

# Compare of Continuation Rate and Reasons for Discontinuation of DMPA Contraceptive among Iranian Women Referred to Tabriz and Ardebil Health Centers

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## Abstract

**Objective:** Worldwide overpopulation has brought about lots of problems for people especially for developing countries. However, there is a success at reduction of population rate from 2.1% on 1960 to 1.7 on now, 95 million is increased every year.

**Materials and Methods:** This cross sectional-descriptive study was designed retrospectively on 396 and 484 DMPA user women aged 15-49 years referring to health care centers in Ardabil & Tabriz respectively by classification sampling who were injected their first DMPA between 2009-2012. Due to being a cross sectional study 800 women were selected (400 for Ardabil and 400 for Tabriz). Questionnaire was arranged at two parts: demographic and main reasons for continuation and discontinuation and its side-effects. Then data were collected via completing questionnaires by researchers and interviewing subjects after signing the consent form. Data were analyzed by SPSS 12 software using analysis variance (ANOVA) and correlation.

**Results:** The mean of continuation rate of DMPA is 2.60 and 6.52 months at Ardebil and Tabriz respectively. By using t-test the mean of continuation rate differs between two cities and its rate is higher at Tabriz.

**Conclusion:** According to the results of this study focusing on low level of continuation rate of DMPA at both cities and its most common side-effect (Amenorrhoea) care givers could help in term of sufficient counseling and educating women desiring DMPA injection. This factor could result in more satisfaction use and improve continuation rate of DMPA.

**Keywords:** Continuation Rate, Contraceptive, Discontinuation, DMPA

## Introduction

Worldwide overpopulation has brought about lots of problems for people especially for developing countries. However, there is a success at reduction of population rate from 2.1% on 1960 to 1.7 on now (1).

In our country in spite of family planning programs for first developing strategies of country the rate of population is still high and irregular (2). This has been reduced from 3.2% on 1355 to 1.5% on 1377 and 1.4% at past tense (1). At 3 previous years this rate has been stable 1.4% (1,3) which is located among countries with higher growth index (1). At some developing countries the risk of prenatal mortality and morbidity 10-20 times is more than developed countries and this risk is increased by mother age and number of pregnancies (3-4). Worldwide research show 5800000 women die for prenatal complications and 1/3-1/4 is related to abortions due to unwanted pregnancies (5). 50% of all pregnancies in USA are unwanted and half of them are terminated electively (6). In Iran the rate of unwanted pregnancies was 44.5% (7). According to report WHO (1993), at developing countries elective abortion is

2nd leading causes of maternal mortality and morbidity after hemorrhage (28%). Family planning programs could reduce 25-30% of these deaths, complications and other congenital malformations because of high risk pregnancies (8). Unwanted pregnancies at 36.9% were due to no using of Family planning methods and 63.1% by using them but 41.7% were using methods with high failure rate like natural, calendar, and continuous abstinence (7). According to higher rate of unwanted pregnancies and higher failure rate of some reversible birth control methods there seems to be necessity to use a prolonged method like Depot medroxyprogesterone acetate (DMPA) which is easy to use, acceptance and comfort for client (6). According to report WHO (2000) 16 million women world widely use injectable contraceptive which 13 million of them use DMPA and over 100 countries like America use this method (8). Actually the reduction of unwanted pregnancies rate at American adults is due to use of this method (6). In Iran the rate of DMPA use was reported 2.8% on 2003 (4). In Ardebil city the rate of DMPA use was reported 8.66% and 8.91% on 2003

