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Article

The Association between Injectable Contraceptive Use and Menstrual Pattern Changes among Reproductive-Age Women at RSAU Dr. Yuniati Wisma Karyani

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ABSTRACT
Background: Injectable contraceptives are a widely used method of family planning due to their high efficacy and convenience. However, they are often associated with side effects, particularly menstrual irregularities, which can affect user satisfaction and continuation rates. Understanding the relationship between injectable contraceptive use and menstrual changes is essential to support informed contraceptive choices.
Objective: This study aimed to examine the effect of injectable contraceptive use on changes in menstrual patterns among eligible women at RSAU Dr. Yuniati Wisma Karyani, Lanud Raden Sadjad.
Methods: A quantitative analytical study with a cross-sectional design was employed. The study involved a total population of 48 eligible women who were all included as participants. Data were collected using a structured questionnaire.
Results: Among the 48 participants, 25 women (52.1%) used progestin-only injectable contraceptives, while 23 women (47.9%) used combination injectables. The majority of users experienced changes in their menstrual patterns. Statistical analysis revealed a significant association between the use of injectable contraceptives and changes in menstrual patterns ($p = 0.02$).
Conclusion: The findings suggest that injectable contraceptives are associated with changes in menstrual patterns. However, users are advised not to be overly concerned, as these changes are generally harmless and temporary.

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INTRODUCTION

Indonesia ranks as the fourth most populous country in the world after the United States, with a total population of 273,879,750 as of December 30, 2021. In response to concerns about rapid population growth, the Indonesian government has implemented a development communication initiative known as the family planning (KB) program. This program is designed to control the population growth rate while improving maternal and child health outcomes by reducing high-risk and unintended pregnancies. Family planning is widely recognized as a cost-effective public health intervention that contributes to improved reproductive health.

Data from 2018 show that among the 24,258,532 couples of reproductive age (Pasangan Usia Subur, or PUS) participating in family planning in Indonesia, the majority used injectable contraceptives, accounting for 15,261,014 users or 62.90%. This was followed by oral contraceptive pills at 17.02%, intrauterine devices (IUDs) at 7.25%, implants at 7.11%, female sterilization (MOW) at 2.72%, condoms at 1.22%, and male sterilization (MOP) at 0.49% (Kemenkes RI, 2018). The 2020 Indonesian Health Profile further revealed that injectable contraceptive use remained the highest at 72.9% (12,658,568 users), followed by pills at 19.4%, IUDs at 8.5%, implants at 8.5%, MOW at 2.6%, condoms at 1.1%, and MOP at 0.6%.

Injectable contraceptives offer both advantages and disadvantages. While they are effective and convenient, side effects include changes in menstrual patterns such as amenorrhea, menorrhagia, irregular cycles, and a delay in the return of fertility after discontinuation (Marfuah, 2024). Weight gain is also commonly reported. The most commonly used injectable contraceptive is Depo Medroxyprogesterone Acetate (DMPA), a synthetic version of the natural hormone progesterone, administered every three months at a dose of 150 mg. Long-term use of DMPA has been associated with several side effects, including vaginal dryness, reduced libido, headaches, nervousness, and acne (Hanafi, 2013; Hartanto, 2004).

Several studies have examined the relationship between injectable contraceptive use and changes in menstrual cycles. A study by Yuriati (Sari & Wittiartika, n.d.) conducted at BPM Fitriani, SST in Tanjungpinang in 2019 found that 73.1% of users of 1-month injectable contraceptives experienced normal menstrual cycles, while only 15.1% of 3-month users reported the same. Conversely, 84.9% of women using 3-month injectables experienced abnormal cycles, indicating a significant association between the type of injectable used and menstrual irregularities (Ananda, n.d.; Sihombing, 2019; Yunitasari et al., 2022).

According to the 2020 Health Profile, the contraceptive use rate in the Riau Archipelago stood at 45.83%, with injectable contraceptives being the most preferred method among new users, totaling 66,971 acceptors or 55.70%. In Natuna Regency, 2018 data from BPS Riau Islands indicated that 61.87% of women aged 15–49 used injectable contraceptives (Anita, 2023). At RSAU Dr. Yuniati Wisma Karyani, Lanud Raden Sadjad, injectable contraceptives were also the most commonly used method, accounting for 23.68% of contraceptive use. In January 2022, out of 118 women of reproductive age at this facility, 48 used injectable contraceptives, making it the most frequently chosen method, followed by pills, IUDs, implants, and other methods (Astutik, 2022).

Despite the high rate of adoption, many injectable contraceptive users report menstrual disturbances, such as breakthrough bleeding, prolonged bleeding, or heavier-than-usual menstrual flow. These side effects, while common, may cause concern among users and affect adherence to the method.

