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The Impact of Three Months of Use of KB Injections on Spotting Incidents in KB Participants

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ABSTRACT Spotting is bleeding between 2 menstrual cycles due to hormonal imbalance in the body due to the use of hormonal birth control that is used by the community, namely 3-month injection birth control. However, spotting makes 3-month injectable birth control users feel disturbed by the side effects of irregular and unscheduled bleeding, resulting in many dropouts. The study aimed to determine the effect of the duration of using 3 months of injectable birth control on the incidence of spotting. Health workers can use this research to provide health education for people who will use 3-month injection KB. The research method uses an analytical survey with a retrospective approach. A sample of 246 KB injection participants for 3 months was taken by systematic simple random sampling. Statistical analysis using Fisher's Exact test. The results showed that most 3-month injection KB participants who were less than 2 years old experienced spotting side effects, while those who used injection KB for more than 2 years did not experience spotting. A p-value of 0.000 was obtained (p-value <0.05) so that there was an effect of the duration of using 3 months of injection contraception on the incidence of spotting. It is hoped that this research will be used as information for PUS who will use 3-month injection birth control or who are currently using 3-month injection birth control as an illustration of the side effects that will be experienced when using 3-month injection birth control, so there are no dropouts and switching to using non-hormonal birth control.

INDEX TERMS duration of use; 3 months injectable birth control; spotting;

I. INTRODUCTION

Spotting is caused by a hormonal imbalance in the body, one of which is due to the use of hormonal birth control that is most widely used by the public, namely 3-month injection birth control[1]. The 3-month family planning injection contains Depo Medroxy Progesterone Acetate (DMPA), given as much as 150 ml/IM every 12 weeks[2].

The results of active family planning in 28 districts/cities, including Ponorogo Regency, are already above 70%[3]. Couples of Reproductive Age (PUS) who are active in 2021 in Ponorogo are 105,978 (71.1%) PUS, with the highest percentage using the injection method as many as 47,794 couples (45.1%)[4]. According to the data recap of the Ngebel Health Center's monthly family planning report in 2020, there were 11.2% of complaints about spotting from users of 3-month injection birth control; in 2021, there were 14.1% of complaints, and in 2022, there were 21.7% of cases.

Spotting can cause physical and psychological disorders. Physical disturbances in the form of anaemia if spotting occurs continuously and causes irritation to the genital area due to

more frequent use of pads[5]. Psychological disorders that can occur due to spotting are feelings of tension, anxiety, stress, lethargy, decreased concentration, irritability, and no sex drive. These physical and psychological disorders can interfere with daily activities[6].

Efforts that can be made to deal with cases of mild spotting do not need to be given medication; providing counselling about spotting experienced by WUS is normal and not dangerous. But if it bothers you, you can give 2x1 Oral Combination Pills (POK) tablets for 7 days. If there is heavy bleeding, do a physical examination, gynaecological examination, and laboratory examination[7]. Psychotherapy can be given to relieve psychological disorders due to spotting, including relaxation therapy, cognitive behavioural therapy, and dynamic psychotherapy. Meanwhile, to alleviate physical disturbances caused by spotting due to the more frequent use of pads, it is necessary to maintain excellent and correct genital hygiene. Adequate nutrition with healthy and nutritious food that contains lots of iron and vitamins and drinking lots of

water[8]. Factors influencing PUS using 3-month injectable birth control are husband's support[9], education[9], knowledge[9], occupation, age[10], place of residence[11], and parity[12].

The effect on menstrual patterns depends on the length of use of 3-month injectable birth control. Spotting bleeding is the most common complaint, which will decrease the longer it is used, but on the contrary, the number of cases experiencing amenorrhea increases the longer it is used [13][14]. According to Wahyuni[15], it was found that in general, someone who uses 3-month injections will stop experiencing spotting after the first year. After passing 1 year most respondents will experience amenorrhea. The results of this study are the same as the results of Wahyu's study[16], that the duration of use of injectable contraceptives greatly affects the occurrence of menstrual disorders. Users of 3-month injectable birth control for less than 1 year will experience spotting side effects that do not interfere with activities. According to Sisilvia[17][18], in her research, it was found that there was an effect of the length of time using 3 months of injectable birth control with menstrual disorders due to an increase in the amount of the hormone progesterone in the body which causes hormonal imbalance. The results of this study are the same as the results of Hariati's research[13], that the duration of using injectable birth control for 3 months is less than 2 years causing spotting and the longer it is used the more amenorrhea occurs. This study used secondary data samples from the KB register book for the period January 2022 to December 2022 with a retrospective approach, namely spotting side effects experienced by 3-month injecting KB participants looking for causes related to the duration of 3-month injecting KB use.

Based on the description of the problem above, researchers must conduct research on "3 Months of Injectable Contraception Use for Spotting Events" to add insight into the effect of the duration of 3 months of injection KB use on the side effects of spotting.

II. RESEARCH METHODS

The general objective of this study was to determine the effect of the duration of 3-month injections on the incidence of spotting in family planning participants. The specific objectives of this study were to identify the characteristics of PUS in 3-month injecting family planning participants including age, parity, education, and occupation, to identify the duration of use of 3-month injecting family planning, to identify spotting events experienced by 3-month injecting family planning participants, and to analyze the effect of the length of use of 3-month injecting family planning on the incidence of spotting in KB participants.