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and 2004 respectively (8). The 150 mg DMPA is injected into a muscle and then is gradually released into the bloodstream. It works mainly by stopping ovulation and it is given every 12 weeks, makes the lining of the uterus thinner and thickens the mucus. It is more effective and its failure rate is 0.3% for one year (8-10). Its effectiveness is equal with tubal ligation and more effective than OCPs and IUD (11). It has some other benefits like reducing the risk of endometrial and ovary cancers (6,9,12). It has no drug interactions with antibiotics, anticonvulsive and sexual activities. There will not be any congenital malformations even though the pregnancy occurs soon after drug stop (12). It could be prescribed for countries with Sickle cell disease and Iron-deficiency anemia (6,12,13). It may help protect against pelvic infection. The mucus plug in the cervix may help stop bacteria travel into the uterus (6,13). It can use by some women who cannot take the combined pill which contains estrogen for medical reasons. It increases breast milk. Other educated health care givers could prescribed it (6). It is accepted by many cultures but some users do not continue it for its side-effects or other worries (6). The main reasons cited for discontinuation for first 2 years were weight gain, bleeding problems, prolonged amenorrhea, breast tenderness, depression, low desire & libido (6,12), Headaches (6,13), hair loss (14) and dizziness (6). According to the reasons 12 month cumulative continuation rate of DMPA differs from 25% to 65% and among different population (15-18). At KAP study on DMPA by Moham Alizade et al. at Tabriz 12 month cumulative continuation rate was 0.33% and common reason for discontinuation was menstrual disorders (14). One reason for these differences (15) could be relationship between cumulative continuation rate and social-demographic characters which WHO has focused on cultural differences in continuation of DMPA use (19). There was a relationship between demographic-economic conditions, level of education and number of pregnancies (20-23). For high and freely providing different birth control methods embassy of health and higher education spends huge credit (more than \$15 million) (7) and the cost of an ampoule of DMPA is calculated \$396 for every one annually (10). WHO focuses that for using effective and modern methods there is a need for health care givers who people trust and accept them, so midwives and health care givers could find out their requires and counsel with women desiring DMPA injection and they follow up then. Prevention of pregnancy is one of a midwife task in terms of reproductive and sexual health and she uses this opportunity for promotion of their health (24). Due to DMPA low failure rate, its higher cost and higher rate of its discontinuation, researchers were designed to study the continuation rate and different reasons of discontinuation of DMPA in culturally different cities like Tabriz & Ardebil. The results of this study could help health authorities to elevate rate of continuation and reduce its side-effects in order to prevent unwanted pregnancies and help their well-being and reinforce economic of country. Also it is better

to know the reasons of no using of effective contraception to prevent unintended and unwanted pregnancies. This factor could result in more satisfaction use and improve continuation rate DMPA.

### Material and Methods

This cross sectional-descriptive study was designed retrospectively on 396 and 484 DMPA user women aged 15-49 years referring to health care centers in Ardabil & Tabriz respectively by classification sampling who were injected their first DMPA between 2009-2012. Due to being a cross sectional study 800 women were selected (400 for Ardabil and 400 for Tabriz) by this formula:

$$n = \frac{z^2 pq}{d^2} = \frac{1.96^2 \times 0.33 \times 0.67}{0.05^2} = 339$$

And numbers were like as P & Q numbers from KAP study on DMPA by Moham Alizade et al. (14). This study was designed due to little information about continuation and discontinuations rate of DMPA and its reasons in our rejoin by reviewing books and articles in this field a questionnaire was arranged at two parts: demographic and main reasons for continuation and discontinuation and its side-effects. Then data were collected via completing questionnaires by researchers and interviewing subjects after signing the consent form. Data were analyzed by SPSS 12 software using analysis variance (ANOVA) and correlation. The method of content validity is used for validity of questionnaire in which 8 academic members of nursing faculty and 2 academic members of socio-medical group of Ardabil & Tabriz gave their viewpoints and then they were corrected respectively. Reliability of questionnaire was based on retest method in which 30 subjects completed it and after 10 days questionnaire was filled by them. Then Pierson relationship coefficient was measured about 0.85.

