

Factors Contributing to Discontinuation among Intrauterine Device Users in Zagazig City

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Abstract:

Background: Intrauterine contraceptive device (IUD) is the most common, widely used reversible method of contraception, currently used by nearly 160 million women. **Aim:** This study embarked on to explore the factors associated with intrauterine device discontinuation and failure in Maternal and Child Health Centers at Zagazig City. A descriptive **design** was selected in carrying out this study and a purposive **sample** of 400 women who had used an IUD and requested its removal was recruited for this study. **Setting:** The study was conducted at 4 Maternal Child Health clinics of 4 Rural Health Units affiliated to the Ministry of Health and population in Zagazig city. **Tools:** An interview questionnaire sheet was designed and implemented. **The results** of the present study revealed that the mean duration of the current IUD was 4.5 ± 3.6 with a range of 0.1-22 years, almost three fourths (74.4%) of women lost to follow up. The desire for conception was the most common reason, with the highest percentage (25.5%) followed by heavy bleeding and spotting and PID (21.5% and 12.3% respectively). In addition, other reasons for IUD withdrawal was social problems, expired date of the IUD and missed IUD (14.5%, 10.3% and 8.2% respectively). Statistical significant relation was found between reasons of discontinuation and women's age, education, number of living children, the previous use of IUD and the duration of the current IUD. **Conclusion:** From present results it could be suggested that medical and social problems constitute the main reasons for discontinuation of IUDs. A great proportion lost the follow up and a significant relation was found between women characteristics and reasons for discontinuation of the IUD. **Recommendations:** Counseling during the initial and return visits as well as after the removal of the IUD is mandatory.

Key Words: Intrauterine contraceptive device, Follow up, Discontinuation, Counseling.

Introduction:

An intrauterine device is the most popular contraceptive method worldwide, with 60 million users in 1986 increasing to 160 million users in 2002. Some statistics claim that approximately 15% of all fertile women in the world choose an intrauterine device to protect from pregnancy (Haugan, SKjeldestad & Halvorsen 2007). In Egypt, Jordan, and Tunisia, 15%, 17%, and 18%, of women prefer the IUD for contraception, respectively, whereas in Pakistan only 2% of women use the

IUD (Tugrul, Yavuzar & Yldirim, 2005).

Solter (2008) illustrated that there are two major types of an IUD. An intrauterine device can be a non-hormonal or hormonal type of contraception. The first one is a t-shaped device made out of flexible plastic and holds copper in it. The second type contains hormones, such as levonorgestrel or progesterone, which are constantly released by a device. A copper containing IUD is an older and more popular form than the

one containing progestins. Another part of both types of an intrauterine device is two threads hanging down into the vagina. These threads are easy for a woman to feel and check whether an IUD is in the right place. Copper IUD may be used for ten years after insertion, whereas hormone releasing IUD's expire after 5 years of use and must then be removed or replaced (Samra, 2006).

There are different reasons for the IUD to be removed. Most often they are removed at the expiration date. All IUD's both copper and hormone releasing IUD's must be removed at expiration date. IUDs can also be removed from women who want to get pregnant, or women who are experiencing unpleasant side effects. IUDs are also typically removed after the first year of menopause (Smith, 2011)

Discontinuations of IUD use are less common, apart from implants, than for other methods, mainly because cessation of use requires a deliberate decision to have the device removed. The continuation rates with IUDs are reported to be around 70% after 3 years of use. Failure rates are highest soon after insertion and are positively correlated with the surface area of copper in the endometrial cavity (El-Zanaty & Ann Way, 2009 and O'Brien, Kulier & Helmerhorst, 2008).

Aim of the study:

The aim of the study was to explore reasons associated with intrauterine device discontinuation, in Maternal and Child Health Centers at Zagazig City.

Research Questions:

1. What are the reasons of discontinuation or failure of IUD?

2. What are the relations between the reason of failure and associated factors?

Significance of study

Many studies have investigated the continuation of contraceptive methods. A study in Egypt revealed that the continuation rate of contraceptive methods was 88% for the first 6-months, 75% for 12-months and 56% for 24-months. Three important predictive factors for discontinuation were: side-effects, female age and method type (Rakhshani & Mohammadi., 2004).

In Egypt, side-effect and health concerns of the method were the commonest reasons for Discontinuation. Common User Complaints and side-effects were the reasons for discontinuation that were related to the methods. This is similar to 15 Asian countries, whereas in Isfahan the main reason for discontinuation was changing the method (Rakhshani & Mohammadi, 2004).

