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Analysis of the Continuation Rates of Intrauterine Device (IUD) and Three-Month Injectable Depot Medroxyprogesterone Acetate (DMPA)Usesand Reasons for Their Discontinuation in Women Referred to Health Centers

Hassan Robabi[1], Azizollah Arbabisarjou[1], Ali Navidian[1] and Hossein Gourkani[2]

[1]*Pregnancy Health Research Center, Zahedan University of Medical Sciences, Zahedan, Iran*
[2]*Student Scientific Research Center, Zahedan University of Medical Sciences, Zahedan, Iran*

ABSTRACT

*Improving the quality of the use of contraceptives is one of the main objectives of family planning programs and the discontinuation/continuation rates of their use is one of the most important indicators of their quality. The present study aimed at analyzing the continuation rates of Intrauterine Device (IUD) and three-month injectable Depot Medroxyprogesterone Acetate (DMPA)uses and reasons for their discontinuation in women referred to health centers. This descriptive-analytical study was conducted on 260 married women in the age range of 15-49 years referred to health centers to discontinue their use of IUD or DMPA. The data were collected through interviews and using their medical records. Using the SPSS-18 software, the collected data were analyzed through ANOVA, t-test and Pearson correlation coefficient. **T**he results showed that the mean continuation rates for IUD and DMPA use were 23.8±22.69 and 10.36±8.99 months respectively. The continuation rate of IUD use at the end of the 6 months was %83.84; at the end of the first year was %76.15; and at the end of the fifth year was %7.69. The continuation rate of DMPA use at the end of the six months was %73.07; at the end of the first year was %54.61; and at the end of the second year was %12.3. It was also indicated that the most common reason behind IUD (%51.7) or DMPA (%48.6) discontinuation was side effects. The results indicated a high rate of early IUD and DMPA use discontinuation; accordingly, in addition to providing integrated educational programs,holdingmotivational counseling sessions with couples' participation, especially when IUD/DMPA are being used, is recommendedto increase the use of these contraceptive methods.*

Key words: ContraceptiveMethods, Continuation Rate, IUD, Three-month Injectable DMPA

INTRODUCTION

Attention to reproductive health and family planning services to promote health and reduce maternal and fetal mortality rates is increasing today [1,2]. However, according to the WHO statistics, 75 million unintended pregnancies occur each year due to the failure or lack of continuous use of contraceptive methods [3]. In France, one woman out of every three is faced with an unwanted pregnancy and %65 of those pregnancies are due to a lack of continuity or misuse of contraceptive methods. In the United States, %49 of women face unintended pregnancies while almost half of them are due to the lack of continuation of contraceptive methods [4]. In a study, it was specified that more than %50 of all unintended pregnancies in 15 Asian countries are due to the failure or discontinuation of contraceptive methods [5]. In Iran, the reported prevalence of unintended pregnancy -mainly caused by improper use or non-use of contraceptive methods-has been in the range of %26-47 [6-7]. The

indicator(decreasing the children's deathrates which has graet effect on the human deveolment index through increasing in life expectancy at birth[8].

