Journal of Midwifery and Reproductive Health
Universitas Kusuma Husada Surakarta

Volume 2 No 2, Hal 1-8, Desember 2025
E-ISSN: 3090-577X
https://doi.org/10.34035/jmrh.v2i2.1927

THE RELATIONSHIP OF SIDE EFFECTS OF DEPO MEDROXY PROGESTERONE ACETATE (DMPA) INJECTIONS TO CONTINUATION OF CONTRACEPTIVE USE

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ABSTRACT

Background: The increase in population is partly due to the high dropout rate of contraceptive use. The reason for many dropouts is due to side effects. Depo Medroxy Progesterone Acetate (DMPA), as the most popular contraceptive method in Indonesia, has been reported by most acceptors to experience adverse events in the first three months of use. This affects the continuity of contraceptive use. The purpose of this study was to determine the relationship between side effects of DMPA injections and the continuity of contraceptive use at the Ibrahim Adjie community health center.
Methods: The research method used was a cross sectional approach. The population was women of childbearing age aged 15-49 years at Puskesmas Ibrahim Adjie, with a sample size of 100 respondents. Consecutive sampling technique. Data analysis chi square test.
Results: The results of this study showed that DMPA family planning acceptors who experienced side effects were 64 respondents (64.0%), and those who chose to drop out were 47 respondents (47.0%). The side effects of DMPA family planning caused 44 respondents (44.0%) to drop out. There was a significant relationship between the incidence of side effects of DMPA injections and the continuity of contraceptive use, with a p-value of 0.001≤ 0.05.
Conclusion: Side effects of Depo Medroxy Progesterone Acetate (DMPA) injections caused the dropout rate.
Keywords: continuity, contraceptive use, DMPA, side effects

INTRODUCTION

Indonesia is facing a population problem that continues to increase annually. According to the 2024 population census. The population of West Java alone reached 50,7. This population growth is a problem, particularly due to the ever-increasing birth rate. To address this, the government has developed contraceptive methods to regulate birth spacing and prevent unplanned pregnancies (BPS, 2024).

In West Java, many women of childbearing age have followed government recommendations by using hormonal and non-hormonal contraceptive methods. The number of women of reproductive age in West Java reached 3,365,800. This effort is part of the government's steps to control the rate of population growth and improve public welfare. In 2023, active contraceptive users in Indonesia reached 67.8%. In West Java, the number of contraceptive acceptors reached 466,304. The percentage of active KB participants in West Java, by contraceptive method, is IUD (7.35%), implant (7.2%), pill (17.24%), injection (63.71%), condom (1.24%), MOW (2.76%), and MOP (0.5%). From

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these data, it can be concluded that the use of injectable KB dominates, with a percentage of 63.71%.63.71% (BPS, 2017). This is due to easy installation factors, economic factors, and experience of using contraception with minimal side effects. The injectable contraception most frequently used by contraceptive users in West Java is *progesterone only*, which contains the hormone progestin or its patent name *Depo Medroxy Progesterone Acetate* (DMPA) (Dinkes Kota Bandung, 2022).

DMPA KB users in West Java reached 539,81 acceptors, while in Bandung City, there were 1,162,94 (BPS, 2022). In choosing contraception, no one should force a woman or a couple of childbearing age to use a particular contraceptive that is not their choice. However, prospective contraceptive users should know all related information, including side effects. The side effects that occur can sometimes cause discomfort and can make things difficult for acceptors (evitasari et al., 2019).

The high use of injectable contraception in Bandung City is not in line with the level of continued use. In Indonesia, the dropout rate for injectable contraception increased from 11.46% in 2018 to 15.09% in 2021, and remains high. In West Java, there were 83,433 cases of injectable contraception dropouts during the last six months of 2021.

Most women who stop using contraception have various reasons, including the desire to have more children, refusal to use contraception by themselves or their partners, lack of knowledge about contraception, long distance from contraceptive services, high cost of contraception, and women who are not using contraception, including premenopause and hysterectomy. However, one of the main reasons for discontinuing contraception is the emergence of side effects from the contraception.

