancy with the previous finding could be demonstrated by the differences in the criteria of sample selection and the research design. The present study's findings showed that the greatest number of women in the study group were highly satisfied with the services provided, the providers of the service, and the method itself compared with the control group, with statistical significant differences. This corresponded well with the study about satisfaction assessment among Intrauterine Device (IUD) users. Their results revealed that 21.0% and 45.25% women were discontent with the availability of nurses and doctors ; respectively, 64.5% women were not content with the knowledge given to them, and 44.0% were dissatisfied with the maintenance of appropriate privacy [42]. Moreover, it was reported that counseling about prospective alterations in bleeding patterns before IUD insertion got together with the expectations and continuation rates after one year of use [43].

CONCLUSIONS

- After the program implementation, statistically significant improvement was revealed in total score of good knowledge in favor of the study group during the program phases.
- Women who received counseling program on IUD showed better satisfaction and continuation than those who did not receive it.

Recommendations

- Training programs are recommended for nurses in Egypt in order to enhance their knowledge and skills regarding IUD because nurse practitioners have an increasingly well-being situation in addressing high not- planned pregnancy, but demand particular training in IUD.

- Further studies should be done to appreciate and catalogue the effects of counseling on reducing the rate of IUD discontinuation with larger sample and longer period.

REFERENCES

1. Egypt Population (Demographics, Maps and Graphs) (2018): World population review.com/countries/Egypt-population/2018. Accessed 19/4/2018.
2. Phillips, S.J., Hofler, L.G., Modest, A.M., et al. (2017): Continuation of copper and levonorgestrel intrauterine devices: a retrospective cohort study. Am J ObstetGynecol; 217:57.e1-6.
3. WHO (2011): Department of Reproductive Health and Research, World Health Organization. Unsafe abortion: global and regional estimates of the incidence of unsafe abortion and associated mortality in 2008. World Health Organization 2011. 2002; 99(4):608–613. Cross Ref. Medline.
4. Gemzell-Danielsson, K., Berger, C. and Latlikumar, P.G.L. (2013): Emergency contraception - mechanisms of action. Contraception. A Mar; 87(3):300-308.
5. Tyler, C., Whiteman, M., Zapata, L., et al. (2012): Healthcare providers attitudes and practices related to intrauterine devices for nulliparous women, Obstet. Gynecol; 119 (4): 762–771.
6. United Nations (UN) (2015): World contraceptive report. Available at: http://www.un.org/esa/population/publications/contraceptive2015/contraceptive2015.htm. Accessed February Mai, 2018.
7. Awadalla, H.I. (2012): Contraception Use among Egyptian Women: Results from Egypt Demographic and Health Survey in 2005. J ReprodInfertil; 13(3):167-173.
8. El-Zanaty, F. and Way, A.(2015): ICF international. Egypt demographic and health survey 2014. Cairo, Egypt and Rockville, Maryland, USA: Ministry of Health and Population and ICF International. Accessed at 15/4/2018.
9. Pathfinder International. (2008):Participant's Guide: Intrauterine Devices (IUDs) (2nd ed.). Competency-Based Checklist for IUD Counseling Skills. Accessedat16/4/2016, from http://www.pathfind.org/site/DocServer/IUD2E_Participant_s_Guide.pdf?docID=11281.
10. Kaneshiro, B., and Aeby, T. (2010): Long-term safety, efficacy, and patient acceptability of the intrauterine Copper T-380A contraceptive device. International Journal of Women's Health; (2): 211–220.
11. Schivonea, G.B. and Glish, L.L. (2017): Contraceptive counseling for continuation and satisfaction. 1040-872X Copyright. Wolters Kluwer Health, Inc. All rights reserved.
12. Nobili, M.P., Piergrossi, S., Brusati, V. et al. (2007): The effect of patient-centered contraceptive counseling in women who undergo a voluntary termination of pregnancy. A Patient Education and Counseling; 65: 361–368.
13. Miller, W.R and Rollnick, S. (2013): Motivational Interviewing: Helping People Change, 3rd ed., Guilford Press.
14. Nguyen, T.H., Park, M.H., Le, M.H. et al. (2011): The dynamics of intrauterine device (IUD) use among Vietnamese women: a retrospective study. London: Marie Stopes International Google Scholar.
15. Azmat, S.K., Shaikh, B.T., Hammed, W. et al. (2012): Prevalence of IUCD discontinuation and its associated factors: Findings from a retrospective study with clients of a social franchising network in Pakistan. BMC WomensHealth; 12: 8 10.1186/1472-6874-12-8.View ArticlePubMedPubMedCentralGoogle Scholar.
16. World Contraceptive Patterns (2013): United Nations Web site. Available at un.org/en/development/desa/population/publications/family/contraceptive-wallchart-2013.shtml.Accessed at 2/5/2016.
17. Patel, D., Koenig, M., Patel, A.et al. (2003): The impact of improved service quality on IUD continuation: Evidence from rural india. The journal of family welfare; 49(2):1-9.
18. Wirtschafter, J. and Nader, M. (2018): Egypt pushes population control: 'Two is Enough. Published at 5:03 a.m. ET July 5, 2018 | Updated 3:40 p.m. ET July 5, 2018.Accessed at 7/11/2018. Available at : https://www.usatoday.com/story/news/world/2018/07/05/egypt-pushes-population-control-two-enough/743591002/ https://www.usatoday.com/story/news/world/2018/07/05/egypt-pushes-population-control-two-enough/743591002/