Among the advantages of this contraceptive method, high efficiency, reversibility immediately after the expulsion, no need to daily reminder, no effect on breastfeeding, lack of hormonal effects, no interference with sexual activities and medications can be mentioned [5]. The outcome of the birth control policy and increase in life expectancy in the world will follow some problems such as the inceased need for social and supportive services[10].Although IUD is one of the safest and the most widely used reversible contraceptive methods, complications such as bleeding and pain lead to early removal of IUD in some cases [9]. In a study, Agha Mollaee and colleagues examined the rate of IUD use continuation in Bandar-e-Abbas. They reported the continuation rates of %87 (at the end of the first year), %75 (at the end of the second year), %62 (at the end of the third year) and %50 (at the end of the fourth year).In their study, the main reasons for IUD use discontinuation were bleeding, side effects, willingness to pregnancy, pain, health concerns, self-removal and dissatisfaction with the method [5]. In another study conducted in Ardabil, the continuation rates of IUD use for the periods of less than 6 months (%87.4), between 6 months and a year (%81.4) and between a year and 18 months (%72.1) were examined. In that study, the most common causes of IUD discontinuation were medical causes and side effects and the most common side effect was bleeding (8). Finally, in a study conducted by Ebrahimtaheri and colleagues, the average continuation rate of IUD use was 29.95±27.88 months and the most common reasons for IUD discontinuation were bleeding, infection, pain and self-removal [11]. Another effective contraceptive method is injectable DMPA being used by 90 million women in 130 countries [12]). Although this method is widely used, the continuation rate of DMPA use for 12 months is less that %30 [13]. In a study, the continuation rates of DMPA use for 1, 2 and 3 years were %60, %42 and %29 respectively [14]. The most common reasons for DMPA discontinuation are its side effects [13& 15]. The discontinuation rate of a contraceptive method is one of the important indicators of its quality [16]. High discontinuation rates of contraceptive methods are among the most important problems faced by family planners; thus, investigating factors associated with them is actually a need[17]. By identifying the causes of contraceptive methods discontinuation, potential causes can be prevented and family planning programs can be improved. Counseling about the selection of the best method may also be needed in some cases [18].

The present study aimed at analyzing the continuation rates of IUD and three-month injectable DMPA use and reasons for their discontinuation in women referred to health centers.

MATERIALS AND METHODS

This cross-sectional descriptive-analytical study was conducted on 260 married women in the age range of 15-49 years who referred to health centers to discontinue their use of IUD or DMPA.

Given the reported contraceptive methods continuation rates in previous studies, a six-month continuation rate of IUD/DMPA use was estimated as %86. To determine the sample size, the following formula was used (p: 0.86; z: 1.96; q: 1-p; d: 0.06); accordingly a sample of 128 women was determined for each contraceptive method (IUD and DMPA) (a total of 260 women).

$$N = \frac{Z^2pq}{d^2} = \frac{1/96^2 \times 0/86 \times 1 - 0/86}{0/06^2} = 128$$

Samples were selected based on convenience sampling method; so that, all women referred to health centers to discontinue the use of either IUD or DMPA were included in the study.

The data were collected through interviews and using the subjects' medical records: to determine the start date of using IUD or Injectable DMPA, the subjects' medical records were examined;then, using a form containing demographic information (i.e. age, educational level, occupation, marriage age, number of pregnancies and the number of children) and questions about the duration of contraceptive use and reasons for its discontinuation, the required data were collected. All analysis were performed using SPSS for Windows (Version 18.0, SPSS Inc., Evenston, Illinois). Data were analyzed through descriptive (mean, standard deviation and frequency distribution) and inferential statistics (ANOVA, t-test and Pearson correlation coefficient). Participation was voluntary and the responses were kept unidentical.

RESULTS

The results indicated that the average ages of IUD and injectable DMPA users were 28.93±6.91 and 29.6±7.16 years respectively; among the IUD users, %37 had high school degrees and %5.4 had university degrees;among the users of injectable DMPA, %30 had elementary school educational level and %0.8 had university degrees; %98 of IUD users and %95.8 of injectable DMPA users were housewives; the average mariage age of IUD users was 19.3±3.65 years and the average mariage age of injectable DMPA users was 18.58±3.96 years; the average number of children in IUD users was 2.3±1.46 and in injectable DMPA users was 3.06±1.88; the average duration of IUD use continuation was 23.8±22.69 months and the average duration of injectable DMPA use continuation was 10.36±8.99 months (Figures 1 & 2).

