

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20232300>

Original Research Article

## Assess the acceptance and compliance of injectable contraceptive depot medroxyprogesterone acetate

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**Received:** 21 June 2023

**Revised:** 13 July 2023

**Accepted:** 14 July 2023

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### ABSTRACT

**Background:** The use of safe and effective contraception is the need of the hour in India, with one of the world's largest and fastest growing population. Assessing the acceptance and compliance of women for temporary contraception DMPA. Acceptance shall be compared between different reproductive age group, different parity and among lactating/non lactating female.

**Methods:** In this study, 100 women have been taken, those were appropriate within the inclusion criteria for the period of one year. Injection DMPA 150 mg injected intramuscularly every 3 months and used questionnaire method for assessing the acceptance and compliance of women for temporary contraception DMPA.

**Results:** Injectable contraceptive DMPA is safe, convenient, efficacious and effective long term contraceptive. It is acceptable to women when offered with quality counselling and follow up care. Acceptance of DMPA, was found that there is no need of daily administration of DMPA in 51% of women, 10% women found it's easy to administer via intramuscular injection, lactating female can breast feed also as it possess no changes in breast milk.

**Conclusions:** DMPA is highly efficacious, safe and effective method of contraception requiring less frequent dosing and can be used in lactating female. Women who received information on DMPA safety, efficacy and side effects are more likely to continue DMPA use.

**Keywords:** Depot medroxyprogesterone acetate, Injectable contraceptive

### INTRODUCTION

For the health of community, contraceptive advice is the most important component. An ideal contraceptive should emphasize on individual's personal, social and medical needs. Factors playing important role in family planning acceptance includes socio-economic status and education of the women or the couple. Approximately 40 million women in India, would prefer to avoid becoming pregnant but they are not practicing any form of contraception. According to National Family Health Survey-3 [NFHS],

there is a huge gap between the demand and supply of family planning measures, accounts for around 30% unwanted pregnancies. The unmet need for contraception in the country is about 13%. India was the first country in the world to launch a Family Planning Programme in the year 1952, the main aim of the programme was population control. India's population has already reached 1.366 billion and according to United Nations Development Programme [UNDP] the country's population will surpass China by 2028 considering the high decadal growth rate of 17.64. Previously the challenge was just population

stabilization but now it extended beyond that, involving sustainable development goals for maternal and child health. After the International Conference on Population and Development (1994) Cairo, Family Planning came up as a crucial component in reducing maternal morbidity and mortality.<sup>1</sup>

The London Summit on Family Planning (2012) reinforced this further and has succeeded in bringing back the focus on Family Planning Programme in a better way. Over the years, India's National Family Planning Program evolved a lot previously it was just focused on population control but now more emphasis is towards maternal and child health, proper spacing between subsequent pregnancies, reduction in unwanted and untimely pregnancies by use of temporary contraceptive methods, providing quality care in all aspect and thus avoiding pregnancies with higher risks and chances of unsafe abortions. Studies showed that maternal deaths would have been 1.8 times higher without contraceptive use. Thus, uses of contraceptive methods prevented 44.3% of maternal deaths worldwide. Family Planning can avert more than 30% of maternal deaths and 10% of child deaths if couples spaced their pregnancies more than 2 years apart. Intensive efforts by the government of India resulted in the decline in unmet need for family planning from 25.4% (district level household and facility survey [DLHS-I]) to 21.3% (DLHS-III) but approximately 4.2 crore couples even now have an unmet need for contraception (1.6 crore for spacing between children and 2.6 crore for limiting child birth). Presently the spacing options are limited to only condoms, Intrauterine Contraceptive Devices [IUCDs] and oral pills contributing to 5.9%, 1.9% and 4.2% share of modern contraceptive prevalence rates respectively. Worldwide, injectable contraceptives have lower 12-month continuation rates than other forms of contraception like the oral contraceptive pills [OCs] and IUCD, yet they also have lower failure rates. Injectable contraceptive DMPA was approved, to be added in the National Family Planning Program in August 2015. The increasing availability and use of DMPA in the non-governmental organization/private sectors channelize it as modern method of contraception. Government sector strengthen under the National Health Mission resulting in improvement of infrastructure and manpower.<sup>2-6</sup>