Dropout of DMPA contraceptives is one of the causes of the increase in the Total Fertility Rate, namely from 2.28 in 2016 to 2.44 in 2019 (BPS, 2023). Which does not reach the International target of 2.1. A high TFR can cause the population growth rate to increase, so that population problems such as increasing population numbers, increasing birth rates, and uneven population distribution are getting worse. If the number of progesterone injection contraceptive dropouts increases, the number of unintended pregnancies will also increase. Furthermore, if someone stops using contraception and experiences a high-risk pregnancy, such as being over 35, having a poor parity history, having a history of chronic illness, or having a pregnancy under the age of 20, the risk of having a baby increases.

Based on the above background, the researchers aimed to determine the relationship between the side effects of Depo Medroxy Progesterone Acetate (DMPA) injections and the continuity of contraceptive use at the Ibrahim Adjie Community Health Center.

RESEARCH METHOD

The type of research conducted was quantitative analytical research using a cross-sectional study approach to determine the relationship between the side effects of Depo Medroxy Progesterone Acetate (DMPA) injections and the continued use of contraception. The research was conducted at the Ibrahim Adjie Community Health Center, Bandung City, Indonesia. The research was conducted from March to May 2024. The inclusion criteria were women of childbearing age aged 15–49 years, women of childbearing age who had used or were currently using DMPA contraception at least 3 times, and women of childbearing age who were willing to be respondents. The exclusion criteria were women of childbearing age who stopped using DMPA contraception, not because of side effects, but because they wanted to have children.

Data collection was carried out in three stages: the preparation stage (obtaining permission and selecting potential respondents according to the inclusion criteria, as well as providing informed consent), the implementation stage (ensuring the availability of respondents, providing explanations and time contracts, distributing questionnaires, and

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providing opportunities to ask questions), and the final stage (checking the respondents' answers, processing and analyzing the data, and compiling reports).

The research instrument was developed independently and tested for validity and reliability to obtain a valid and accurate instrument. There are three categories in the questionnaire, namely respondent identity related to respondent characteristics, such as initials, age, parity, religion, education, occupation, duration of use of 3-month injectable contraception, and variables related to the side effects of DMPA injectable contraception, using a questionnaire consisting of 13 statements with Yes and No answer options. The questions were created by the researcher. If the answer was Yes, it was given a value of 1, and if the answer was No, it was given a value of 0. The variable of contraceptive use continuity used a 1-4 Likert scale consisting of 13 questions with answer choices of strongly agree, agree, disagree, and strongly disagree. Positive statements were given a score of 4 for strongly agree, 3 for agree, 2 for disagree, and 1 for strongly disagree. The questionnaire used in this study was a closed questionnaire, where the answers were provided so that respondents only had to choose. The research instrument used Google Forms links.

Data analysis used univariate analysis, which aims to explain each characteristic of the variables studied, in this case, side effects and sustainability. Bivariate analysis was also used, which is a statistical analysis test that considers data from the nature of two variables in relation to each other, so that conclusions can be drawn from the analysis results. The Chi-square statistical test was used with a significance level of $\alpha = 0.05$. The significance level (p-value) was compared with the error level or alpha (α). Three principles of research ethics must be applied, namely respect for persons, beneficence and non-maleficence, and justice.

RESULTS

The research findings indicate that:

Table 1. Respondent Characteristics

Characteristics	Frequency	Percentage
Age		
< 20 years	2	2.0
20 - 35 years	36	36.0
> 35 – 49 years	62	62.0
Number of children		
Don't have children yet	2	2.0
1 child	41	41.0
> 1 child	57	57.0
Education		
Elementary School	3	3.0
junior high school	22	22.0
Senior high school	43	43.0
College	32	32.0
Employment		
Housewife	61	61.0
Self-employed	4	4.0
Private/ state employees	35	35.0
Duration of Birth Control Use		
< 1 year	28	28.0
1-3 years	54	54.0
> 3 years	18	18.0
Total	100	100.0

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E-ISSN: 3090-577X
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Table 1 shows that most respondents are aged 35-49 years, as many as 62 respondents, respondents with more than one child, as many as 57 respondents, most have a high school education, as many as 43 respondents, and for occupation, most work as housewives, as many as 61 respondents. In terms of the duration of use of KB, most respondents use KB for 1-3 years, with 54 respondents.