19. Van Zijl, S., Morroni, C. and Van Der Spuy, Z.M.(2010): A surveyto assess knowledge and acceptability of theintrauterine device in the family planning services inCape Town, South Africa. J FamPlannReprodHealth Care; 36:73-8.
20. Pandey, D. and Tiwari, S. (2015): Study of pattern related to side effects and removal of IUCD usage. Int J Community Med Public Health; 2(2):172-175.
21. Vakilian, K., Molavi, S., Zamani, A.R. et al. (2018): Effect of Motivational Interviewing on Using Intrauterine Device in Women at High Risk for Pregnancy. Open Access Macedonian Journal of Medical Sciences; 6(7):1306-1309.
22. Whitaker, A.K., Johnson, L.M., Harwood, B. et al. (2008): Adolescent and young adult women's knowledge of and attitudes toward the intrauterine device. Contraception; 78(3):211-7. https://doi.org/10.1016/j.contraception.2008.04.119 PMid: 18692611.
23. Credé, S., Hoke, T., Constant, D. et al.(2012): Factors impacting knowledge and use of long acting and permanent contraceptive methods by postpartum HIV positive and negative women in Cape Town, South Africa: a cross-sectional study. BMC Public Health; (12):197:1-9.
24. Gbagbo, F.Y. and Kayi, E.A. (2018): Use and discontinuation of intrauterine contraceptive device in the Greater Accra Region of Ghana.Contraception and Reproductive Medicine; 3(8):1-17.
25. Michie, L., Cameron, S.T., Glasier, A. (2014): Myths and misconceptions about intrauterine contraception among women seeking termination of pregnancy. J FamPlannReprod Health Care; 40(1):36-40.
26. Khan, M.E., Kar, S.S., Desai, V.K., et al. (2008): Increasing the Accessibility, Acceptability and Use of the IUD in Gujarat, India Frontiers in Reproductive Health Program (FRONTIERS), Population Council.P1-38.
27. Manzouri, L., Aghdak, P., Nematollahi, S. et al. (2010): Misbelieves about Intra Uterine Device (IUD) in Isfahan, Iran. Journal of Family and Reproductive Health; 4(4):169-74.
28. Khan,A. and Shaikh, B.T. (2013) : An all-time low utilization of intrauterine contraceptive device as a birth spacing method- a qualitative descriptive study in district Rawalpindi, Pakistan Reproductive Health;10(10): 1-5.
29. Sullivan, T.M., Bertrand, J.T., Rice, J. et al. (2006): Skewedcontraceptive method mix: why it happens, why itmatters. Journal of biosocial science; 38 (4) :501-21.
30. Montgomery, C.M., Gafos, M., Lees, S. et al. (2010): Re-framingmicrobicide acceptability: findings from the MDP301 trial. Cult Health Sex; 12 (6) :649-62.
31. Nalwadda, G., Mirembe, F., Byamugisha, J. et al. (2010): Persistent high fertility in Uganda: young peoplerecount obstacles and enabling factors to use ofcontraceptives. BMC public health; 10:530.
32. Yuan, H. et al. (2018): Knowledge Acquisition through Simulation in Nursing Education: A Meta-Analysis. 2018. Available at URL: http://www.nursinglibrary.org/vhl/bitstream/10755/243513/1/Yuan_Hao+Bin_50388.pdf. Retrieved on: 18 April 2018.
33. Ahmed, N.M.A., Mostafa, R.H., Abuelghar, W. et al. (2018): Discontinuation Rates among Copper Intrauterine Device Users in Primary Healthcare Unit and University Clinic. Is There a Difference? The Egyptian Journal of Hospital Medicine; 72 (11):5658-5665.
34. Rezaie, M., Karamei, R. and Shahoei, R. (2013): Factors Associated withDiscontinuation of Intra Uterine Devicesamong women referred to Sanandaj Health centers. Iran Journal of Nursing, 26(82): 34-41.
35. Alam, M.E., Bradley, J. andShabnam, F. (2007): IUD use anddiscontinuation in Bangladesh. E&R Study# 8.Engender Health/The ACQUIRE Project, NewYork.
36. Kumar, A. et al. (2018): Determinants of Intrauterine Device Acceptance among Married Women in Coastal Karnataka, India.Journal of Clinical and Diagnostic Research; 12(6): 5-9.
37. Sakinci, M., Ercan, C.M., Olgan,, S. et al.(2014): Comparative analysis of copper intrauterine device impact on female sexual dysfunction subtypes.Taiwanese Journal of Obstetrics & Gynecology; 55 (1): 30-34.
38. Dı´ez1, E., Lo´pez1, M.J., Marı´-Dell'Olmo1,M. et al. (2017): Effects of a counselling intervention to improve contraception in deprived neighborhoods: A randomized controlled trial.European Journal of Public Health, 1–6.

39. Fleming, K.L., Sokoloff, A. and Raine, T.R. (2010): Attitudes and beliefs about the intrauterine device among teenagers and young women. Contraception; 82 (2) :178e82.
40. Schmidt, E.O., James, A., Curran, K.M., et al. (2016): Adolescent Experiences with IUDs: a Qualitative Study.J Adolesc Health. Author manuscript; J Adolesc Health. ; 57(4): 381–386.
41. Modesto, W., Bahamondes, M.V. and Bahamondes, L. (2014): A randomized clinical trial of the effect of intensive versus non-intensive counselling on discontinuation rates due to bleeding disturbances of three long-acting reversible contraceptives.Human Reproduction; 29(7):1393–1399.
42. Sakalle, S. and Pandey, D. (2018): Satisfaction Assessment among Intrauterine Device (IUD) Users: A Community Based Study. Scholars Journal of Applied Medical Sciences (SJAMS); 6(5): 2006-2012.
43. Costales, A.C., Jensen, J.T., Nelson, A.L. et al. (2006): A US multicenter open-label trial withthe levonorgestrel-releasing intrauterine system clinical and device-related experience.Contraception; 1; 74(2):178.