The Drugs Controller General of India has authorised injectable contraceptives, including DMPA and norethisterone enanthate (NET-EN), for commercial sale in India.<sup>7-9</sup> DMPA is a progestin-only method of contraception. It is administered at interval of every 3-month. It is available in injectable form administered intramuscularly that delivers 150 mg of medroxyprogesterone acetate in microcrystalline suspension form. It delays absorption of the hormone after the injection. DMPA is a long acting, effective, efficacious and reversible method of contraception. It is accepted by women who cannot remember to take OCPs regularly and by those who do not wish to insert an Intrauterine Devices

[IUD].<sup>10</sup> International and National experiences confirmed that DMPA is highly acceptable to women when they are offered with quality counselling and follow-up care for further doses and side effects. Women who are counselled about side effects are less likely to discontinue their use, more likely to become satisfied users and eventually become it's best promoters as a reversible contraceptive. Inclusion of injectable contraceptive in the basket of Family Planning choices would not only be consistent with the GOI's commitment to reduce the unmet need for spacing but also provided new momentum towards increasing modern contraceptive usage and in addition to that it addresses the new sustainable development goals.

We shall use questionnaire method for assessing the acceptance and compliance of women for temporary contraception DMPA. Acceptance shall be compared between different reproductive age group, different parity and among lactating/non lactating female. Compliance and side effects shall be assessed by their follow up visits for next doses.

## METHODS

In this prospective observational cohort study 100 women have been taken, non-pregnant women in reproductive age group who have one or more children including postpartum women include in this study from March 2021 to March 2022. The study protocol was approved by the Institutional Ethics Committee and all the participants signed written informed consent letter, after providing them with details about their contraception. All data collect on Out patient department basis, The required significant personal details of the patients, like-name, age, sex, address, occupation, contact no. etc., were obtained. The comprehensive and focused history of the patient were taken for patient selection to study, as well as for further investigations and contraception.

Female who has already opted or are opting for permanent contraceptive method, Lactating female less than six weeks postpartum, reproductive age group female with undiagnosed uterine bleeding, and reproductive age group female with medical diseases like hypertension (blood pressure more than or equal to 160/100mmhg), vascular disease, diabetes with retinopathy/nephropathy/neuropathy, acute DVT/history of pulmonary embolism, ischemic heart disease/stroke, rheumatic disorder, breast cancer and history of cholestasis, liver cirrhosis, carcinoma excluded from the study. Injection DMPA 150 mg injected intramuscularly every 3 months. Managed conservatively for any treatment related complications and for evaluation used questionnaire method for assessing the acceptance and compliance of women for temporary contraception DMPA.

### Sample size

Formula for calculating sample size:  $n = N \times X / (X + N - 1)$ ,

where,  $X = Z_{\alpha/2} \sqrt{p \times (1-p) / MOE^2}$ , and  $Z_{\alpha/2}$  is the critical value of the normal distribution at  $\alpha/2$  (e.g., for a confidence level of 95%,  $\alpha$  is 0.05 and the critical value is 1.96), MOE is the margin of error,  $p$  is the sample proportion, and  $N$  is the population size.

$N=2190$ ,  $p=7.0\%$ ,  $MOE=5\%$ , so,  $n= 96$  to reduce the margin of error total sample size was taken as 100.

## RESULTS

The current study was a hospital based observational study to assess the acceptance and compliance of injectable contraceptive DMPA in reproductive age group female. Women who fulfil the inclusion criteria were administered with injection DMPA 150 mg intramuscular after ruling out pregnancy by urine pregnancy test by UPT kit. Further doses was advised to be taken at the nearby dispensary because of covid pandemic. Evaluation was done by analysing the preformed questionnaire. Questionnaire filled by the women or the accompanied person in case if she is not literate.

**Table 1: Demographic profile of participant.**

Parameters	Number of women (n=100)	Percentage (n%)
<b>Age in years</b>		
<20	4	4
21-25	35	35
26-30	30	30
31-35	20	20
>36	11	11
<b>Habitat</b>		
Rural	32	32
Urban	68	68
<b>Education</b>		
Illiterate	9	9
Primary	8	8
Middle school	8	8
Secondary	17	17
Higher secondary	38	38
Under graduate	13	13
Post graduate	7	7
<b>Type of family</b>		
Nuclear family	73	73
Extended family	27	27
<b>Parity</b>		
1	46	46
2	49	49
>3	05	5
<b>Menstruation</b>		
Regular	72	72
Irregular	28	28

Majority of women were between the age group 21-25 years (35%), mostly belonging to urban area that is 68% and rest of them are from rural area. Majority of women included in our study belonging to Hindu religion (77%) as the area predominates the Hindu population. Educational qualification plays an important role in decision making in every aspect of life hence the women who are qualified or educated show a great number in family planning. The women who are educated till higher secondary that is 38% shows maximum acceptance for contraceptive use. This study shows that women from nuclear family has more acceptance 73% than women from extended family, in nuclear family decision were made by both the partners and hence there is more acceptance in women from nuclear family. No Nulligravida was offered this contraceptive method as method of birth spacing. Most of the women 44% had 2 or more children, thus had completed their family size and has the maximum acceptance for DMPA (Table 1).

