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## Assessment of Reasons for Discontinuation of Different Methods of Contraception

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In this study, we have evaluated the duration of using, complications and causes of discontinuation of each of common contraceptive methods. This descriptive-analytic study was performed in Tabriz over 500 women using one of contraceptive methods which have been discontinued that for any reason. Analysis of data was performed by SPSS software and Chi square statistical test. The most common causes of contraceptive discontinuation were including severe bleeding (IUDs), medical complications (OCPs), bleeding (minipill), amenorrhea (DMPA), bleeding and spotting (Norplant) and fear of being pregnant (candom). These relationships were statistically significant. Also, the relation between literate level and the type of used contraception was significant, so that low-literate women had used from IUD, DMPA and OCP and high-literate cases had used from candom. There was no significant relation between the type of prior deliveries and the used method of contraception. The women with sufficient children number, had used often from IUD and those with less children number had used often from minipill or candom and the relation between the sufficiency of children and the used method of contraception was significant. Because of long-standing use from IUDs as an effective method and its discontinuation because of severe bleeding we recommend using from progesterone releasing IUDs which decrease bleeding rate. Also, this study showed that male partner's influence is associated with contraceptive use.

**Key words:** Contraception, amenorrhea, norplant, discontinuation, DMPA, family planning

## INTRODUCTION

The successfulness of contraception depends on the regular use from these methods by women. They should be educated about the risk of pregnancy due to discontinuation of contraception. Control of fertility without correct use from suitable and standard methods is impossible, indicating the importance of awareness and sufficient excitement of users.

An Indian study showed that 80% of educated women use from contraception after bearing the first child while the rate of use from contraception in uneducated women even after bearing the third child is only 50% (Kanojia *et al.*, 1996; Casterline *et al.*, 2003). All couples in Shanghai are well aware of the one-child policy. It might therefore be expected that pregnancy would be exceedingly uncommon following a first birth, except in the few cases in which the child dies (Che and Cleland, 2004). Unwanted pregnancy for women in developing countries can mean life or death, which may explain why modern contraceptive methods with low failure rates (e.g., sterilization, IUDs and hormonal methods) predominate in developing countries. Conventional methods with relatively high failure rates (e.g., natural family planning, barrier methods and withdrawal) predominate in developed countries. Developing-country governments first supported family planning programs for demographic reasons. They now embrace them because they save the lives of women and children. The four fundamental pillars of reproductive health policy are family planning, maternal care, infant and child care and control of sexually transmitted diseases (STDs) (Winter, 1988; Diczfalusy, 1993; Bajos *et al.*, 2003).

The efficacy of a contraceptive method is determined by measurement of unwanted pregnancies during defined period in which the method is used. Pearl index is calculated as the number of failures of a contraceptive method in 100 women in one year (Speroff *et al.*, 2004).

Among all reversible methods, IUDs and OCPs have the lowest and natural methods have the greatest failure rates (Grady *et al.*, 1986). Worldwide, female sterilization is the most common contraceptive method, followed by IUDs and oral contraceptives (Che and Cleland, 2004).

The most commonly used IUDs in Iran include: T Cu-380A, T Cu-200B, multiload 375 and Cooper 7. The failure rates of these devices are very low with reported rate of less than 1 per 100 women in 1st year of use from T Cu-380A. The World Health Organization has cited the IUD as the single most effective reversible method of fertility control (Raymond *et al.*, 1999; Yang *et al.*, 1990).

The most frequent complications of IUDs include bleeding, dysmenorrhea, infection and uterine perforation during insertion of IUD with prevalence of 1 in 3000.

Other non-hormonal methods of contraception are condom, cervical cap and diaphragm. The failure rate of

condom method is 3% due to its rupture. Condom and other barrier methods decrease the risk of STDs.

OCPs are the most frequent hormonal methods of contraception. The pharmacologic preparations within OCPs are estrogen and progesterone. Depo-Provera (DMPA) is one of injectable forms of hormonal methods, administered intramuscularly every 3 months. Norplant is a slow-release instrument containing progestin, which prevents penetration of sperms by suppression of ovulation and increase the cervical mucosa. Norplant causes irregular bleeding specially at the first year in more than 80% of users. Other complications of hormonal methods include irregular menstrual bleeding, breast stiffness, weight gain, depression, decreased libido, hypertension and fatigue (Jennifer *et al.*, 2003; Khan, 2003).

Studies have shown that the discontinuation rate of a method decrease with long duration of use and the number of alive children. Also, woman's decision to use and remain on the contraception has relation with complications and male partner support. Several studies have found that a male partner's influence is associated with contraceptive use among both white and black women (Rosenberg *et al.*, 1995; Rosenberg and Waugh, 1998; Norell *et al.*, 1998; Stubblefield, 2002).