Questionnaire was arranged at two parts: demographic and main reasons for continuation and discontinuation and its side-effects. Then data were collected via completing questionnaires by researchers and interviewing subjects after signing the consent form. Data were analyzed by SPSS 12 software using analysis variance (ANOVA) and correlation. The results in Tabriz showed that the mean age of the study population was 33.6±6.2 years. The majority of the users were housewives (89.9%). The mean marriage age of the study population was 13.8±6.7 years old. Most of them (171 persons) had 10-19 years marriage long. Most of them (34.9) had primary educational level. 50.4% of them had less than 3 pregnancies and 47.3% with 2 children. The method of birth control before DMPA was OCPs (46.9%) and 24.5% of them did not continue it for its side-effects. 6,9,12 and 24 month cumulative continuation rate of DMPA were recorded as 58.8%, 35.1%, 21.6% and 9.1% respectively (Table 1). The most reason for selecting DMPA was its low failure rate of pregnancy. The most side-effects reveled by women after injection was cease of bleeding (59.8%), weight gain (18.3%), spotting

**Table 1.** Frequency of subjects due to DMPA continuation rate at Tabriz n=484.

Frequency percent	Percent	Frequency	Number	Continuation rate (months)
100	40.3	473	195	3
58.8	23.1	278	112	6
35.1	13.2	661	64	9
21.6	6.6	210	32	12
14.8	5.6	70	27	13-23
9.1	3.3	43	16	24
19.9	1.9	94	9	24 more than

(12.1%) and Headaches (5.8%). The main reason for discontinuations of DMPA was cease of bleeding (14.9%). As result of this study showed an association between continuation and husband educational level and the form of previous delivery (p<0.05). The mean of continuation rate mostly were 9 months among illiterate women and at least 5.31 months for highly educated women. There was no association between moderate continuation and variables such as age, educational level, occupations, husband occupations, family wage and number of pregnancies and children. The mean of continuation rate mostly was among women aged 30-39 years (Table 2).

**Results**

The results in Ardebil showed that the mean age of the study population between 14-59 years old was 32±7.8 years, the majority of the users were housewives (95%) and only 20 of them (5%) were employed. 33.8% of them had primary educational level. 70.5% of them had less than 3 pregnancies and 39.7% with 2 children. The method of birth control before DMPA was OCPs (75.3%) and 24.5% of them did not continue it for its

side-effects. The most reason for selecting DMPA was health care giver personnel recommendations. The most side-effects reveled by women after injection was cease of bleeding (69.7%), backaches(13.4%), weight gain (10.9%), and Headaches (10.4%). 6, 9, 12 and 24 month cumulative continuation rate of DMPA were recorded as 44.5%, 26.5%, 18.2% and 2.3% respectively. (Table 3) The main reason for discontinuations of DMPA was cease of bleeding (54.5%) (Table 4). As result of this study showed an association between continuation and educational level and the number of pregnancies and children (p<0.05). The mean of continuation rate mostly were 7.62 months among illiterate women and at least 4.31 months for highly educated women. There was no association between moderate continuation rate and variables such as age and occupations. The mean of continuation rate mostly was among women aged 30-39 years (7.22 months).

Totally, the mean of continuation rate of DMPA is 2.60 and 6.52 months at Ardebil and Tabriz respectively. By using t-test the mean of continuation rate differs between two cities and its rate is higher at Tabriz.

**Table 2.** Distributive frequency of subjects due to reasons of discontinuation of DMPA at Tabriz (n=484).

Frequency		Reasons of discontinuation of DMPA	Frequency		Reasons of discontinuation of DMPA
Percent	Number		Percent	Number	
-	-	Low sexual desire	-	-	Malignancy
1.2	6	Backache	0.2	1	Husband proponents
1.7	8	Leg pain	2.1	10	Long lasting bleeding time
0.2	1	Vision problem	2.1	10	Decrease of bleeding
0.6	3	Face pigmentation	3.1	15	Increase of bleeding
1.2	6	Fatigue	2.7	13	Low bleeding
0.2	1	Acne	14/9	72	Amenorrhea
-	-	Less effective to prevent pregnancy	4.8	23	Spotting
-	-	No need to use for being away from husband	0.8	4	Breast tenderness
0.6	3	Desire to be pregnant	3.3	16	Weight gain
-	-	Lack of sufficient information	12.1	10	Headache & dizziness
-	-	Low quality of care	-	-	Nausea
-	-	Sickness	1.7	8	Getting anger
3.1	15	Other reasons*	0.2	1	Hair loss
			0.4	2	Hirsutism

Table 3. Frequency of subjects due to DMPA continuation rate at Ardabil.