Analytical survey research with a retrospective research design[19]. This study analyzed the causes of spotting from the length of time using 3-month injectable birth control among family planning participants in the working area of the Ngebel Health Center in 2022. Sampling used a probability sampling technique, namely systematic simple random sampling. The inclusion criteria for this study were

all 3-month injecting family planning participants who were spotting and not spotting with complete data records in the KB register book from January 2022 to December 2022. In this study, the population was 502 people with 246 samples. Using secondary data collected from the KB register book from January 2022 to December 2022. As a result of data collection, the data is processed through editing, coding, entry, and tabulating. Data were analyzed using descriptive analysis and statistical analysis on 2 variables that have a relationship or influence. This study used the Fisher's Exact test with a 2x2 contingency table and a nominal data scale. Value $\alpha = 0.05$. there are cells with an expected value of less than 5. The ethical eligibility protocol has been approved by the Surabaya Poltekkes Ethics Commission with Certificate Number EA/1616/KEPK-Poltekkes_Sby/V/2023

III. RESULT

A. CHARACTERISTIC FREQUENCY DISTRIBUTION

Based on the results of the data obtained, the characteristics of the 3-month injection family planning participants in this research are as follows:

TABLE 1
Characteristic Frequency Distribution Participants

	Characteristics	frequency	%
Aged	< 20 years	7	2.8
	21-35 years	136	55.3
	> 35 years	103	41.9
	Total	246	100.0
Job	Doesn't work	114	46.3
	Work	132	53.7
	Total	246	100.0
Education	SD	82	33.3
	SMP	76	30.9
	SMA	88	35.8
	Total	246	100.0
Parity	0-1 Parity	78	31.7
	2-5 Parity	85	34.6
	> 5 Parity	83	33.7
	Total	246	100.0

TABLE 2
Frequency Distribution of 3-Month Injectable Contraception Use

	Variable	frequency	%
The duration of use of injectable birth control is 3 months	≤ 2 years	147	59.8
	> 2 years	99	40.2
Total		246	100.0

Based on the table above, the age of the 3-month injection KB participants are mostly 21-35 years as many as 136 people (55.3%), most of the 3-month injection KB participants work as many as 132 people (53.7%), the education of some 3-month injection KB participants months is SMA as many as 88 people (35.8%) and parity mostly have 2-5 children as many as 85 people (34.6%)

B. FREQUENCY DISTRIBUTION OF TIME OF USE

Based on the results of the data obtained, the distribution of the old frequency of using 3-month injections in this study. Based on the TABLE 2, the duration of use of 3-month injectable birth control is mostly ≤ 2 years of use by 147 people (59.8%).

C. FREQUENCY DISTRIBUTION OF SPOTTING EVENTS

Based on the results of the data obtained, the frequency distribution of spotting events in this research is as follows:

TABLE 3

Frequency Distribution of Spotting Events in 3-month injecting family planning participants

Variabel	frequency	%
Spotting	134	54.5
No Spotting	112	45.5
Total	246	100.0

Based on the table above, the majority experienced spotting as many as 134 people (54.4%)

D. ANALYSIS OF THE EFFECT OF OLD 3-MONTH INJECTABLE CONTRACEPTION USE ON SPOTTING

Based on the results of the data obtained, the test for the effect of the duration of using 3 months of injection contraception on the incidence of spotting in this study is as follows:

TABLE 4

The Influence of 3-Month Injectable Family Planning Use on Spotting Events of KB Participants

Variable	Spotting		No Spotting		Total		Chi-square	
	Freq	%	Freq	%	Freq	%	P-value	
The duration of use	≤ 2 years	134	91.2	13	8.8	147	100.0	0.000
	> 2 years	0	0.0	99	100.0	99	100.0	
Total	134		112		246			

Based on the table above, the number of 3-month injectable family planning participants with a duration of 3-month injection ≤ 2 years with complaints of spotting was 134 people (54.5%) while 3-month injecting KB participants who did not have spotting complaints were 13 people (5.3

%). 3-month injectable family planning participants with a duration of 3-month injection KB > 2 years with no spotting complaints (0.0%), while 99 people (40.2%) did not have spotting complaints.

This study uses a 2x2 table with a factual frequency (fo) that has zero (0) in the cell, so the Fisher's Exact Test is used[14]. The results of the Fisher's Exact Test analysis on the effect of the duration of 3 months of injection contraception on the incidence of spotting obtained a p-value of 0.000 (p-value < 0.05) so that it can be concluded that there is a significant effect between the duration of 3 months of injecting birth control and the incidence of spotting in family planning participants at the Ngebel Health Center, Ponorojo Regency in 2022.

IV. DISCUSSION

The results of characteristic data collection showed that most of the 3-month injection KB participants were aged 21-35 years. At that age, many women use contraception that is effective in delaying, spacing, and preventing pregnancy but it is easy to return to fertility[21].