The object of this study is assessment of causes of discontinuation of various contraceptive methods.

## MATERIALS AND METHODS

This study is a descriptive-analytic study performed over 500 women who had been used from contraceptive methods and discontinued the methods by itself or according to their physician recommendation. The simple method was used for sampling. Because the insufficient number of users from DMPA, minipill and norplant, the number of samples in these groups was low. So, the used methods were including IUD (100), condom (100), OCP (90), DMPA (80) and Norplant (50).

The data were collected through questionnaire and by educated questioners. The used questionnaire constitutes questions including general identifications (occupation and literate), the type of used contraception method, duration of use and discontinuation reason, type of prior deliveries and satisfaction or non-satisfaction from the number of children.

Then the collected data analyzed by SPSS-11 statistical software and Chi-square test.

## RESULTS

The mean age of all users of contraception methods, according to the Table 1, was 30±3. The age differences between groups is significant with greater use of minipill among younger women (PV = 0.000, F = 9.17).

As showed in Table 1, the majority of women using contraception, was house-keeper and the remaining were employee, or had free job. Among house-keeper women, the most commonly used method was IUD and among employee women, the most used method was condom. ( $\chi^2 = 9, p = .275$ ).

Among all studied women, the literate groups of pre-diploma and diploma were including the most number and the graduate group was including the lowest number of contraceptive users. The most commonly used methods in each literate group were as following: illiterate (IUD), pre-diploma (DMPA), diploma and graduate (condom). There was significant relation between the level of literate and contraception method ( $\chi^2 = 67.9, p = 0.000$ ).

According to the Table 2, there was significant relation between the number of prior abortion and the used contraception method ( $\chi^2 = 28.997, p = 0.001$ ).

In this study, the women with normal prior deliveries had used often from condom and those with history of cesarean had used greatly from minipill and condom.

But there was no significant relation between the used contraception method and type of prior deliveries ( $\chi^2 = 1.701, p = 0.889$ ).

The women with insufficient number of children had used often from minipill, or condom, while those with sufficient number of children, had used more from IUD. There was significant relation between the satisfaction from number of children and the used method of contraception ( $\chi^2 = 34.27, p = 0.000$ ) (Table 3).

Overlay, the most common causes of contraception discontinuation were include severe bleeding (IUD), irregular bleeding (minipill), medical complication (OCP), amenorrhea (DMPA), severe bleeding and spotting (Norplant) and fear from being pregnant (condom). According to K<sup>2</sup> test, in all of these cases-except for Norplant use- the differences were significant ( $p < 0.01$ ). In the case of Norplant use, the difference was not significant.

The average times of use from each of mentioned methods are as following: IUD (42 ms), Norplant (36 ms),

**Table 1: The personal characteristics of women discontinued contraception**

P-value	$\chi^2$	Total 500	Condom 100	Norplant 50	DMPA 80	Minipill 80	OCS 90	IUD 100	Variable number
$p > 0.05$			30±3	32±4	31±3	27±3	32±1	33±6	Mean age
$p > 0.275$	6.331	426	77 (77.8)	44 (88)	70 (87.5)	70 (87.5)	80 (88.9)	85 (85)	Job House Keeper employee
		73	22 (22.2)	6 (12)	10 (12.5)	10 (12.5)	10 (11.1)	15 (15)	
0.000	50.56	55 (11.2)	2 (2)	5 (10)	14 (17.5)	5 (6.3)	13 (15.1)	22 (22)	Literate Alliterate
		178 (36.4)	22 (22)	26 (52)	36 (45)	26 (32.9)	35 (40.7)	33 (33)	Pre-diploma
		211 (43.1)	58 (58)	17 (34)	27 (33.8)	41 (51.9)	31 (36)	37 (37)	Diploma
		45 (9.2)	18 (18)	2 (4)	3 (3.8)	7 (8.9)	7 (8.1)	8 (8)	Graduate

The values in parenthesis show percentage.

**Table 2: The medical characteristics of women discontinued contraception**

P-value	$\chi^2$	Total 500	Condom 100	Norplant 50	DMPA 80	Minipill 80	OCS 90	IUD 100	Variable number
$p > 0.001$	28.997	391 (78.2)	81 (81)	43 (86)	68 (84)	67 (84.8)	60 (66.7)	72 (72)	Abortion Without abortion One
		86 (19.9)	15 (15)	7 (14)	12 (10)	12 (15.2)	19 (21.1)	20 (20)	abortion ≥ 2 abortion
		23 (4.6)	4 (4)	0 (0)	0 (0)	0 (0)	11 (12.2)	8 (8)	Labor Normal
$p = 0.889$	1.701	297 (60.6)	61 (61)	29 (58)	45 (56.3)	41 (58.6)	58 (64.4)	63 (63)	Cesarean
		193 (39.4)	39 (39)	21 (42)	35 (43.8)	29 (41.4)	32 (35.6)	37 (37)	Number of children
$p = 0.000$	34.279	300 (60)	53 (53)	31 (62)	44 (55)	31 (38.8)	65 (72.2)	76 (76)	Sufficient Insufficient
		200 (40)	47 (47)	19 (38)	36 (45)	49 (61.3)	25 (27.8)	24 (24)	

