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JURNAL NERS DAN KEBIDANAN  
(JOURNAL OF NERS AND MIDWIFERY)

<http://ojs.phb.ac.id/index.php/jnk>



## Menstrual Disorders of 3-Month Contraceptive Injection Acceptors in Independent Midwife Practice in Binangun District, Blitar Regency



Laily Prima Monica<sup>ID</sup>,<sup>CA</sup> Maria Ulfa, Ulfa Husnul Fata<sup>ID</sup>  
STIKes Patria Husada Blitar, Indonesia  
<sup>CA</sup>Corresponding Author

### Article Information

#### History Article:

Received, 20/11/2024  
Accepted, 31/12/2024  
Published, 31/12/2024

#### Keyword:

3-Month Contraceptive Injection,  
Menstruation

### Abstract

The contraceptive injection method using medroxyprogesterone (a type of progestin) which is injected every 3 months has side effects, namely menstrual cycle disorders. The longer the injection is used, the more women do not menstruate and also experience irregular bleeding. This was a descriptive study that aimed to see the menstrual disorders of 3-month contraceptive injection acceptors at the Binangun Midwife Independent Practice, Blitar Regency. The population in this study were active contraceptive injection acceptors who visited the Binangun Midwife Independent Practice, Blitar Regency, with an average population of 87 people. The sample in this study was 3-month contraceptive injection acceptors who met the inclusion and exclusion criteria. The number of samples in this study was 66 people with a purposive sampling technique. The data analysis used frequency distribution to describe menstrual disorders experienced by 3-months Contraceptive Injection acceptors. The results of this study indicated that the menstrual disorders experienced by 3-months contraceptive injection acceptors were mostly amenorrhea, namely 53 people (80.3%). While bleeding outside of menstruation was 10 people (15.2%) and the rest, namely 3 people (4.5%) did not experience menstrual disorders. The 3-months contraceptive injection method has been proven effective in preventing pregnancy, the therapy needs to pay attention to the side effects caused so as not to interfere with the 3-months Contraceptive Injection acceptors.

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✉Correspondence Address:

STIKes Patria Husada Blitar – East Java, Indonesia

Email: [ulfa.maria.blitar@gmail.com](mailto:ulfa.maria.blitar@gmail.com)

DOI: <https://doi.org/10.26699/jnk.v11i3.ART.p312-321>

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P-ISSN : 2355-052X

E-ISSN : 2548-3811

## INTRODUCTION

The contraceptive injection method uses medroxyprogesterone (a type of progestin) which is injected once or every 3 months into the buttocks or upper arm muscle. This injection is very effective but can disrupt the menstrual cycle. One third of contraceptive injection users do not menstruate 3 months after the first injection and another third experience irregular bleeding and spotting for more than 11 days each month. The longer the contraceptive injection is used, the more women do not menstruate but fewer women experience irregular bleeding ([Herlitawati, 2022](#)). Apart from some positive impacts of the 3-month contraceptive injection, DMPA (Depo-Medroxyprogesterone Acetate) Contraception has side effects such as menstrual disorders (amenorrhea, spotting or menorrhagia), weight gain or loss, depression, vaginal discharge, acne on the face, hair loss, dizziness/headache, nausea and vomiting and changes in libido/sexual drive ([Setyoningsih, 2020](#)). The side effects of using 3-monthly contraceptive injections are seen as one of the disadvantages of using this contraception by most women because most women consider regular bleeding to be healthy and use menstruation as an indicator that they are not pregnant ([Fatmawati, 2023](#)).

According to the Central Statistics Agency of East Java Province, the number of Fertile Age Couples (PUS) in East Java Province in 2021 was 7,833,818 people with active birth control participants of 918,135 people (73.1%) of the target Contraceptive Prevalence Rate (CPR) of 75.6%. Condom contraception 128,743 people (1.19%), injection 3,034,884 people (56.57%), Pill 1,082,538 people (19.20%), IUD/IUD 674,826 people (8.57%), MOP/MOW 309,299 people (4.74%), and implant 687,846 people (7.27%). Meanwhile, according to the Blitar City Central Statistics Agency, active family planning participants according to contraceptive methods in Blitar City in 2023 include IUD 3,193 people, Pill 1,906 people, Condom 1,086 people, injection 5,058 people, Contap 1,042 people, and implant 794 people ([Setiyawati et al., 2023](#)).