Reason for acceptance of DMPA, was found that there is no need of daily administration of DMPA in 51% of women, 10% women found it's easy to administer via intramuscular injection, lactating female can breast feed also as it possess no changes in breast milk (Table 3).

**Table 2: Side effect of DMPA.**

Parameter	Number of women (n=100)	Percentage (n%)
<b>Side effect</b>		
Irregular bleeding	59	59
Amenorrhea	6	6
Weight gain	18	18
Headache	7	7
Mood changes	2	2
No problems	8	8

The side effects was found to be the main reason for attrition in 38% women while 20% women are lost to follow up and least common reason was change in mood (2%). The most common side effect of DMPA as perceived by women is irregular bleeding or spotting in 59%, weight gain in 18%, while mood changes is the least common side effect and 8% faces no problem with DMPA use. Amenorrhea is seen with frequent dosing of DMPA. Major concern was irregular or inter menstrual bleed or heavy bleeding this is the main reason for attrition in majority of participating women (Table 2-3).

In our study 55% women discontinued after 1st injection while 6% discontinued after 4th injection. The reasons can be attributed to the side effects hampering the further use of DMPA injection, their sociocultural factors, lost to follow up, further follow up was done telephonically to inquire about further doses of DMPA received at other centres. Telephonic conversation is not effective as face-to-face conversation this is just for inquiring the further

doses. Few of them had opted for further pregnancies. Hence, discontinued the injections (Table 3).

**Table 3: Acceptance, discontinuation and attrition.**

Parameter	Number of women (n=100)	Percentage (n%)
<b>Reasons for acceptance</b>		
Easy to use	9	9
Easy to administer	10	10
No need for daily administration	51	51
Can breast feed also	28	28
Relieved of monthly bleeding	2	2
<b>Discontinuation rate</b>		
After 1st Injection	55	55
After 2nd Injection	29	29
After 3rd Injection	10	10
After 4th Injection	6	6
After 5th Injection	0	0
<b>Reasons for attrition</b>		
Side effects	38	38
Lost to follow up	20	20
Planning pregnancy	17	17
Missed injection date/changed contraception	3	3
Repeated doses of DMPA are troublesome	5	5
Change in mood	2	2
Reduced sex desire/fear of infertility	3	3
Partner or family pressure	12	12
Not specified	0	0

## DISCUSSION

The current study was a prospective observational cohort study to assess the acceptance and compliance of injectable contraceptive DMPA among reproductive age group female attending outdoor and indoor patient department in department of obstetrics and gynaecology, Government Multi Specialty Hospital Sector-16 Chandigarh.

In this study, 100 women have been taken, those were appropriate within the inclusion criteria. All the participants signed written informed consent letter, after providing them with details about their contraception and excluded female who has already opted or are opting for permanent contraceptive method, lactating female less than six weeks postpartum, undiagnosed uterine bleeding and medical diseases like hypertension, vascular disease, diabetes with retinopathy/nephropathy/neuropathy, acute DVT/history of pulmonary embolism, ischemic heart disease/ stroke, rheumatic disorder, breast cancer and history of cholestasis, liver cirrhosis, carcinoma. The

comprehensive and focused history of the patient were taken for patient selection for study, as well as for further investigations and contraception. The aim of this study was to assess the acceptance and compliance of the temporary contraceptive DMPA as family planning tool and compare the acceptance and side effects of DMPA amongst different reproductive age group and parity and compare the side effects of DMPA amongst lactating and non-lactating females.

