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DIFFERENCES IN POST-INJECTABLE CONTRACEPTIVE FERTILITY RECOVERY IN THE INDEPENDENT PRACTICE OF MIDWIVES

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ABSTRACT
The Family Planning (KB) program is designed as a strategic effort to regulate birth intervals, number of children, and pregnancy for the creation of quality families. In the process of choosing a contraceptive method, the potential for side effects is one of the main considerations for couples to maintain birth distance. However, based on the data, the dominant factor that led to the discontinuation of the use of birth control in all types of methods was the desire to have offspring again, with a percentage reaching 34% The purpose of this study was to find out the difference in fertility recovery after injectable contraception. This type of research is descriptive comparatively with a cross sectional approach. The sample in this study was taken using a total sampling technique in accordance with the inclusion and exclusion criteria with a total of 62 respondents. Data collection techniques using factual data questionnaire instruments and analysis used using the Mann Whitney statistical test. The results of the study found that the average recovery time of injectable contraceptives was 1 month for 7.37 months while injectable 3 months for 13.3 months with a p value of 0.001<0.05 hai indicates a difference in fertility recovery from injectable contraceptives of 1 month and 3 months. The conclusion of this study is that there is a difference in fertility recovery after injectable contraception.

Keywords: fertility recovery; 1-month contraception; 3-month contraception

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INTRODUCTION

The Family Planning (KB) program is basically a systematic effort in planning pregnancy, determining the number of offspring, and regulating the distance between births to form a prosperous and quality family. More than that, family planning plays a crucial role in reducing the Maternal Mortality Rate (AKI), especially to prevent the risk of "4T" pregnancy, namely getting pregnant at too young a age (under 20 years old), the frequency of childbirth too often, the distance between pregnancies that is too close, and getting pregnant at too old (over 35 years old) (Kemenkes RI, 2015).

In principle, the selection of contraceptive methods should be adjusted to the medical indications and physical condition of the prospective acceptor. This conformity is very important to minimize the risk of complications and complaints of side effects, considering that hormonal contraceptives tend to cause more complex side effects than non-hormonal methods. Therefore, health workers are required to play an active role in providing counseling or Communication, Information, and Education (KIE) at the beginning of the visit. This is so that new acceptors can make informed choices about the safest and rational type of family planning with their reproductive needs. (Sandi, 2019). Most married women in this region of the world use cotraction in various forms (Elwadood et al., 2019). Based on data from the Palembang City Health Office in 2022, out of 295,703 couples of childbearing age, 245,106 (82.9%) are active family planning participants. Based on the selection of the type of contraception, most active family planning people choose injectable birth control, which is 57.6% and pills 22.5%.(Dinkes Kota Palembang, 2023).

Injectable hormonal contraceptives are in great demand by the public because they are considered very effective, practical, economical, and safe without interfering with the comfort of sexual activity. Despite offering these advantages, the main consideration of acceptors in choosing this method often centers on the risk of side effects that may arise. Clinically, the most common complaints experienced by injectable birth control users include weight fluctuations, headaches, to menstrual pattern disorders that vary from spotting to not menstruating at all (amenorrhea) (Titi & Anisa, 2015). The occurrence of amenorrhea (non-menstruation) triggered by hormonal imbalances often raises concerns about delayed fertility recovery after the acceptor stops using contraceptives. Therefore, the phenomenon of return to fertility is one of the focuses of a very crucial study in various clinical literature to evaluate the effectiveness and safety profile of various contraceptive methods, both hormonal and non-hormonal. (Setyaningsih et al., 2021).

A woman's fertility rate or fertility is influenced by a variety of factors, given that the anatomy and physiology of her reproductive system are much more complex when compared to men. Some of the determinant factors that affect this fertility condition include extreme body mass index (obesity or being too thin) that can interfere with ovarian function, smoking habits that risk damaging the quality of eggs and inhibiting the ovulation process, and the duration of use of contraceptives. Especially with a history of prolonged contraceptive use, this can trigger a persistent hormonal imbalance, which ultimately slows down the process of returning to fertility for women planning a pregnancy. (Maharani et al., 2023). Other problems after using injectable contraceptives are most often experienced by the public is the occurrence of weight gain, changes in the menstrual cycle and delayed fertility which results in a long time in getting the next pregnancy (Agustin et al., 2016).