The advantages of using 3-month contraceptive injection include being suitable for preventing pregnancy or spacing pregnancies in the long term and fertility can be restored, not affected by forgetfulness from the user (unlike birth control pills), does not interfere with husband and wife relations and others. The disadvantages of the injection contraceptive method cause side effects on the menstrual cycle such as bleeding, weight gain and several other effects ([Herlitawati, 2022](#)). Result of research showed that as many as 44 respondents (50%) of 1-month injection contraceptive acceptors did not experience menstrual disorders and 44 respondents (50%) of 3-month injection contraceptive acceptors mostly experienced menstrual disorders, namely 41 respondents (46.6%), only 3 respondents (3.4%) did not experience menstrual disorders ([Solama, 2019](#)). Other sources state that the disadvantages of 3-month contraceptive injection are that menstrual patterns are disturbed, including amenorrhea, headaches, menorrhagia and spotting, delayed fertility after stopping use, and also weight gain ([Wati & Lamaindi, 2021](#)). The use of 3-monthly contraceptive injections causes the menstrual cycle to become shorter or even cause menstruation to not occur ([Fatmawati, 2023](#)).

Most of the 3-month injectable contraceptive acceptors experienced amenorrhea, 35 respondents (81.4%), the remaining 8 respondents (18.6%) experienced oligomenorrhea, hypomenorrhea, and non-menstrual bleeding or bleeding between periods with blood like spotting (3). There is an effect of the use of injectable contraceptives on menstrual disorders in Fertile Age Couples (PUS) who use injectable contraceptives ([Solama, 2019](#)). Based on the results of direct interviews with contraceptive injection acceptors, it was found that out of 10 users of 3-month injectable contraceptives, 9 people experienced menstrual disorders and only 1 person did not experience menstrual disorders ([Wati & Lamaindi, 2021](#)). The occurrence of menstrual disorders that occur is thought to be caused by the addition of progesterone which causes dilation of small veins in the endometrium and these

veins eventually become fragile so that local bleeding occurs ([Insnandar et al., 2024](#)).

Based on the background description above, the researcher is interested in conducting a study on "Menstrual disorders in users of 3-month contraceptive injection in independent midwife practices in Binangun, Blitar Regency". The results of this study are expected to be a basic reference in providing health education to KB acceptors, especially 3-month contraceptive injection users, about menstrual disorders in 3-month contraceptive injection users.

## METHODS

This study is a descriptive study that describes menstrual disorders in 3-month injection contraceptive acceptors in the independent midwife practice work area of Binangun District, Blitar Regency. The population in this study were active contraceptive acceptors who visited the independent midwife practice in Binangun, Blitar Regency. The average number of visits by 3-month injection contraceptive acceptors in April - June 2023 was 87 people. The sample in this study were active contraceptive acceptors based on the inclusion criteria, namely (1) aged 15 - 49 years (fertile age couples), (2) active contraceptive acceptors for more than 1 year, (3) able to communicate well, (4)

able to read and write. While the exclusion criteria in this study were (1) contraceptive acceptors who were late for a 3-month injection repeat visit, (2) 3-month injection contraceptive acceptors who experienced disorders in the reproductive system (such as uterine myoma, endometrial polyps, and others). The number of samples in this study based on the formula is 66 people with the sampling technique used is purposive sampling. This study began by submitting a letter of application to the research location, then identifying active contraceptive injection acceptors who would later be used as respondents. The researcher explained the intent and purpose of the study to the respondents and asked for a signature of consent to become respondents. After that, the researcher gave a questionnaire to the respondents. During the research process, the researcher gave rewards in the form of masks and hand sanitizers. Data analysis using frequency distribution then described menstrual disorders experienced by 3-months contraceptive injection acceptors. This study was conducted in July 2023. This research has passed the ethical feasibility test from the Higher Education Council of the Central Leadership of Muhammadiyah, Muhammadiyah University of Lamongan with No. 332 / EC / KEPK S2 / 05 / 2023.