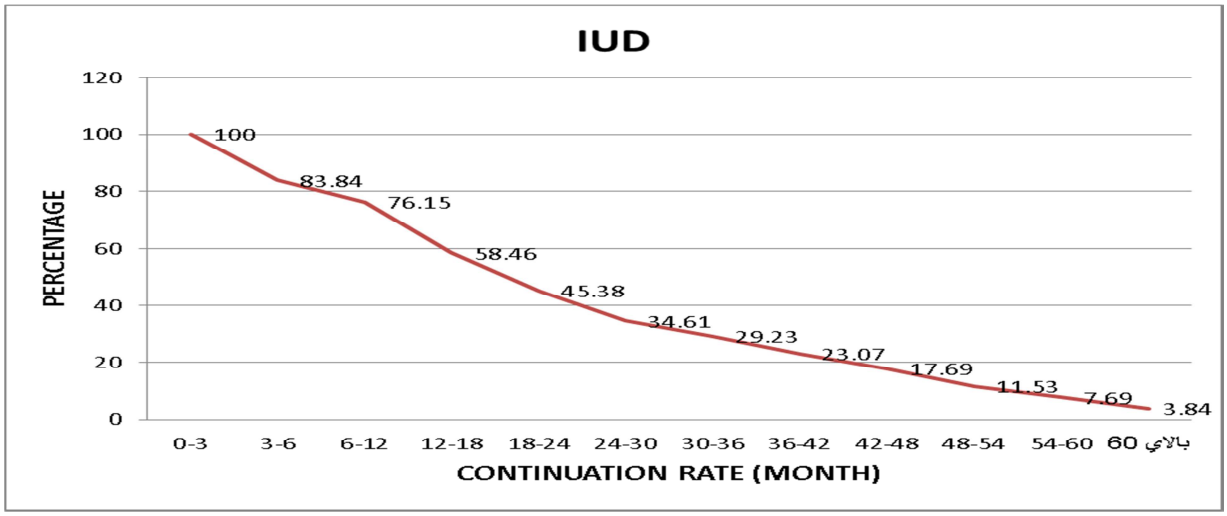

Figure 1. The duration of IUD use continuation (month)

As indicated in Figure (1), the continuation rate of IUD use in a six-month period (%83.84) dramatically decreased to %3.84 in a 60-month period.

