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**Differences Between the Use of One Month Injection Contraception and Three Month Injection Contraception on the Increase in Body Weight in Contract Acceptors in PMB Sri Aningsih, Glenmore District, Banyuwangi Regency In 2024**

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**ABSTRACT**

Developing countries like Indonesia face the biggest problem, which is population growth. The National Family Planning Movement is one way to manage the population that aims to increase human resources. Progesterone is a hormone found in injectable contraceptives for one and three months. The progesterone content in injectable contraceptives DMPA 150 mg and combined injectable contraceptives 25 mg has an impact on increasing appetite, which causes an increase in body weight. This study used a retrospective method. With a total sampling technique, this study involved 60 people who received 1-month and 3-month birth control injections. Observation sheets were tools for collecting data. Data were analyzed using the Mann-Whitney test. This study showed that those who received 1-month contraceptive injections (with 30 respondents each) experienced a weight gain of 19.32% and 41.68% in 3-month contraceptive injections (with 30 respondents each). The Mann-Whitney test value showed that Among KB acceptors, there was a significant difference in weight gain between one-month and three-month contraceptive injections ( $p\text{-value} = .000 < \alpha = 0.05$ ), indicating that  $H_a$  was accepted and  $H_0$  was rejected. It is hoped that this research will help midwives and other researchers understand the side effects of contraceptive injections.

**Keywords:** Acceptors of 1-month contraceptive injection, Acceptors of 3-month contraceptive injection, Weight gain

**INTRODUCTION**

The population explosion faced by developing countries like Indonesia is one of its biggest problems. Improving human resources is the primary goal of the national family planning movement, which is to reduce population growth. Participating in the Family Planning program provides various benefits for couples of childbearing age, including better health for mothers, better health for their babies and children, more attention to their children's education, and better health for fathers so that they do not have to work too hard to earn a living. (Muayah, 2022)

According to the 2022 Indonesian Health Profile, the number of Fertile Age Couples (PUS) with KB acceptors in Indonesia is 59.9%. In East Java, the figure

is 65.9%, while in Banyuwangi, according to 2022 BPS data, the number of PUS is 59.23%. BKKBN 2022 data also shows that KB participants in Indonesia are 59.9%. The most common contraceptives used are injectable KB (61.9%), MOP (0.2%), IUD/AKDR (7.7%), tablets (13.5%), implants (10.6%), and MOW (3.8%) (Kementrian Kesehatan, 2016).

East Java BPS data 2021 shows that as many as 56.57% of people use injectable contraception, 19.20% use tablets, 8.57% use IUDs, 7.27% use implants, 4.74% use MOW/MOP, and 1.25% use condoms (Anggraeni et al., 2023). Based on BPS Banyuwangi 2021 data, there are 317,773 family planning participants, with 122,279 using injectable contraception, 4,978 pills, 24,267 implants, 17,881 IUDs/AKDRs,

6,312 MOWs, 57,144 implants, and 645 MOPs. The policy target in the 2020-2024 Strategic Plan is to increase the prevalence of modern contraception to 63.41% by 2024. Family planning acceptors are more likely to choose short-term rather than long-term contraceptive strategies (MKJP), which include MOW, IUD/AKDR, implant, and MOP.

Through the hypothalamus, the progesterone hormone in the one and 3-month contraceptive injections can stimulate appetite. This hormone increases hunger and converts carbohydrates into fat, which can cause weight gain. Estrogen and progesterone in contraceptive injections affect lipid metabolism and cause fat accumulation, especially around the stomach. DMPA contraceptive injections contain higher progesterone (150 mg) than combination contraceptive injections (25 mg), which is involved in weight gain.

In the first year of use, users of 3-month contraceptive injections usually experience an increase in weight of 1-5 kg, but users of 1-month contraceptive injections usually experience an increase in weight of 2-3 kg. A study showed that out of 40 respondents, 47.5% experienced weight gain, 40% experienced no change, 32.5% had a Body Mass Index of 25-29.9 (overweight), and 2.5% had a Body Mass Index of 35-39.9 (Obesity 1) (Rufaridah et al., 2017)

Weight gain can lead to obesity, a medical condition where excess body fat results in obesity, heart disease, diabetes, and hypertension, which have negative impacts on health (Anggraeni et al., 2023)

One way to lose weight is to implement a healthy lifestyle with a healthy lifestyle that includes the habit of eating a balanced diet, consuming vegetables and fruits, being physically active, managing stress, and reducing unproductive activities. This can significantly improve the health of users of injectable contraception. Given the high number of injectable contraception acceptors, there needs to be attention and

evaluation of its use, including effectiveness, target accuracy, and monitoring of side effects (Purbaningsih et al., 2023)

This study is expected to fill the knowledge gap and provide new contributions to understanding the side effects of both types of injectable contraception. This study's main objective is to compare changes in the weight of KB acceptors for one and three months (Ambarwati & Santoso, 2019).