## RESULT

**Table 1.** Distribution of respondents at the Independent Midwife Practice in Binangun, Blitar Regency, July 2023.

	Variable	Frequency	Percentage
Age	Age not at risk (20 – 35 th)	55	83,3
	Age at risk (<20th atau >35th)	11	16,7
	<b>Total</b>	<b>66</b>	<b>100</b>
Weight	Ideal body weight	4	6,1
	Body weight is not ideal	62	93,9
	<b>Total</b>	<b>66</b>	<b>100</b>
Body Mass Index	Underweight	7	10,6
	Normal weight	36	54,5
	Overweight	11	16,7
	Obesity	11	16,7
	Obesity II	1	1,5
	<b>Total</b>	<b>66</b>	<b>100</b>
Education	No school	1	1,5
	Junior hight school	26	39,4
	Senior height school	32	48,5

	Variable	Frequency	Percentage
Employment	Academic/College	7	10,6
	<b>Total</b>	<b>66</b>	<b>100</b>
	Not working	28	42,4
	Laborer	9	13,6
	Farmer	13	19,7
	Self-employed	10	15,2
	Private employet	4	6,1
	Civil servant	2	3,0
Contraceptive Injection Acceptor Status	<b>Total</b>	<b>66</b>	<b>100</b>
	Active	66	100
	Inactive	0	0
Menstrual disorder	<b>Total</b>	<b>66</b>	<b>100</b>
	No	4	6,1
	Yes	62	93,9
	<b>Total</b>	<b>66</b>	<b>100</b>

Based on [Table 1](#), it shows that most respondents are in the category of non-risk respondents, namely 60 respondents (76.9%). The frequency of respondents based on body weight shows that almost all respondents with non-ideal body weight are 62 respondents (93.9%). The majority of respondents who are treated based on their body mass index are still classified as normal body weight, namely 36 respondents (54.5%).

Almost half of the respondents are high school educated, namely 32 respondents (48.5%), and almost half of the respondents are unemployed, namely 28 respondents (42.4%). All respondents (100%) are active contraceptive injection acceptors and almost all of the respondents experience menstrual disorders, namely 62 respondents (93.9%).

**Table 2.** Distribution of respondents based on type of menstrual disorders at the Independent Midwife Practice in Binangun, Blitar Regency, July 2023.

	Variable	Frequency	Percentage
Types of Menstrual Disorder	Amenorea	53	80,3
	Bleeding outside of menstruation	10	15,2
	No menstrual disorder occur	3	4,5
	<b>Total</b>	<b>66</b>	<b>100</b>

[Table 2](#) shows that the majority of respondents experienced amenorrhea, namely 53 respondents (80.3%).

**Tabel 3.** Distribution of respondents based on type of menstrual disorders at the Independent Midwife Practice in Binangun, Blitar Regency, July 2023.