The benefits of family planning for both maternal and infant health have been well documented. The intrauterine device is the most widely used modern contraceptive method available in most of the countries including Egypt. Therefore, it is necessary for nurse to investigate the components of contraceptive dynamics such as contraceptive discontinuation and failure to conduct proper counseling and assist in the prevention of unintended pregnancy.

Subjects and methods:

Research design:

An exploratory descriptive was used to implement this study.

Setting:

The study was conducted at 4 Maternal Child Health clinics of 4 Rural Health Units affiliated to the Ministry of Health and population in Zagazig city.

The 4 MCH centers are: Alnahal medical centre, Second care child, Third care child, and Alhokama clinic.

Sample:

The study subjects were comprise a purposive sample of 400 women, 100 from each They were selected randomly from 15 Rural Health Units in Zagazig City and fulfill the following inclusion criteria ; both primiparas and multiparas, had an IUD used for contraception and had the intention to discontinue this method.

Tools:

A structured interviewing sheet, consisting mostly of closed questions, was designed by the investigator to collect the following data:- Demographic data, data related to the use of IUD, reasons discontinuation both medical and non-medical reasons. It was constructed after thorough review of relevant and current literature.

Validity of tool:

The study tool was validated by 5 juries who were expert in this field.

Pilot study:

The pilot study was conducted on 10% of the total sample (40 women) to test the content validity, feasibility, clarity and objectivity of the tools as well as to estimate the time needed for data collection. (Those were excluded from the sample) before commencement of the study

Field work:

The sample was chosen according to the previously mentioned criteria. Only one researcher was responsible for collection the data from the first of June 2010 to the end of March2011. The researcher attended the studied setting three days per week .Each interview was completed within 15-20 minutes and it was conducted after the removal of the IUD. The sheet was reviewed immediately after data collection to ensure completeness.

Limitations of the study:

MCH centers visits had to be repeated for 40 women because they were uncooperative. Thus, the researcher had to spend more time in data collection.

Ethical and administrative considerations:

An official approval was obtained from pertinent authorities in Zagazig Faculty of Nursing as well as the selected maternal child health centers at Zagazig City. The aim of the study was explained to every woman before participation, which was totally voluntary. Women were reassured that any obtained information will be confidential, and will be used only for the purpose of the study. The study maneuvers had no actual or potential harms on women and professional help was provided whenever needed.

Statistical design:

The data were recorded, categorized, tabulated and analyzed using computer software Epi. 6, SPSS version 10. Qualitative data was presented as number and percent. Comparison between groups was done by Chi-Square test. Quantitative data was tested for normality by Kolmogrov-Smirnov test. Normally distributed data was presented as mean \pm SD. F-test (One Way Anova) was used to compare between more than two groups. For all statistical tests done, the threshold of significance was fixed at the 5% level (p-value).

Result

Table (1): and **Fig (1):** show the distribution of study subjects according to the present use of IUD. The duration of using the IUD ranges between 0.1-22 years with a mean of 4.46 ± 3.62 . It was obvious that more than two fifth (46.3%) of subjects used it for four years and more, while only 13.7% used it for less than one year.

Table (2): show the distribution of study subjects according

to the present use of IUD and the follow up care provided for them after IUD insertion. less than half (46.1%) of women used IUD because it does not require remembering for using and almost one quarter (26.9%) used it because it does not contain hormones. Nearly two thirds (63.3%) of subjects used IUD without knowing its type. However, the copper type of IUD was used by more than one third 34.0% of cases. It is clear that nearly three quarters (74.2%) of women didn't carry out the follow up after the insertion of the IUD.

Reasons for discontinuation of IUD are demonstrated in **Figure (2)**, it is obvious that the desire for conception was the most common reason, with the highest percentage 102 (25.5%), followed by heavy bleeding and spotting 86 (21.5%) as well as PID and cervicitis (12.3%). Other social problems such as; husband's death, divorce, family or husband objection, menopause accounted for (14.5%). Other reasons include; expired date of IUD, missed IUD and back or colicky pain (10.3%, 8.2%, and 7.7% respectively).

As for the relation between socioeconomic factors, **table (3)** shows statistically significant relations with women's age $\chi^2 = 83.129$ ($P < 0.001$). It is evident that women in the middle age group or younger than 25 years of age (59.8% and 32.4%) were more likely to remove the IUD than those 35 and more (7.8%) because they desire pregnancy. It is also noticed that medical reasons and bleeding constitute half of the sample among women ≥ 35 years compared, to nearly one tenth (9.1% and 10.5%) of women less than 25 years of age. Meanwhile, social reasons for discontinuation of the IUD were higher among women who had ≥ 35 (51.7%), compared to those < 25 (3.5%).