## RESEARCH METHOD

This study uses quantitative techniques conducted through a retrospective method. The total sampling technique was used on 60 respondents at PMB Srianingsih Glenmore as a research sample. This study used one-month and three-month injection contraception as independent variables, while the dependent variable was weight gain. To determine the differences between the two sample groups tested in this study, the Mann-Whitney U-Test was used to analyze the data.

## RESULT AND DISCUSSION

The results of the study conducted in June 2024 regarding "Differences in weight gain in KB users at PMB Sri Aningsih, Glenmore District, Banyuwangi Regency, after using KB injections for 1 month and 3 months" were in line with the stated objectives. The data obtained were then processed using SPSS version 25.0 for Windows. Univariate and bivariate analyses were used in this study. This study has the following results.

**Table 1.** Presents the Characteristics of Respondents Based on Age:

Age	One month injection		Three-month injection	
	F	%	F	%
<20 th	0	0	0	0
20-35 th	17	56.7	22	73.3
>35 th	13	43.3	8	26.7
Total	30	100.0	30	100.0

**Table 2.** Presents the Characteristics of Respondents Based on Job

Job	One month injection		Three-month injection	
	F	%	F	%
Working	12	40.0	10	33.3
Not Working	18	60.0	20	66.7
Total	30	100.0	30	100.0

**Table 3.** Presents the Characteristics of Respondents Based on Duration of Use.

Duration of Use	One month injection		Three-month injection	
	F	%	F	%
3-6 month	0	0	0	0
7-12 month	0	0	0	0
<1 Year	30	100.0	30	100.0
Total	30	100.0	30	100.0

**Table 4.** Presents the Characteristics of Respondents Based on IMT

IMT	One month injection		Three-month injection	
	F	%	F	%
Underweight <18,5	0	0	0	0
Normalweight 18,5-24	29	96.7	16	53.3
Overweight 25-29	1	3.3	14	46.7
Obese >30	0	0	0	0
Total	30	100.0	30	100.0

**Table 5.** Increase in Body Weight of Injectable Contraceptive Acceptors

Increase in BB of KB Injection Acceptors	One month injection		One month injection	
	F	%	F	%
There is an increase in BB	13	43.3	25	83.3
There is no increase in BB	17	56.7	5	16.7
Total	30	100.0	30	100.0

**Table 6.** Mann Whitney test results

Variable	Mean	p-value
One-month birth control injection	19.32 41.68	.000

Of the 60 respondents, the majority

experienced weight gain, as shown in Table 4.6. Of the 30 respondents who used one-month birth control injections, 19.32% did not experience weight gain, and of the 30 respondents who used three-month birth control injections, 41.68% experienced weight gain. In PMB Srianingsih, Glenmore District, Banyuwangi Regency, in 2024, there was a significant difference in weight gain between users of 1 and 3-month birth control injections, according to the Mann Whitney test, with a p-value =  $0.000 < \alpha = 0.05$ .

#### Age

According to this study, 73.3% of respondents who used 3-month birth control injections were aged 20 - 35 years, and they were mothers in the fertile age group who were not at risk, as shown by the research results in Table 4.1.

Wahyuni's (2015) research stated that reproductive age influences the choice of contraceptive injections because of their effectiveness and convenience. The majority of samples in this study had more than one child and were between 31 and 40 years old. As a result, they prefer effective and long-term contraceptive methods, such as using contraceptive injections for three months. They said during the interview that contraceptive injections that require regular monthly injections seemed uncomfortable for them, which caused fear. (Septianingrum et al., 2018).

In the 20-35 age group, many women use injectable contraception to delay pregnancy because this age is safer from the risk of AKI. The use of contraception at this age can minimize the dangers of AKI and AKB (Alkomah, 2023).

Based on this, the majority of contraceptive injection users are aged 20-35 years. This is due to the theory that the age of 20-35 years is the reproductive phase of space pregnancies, so it requires effective contraception (Purbaningsih et al., 2023).

#### Job

Based on Table 4.2, Most of the 20 people (66.7%) do not work. Income affects

the choice of contraception because expensive contraceptives make people tend to choose cheaper ones (Darmawati, 2011). Working mothers help increase family income, making it easier to choose contraceptives such as injections.

Wahyuni's research (2015) also found that at the Cimandala Bogor Health Center, factors influencing the choice of 3-month birth control injections were work and family income. Although the family economy is solid and many acceptors of 3-month birth control injections are homemakers. The majority of users of 3-month birth control injections do not work. They consider 3-month birth control injections to be quite economical and affordable, and 3-month birth control injections do not affect the family economy, so many choose them (Septianingrum et al., 2018).

#### **Duration of Use**

Based on Table 4.3, all users of 1-month and 3-month contraceptive injections have a duration of use of 6 months with a total of 30 people (100.0%).

Gustien Hana Kartika's research found that out of 30 samples, 18 people (60%) used DMPA contraceptive injections for more than 36 months. Lena Juliana Harahap reported that out of 92 samples, 59 people (64.1%) used DMPA contraceptive injections for over one year, and 33 people (35.9%) for less than one year. The large number of users of long-term contraceptive injections shows the high public interest in this method because it is effective in delaying, spacing, or stopping pregnancy.