Variabel	Types of Menstrual Disorder									
	No menstrual disorder occur		Amenorea				Bleeding outside of menstruation		Total	
	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)		
Age	Age not at risk (20 – 35 th)	0	0	46	69,7	9	13,6	55	83,3	
	Age at risk (<20th or >35th)	3	4,5	7	10,6	1	1,5	11	16,7	
	<b>Total</b>	<b>3</b>	<b>4,5</b>	<b>53</b>	<b>80,3</b>	<b>10</b>	<b>15,2</b>	<b>66</b>	<b>100</b>	
Weight	Ideal body weight	0	0	2	3,0	2	3,0	4	6,1	
	Body weight is not ideal	3	4,5	51	77,3	8	12,1	62	93,3	
	<b>Total</b>	<b>3</b>	<b>4,5</b>	<b>53</b>	<b>80,3</b>	<b>10</b>	<b>15,2</b>	<b>66</b>	<b>100</b>	
Body Mass Index	Underweight	0	0	5	7,6	2	3,0	7	10,6	
	Normal weight	1	1,5	31	47,0	4	6,1	36	54,5	
	Overweight	0	0	8	12,1	3	4,5	11	16,7	
	Obesity	1	1,5	9	13,6	1	1,5	11	16,7	
	Obesity II	1	1,5	0	0	0	0	1	1,5	
	<b>Total</b>	<b>3</b>	<b>4,5</b>	<b>53</b>	<b>80,3</b>	<b>10</b>	<b>15,2</b>	<b>66</b>	<b>100</b>	
Education	No school	0	0	0	0	1	1,5	1	1,5	
	Junior high school	2	3,0	20	30,3	4	6,1	26	39,4	
	Senior high school	1	1,5	27	40,9	4	6,1	32	48,5	
	Academic/College	0	0	6	9,1	1	1,5	7	10,6	
	<b>Total</b>	<b>3</b>	<b>4,5</b>	<b>53</b>	<b>80,3</b>	<b>10</b>	<b>15,2</b>	<b>66</b>	<b>100</b>	
Menstrual disorders	No	3	4,5	1	1,5	0	0	4	6,1	
	Yes	0	0	52	7,8	10	15,2	62	93,0	
	<b>Total</b>	<b>3</b>	<b>4,5</b>	<b>53</b>	<b>80,3</b>	<b>10</b>	<b>15,2</b>	<b>66</b>	<b>100</b>	

**DISCUSSION**

[Table 1](#) shows that almost all respondents who accepted 3-month contraceptive injections experienced menstrual disorders, namely 62 respondents (93.9%). [Table 2](#) shows that most respondents experienced menstrual disorders of amenorrhea as many as 53 respondents (80.3%), and 10 respondents (15.2) experienced bleeding outside of menstruation, only 3 (4.5%) respondents did not experience menstrual disorders. 3-month contraceptive injections prevent pregnancy by releasing the hormone progesterin into the blood

vessels. Progesterin is a hormone similar to progesterone produced by the ovaries. Progesterin in 3-month contraceptive injections works by stopping the release of eggs into the uterus, thus preventing fertilization ([Sumantri, 2020](#)).

The use of 3-month contraceptive injections causes the amount of menstrual blood that comes out to be reduced by 50-70%, especially during initial use. After long-term use, the amount of blood that comes out also decreases and even amenorrhea occurs ([Limpele et al., 2020](#)). Hormonal contraceptive methods can disrupt the menstrual

cycle because hormonal contraceptives contain estrogen and progesterone hormones, thus providing feedback on follicle development and the ovulation process. Through the hypothalamus and pituitary, estrogen can inhibit the release of FSH so that the development and maturity of the follicle does not occur. In addition, progesterone can inhibit the release of the LH hormone so that 3-month contraceptive injection acceptors often experience menstrual disorders because there are excessive estrogen and progesterone hormones ([Sailan et al., 2019](#)).

The results of the study showed that out of 18 respondents who had 3-month contraceptive injections, 15 respondents (83.3%) experienced more menstrual disorders compared to 3 respondents (16.7%) who did not experience menstrual disorders. 3-month contraceptive injections can cause menstrual disorders due to disruption of hormonal balance in the body due to the addition of quite large hormones. The addition of hormones is used to prevent pregnancy in the long term for 12 weeks. 3-month contraceptive injections are contraceptive injections that have the effect of experiencing irregular menstruation ([Sumantri, 2020](#)).