The characteristics of most of the 3-month injectable family planning participants' work related to income. 3-month injection family planning is considered an affordable, inexpensive, and effective contraceptive method for the community[22].

The characteristics of most of the 3-month injecting KB participants are high school graduates. Someone with higher education does not necessarily know and understand all existing contraceptive methods[23].

Most of the respondents have 2-5 children. If you feel that the number of children who are still alive is sufficient for the desired number of children. So, the number of children who are still alive affects a person's participation in family planning[24].

Most of the 3-month injection KB participants use 3-

month injection KB for ≤ 2 years of use. One of the side effects of 3-month injection birth control is spotting which can occur depending on the length of use. Spotting occurs at the beginning of the use of 3-month injectable birth control and will decrease with the duration of use, while the incidence of amenorrhea increases. Spotting is the most

common complaint, which will be experienced by KB injection participants with 3 months of use \leq 2 years[25].

Most of the 3-month injection KB participants experienced spotting. The hypothalamus produces gonadotropin-releasing hormone (GnRH) which controls the release of hormones secreted by the anterior pituitary, namely luteinizing hormone (LH) and follicle-stimulating hormone (FSH). The increase in the amount of the hormone progesterone from the 3-month birth control injection provides feedback to the anterior pituitary to suppress Follicle Stimulating Hormone (FSH) secretion. This causes the maturation of the primordial follicle to become a Graafian follicle does not occur. Then there is a spotting of amenorrhea in 3-month injectable birth control users[26].

In this study, it was found that most of the 3-month injectable birth control participants who experienced spotting were those with a duration of 3-month injection \leq 2 years. Based on the results of the Fisher's Exact test analysis table, the effect of the duration of 3 months of injection contraception and the incidence of spotting obtained a p-value of 0.000 (p-value $<$ 0.05) family planning participants at the Ngebel Health Center, Ponorogo Regency in 2022.

In the study, it was found that injecting birth control users for 3 months less than 1-year experienced spotting side effects. This is due to hormonal imbalances in the body which cause suppression of FSH secretion so that the maturation of the primordial follicles into de Graaf follicles does not occur. Then there was spotting (spotting). Meanwhile, users of 3-month injectable birth control for more than 1-year experience amenorrhea.

The effect on menstrual patterns depends on the length of use of 3-month injectable birth control. Spotting decreases with time, while the incidence of amenorrhea increases. Spotting bleeding is the most common complaint, which will decrease with longer use, but on the contrary, the number of cases experiencing amenorrhea increases with longer use[13]. According to Wahyuni[15][27], it was found that in general, someone who uses 3-month injections will stop experiencing spotting after the first year. After passing 1 year the majority of respondents will experience amenorrhea. The results of this study are the same as the results of Wahyu's study[16][28], that the duration of use of injectable contraceptives greatly affects the occurrence of menstrual disorders. Users of 3-month injectable birth control for less than 1 year will experience spotting side effects that do not interfere with activities[29][30].

According to Sisilvia[17], in her research, it was found that there was an effect of the length of time using 3 months of injectable birth control with menstrual disorders due to an increase in the amount of the hormone progesterone in the body which causes hormonal imbalance. The results of this study are the same as the results of Hariati's[13][31] research, that the duration of using injectable birth control for 3 months is less than 2 years causing spotting and the longer it is used the more amenorrhea occurs.

Menstrual disorders such as spotting and amenorrhea in users of 3-month injectable birth control are normal side

effects as long as these events are not disturbing. If there is bleeding with a large amount of blood and for a long time, it is necessary to carry out laboratory tests, and gynecological examinations at the hospital[32].

The limitations of this study include data from the Ngebel Health Center family planning register book for the period January 2022 to.d. In December 2022, where some of the data was not completely recorded in the column for the initial date of using the 3-month injection, date of birth, parity, or occupation, the research variables that cause spotting only focus on the duration of using the 3-month injection. Spotting can be caused by the use of other hormonal birth control such as pills and implants or the start of using an IUD or the presence of a certain disease, the research time is sometimes delayed by the activities of the public health center so that data collection cannot be done without assistance, the sample size taken is only family planning participants who are served at the Ngebel Health Center period January 2022 to.d. December 2022

V. CONCLUSION

The main objective of this study was to determine the effect of the duration of using 3 months of injectable birth control on the incidence of spotting in family planning participants. Based on the results of the analysis and discussion of "Length of Using 3-Month Injection Contraceptives Against Spotting in Family Planning Participants", it can be concluded that the characteristics of the respondents who used the 3-month injection were mostly women aged 21-35 years, with a high school education background, who worked and have 2-5 children. The duration of use of 3-month injectable birth control in the majority of respondents was less than 2 years of use. Most of the respondents using the 3-month injection of birth control experienced spotting.

There is a significant effect between the duration of the 3-month injection and the incidence of spotting in family planning participants with a p-value of 0.000 ($<$ 0.05). At the beginning of using 3-month injectable birth control, there will be a hormonal imbalance that causes irregular menstruation. The longer the use of injectable birth control for 3 months, the fewer complaints of spotting and becoming amenorrhea. Suggestions for other researchers are to carry out similar research by developing other variables that affect spotting events and conducting research with primary data.

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