METHODE

Study design

This study employed a quantitative analytic approach with a cross-sectional design. A cross-sectional study is a form of observational research where data on all variables are collected at a single point in time, allowing for the identification of associations between exposures and outcomes without establishing causal relationships. This design is suitable for exploring the correlation between the use of injectable contraceptives and changes in menstrual patterns among women of reproductive age.

Sample

The study was conducted at RSAU Dr. Yuniati Wisma Karyani, Lanud Raden Sadjad, and targeted women of childbearing age who were registered as injectable contraceptive acceptors. The objective was to determine the types and extent of menstrual pattern changes experienced by these users. The population included all injectable family planning (FP) acceptors at the facility during the study period. Inclusion criteria required participants to be women aged 15 to 49 years who had been using injectable contraceptives and reported changes in their menstrual cycle. Women who had recently discontinued or switched contraceptive methods, those undergoing perimenopause or menopause, and those with known gynecological disorders not related to contraception were excluded to reduce confounding variables.

A total sampling technique was employed, in which the entire accessible population meeting the inclusion criteria was selected for participation. Consequently, the study sample comprised 48 women who were actively using injectable contraception and had experienced alterations in their menstrual patterns. This approach was chosen to ensure comprehensive representation and minimize selection bias within the target population.

Measurement

A validated and standardized questionnaire was used to capture relevant data, including demographic characteristics, duration and type of injectable contraceptive used (e.g., progestin-only or combination), and details on menstrual changes such as cycle regularity, duration, bleeding intensity, and the presence of intermenstrual spotting or amenorrhea. The questionnaire was developed based on existing literature and expert input, and pre-tested on a small group to ensure clarity and reliability.

Data collection

Data collection was carried out at RSAU Dr. Yuniati Wisma Karyani, Lanud Raden Sadjad, after obtaining ethical approval and formal permission from the institutional authorities. All eligible reproductive-age women who were registered as injectable contraceptive users at the outpatient clinic were approached during routine service visits. Participants were selected using total population sampling, which included all 48 women who met the inclusion criteria. Prior to participation, each respondent was provided with a detailed explanation regarding the purpose, procedures, confidentiality, and voluntary nature of the study. Written informed consent was obtained from all participants. Data were collected through face-to-face interviews using a structured questionnaire developed by the researchers. The questionnaire consisted of two parts: (1) demographic and reproductive characteristics, and (2) menstrual pattern changes experienced during the use of injectable contraceptives. The interviews were conducted in a private setting within the clinic to ensure participant comfort and confidentiality. The entire data collection process was completed over a period of two weeks, and interviews were conducted by

trained research assistants to ensure consistency and reliability of data. Completed questionnaires were checked daily for completeness and accuracy before being entered into a secured digital database for analysis.

Data analysis

Data were analyzed using descriptive and inferential statistics. Descriptive analysis was conducted to summarize demographic characteristics and the frequency of different menstrual pattern changes. Inferential analysis, including chi-square tests, was used to determine the association between the type of injectable contraceptive used and changes in menstrual patterns. Statistical significance was assessed at a 95% confidence level with a p-value threshold of less than 0.05. All analyses were performed using SPSS software version 25.0.

Ethical Consideration

The study was approved by the institutional ethics committee at RSAU Dr. Yuniati Wisma Karyani and was conducted in accordance with ethical standards for research involving human subjects, including confidentiality and voluntary participation.All ethical procedures were strictly followed. Prior to participation, respondents received information about the purpose, procedures, risks, and benefits of the study. Written informed consent was obtained from all participants.

RESULTS

The characteristics of the study respondents, all of whom were women of childbearing age using injectable contraceptives, are presented in Table 1. The majority of participants were aged 20–35 years (70.8%), followed by those over 35 years (29.2%), with no respondents under 20 years of age. In terms of parity, most were multiparous (68.8%), while 29.2% were primiparous, and only 2.1% were nulliparous. No respondents were classified as grand multiparous. Regarding the duration of contraceptive use, 58.3% had used injectable contraceptives for more than one year, while 41.7% had used them for less than one year.

Table 1. Characteristics of Respondents (Women of Childbearing Age)

Variable	Category	Frequency (n)	Percentage (%)
Age	< 20 years	0	0.0
	20–35 years	34	70.8
	> 35 years	14	29.2
Parity	Nullipara	1	2.1
	Primipara	14	29.2
	Multipara	33	68.8
Duration of Contraceptive Use	< 1 year	20	41.7
	> 1 year	28	58.3

The univariate analysis showed that 52.1% of respondents used progestin-only injectable contraceptives, while 47.9% used combination injectables, as shown in Table 2. Furthermore, the vast majority of respondents (89.6%) experienced changes in their menstrual patterns following the use of injectable contraceptives, while only 10.4% reported no change (Table 3).