Another study showed that out of a total of 72 respondents with 3-month contraceptive injections, almost half of the respondents, namely 34 respondents (47.2%) experienced amenorrhea. Menstrual cycle disorders occur in the use of 3-month contraceptive injections caused by hormonal imbalances in the activity of the hypothalamus-pituitary ovaries ([Anggeriani et al., 2022](#)). Changes in the absence of menstruation (amenorrhea) in users of 3-month injection contraceptives are not due to the ovarian function being suppressed by progestin contraceptives for too long, but rather because the direct effect of progestin contraceptives on the endometrium over a long period of time causes endometrial growth to become smaller and endometrial atrophy will occur. Long-term use can cause abnormal menstrual patterns to change to amenorrhea, irregular bleeding, spotting, changes in frequency, duration and amount of blood lost. The effect on menstrual patterns depends on the duration

of use. Intermenstrual bleeding and spotting decrease over time, while the incidence of amenorrhea increases. The high incidence of amenorrhea is thought to be related to endometrial atrophy. While the causes of irregular bleeding are still unclear, and there does not seem to be any relationship to changes in hormone levels or endometrial histology ([Hidayanti et al., 2024](#)). The use of progestin injection contraceptives causes hormonal imbalance, with the use of progestin making the endometrial wall thinner. Because the estrogen hormone is suppressed by the progestin hormone, the condition is like a pregnant woman so she does not menstruate. The effect of menstrual patterns depends on the length of use. The amount of amenorrhea increases with the length of use ([Herlitawati, 2022](#)).

The researcher assumes that the large number of respondents who experienced menstrual disorders of the amenorrhea type in this study was due to the side effects of using 3-month injection contraceptives and the influence of the progesterone hormone. Based on table 3, it shows that some, namely 46 respondents in the non-risk age group (20-35 years) experienced menstrual disorders of the amenorrhea type. Most of the productive age, namely 20-35 years, used 3-month injection contraceptives and experienced menstrual disorders. Mothers of reproductive age aim to delay or space out pregnancies so they need contraceptives that have high effectiveness and reversibility. At the age of <20 years, contraception is used with the aim of delaying pregnancy. While the age of > 35 years is the period to end fertility or not want to get pregnant again. Acceptors of 3-month injection contraceptives are widely used by respondents, one of the reasons is its high effectiveness and reversibility or rapid return of fertility. The injection action carried out is also simple and not frightening for most KB acceptors. Age greatly influences menstrual pattern disorders in 3-monthly injectable contraceptive acceptors ([Yusmiati et al., 2023](#)).

Although many people are aware of the side effects that arise after using contraceptive injections, they feel they have to do it for the welfare

of their families and for the quality of life and education of their children. In addition, other factors that also cause the high number of 3-month contraceptive injection users are age factors, the price is relatively cheap, it does not affect breast milk production, and a history of certain diseases such as stroke and diabetes mellitus (Yulita, 2018). Based on the data above, it can be concluded that people use 3-month contraceptive injections more at productive ages because this age range is still very productive so that pregnancy can easily occur (Yulita, 2018). Based on the researcher's assumption, the age of 3-month contraceptive injection acceptors have a higher risk of side effects from using 3-month contraceptive injections because the increasing age of a woman causes changes in the hormonal system which can result in menstrual disorders.

Other data in [Table 3](#) shows that 51 respondents with non-ideal body weight experienced amenorrhea in the use of 3-month contraceptive injection. DMPA injection hormonal contraception is the only hormonal contraception that is consistently associated with weight gain (Sari, 2015). The side effects caused by long-term use of contraceptive injection can cause weight gain because of the content of the hormone progesterone which can increase appetite if the use of high or excessive doses can stimulate the appetite control center in the hypothalamus which causes eating more than usual. The results of the study showed that weight gain will be seen after one year of using contraceptive injection. Weight gain is likely caused by the hormone progesterone facilitating the conversion of carbohydrates and sugar into fat, so that fat under the skin increases, in addition, the hormone progesterone also causes increased appetite and decreased physical activity, as a result the use of injections can cause weight gain (Pratiwi et al., 2023). In addition, weight gain due to 3-month birth control injections can stimulate insulin secretion and stimulate appetite in the hypothalamus, resulting in increased food intake in DMPA injection users (Fadhilah et al., 2020).