Concerning the relation between reasons for discontinuation of IUD and women's level of education, it is evident from **table (3)** that the percentage of women with university or secondary level of education who had the desire for pregnancy was higher (52.0% and 41.2%) than those who were illiterate or can read and write (5.9%). It is also evident that the removal of the IUD due to bleeding or social reasons (44.0% and 36.2%) was more common among women who had secondary level of education compared to women who were illiterate or can read and write ((20.0% and 34.5% respectively). Differences observed were statistically significant $\chi^2 = 83.129$ ($P < 0.001$).

The relation between the previous use of the IUD and reasons for discontinuation of IUD, **table (4)** shows a statistically significant association $\chi^2 = 51.279$ ($P < 0.001$). Thus almost three quarters (72.4%) of women who previously used the IUD had social reasons for removing it compared to, only 27.6% who did not use it before. In addition, women who had medical or bleeding problems (72.1% and 65.1%) were more likely to previously use the IUD compared, to those who did not use it before (34.9% and 27.9% respectively).

Concerning the relation between duration of using the IUD and reasons for discontinuation of IUD it is evident from **table (4)** that almost two third (67.7%) of women desiring pregnancy had used the IUD for less than 4 years. In addition bleeding and spotting were the common adverse effects of causing discontinuation (39.5%) among those who came for the removal of their IUD before 2 years.

Discussion:

Women came for the removal of the IUD, were asked about the advantages of their current IUD, nearly half of them mentioned that it didn't require

any memory as opposed to other methods. This was similar to the study of **Alam, Bradley and Shabnam (2007)** in Bangladesh. As for the duration and type of IUD used, more than two fifth (46.3%) of subjects used it for four years and more, while only 13.7% used it for less than one year and the majority did not know the type they use. These findings are not in agreement with **Mardi, Refahi and Jabbarzadeh (2007)** during their study in Iran, which revealed that only less than one fourth (21.9%) of subjects used it for four years and more, while 31.3% used it for less than one year. This clarifies the longer the duration of use possibly related to better counseling and education on IUD use.

The main problem observed in this study was the high number 297 (74.2%) of cases lost to follow-up the current IUD. This finding is not in accordance with **Araujo, Barbier and Guazzelli (2008)** who founded that there was a 21.2% rate of loss to follow-up, most of which (15.2%) occurred during the first 2 years of the study. This may repeatedly highlight the importance of counseling, especially during the return visits and proper selection of an IUD candidate to encourage the follow up and reduce the discontinuation rate of the IUD.

Concerning the current discontinuation reasons of IUD, the present study findings indicated that the desire for conception was at the top of the list, with the highest percentage of the reasons reaching up to 102 (25.5%) of the sample. This was followed by heavy bleeding and spotting 86 (21.5%). Women complained that they cannot pray, have sexual intercourse, perform household tasks or participate in community activities during menstruation. The above figures are very close to that reported by **Alinany (2007)** in Egypt.

In addition, **Farajzadegan, Zamani and Manzouri (2008)** founded that the desire for conception is the highest percentage (38%) of general factors for discontinuing IUD using in Iran. On the other hand, **Tolley, Loza and Kafafi L (2005)** reported that bleeding is the commonest reason for discontinuation of IUD. In the same line **Jenabi, Mohammed and Baga (2006)** and **Khademloo, Ghasemian and Yasari (2008)** reported that the highest removal rate was for bleeding. Other major reasons for removal were pregnancy and expulsion respectively.

Moreover the study done by **Tugrul et al., (2005)** in Turkey indicated that menorrhagia and pelvic pain in IUD users were observed more frequently. Also clinical trial has shown that 4-5% of the women using IUDs tend to discontinue using this method due to pain (**Batar, Kuukankorpi and siljander 2002**).

Since the late 1960s, the potential relationship between the use of an intrauterine contraceptive device and the development of Pelvic Inflammatory Disease (PID) has been an area of considerable concern and controversy (**Burkman, 1996**). Stanwood reported that the net discontinuation rates due to pelvic inflammatory disease was low, ranging from 0.0 -0.8 per 100 women at one year (**Stanwood, Grimes & Schulz, 2001**). However, in the present result 12.3% were treated for upper and lower genital tract infection and this is a serious complication especially if it was neglected by losing the follow up.