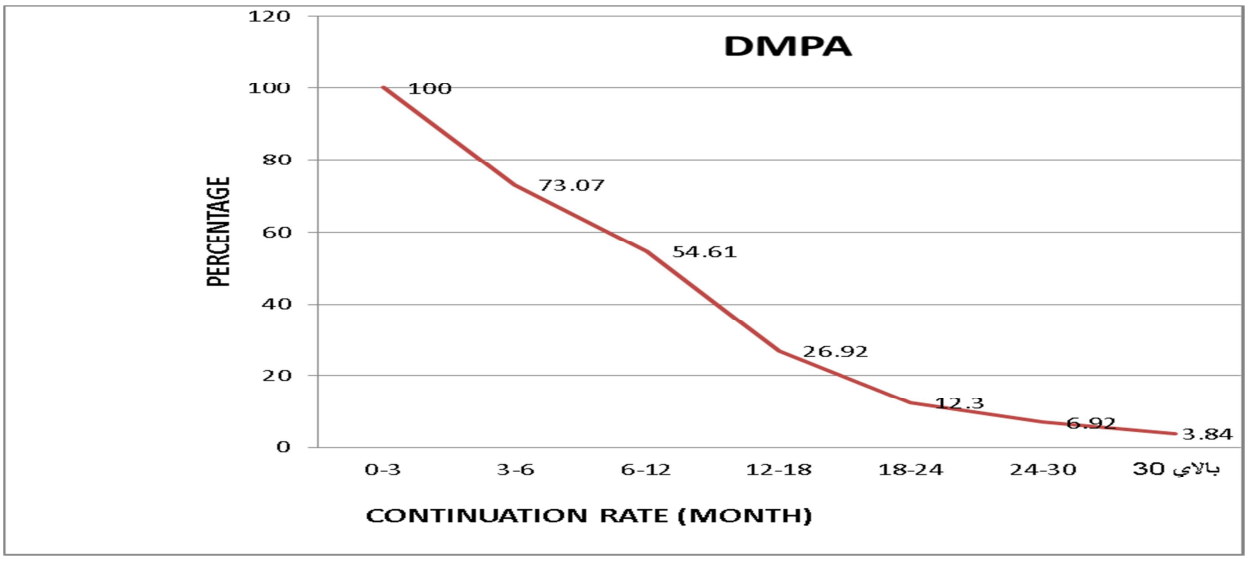

Figure 2. The duration of injectable DMPA use (month)

As indicated in Figure (21), the continuation rate of DMPA use in a three-month period (%73) dramatically decreased to %3.84 in a 30-month period.

To investigate the relationship between age and IUD/DMPA continuation duration, the Pearson correlation test was used and positive significant relationships (IUD: r=0.19, p=0.02; DMPA: r=0.28, p=0.01) were observed. *Therefore, the duration of IUD/DMPA use continuation increased with age*; a significant relationship was found between the duration of IUD use continuation and number of children (r=0.28, p=0.01); however, no significant relationship was observed between the duration of DMPA use and the number of children; statistical tests did not reveal any significant relationship between the duration of IUD/DMPA use and educational level or occupation.

The results also indicated that the most common reasons for IUD discontinuation were side effects (%51.7) and willingness to pregnancy (%16.8) while the least common reasons were others' (%1.6) and physicians' (%2.3) recommendation; the most common reasons for injectable DMPA discontinuation were side effects (%48.6) and change of contraceptive method (%23.6) while the least common reason was ineffectiveness of the method (%1.6) (table 1).

Table 1. Frequency distribution and percentage of reasons behind IUD/DMPA discontinuation

Method / Reason of discontinuation	DMPA		IUD	
	Number	Percentage	Number	Percentage
Method change	31	23.6	6	4.7
Willingness to pregnancy	12	9.2	22	16.8
Side effects	64	48.6	68	51.7
Dissatisfaction with method	6	4.7	4	3.4
Concerns over lack of effectiveness	2	1.6	5	3.8
Husband's opposition	4	3.4	6	4.7
Physician's recomendation	-	-	3	2.3
Others' recomendation	-	-	2	1.6
Two of the above issues	8	6.6	10	7.4
Three of the above issues	3	2.3	4	3.4
Total	130	100	130	100

The most common complications of injectable DMPA were bleeding (%34.37), Amenorrhea (%26.56) and weight gain (%11.68) and the most common complications of IUD use were bleeding (%36.76) and Dysmenorrhea (%18.65).

DISCUSSION

The aim of current study was analysis of the Continuation Rates of IUD and Three-Month Injectable DMPA uses and reasons for their discontinuation in Women Referred to Health CentersIn this study, the average durtion of injectable MDPA use was 10.36 months which was reported as 14.6 [19]and 23.11 [20] months in other studies. The continuation rate of injectable DMPA use in the first six months was %73 and it was %54.6 at the end of the year while in another study [12], these rates were %44.5 and %18.2 respectively. In a study conducted on 189 women in South Africa, Beksinska reported the continuation rate of %21 (19) and in a similar study conducted in Thailand, the continuation rate was %30.6 [22]. In a study conducted in Egypt, the six-month continuation rate was %68 and the one-year continuation rate was %43[23]. In a study, Davidson reported the discontinuation rate of %58 after a year of continuation whereas in another study conducted in Newzealand, the discontinuation rate was %48 after a 2-year period of use [15]. These different continuation rates can be explained by considering cultural, economic and social diffrences.

In the present study, the results showed that the most common reasons for the discontinuation of injectable DMPA were side effects (%48.6) and change of contraceptive method (%23.6). In a study conducetd by Davidson, the most common reason was side effects [15].