A study conducted by (Bahriah & Saswita, 2021) on 36 pregnant women who were previously acceptors of 3-month injectable birth control showed a significant association. Through statistical analysis using the Chi-Square test, a calculated t value of 0.05 and a p value of 0.01 were obtained. These results confirm that the use of injectable contraceptives at 3 months has a significant influence on the time of return to fertility in pregnant women at the study site (PMB). Based on a study conducted by (Paulus et al., 2024) on 81 3-month injectable birth control acceptors in the independent practice of dr. Wita Marlina, it was found that there was a significant correlation between the duration of using contraceptives and the appearance of amenorrhea symptoms. Through statistical analysis using the Chi-Square test, a p value = 0.000 (p value< 0.05) was obtained, which confirmed the strong relationship between the two variables.

The duration of use of injectable birth control refers to the total time span in which an acceptor actively uses the contraceptive method until finally deciding to stop using it. Meanwhile, fertility recovery or the return of the fertile period is defined as the ability of the female reproductive system to return to the ovulation process, namely releasing a mature egg (ovum) after the cessation of the use of contraceptives (Triwahyuniastuti, 2024). Research by (Maharani et al., 2023) shows that the majority of Depo Medroxy Progesterone Acetate (DMPA) contraceptive ex-acceptors take a year or more to return to fertility. Based on data collected through the questionnaire, the characteristics of respondents who experienced fertility recovery >1 year were dominated by the age group over 35 years old (43 people), had an imideal weight (47 people), were not smokers (64 people), and had used family planning for more than 2 years (63 people). The study concluded that almost all of the study subjects experienced a delay in returning to their fertile period after the use of DMPA injections.

Based on the amount of data in the work area of PMB Lismarini in 2023, as many as 1058 people are family planning acceptors consisting of injectable contraceptives, pills and implants. The results of interviews with family planning acceptors at PMB Lismarini as the main participants of family planning acceptors using injectable birth control and various kinds of complaints experienced including dizziness, amenorrhea or menstrual disorders (Lismarini, 2024). Based on the description

above, the researcher wanted to conduct a study with the Differences in Fertility Recovery After Injectable Contraception in the Independent Practice of Midwives Lismarini Palembang City.

METHOD

This type of research applies a comparative descriptive method through a cross-sectional design. The main focus of this study was to analyze the comparative duration of return of fertility in women after stopping the use of injectable contraception, both one month and three months, at PMB Lismarini Palembang. In this study, the population is all pregnant women who are post-acceptors of injectable birth control for both 1 month and 3 months. The method of determining the sample applied in this research is total sampling, the number of samples is 62 respondents and has been given an explanation of the research ethics and agreed to be a respondent. The data collection technique was using a factual data questionnaire containing questions about the history of contraceptive use and the duration of fertility return, which had been carried out a content validation test to determine the accuracy of the information by conducting a limited trial (pilot test) with 30 pregnant women who had a history of birth control injections. The data obtained by the driver was analyzed for the difference between the two. The data analysis technique used Shapiro-wilk in the normality test and the non-parametric statistical test (Mann Whitney Test) with a significance of ≤ 0.05..

RESULT

The characteristics of the respondents in this study were based on the grouping of age, education, contraception and length of use of contraceptives with 62 respondents

Table 1.
Respondent characteristics (n= 62)

Respondent characteristics	F	%
≤ 35 years old	48	77,4
> 35 years old	14	22,6
Education		
Elementary School	3	4,8
Junior High School	7	11,3
Senior High School	45	72,6
College	7	11,3
Contraception		
1-month contraceptive injection	30	48,4
3-month contraceptive injection	32	52,6
Duration Of Use		
< 1 year	33	53,2
> 1 year	29	46,8

Based on Table 1, it can be seen from the sample of 62 respondents, as many as 48 respondents (77.4%) with the age >20-35 years, as many as 45 respondents (72.6%) who have a high school education, 32 respondents (52.6%) who use injectable contraceptives for 3 months and as many as 34 respondents (54.8%) who have a history of using family planning < 1 year as many as 33 respondents (53.2%)

Table 2.
Frequensi Distribution of the return of fertility following 1-month injectable

Return Of Fertility	f	%
< 1 year	17	53,1
> 1 year	15	46,9

Table 2, the results were obtained from 30 respondents who used injectable contraceptives for 1 month, as many as 19 respondents (63.3%) who needed time to obtain fertility < 1 year.