Social and psychological challenges also made continuation difficult. The present study revealed that these problems constituted 14.5%

of the sample such as husband's death, divorce, family or husband objection and menopause. Meanwhile missed IUD accounted for 8.2 %. On the other hand **Mardi et al., (2007)** reported a very low frequency for the above mentioned problems (2.6%). The discrepancies between the above findings pertaining to the reasons of IUD discontinuation may be related to the social, psychological and biological characteristics of the studied women. Thus, the present profile of discontinuation reasons should be considered in improving the quality of family planning services in Egypt.

According to the present study results, a statistically significant relations was found between women's age and reasons for IUD discontinuation $\chi^2 = 83.129$ ($P < 0.001$). Thus women ≥ 35 years of age had higher PID rates than smaller women, especially compared to women < 25 years. Meanwhile, women in the middle age group or younger than 25 years of age (59.8% and 32.4%) were more likely to remove the IUD than those ≥ 35 years of age (7.8%) because their desire for pregnancy. These results are similar to those achieved by **Nguyen and Park (2011)** in Viet Nam.

On the other hand, social reasons for discontinuation of the IUD were higher among women who had ≥ 35 (51.7%), compared to those < 25 (3.5%). This result is in disagreement with **Mardi et al., (2007)**. This point to seemingly important disparities in the quality of family planning services across various regions of the world and the different needs of women of various age groups.

As for education, the present study findings demonstrate a statistical significant difference between the level

of education and reasons for discontinuation of the IUD $\chi^2=83.129$ ($P<0.001$). Subjects discontinuing the IUD use for the desire of pregnancy were more likely to have higher education. This result is in disagreement with **Khademloo et al., (2008)** who did not find a statistically significant difference between the level of education with causing discontinuation.

In addition, in this study, a significant portion of those who were previously IUD users had high frequency of bleeding, other medical and social reasons for removing the current IUD. This is in coherence with **Jenabi et al (2006)** who have similarly reported that women who had previously used an IUD had lower continuation rate because of bleeding, spotting, expulsion, and cervicitis or other social reasons than did women without previous IUD experience.

The present study results have demonstrated that reasons for discontinuation were statistically significantly related to the durations of using IUD. Thus bleeding and spotting were the common adverse effects of causing discontinuation (39.5%) among those who came for the removal of their IUDs before 2 years. This result is similar to those achieved by **Mardi et al (2007)** who reported that increase in bleeding is the main reason for premature discontinuation of IUD use. Thus, since the duration of use of the highly effective contraceptive method (IUD) is a compelling important factor in preventing pregnancy, therefore, it is necessary to put more emphasis on counseling programs for the above vulnerable group

Conclusion:

In the light of the present study findings, it can be concluded that: The desire for conception was the most common reason for discontinuation of

the IUD. The second reason for IUD withdrawal was bleeding and spotting. Other medical and social problems constitute a sizable portion of reasons for the discontinuation of the IUD. Statistical significant relation was found between women's age, education, previous use of the IUD, the duration of the current IUD and the reasons for discontinuation of the IUD

Recommendations:

The following recommendations are proposed:

- Proper selection of an IUD candidate together with meticulous assessment and careful insertion of the IUD to avoid immediate and remote problems that causes discontinuation.
- Proper counseling is essential during the initial and return visits.
- Factors responsible for making the woman lost the follow up should be overcome.
- Further research is proposed to assess the impact of counseling on reducing the rate of discontinuation of the IUD using. Also, the concept of quality care should be applied in family planning health centers to improve nursing practice and increase satisfaction among users and non users of the IUDs.

Table (1): Distribution of studied women according to the duration of using of IUD (n=400)

Duration of use (years) (n=400)	
Mean \pm SD	4.46 \pm 3.62
range	0.1-22

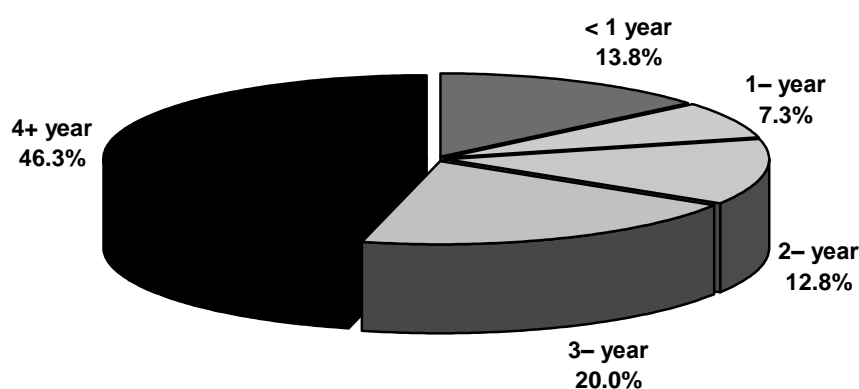


Figure (1): Distribution of study subjects according to the duration of using of IUD (n=400)