Table 2. Side effects of DMPA KB acceptors at Ibrahim Adjie Health Center

Side effects	Frequency	Percentage
No side effects	36	36.0
There are side effects	64	64.0
Weight Gain	33	22.1
Spotting	36	24.1
Amenorrhea	40	26.8
vaginal discharge	1	0.06
Headache	17	11.4
Menorrhagia	22	14.7
Total	149	100.0

Table 2 shows that 64 respondents experienced side effects, and 149 of those 64 reported side effects. The most common side effect was menstrual irregularities (spotting, amenorrhea, and menorrhagia) at 65.5%, with amenorrhea being the most common side effect in 40 respondents.

Table 3. Continuity of Contraceptive Use in Community Health Centers

Sustainability	Frequency	Presentation
Drop out	47	47.0
Keep wearing it	53	53.0
Amount	100	100.0

Based on Table 3, almost all respondents preferred to drop out, with 47 respondents.

Table 4. Relationship between side effects of DMPA injections and continued use of contraception

Side effects of DMPA contraception	Sustainability of Use Contraption				*p-value*
	Drop out		Still		
	F	%	f	%	
No side effects	3	3.0	33	33.0	0.001
There are side effects	44	44.0	20	20.0	
Total	47		53		

Based on Table 4, the majority of respondents who experienced side effects influenced the dropout rate, amounting to 44 respondents (44.0%), and those who did not experience side effects continued using DMPA contraception, amounting to 33 respondents (33.0%). The results of the p-value 0,001 ≤ 0,05. This indicates that Ho is rejected and Ha is accepted, meaning that there is a significant relationship between the side effects of DMPA and the continuation of contraceptive use.

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DISCUSSION

Based on the results of the study, this study shows that the side effects of DMPA have a significant impact on the continued use of contraception. Most respondents who experienced side effects reported that DMPA contraceptive users experienced side effects, with 64 respondents (64.0%) experiencing the most common side effects being menstrual disorders (spotting, amenorrhea, menorrhagia) reaching 65.5%, and the most common menstrual disorder being amenorrhea in 40 respondents (40.0%). Amenorrhea is the absence of menstrual bleeding for at least 3 months. The rate of discontinuation of contraception was quite high, namely 44 respondents (44.0%) (Paulus et al., 2025).

This indicates that almost half of the respondents who experienced DMPA side effects chose to stop using this contraceptive method. This finding is consistent with research conducted by Restiani, who found that 63.4% of women of childbearing age who used DMPA experienced menstrual disorders such as amenorrhea and irregular bleeding. These side effects were reported as a significant factor influencing their decision to stop using DMPA. Furthermore, Raditya's research results showed that 61.6% of side effects caused by DMPA can affect user satisfaction and continued contraceptive use. These studies emphasize the importance of special attention to the management of DMPA side effects to improve compliance and continued use of this contraceptive (Affandi et al., 2021; Nurhayati et al., 2023; Witczak et al., 2022).

The results of this study show that amenorrhea in DMPA contraceptive users is caused by menstrual disorders due to hormonal imbalances, resulting in histological changes in the endometrium. A decrease in FSH can prevent follicle development, while a decrease in LH secretion can prevent follicle maturation and ovulation, resulting in amenorrhea. Additionally, DMPA also affects the reduction of GnRH (Gonadotropin-Releasing Hormone) from the hypothalamus, which causes a decrease in the release of FSH (Follicle-Stimulating Hormone) and LH (Luteinizing Hormone) from the anterior pituitary gland. A decrease in FSH inhibits follicular development, resulting in the absence of ovulation or fertilization. Continuing contraceptive use is crucial in family planning programs to ensure birth control and maternal well-being. Users who do not experience side effects tend to be more consistent in their contraceptive use, contributing to the program's success. Conversely, the high dropout rate among users who experience side effects suggests that side effect management is crucial for improving adherence and continued DMPA use (A.N et al., 2018).