Percent	Frequency	Continuation rate (months)
55.6	220	3
17.7	70	6
8.6	34	9
6.6	26	12
9.3	37	13-23
1	4	24
1.3	5	More than 24

Table 4. Descriptive frequency of subjects due to reasons of discontinuation of DMPA at Ardabil (n=396).

Frequency		Reasons of Discontinuation of DMPA
%	N	
54.5	216	Amenorrhea
8.8	35	Weight gain
8.1	32	Backache
7.1	28	Leg pain
7.1	28	Headache
5.6	22	Increase of bleeding
5.6	22	Spotting
3.5	14	Desire to pregnancy

## Discussion

Results of this study showed the mean of continuation rate of 6 months and 1 year DMPA was 44.5% and 18.2% at Ardebil and 58.8% and 21.6% in Tabriz. At a study by Aktun et al. the mean of continuation rate of 1 year reported 64% (6). While at a study by Beksinska et al. at south Africa the mean of continuation rate of 6 months and 1 year DMPA reported 42% and 21% (15) which is coincided with the results of this study. At a KAP study on DMPA by Mohammad Alizadeh et al. at Tabriz the mean of continuation rate of 12 months DMPA was reported 33% (14). The different reasons were due to cultural and social-economical issues (19). The main reason for discontinuations of DMPA at Ardebil and Tabriz was cease of menstrual bleeding (54.5%, 14.9%) respectively. At a study by Hajikazemi et al., the most common reasons were bleeding irregularity (53.6%), Amenorrhea (50.6%), Headaches (33%) and low desire & libido (20.3%) which is coincided with results of this study (17). At study by Mohammad Alizadeh et al. the main reasons for discontinuations of DMPA at Tabriz was reported cease of menstrual bleeding (25.6%), heavy bleeding (13.7%) (14). At a study by Aktun et al. the important reason for discontinuations of DMPA was reported irregular bleeding (51%) (10). At a study by Soltani et al. the important reason for discontinuations of DMPA was reported Amenorrhea (43%) and then irregular bleeding (35%) (21). As result of this study showed the most common side-effects were cease of menstrual bleeding (69.7%, 19.8%), backaches (13.4%), weight gain (10.9%, 8.7%), and Headaches

(10.4%). As result of study by Afkari et al. the most common side-effect was menstrual disorders (86.1%) and then getting anger (25.2%), weight gain (22.2%). The most common menstrual disorders were cease of menstrual bleeding (53.2%) and spotting (26.7%) (18). Moreover, at a study by Soltani et al. the most common menstrual disorders were low volume of menstrual bleeding (63.4%) Amenorrhea (55.7%) and then irregular bleeding (35%), high intervals between menstrual periods (39.6%) (21). At a study by Aktun et al. (2005) the most common side-effects were menstrual disorders (80%), weight gain (10%), breast tenderness (6%) and Headaches (5%) (10) that all studies results due to menstrual disorders are coincided with results of this study. As result of this study showed an association between mean continuation and variables such as educational level and the number of pregnancies and children ( $p < 0.05$ ). There was no association between mean continuation rate and variables of educational level of mother and his spouse and the number of children by Rakhshani et al. study (13). However, there was association between these variables by Mohammad Alizadeh et al. study (14). The different result could be due to differences at sample size. As this study has done retrospectively so it is recommended to conduct a prospectively study in this field to find out precise side-effects of DMPA and then follow up.

## Conclusion

According to the results of this study focusing on low level of continuation rate of DMPA at both cities and it is most common side-effect (Amenorrhea) care givers could help in term of sufficient counseling and educating women desiring DMPA injection. This factor could result in more satisfaction use and improve continuation rate of DMPA.

## Ethical issues

The study was approved by the ethic committee of Tabriz University of Medical Sciences.

## Conflict of interests

Authors declare that there is no any conflict of interests.

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