Table 3.
Frequensi Distribution of the return of fertility following 3-month injectable

Return Of Fertility	f	%
< 1 year	17	53,1
> 1 year	15	46,9

Table 5, the results were obtained from 32 respondents who used injectable contraception for 3 months, as many as 17 respondents (53.1%) who needed time to obtain fertility < 1 year

Table 4
Differences in Fertility Recovery After Injectable Contraception

Contraception	N	Fertility Recovery Time		P value
		Mean ± SD	Median	
1 Month	30	7,37 ± 4,13	5,00	0,001
3 Month	32	13,3 ± 5,86	13,0	

Based on Table 4, the results of 62 respondents who used injectable contraceptives were obtained, the mean time to recover fertility after 1 month of injectable contraception was 7.37 months and the median value was 5.00 months while the 3-month injectable contraceptive group averaged 13.3 months with a median value of 13 months.

DISCUSSION

Fertility Restoration After 1 Month Injectable Birth Control

Based on Table 5.2, it was found that of the 30 respondents after 1 month of injectable contraception, most of them returned to fertility < 1 year, namely 20 respondents (66.7%). 1-month injectable contraception, commonly known as combination injectable birth control, is a method of pregnancy prevention for women of childbearing age (WUS) that is given routinely every month through intramuscular injection. This preparation works by releasing a combination of the synthetic hormones estrogen and progesterone into the body. Pharmacologically, there are two main types of formulations that are commonly used, namely preparations containing 25 mg of medroxiprogesterone acetate depo (DMPA) and 5 mg of estradiol cycyonate (as in the Cyclofem trademark), as well as other formulations containing 50 mg of norethindron enantat combined with 5 mg of estradiol valerate. The entire preparation is administered into muscle tissue (intramuscularly) once a month. (Munaf, 2020).

In a study (Mustika et al., 2024) regarding the identification of the length of time for the use of injectable birth control for 1 month, it was found that 7.69% of respondents experienced the impact of libido changes on the use of contraceptives for 1 month. So as to increase the number of sexual complaints in acceptors. In the early phases of contraceptive exposure, the body is still physiologically able to carry out a compensatory mechanism by increasing estrogen secretion to maintain hormonal balance (homeostasis). However, the continuous use of hormonal contraceptives over a long period of time can trigger fatigue or failure of the compensation system. This loss of adaptability leads to the suppression of hormone production, especially estrogen. This condition of estrogen decline ultimately triggers various complaints, ranging from decreased sexual function to dysfunction of the reproductive system which directly impacts the slow recovery of female fertility levels. The estrogen content in hormonal contraceptives not only plays a role in inhibiting the ovulation process, but also functions as a regulator of the menstrual cycle to ensure regular bleeding intervals. Even though estrogen is administered, the influence of progestins still dominates the uterine environment by triggering endometrial atrophy. This change in the structure of the uterine lining is a very effective contraceptive mechanism, but continuous thinning has the potential to have an impact on the reproductive function and fertility of the acceptor (HIndriyawati & Nurwiandani, 2021).

Fertility Recovery After 3 Months Of Injectable Birth Control

Based on Table 5.3, it was found that of the 32 respondents after 3 months of injectable contraception, most of them returned to fertility < 1 year, namely 17 respondents (53.1%). Long-term use of hormonal contraceptives, particularly the 3-month injectable type (DMPA), significantly affects the duration of restoration of the balance of the endocrine system. This causes the interval of return to fertility to be slower post-cessation compared to the 1-month injectable method. This condition occurs because persistent exposure to DMPA suppresses the secretion of Luteinizing Hormone Releasing Factor (LHRF) and Follicle Stimulating Hormone Releasing Factor (FSHRF).