The high dropout rate due to DMPA side effects has a direct impact on the Total Fertility Rate (TFR), or total birth rate. TFR is an indicator that reflects the average number of children born to a woman during her childbearing years (Rahayu et al., 2017). When women stop using contraception due to side effects, the risk of unintended pregnancy increases, ultimately contributing to an increase in the birth rate. (Hartanto, 2020).

Therefore, managing DMPA side effects is crucial to ensuring the success of family planning programs in reducing TFR. Several studies in Indonesia have highlighted the relationship between DMPA side effects and continued contraceptive use. For example, a study conducted in Yogyakarta found that 58% of DMPA users experienced significant side effects, leading to a dropout rate of 42% (Sutrisno, 2019). These results are consistent with research conducted by Sari in Surabaya, which reported that 55% of DMPA users who experienced irregular bleeding chose to discontinue use of the contraceptive (Sari, 2020).

Furthermore, research by Wijaya in Jakarta revealed that 64% of women using DMPA reported menstrual irregularities as the primary reason for discontinuing use. The study also showed that users who did not experience side effects were more likely to

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continue using DMPA consistently, which contributed to a decrease in TFR (Bado, 2024; MacLachlan et al., 2018; Silvia et al., 2024).

These studies underscore the importance of appropriate interventions to manage DMPA side effects. Adequate education and counseling can help users understand that some side effects (Edwardo et al., 2014; Anwaroh et al., 2025) are manageable or temporary. Healthcare providers need to provide clear information and support users in dealing with side effects, so they are more likely to continue using this contraceptive method (Ariska & Ulfa, 2016).

To address the high dropout rate due to DMPA side effects, effective strategies are needed. One approach is through comprehensive education and counseling for DMPA users. Users should be provided with clear information about potential side effects and how to manage them (Lailatul, 2020). For example, menstrual irregularities can be considered normal during DMPA use and often resolve over time. Furthermore, healthcare providers should regularly follow up with DMPA users to monitor side effects and provide appropriate solutions. Using apps or digital platforms to monitor reproductive health can also be an effective tool in helping users manage side effects (Nurhayati et al., 2023).

DMPA injection side effects significantly impact contraceptive adherence, with a high dropout rate among users experiencing side effects. This high dropout rate has direct implications for increasing the TFR, which can hinder the success of family planning programs. Therefore, effective side effect management is crucial for improving adherence and continued use of DMPA. Studies in Indonesia support these findings and emphasize the need for appropriate interventions to mitigate the negative impact of DMPA side effects. Therefore, focused efforts on side effect management can contribute to a reduced TFR and the success of family planning programs in Indonesia (Dragoman & Gaffield, 2016; Rajaraman et al., 2024; Silvia et al., 2024).

CONCLUSION

Depo Medroxy Progesterone Acetate (DMPA) injections have side effects that can affect continued use of contraception, as seen in the results, with the majority of DMPA users experiencing side effects and dropping out. Therefore, healthcare workers, especially midwives, can actively educate patients about the benefits, indications, contraindications, and potential side effects of DMPA, as well as how to manage them. This way, patients can make informed decisions and feel more comfortable using contraception. Furthermore, students can play a role in providing education and counseling to patients in the future to improve women's reproductive health.

RECOMMENDATIONS

Healthcare workers, especially midwives, are advised to provide comprehensive counseling before and after the use of DMPA contraception, particularly regarding the possibility of side effects that may arise. This counseling is expected to help contraceptive users anticipate side effects so that the continuity of contraceptive use can be improved.

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