Table (2): Distribution of studied women according to the present use of IUD and the following up care provided for them after IUD insertion (n=400)

Items	No.	%
Why did you use IUD? ?* (n=516)		
Cheap price	35	6.8
Not contain hormones	139	26.9
Not require remembering	238	46.1
Other	104	20.2
Type of used IUD		
Cooper	136	34.0
I don't know	253	63.2
Platen	10	2.5
Multi load	1	0.3
Did you go for the follow up visit		
yes	103	25.8
No	297	74.2

(*) The sample size is not exclusive because there was some women selected an IUD for more than one cause.

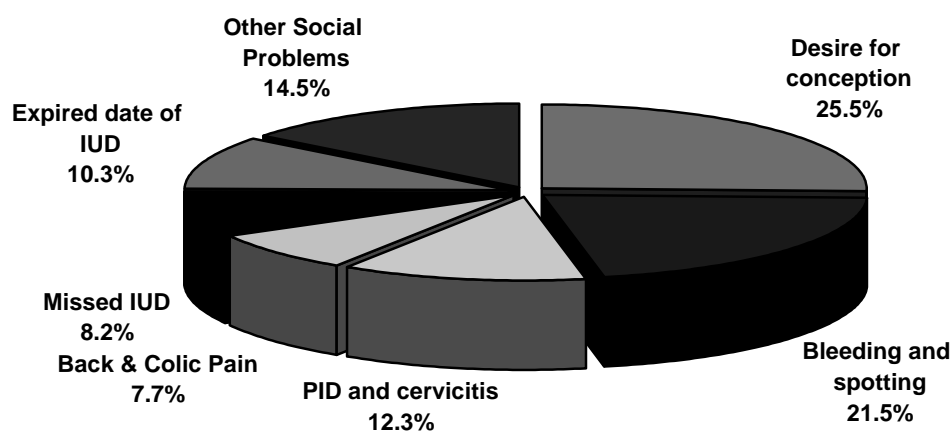


Figure (2): Distribution of studied women according to reasons of discontinuation of IUD (n=400)

Table (3): Relation between women’s age, level of education and reasons for discontinuation of IUD (n=400)

Items	Desire for conception		Bleeding & spotting		Other medical reasons		Social reasons		Test of significance
	No.	%	No.	%	No.	%	No.	%	
Age									
• < 25	33	32.4	9	10.5	14	9.1	2	3.5	X ² = 83.129 P<0.001*
• 25-35	61	59.8	34	39.5	63	40.9	26	44.8	
• ≥ 35	8	7.8	43	50.0	77	50.0	30	51.7	
Total	102	100.0	86	100.0	154	100.0	58	100.0	
Educational level									
• Illiterate & read & write	6	5.9	18	20.0	49	31.8	20	34.5	X ² = 83.129 P<0.001*
• Primary education	1	0.9	4	4.0	8	5.2	3	5.2	
• Secondary education	42	41.2	38	44.0	57	37.0	21	36.2	
• University education	53	52.0	26	30.0	40	26.0	14	24.1	
Total	102	100.0	86	100.0	154	100.0	58	100.0	

(*) Statistically significant at p<0.05

Table (4): Relation between women’s previous use of IUD, duration of using the IUD and reasons for discontinuation of IUD (n=400)

Items	Desire for conception		Bleeding & spotting		Other medical reasons		Social reasons		Test of significance
	No.	%	No.	%	No.	%	No.	%	
Previous use									
• Yes	31	30.4	56	65.1	111	72.1	42	72.4	X ² =51.279 P<0.001*
• No	71	69.6	30	34.9	43	27.9	16	27.6	
Total	102	100.0	86	100.0	154	100.0	58	100.0	
Duration of using IUD									
• < 2 years	9	8.8	34	39.5	32	20.8	9	15.5	X ² =95.081 P<0.001*
• 2 years	69	67.7	18	21.0	28	18.2	16	27.6	
• 4+ Years	24	23.5	34	39.5	94	61.0	33	56.9	
Total	102	100.0	86	100.0	154	100.0	58	100.0	

(*) Statistically significant at p<0.05

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