### *Evaluation according to demographic data*

In our study age distribution depicted that majority of the women 35% were between 21- 25 years of age and using DMPA as method of contraception. According to Fonseca et al, 53.5% recruited in her study were from the age group of 26 to 30 years.<sup>11</sup> These are the women of reproductive age who visit the family planning outpatient department in considerable numbers. Age is variation because of demographic area. Habitat distribution depicted that majority of the women 68% belongs to urban area, as the urban population has maximum opportunity to reach tertiary/district care centre and have more source of information as compare to rural population. Educational qualification showed that majority of women 38% were educated till higher secondary level, this showed that with increasing level of education population is having more knowledge towards family planning and acceptance for contraception. This data shows that women from nuclear family has more acceptance 73% than women from extended family, in nuclear family decision were made by both the partners and hence there is more acceptance in women from nuclear family. In our study, no nulligravida was offered this contraceptive method as method of birth spacing. Most of the women 54% had 2 or more children, thus had completed their family size. According to Fonseca et al.<sup>11</sup> This contraceptive approach was not presented to any nulligravida as a means of birth spacing. Most of the women 78.5% had 2 or more children, thus had completed their family size.

### *Evaluation according to changes in breast milk*

In our study we have 28% lactating women who either opted for DMPA as post-partum contraception or post-abortion contraception, there were no changes in quantity and quality of breast milk as observed by lactating women. This is subjective finding of participating lactating women. According to Elizabeth et al, study there were no changes in breast milk following DMPA injection to lactating women.<sup>12</sup> Another study of WHO task force, A multicentre, nonrandomized study followed 541 infants whose mothers received depot medroxyprogesterone acetate injection 150 mg every 3 months for contraception during breastfeeding.<sup>13</sup> No adverse effects on infant growth through the first year were found in comparison to standard measurements and there is no changes in breast milk. Early postpartum DMPA medication raises theoretical issues with baby safety, early breastfeeding suppression, and metabolic consequences on the mother.

Studies show that the effects of DMPA on breastfeeding and newborn health are unproved.<sup>14,15</sup>

### **Evaluation according to side effects**

In our study the most common side effect of DMPA as perceived by women is irregular bleeding or spotting in 59%, weight gain in 18%, while mood changes is the least common side effect and 8% faces no problem with DMPA use. According to Fonseca et al, most common side effect noted was irregular bleeding/spotting, which was seen in 63% women.<sup>11</sup> Counselling for typical patient concerns, such as possible weight, mood, or menstrual pattern impacts, is crucial and can enhance patient adherence. According to Kaunitz AM, irregular bleeding is the most common side effect and long term use leads to amenorrhea.<sup>16</sup>

### **Evaluation according to reasons for acceptance, attrition and discontinuation rate**

In our study reason for acceptance of DMPA, was found that there is no need of daily administration of DMPA in 51% of women, 10% women found it's easy to administer via intramuscular injection, lactating female can breast feed also as it possess no changes in breast milk and the side effects was found to be the main reason for attrition in 38% women while 20% women are lost to follow up and least common reason was change in mood (2%).

In our study 55% women discontinue after 1<sup>st</sup> injection while 6% discontinue after 4<sup>th</sup> injection. The reasons can be attributed to the side effects hampering the further use of DMPA injection, their sociocultural factors, as most of them were residents of distant places and had come to delivery at this centre. Further follow up was done telephonically to inquire about further doses of DMPA received at other centres. Some of them wanted further pregnancies. Hence, discontinued the injections. According to Fonseca et al, study the maximum dropout rate was after the 1<sup>st</sup> and 2<sup>nd</sup> injections.<sup>11</sup>

Study was done for limited period of time so it reflects the propensity of that time period and long term follow up was not performed. Due to Covid pandemic, there is a smaller number of women attending family planning outpatient department. Certain female who planned for further pregnancy leads to attrition and for subsequent doses women followed up in nearby dispensary leading to more attrition.

### **CONCLUSION**

Injectable contraceptive DMPA is safe, convenient, efficacious and effective long term contraceptive. It is acceptable to women when offered with quality counselling and follow up care. Discontinuation rate will be less if follow up is done at proper interval and side effects managed properly. But still, it is not as popular as female sterilization, it needs more awareness and

counselling from our side to make population aware of its uses, effectiveness and contraceptive values. It is also effective in lactating women and provides proper spacing between children if used in proper manner without affecting quantity and quality of breast milk. As it is freely available in government supply it should be more channelized so that a large population becomes aware of its uses.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Nigam N, Mishra J, Rathod I. Assess the acceptance and compliance of injectable contraceptive depot medroxyprogesterone acetate. *Int J Reprod Contracept Obstet Gynecol* 2023;12:2508-13.