As a result, changes in cervical mucus viscosity and ovulation suppression cannot be recovered instantly, given that hormonal regeneration in the pure progestin method takes place more slowly than in the combination method (Kulsum & Sofa, 2021).

In the initial phase of injectable contraceptive use, acceptors generally experience menstrual cycle disruption in the form of irregular bleeding or spotting, which in the long term can develop into amenorrhea. This condition of amenorrhea occurs due to the mechanism of action of hormonal contraceptives that directly affect the reproductive organs, especially the ovaries and endometrium. It is this constant suppression of the function of these organs that ultimately risks leading to a decrease in fertility rates in women (Mutia & Kamsatun, 2017). Research by (Sinaga, 2021) revealed that out of a total of 53 respondents who used 3-month injectable birth control, there were 51 people who experienced menstrual cycle anomalies, of which 37 were long-term users. Through statistical analysis using the Chi-Square test, a significant correlation was found between the duration of the use of contraceptives and the appearance of menstrual disorders, which was evidenced by the value of $p = 0.003$ ($p < 0.05$).This can happen because the mechanism of action of 3-month injectable birth control is by increasing progestin levels so as to inhibit the levels of LH and FSH hormones which eventually inhibit the follicle and prevent ovulation from occurring. 3-month injectable birth control can also make the endometrium less good (Matahari et al., 2018)

Differences in Fertility Recovery After Injectable Birth Control

Based on the results of the Mann Whitney statistical test, a p value of $0.001 < \alpha=0.05$ was obtained, this shows that there is a significant difference between fertility recovery after injectable birth control. Descriptive results showed that the 1-month history of injectable contraceptive users had a faster recovery time of 7.37 months on average than the 3-month history of contraceptive use with an average of 13.3 months. Research by (Munaf, 2020) revealed that there was a difference in the duration of fertility recovery, where Cyclofem birth control acceptors returned fertile on average in 7.1 months, while DMPA birth control users needed a longer time, namely 12.9 months. This is in line with the opinion of Yunita (2019) who states that the time gap is triggered by the type of hormone in Cyclofem injections which is easier to process or metabolize by the body than the content in DMPA birth control.

Based on research (Hindriyawati & Nurwiandani, 2021), it was found that there was a relationship after the use of injectable contraceptives with fertility in pregnant women with the results of the Kendall's Tau statistical test p value 0.003 in menstrual achievement and p value 0.011 in pregnancy. There is a difference in the duration of fertility return between combination hormonal contraceptive methods and single progestin. Specifically, 1-month injectable birth control acceptors tend to get pregnant again in a faster time than 3-month injectable birth control users. In addition, the difference in hormonal composition in the two types of contraceptives also affects the recovery period of the menstrual cycle after use.

The mechanism of action of 3-month injectable contraception (DMPA) involves a residue of the hormone progestin that remains high in the bloodstream, thereby triggering a sustained negative feedback mechanism to the central nervous system. This condition results in suppression of the secretion of Gonadotropin-Releasing Hormone (GnRH) in the hypothalamus, which further inhibits the release of Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH) from the pituitary. In the absence of adequate LH spikes, the maturation process of follicles in the ovaries is stopped and ovulation does not occur, which ultimately triggers a delay in the recovery of the menstrual cycle as well as post-cessation fertility. (WHO, 2025). The risk of infertility will occur in the acceptor if it is more than 12 months late. Other factors that cause difficulty in pregnancy after the use of contraceptives are age, maternal and husband health factors (Agustin et al., 2016; Mishra & Gupta, 2019). According to (Ramanda et al., 2025) the return of fertility in women is different because it can be influenced by hormones in women, the type of contraception used and the length

of use of contraceptives and lifestyle. This is the cause of fertility return in different women even though they use the same contraceptives

CONCLUSION

There was a difference in fertility recovery after injectable birth control with a value of p = 0.001 (< α=0.05) with an average recovery of 1 month of injectable contraception of 7.37 months while the average recovery of injectable contraception was 3 months 13.3 months

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