The values in parenthesis show percentage

**Table 3: Causes of discontinuation of various contraception methods**

	Condom	IUD	Minipill	OCP	DMPA	Norplant
Tend to be pregnant		10%		12.2%	10%	
Irregular bleeding		10%				
Severe bleeding		29%	28.8%	2.2%	20%	22%
Spotting			12.5%	3.3%	15%	20%
Repeated infection		9%				
Partner insatisfaction		2%		1.1%		
Forget the method			25%	14.4%		
Discontinuation of breastfeeding			25%			
Method failure	14%	6%	3.8%	7.8%	1.2%	
Hidden string of IUD		8%				
Nonfavority of method	27%					
Fear from being pregnant	43%					
Nausea and vomiting			1.3%	18.9%		
Amenorrhea					38.8%	18%
Medical complications				38.9%	11.2%	14%
Other causes	16%	26%	3.6%	1.1%	3.8%	26%

DMPA (30 ms), candom (28 ms), OCP (24 ms) and minipill (15 ms). The longest time was for Norplant and the shortest time was for minipill.

### DISCUSSION

In our study, 29% of cases discontinued IUD because of severe bleeding, 10% because of irregular bleeding and 9% because of repeated infection. Non-cooper IUDs cause 8 fold increases in the risk of PID. The rate of infection is lower in the cases of cooper IUDs, for example it is reported 1.9% in cooper 7 and 1.2% in T Cu IUDs. The increased risk of infection is seen in the first 20 days of use from IUD (Stubblefield, 2002). The frequency of hypermenorrhea and polymenorrhea is higher in IUD users, with 2 fold bleeding in users of T Cu 380 A, leading to iron deficiency anemia.

In a study, 10-15% of women using IUD discontinued it because of severe bleeding (Cunningham *et al.*, 2001).

The average duration of use from IUD was 42 ms in our study. In a study about causes of contraception discontinuation, 65-80% of couples had been used IUD for more than 2 years (Ali and Cleland, 1995). The most common cause of discontinuation of OCP with average using duration of 24 ms was medical complications including impaired glucose tolerance test, hyperlipidemia, nausea and vomiting. In a study performed for determination of causes of contraception discontinuation in six developing countries, one third of couples discontinued OCP use within 12 ms and one half within 24 ms. This durations are resemble to our study results. In this study, 10% of medical complications occurred in the first and 20% in the second year of use (Ali and Cleland, 1995).

In a study performed in US over safeness of low-dose OCP for cardiovascular complications, 187 women with 15-44 years old were studied. The study showed that regardless of other risk factors (age, smoking, race and BMI), there is no increase in the risk of cardiovascular disease (Stubblefield, 2002).

Other studies have reported complications such as nausea, vomiting, change in lipid levels, impaired glucose tolerance test, worsening of liver disease and intensification of migraine headache, due to OCP use (Jennifer *et al.*, 2003). In this study, 28.8% of minipill users discontinued it because of irregular bleeding, which is due to suppression of ovulation and irregularity of menstruation and endometrial atrophy. The rate of minipill use discontinuation is also high in US because of irregular bleeding and high failure rate (Cunningham *et al.*, 2001). In our study, 38.8% of cases discontinued DMPA use

because of amenorrhea. The most important causes of discontinuation of this method in US are amenorrhea and delayed return of fertility, followed by headache, breast stiffness and depression (Cunningham *et al.*, 2001; Hardon, 1995).

In our study, the most common causes of candom discontinuation were fear of being pregnant and failure of the method. Similar studies in Egypt, Indonesia and Thailand show that the failure rate of this method is the main cause of discontinuation (Ali and Cleland, 1995). Apparently, fear of our cases from being pregnant, is due to their awareness from high failure rate of this method.

In two studies performed in US (1993 and 1995), the most important causes of Norplant use discontinuation were reported to be the absence of patients familiarity with the method and fear of patients from the method (Tanfer *et al.*, 2000). But in our study, the main causes of discontinuation were bleeding, spotting, amenorrhea and medical complications.

### CONCLUSIONS AND RECOMMENDATIONS

Because of long-standing use from IUDs as an effective method and its discontinuation because of severe bleeding, we recommend using from progesterone releasing IUDs which decrease bleeding rate.

This study showed that male partner's influence is associated with contraceptive use. So, further studies about the latter intractable variable and its effect on contraception discontinuation is required.

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