The majority of DMPA users with  $\geq 4$  injections experienced weight gain. The average

weight gain for each year varied between 2.3 to 2.9 kg. The annual weight change was between 1.6 to 1.9 kg. The use of injectable contraception, both monthly and trimonthly, has the main side effect of weight change (Indrasari et al., 2023). The DMPA injectable hormonal contraceptive is the only hormonal contraceptive that is consistently associated with weight gain. Women using Depo-Provera gained an average of 5.1 kg over 36 months. The World Health Organization investigated the side effects and reasons for discontinuing DMPA and found that adult women experienced an average weight gain of 1.9 kg in the first year of DMPA use (Sari, 2015). The results showed that DMPA contraceptive acceptors who experienced low weight gain of 0-<2 kg were 36.67% and moderate weight gain of 2-5 kg was 50%. Respondents experienced a high increase of more than 5 kg, namely 13.33%. Most respondents experienced weight gain in the moderate category, namely 50%. According to the results of interviews with respondents, it is known that they were aware of the risks before deciding to use DMPA contraception. They know that the risk of weight gain occurs due to hormonal influences. However, the risk of weight gain does not affect their decision to use DMPA contraception (Simamora et al., 2019). Irregular eating patterns can cause weight gain in acceptors. The results of this study are in line with the findings that age, parity, and duration of use of DMPA contraception together contributed to an increase in acceptor weight by 40.9%. Most women from fertile couples who are acceptors of contraceptive users experienced weight gain. Efforts to prevent weight gain in DMPA acceptors can be done by regulating diet. The use of injectable contraception, both monthly and three-monthly injectable contraception such as DMPA, has the main side effect of changing body weight (Pratiwi et al., 2023).

Based on the above, the factors that influence changes in the weight of DMPA contraceptive injection acceptors are the presence of strong progesterone hormones that stimulate the lateral hypothalamus (Solama, 2019). Appetite that is greater than usual, the body will have excess nutrients. Excess nutrients by the hormone

progesterone are converted into fat and stored under the skin, this weight change is due to the accumulation of excess fat resulting from the synthesis of carbohydrates into fat. The weight gain is generally not too large, this varies between less than 1 kg to 5 kg in the first year. Increased progesterone hormones, in addition to causing increased appetite, also facilitate the conversion of carbohydrates and sugar into fat so that fat under the skin increases. In addition, this hormone also reduces physical activity, as a result of which the use of injections can cause weight gain (Ulfah & Lestari, 2022). Researchers assume that weight gain in 3-month contraceptive injection acceptors is caused by the influence of hormones that can increase food consumption, reduce physical activity so that fat levels in the body increase.

## CONCLUSION

Almost all respondents experienced menstrual disorders, namely 62 respondents (93.0%). Most respondents experienced menstrual disorders of amenorrhea, namely 53 respondents (80.3%).

## SUGGESTION

The use of 3-month contraceptive injection causes many side effects, especially menstrual disorders. Therefore, for 3-month contraceptive injection acceptors, it is expected that they can be better prepared if there are side effects from using 3-month contraceptive injection. In addition, prospective 3-month Contraceptive Injection acceptors should be given education, especially related to the side effects caused by using 3-month contraceptive injection so that prospective acceptors can prepare themselves well.

## ACKNOWLEDGEMENT

Thank you to the entire academic community of STIKes Patria Husada Blitar who have provided support in the implementation of this research, all respondents of 3-month contraceptive injection acceptors who have participated in the research, to the entire research team who have assisted in the implementation of the research, and to all parties

who have assisted in the implementation of this research.

## FUNDING

The funds used for this research activities are the personal funds of the research team.

## CONFLICT OF INTEREST

The authors have no conflict of interest in publishing the article.

## AUTHOR CONTRIBUTIONS

The first author contributed to conceived and designed the analysis, collected data, contributed data or analysis data, performed the analysis, wrote the paper, and other contribution. The second author contributed to conceived and designed the analysis, collected data, contributed data or analysis tools, preformed the analysis, wrote the paper and other contribution. The third author contributed to conceived and designed the analysis, data analysis, performed the analysis, wrote the paper, and other contribution.

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