Mochtar (2015) stated that contraceptive injections are increasingly popular in Indonesia because they are effective, practical, cheap, and safe. It is estimated that half a million couples in Indonesia use contraceptive injections to prevent pregnancy. Contraceptive injections offer many benefits, such as long-term protection, high effectiveness in preventing pregnancy, not interfering with husband-wife relations, and ease of use without having to remember every day

(Yuhedi & Kurniawati, 2015). Based on the description above, most users choose contraceptive injections because they are practical, relatively cheap, and safe.

#### **Body Mass Index**

Based on Table 4.4, the majority of users of injectable contraception have a normal BMI (18.5-24), as many as 29 people (96.7%). Hartanto's theory is that, according to this study, injectable contraception for one month can cause weight gain because the hormones progesterone and estrogen stimulate appetite and facilitate the conversion of carbohydrates into fat. Thus, users of 3-month injectable contraception tend to gain weight faster because the progesterone hormone content is higher than 1-month injectable contraception. Progestin stimulates appetite, causing higher calorie consumption and weight gain.

#### **Weight Gain**

Users of 3-month contraceptive injections, namely 25 people (83.3%), experienced weight gain, as shown in Table 4.5.

Sulistyaningsih's (2014) study showed that 69.6% of 3-month contraceptive acceptors experienced weight changes, while 30.4% did not. Pangestika (2017) found that 100% of acceptors experienced weight changes. Pratiwi (2013) also found that the use of hormonal contraceptive injections and weight gain were significantly correlated, with 57.5% of respondents reporting weight gain, especially 0-1 kg (47.8%) and 1-2 kg (21.73%) per year.

Medford et al. (2015) explained that rapid or slow weight gain is caused by increased fat and fluid retention due to progesterone. This hormone converts sugar and carbohydrates into fat, increases subcutaneous fat and hunger, and decreases physical activity. In the first year, those who use 3-month birth control injections usually gain 1-5 kg, but those who use 1-month birth control injections usually gain 2-3 kg (Rufaridah et al., 2017).

#### **Difference in weight gain from 1-month**

### **or three-month injectable contraception at PMB Srianingsih, Glenmore Village, Banyuwangi Regency**

In Table 4.6, out of 60 respondents, 41.68% of injectable contraceptive users experienced weight gain after three months. The Mann-Whitney test showed a significant difference, where one type of injectable contraceptive showed a higher weight gain than the others ( $p$ -value = 0.000  $< \alpha = 0.05$ ).

Research by Zainiyah et al. (2021) showed that 60% of respondents who used 3-month birth control injections experienced weight gain, while 44% of users of 1-month birth control injections also experienced weight gain. The Chi-Square test results showed a significant difference between the two types of birth control injections, with a  $p$ -value = 0.036  $< \alpha = 0.05$  at BPS Jariyah Amd, Burneh District, Bangkalan.

Birth control injections contain hormones that affect appetite. The one-month birth control injection contains both progesterone and estrogen, but the three-month birth control injection only has a larger dose of progesterone. (150 mg for DMPA versus 25 mg for the combination). Progesterone increases hunger and accelerates the conversion of carbohydrates to fat. While estrogen affects lipid metabolism and can cause fluid retention, both contribute to weight gain (Rufaridah et al., 2017).

Researchers suggest that injectable contraceptive acceptors regulate food intake, low-fat diet, and exercise regularly to overcome weight gain. Communication, information, and education (IEC) are also important in explaining the causes of weight gain.

### **CONCLUSION AND RECOMMENDATION**

The results of this study can be concluded as follows:

Based on data analysis, most users of 1-month injection contraception at PMB Srianingsih, Glenmore Village,

Banyuwangi Regency, did not experience weight gain as many as 17 people (56.7%).

As many as 25 people (83.3%) of 3-month injection contraception acceptors at PMB Srianingsih, Glenmore Village, Banyuwangi Regency, experienced overall weight gain.

There is a difference in weight gain between 1- and 3-month injection contraception acceptors at PMB Srianingsih, Glenmore Village, Banyuwangi Regency with ( $p = .000$ )  $< \alpha = 0.05$ , which means that there is a significant difference between the weight gain of 1- and 3-month injection contraception users in KB acceptors at PMB Srianingsih, Glenmore District, Banyuwangi Regency in 2024.

Based on the results that have been found, the researcher will provide suggestions and if you are willing to consider the following:

For Researchers apply your expertise related to education to hormonal contraceptive injection acceptors, especially midwifery care.

At the research site it can improve the effectiveness of reproductive health services provided to patients.

For further researches future studies can use the findings of this study as a basis, and they can be refined again if there are shortcomings from previous researchers. Then, the measuring instruments that have been used can be further refined.

Government collaborate with local health services to provide education and socialization, monitoring, and evaluation, especially for users of 3-month contraceptive injections. With this, the government can help reduce the side effects of using contraceptive injections and improve the quality of reproductive health services.

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