In the present study, the most common complications of injectable DMPA were bleeding (%34.37), Amenorrhea (%26.56) and weight gain (%11.68). In a study conducted by Alizadeh and colleagues, the most common causes of DMPA discontinuation were cessation of menstruation (%25.6) and bleeding (%13.7) (22). In another study

conducted by Aktun and colleagues in Turkey, the most common cause of DMPA discontinuaion was irregular menstrual periods (%51) [25]. Davidson mentioned side effects as the main causes of DMPA discontinuation [15].

As mentioned, the second important reason for DMPA discontinuation in the present study was change of contraceptive method (%23.6). Tak Fallah and colleagues also reported change of method as the main cause of DMPA discontinuation [19].The third important cause of DMPA discontinuation in this study was willingness to pregnancy (%9.2). In the present study, no significant relationhsip was observed between educational level and the duration of injectable DMPA use which was in line with the results of a study conducted by Homayounfar in Ardabil [13].In current study, a significant relationship was reported between age and the duration of injectable DMPA use (p=0.025) indicating that the duration of use increased with age. MirMohammadali also found that compared to users of other contraceptive methods,injectable DMPA users were older and experienced more pregnancies [26].

In this study, the average durtion of IUD use was 23.8 months which was reported as 12.3 months [19], 29.95 months [11], 36 months [27] and 40.5 months [28] in other studies.The continuation rate of IUD use in the first six months was %83 and it was %76.2 at the end of the year which were in line with the results of Ferreira study in which the 1-year continuation rate of IUD use was %84 [29]. In a study, Flemig reported a %70 continuation rate of IUD use in a 1-year period [30]. In another study conducted by Meirik, the continuation rate of IUD use in a 1-year period was %69.5 [31]. Enrico reported a discontinuation rate of %44 in a 2-year period of IUD use [32]. In this study, the continuation rate of IUD use was decreased to %17.7 at the end of the fourth years indicating that less than one in five people used a half life of it (if the useful life of an IUD is considered as 8 years); however, according to the WHO reports, %44 of women continue using their IUD after 7 years[33]. Since IUD may not be an approperiate contraceptive method for some users, it is better to conduct a detailed examination of its potential users' medical status before its insertion.

In this study, the most common cause of IUD use discontinuation was side effects (%51.7) which was in line with other studies' results[9&28].The most common complication of IUD use in this study was bleeding (%36.76). Similarly, bleeding has been reported as the most common complication of IUD use in other studies conducted by Hajian (%28.9) (32), Hesami (%30.5) [27], Rezaei (%38.77) [28],Ebrahimtaheri (%44) [11] and Tak Fallah (%50) [19]. The WHO also indicated that bleeding is the most important cause of IUD use discontinuation in the first 2 years [35]. Since changes in the duration or intensity of menstruation are often disturbing and lead to the discontinuation of IUD use, approperiate treatmnet of these complications can decrease the rate of IUD use discontinuation.

The second important complication of IUD use was infection (%26.47) which was consistent with the results of other studies conducted by Rezaei[28)], Mansouri (%29.6) [36)] and Ebrahimtaheri (%36.5) [11].The third common complication of IUD use was painful menstruation (%18.65). In the present study, the second most important cause of IUD discontinuation was willingness to pregnancy (%16.8) which was in line with the results of other studies conducted by Hoseini et al. in Yazd [22], Hesami [27] and Hajian [34] in Babol.The results of this study showed a significant relationship between the duration of IUD use continuation and the number of children. Accordingly, the duration of IUD use increased after two or three children, indicating that families decided to use long-term contraceptive methods after having two or three children. This finding was in line with the findings of AghaMohammadi [5] and Ebrahimtaheri [11].In this study, a significant relationship was observed between age and the duration of IUD use (p=0.015); so that, the duration of IUD use increased with age. However, Aghamohammadi found no significant relationship between age and the continuation rate of IUD use [5].

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