Table 2. Types of Injectable Contraceptives Used and Menstrual Pattern

Type of Injectable	Frequency (n)	Percentage (%)
Type of Injectable		
Progestin-only	25	52.1
Combination	23	47.9
Menstrual Pattern		
Unchanged	5	10.4
Changed	43	89.6

The bivariate analysis revealed a statistically significant association between the type of injectable contraceptive used and changes in menstrual patterns ($p = 0.020$), as displayed in Table 4. All users of the progestin-only

injectable reported changes in their menstrual patterns (100%), whereas among combination injectable users, 78.3% experienced changes and 21.7% reported no changes.

Table 4. Association Between Type of Injectable Contraceptive and Menstrual Pattern Changes

Type of Injectable	Menstrual Pattern	Frequency (n)	Percentage (%)	Total (n)	Total (%)
Progestin-only	Changed	25	100.0	25	100.0
	Unchanged	0	0.0		
Combination	Changed	18	78.3	23	100.0
	Unchanged	5	21.7		

Note: Pearson Chi-Square test: p = 0.020

DISCUSSION

The study found that most injectable contraceptive users at RSAU Dr. Yuniati Wisma Karyani were acceptors of the 3-month progestin-only injection (52.1%), followed closely by users of the 1-month combined injection (47.9%). These findings are consistent with Sujono's research, which identified factors influencing injectable contraceptive choice, including spousal support, cost, and infant age. Injectable contraceptives, particularly the 3-month progestin type, are increasingly preferred due to their cost-effectiveness, ease of use, and suitability for breastfeeding mothers (Surjono & Nurhidayah, 2016). Moreover, progestin injections are fully covered by BPJS (Indonesia's national health insurance), making them more accessible to women from lower socioeconomic backgrounds. The longer dosing interval (every three months) also adds to the practicality and appeal of this method.

The study revealed that 89.6% of women using injectable contraceptives reported changes in their menstrual patterns, while only 10.4% did not experience any changes. This is in line with findings by Meysetri et al. (2021), who reported that 82.8% of injectable contraceptive users experienced menstrual disturbances. These changes are attributed to hormonal fluctuations, particularly the effects of exogenous estrogen and progesterone on the hypothalamic-pituitary-ovarian axis. Estrogen plays a role in endometrial proliferation, while progesterone prepares the endometrium for implantation and inhibits ovulation by suppressing the hypothalamic release of gonadotropin-releasing hormone (Hartanto, 2004). The hormonal imbalance caused by synthetic progestins or combined hormones leads to menstrual irregularities, such as amenorrhea, spotting, prolonged bleeding, or shortened cycles.

Statistical analysis revealed a significant association between the type of injectable contraceptive used and changes in menstrual patterns (p = 0.02). All users of the 3-month progestin-only injection (100%) experienced menstrual changes, whereas 78.3% of users of the 1-month combined injection reported such changes. These results are supported by Prawirohardjo (2011), who explained that progestin-only methods, particularly depot medroxyprogesterone acetate (DMPA), inhibit the luteinizing hormone (LH) surge, thereby suppressing ovulation. In addition, progestin causes atrophic changes in the endometrium, often leading to amenorrhea over time. The lack of cyclic estrogen and progesterone peaks prevents the regular buildup and shedding of the endometrial lining, which explains the high rate of menstrual changes among 3-month injectable users (Purwandani, 2023).

In contrast, combined 1-month injections have a milder effect on ovulation and more closely mimic the natural menstrual cycle. Although menstrual disturbances such as spotting or irregular bleeding may occur initially, most users resume a more regular cycle after a few months of use (Varney et al., 2007). The hormonal dosage in combined injections tends to produce fewer and less severe changes in endometrial physiology than progestin-only preparations.

CONCLUSION

This study demonstrated that injectable contraceptive use significantly affects menstrual patterns among women of reproductive age at RSAU Dr. Yuniati Wisma Karyani. A substantial majority (89.6%) of users reported menstrual disturbances, with progestin-only (3-month) injection users being the most affected. Statistical analysis confirmed a significant relationship between the type of injectable contraceptive and changes in menstrual patterns (p = 0.020). Specifically, all users of 3-month injections experienced menstrual changes, compared to 78.3% of 1-month injection users. These findings underscore the need for adequate counseling regarding the potential side effects of injectable contraceptives, especially menstrual irregularities. Health providers should reassure clients that

such changes are typically harmless and transient. Continued education and support can help increase acceptance and adherence to contraceptive methods, particularly among women experiencing early side effects.

Conflict of Interest

The authors declare no conflict of interest related to the conduct, authorship, or publication of this study.

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Data Availability Statement

The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request.

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