



Differences in Weight Gain between Acceptors of 1 Month Injection and 3 Month Injection of KB at Delta Mutiara Maternity Clinic and Hospital

^KAfinatus Syubah¹, Paramitha Amelia Kusumawardani², Siti Cholifah³
^{1,2,3} Midwifery, Faculty of Health Science, Universitas Muhammadiyah Sidoarjo
Email Corepondence author (^K): paramitha_amelia@umsida.ac.id

ABSTRACT

The high birth rate is still a major problem in Indonesia the population which until now has not been able to overcome. Injectable contraception is a way to prevent pregnancy through hormonal injections. There are 2 types of injectable birth control, namely 1 month injection and 3 month injection. The side effect of injecting contraception with the highest frequency is weight gain. The side effect of weight gain is the body's adjustment to hormonal changes so that the possibility of weight gain occurring does not last long. The purpose of this study was to determine the differences in weight gain in 1-month and 3-month injectable birth control acceptors at the Delta Mutiara Maternity Clinic and Hospital. The method used in this research is quantitative analytic with cross sectional research design. using the Quota Sampling technique, data processing in this study was carried out in 2 ways, univariate analysis to describe the characteristics of each variable and bivariate analysis using the Independent T Test with an error rate of 5% (0.05). The results showed that the significant value for 1-month injectable family planning acceptors was $p=0.004$ ($p>0.05$) and for 3-month injectable family planning acceptors obtained a significant value of $p=0.000$ ($p>0.05$) indicating that there was a significant difference between weight gain in 1-month and 3-month injectable birth control acceptors at the Delta Mutiara Maternity Clinic and Hospital.

Keywords: Injection contraceptives, Acceptors; Family Planning; Weight gain

Article history :

Received: 6 February 2024

Received in revised form: 16 March 2024

Accepted: 12 May 2024

Available online: 15 June 2024



Licensed by [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).

INTRODUCTION

The high birth rate in Indonesia is still a major population problem that has yet to be solved. The Central Bureau of Statistics (BPS) conducted a survey on the population of Indonesia, which continues to increase from year to year. In 2010 the Indonesian population reached 237.6 million people, while in 2020 the Indonesian population reached 270.2 million people (Central Bureau of Statistics, 2020). Therefore, the government made one of the programs that can help avoid unwanted births commonly referred to as family planning ¹. According to the World Health Organization (WHO), family planning is an action that can help married couples to avoid unwanted births, regulate the interval of pregnancy and birth, control the time of birth in relation to the age of the husband and wife, determine the number of children in the family through promotion, protection and assistance in accordance with reproductive rights and improve the welfare of children to create a quality family ².

Based on data from the Indonesian health profile, active family planning participants among couples of childbearing age (PUS) in 2020 amounted to 67.6%. Most acceptors choose to use short-term contraceptive methods compared to long-term contraceptive methods. The pattern of contraceptive type selection in 2020 showed that most acceptors chose to use the injectable method by 72.9% (BKKBN, 2020) ³. According to the Central Bureau of Statistics, the number of couples of childbearing age in East Java Province in 2020 is 7,833,818 with active family planning users IUD 674,826, MOW 287,553, MOP 21,746, Condoms 128,743, Implants 687,847, Injections 3,034,883, Pills 1,082,538. and for injectable family planning users in Sidoarjo Regency is 150,048 people ((BPS), 2020) ⁴.

The family planning program is still one of the priority programs in various countries, including Indonesia. One type of effective contraception that is an option and is part of the current national family planning program is injectable family planning. Injectable contraception is one way to prevent pregnancy through hormonal injections ⁵. There are 2 types of injectable family planning, namely 1-month injections and 3-month injections. Injectable contraception is in great demand by many people because it works effectively, its use is practical and the price is relatively cheap ⁶. In his book Harfi Hartanto about family planning and contraception says that until now there has not been a single contraceptive method that is truly 100% perfect ideal. As well as that all contraceptives have failures, all contraceptives also pose certain risks to the wearer. Thus there are 3 things that are very important to be known by prospective family planning acceptors, namely effectiveness, safety and side effects ⁷.

The use of hormonal contraceptives for a certain period of time can cause various side effects including disruption of menstrual patterns, such as amenorrhea, menorrhagia and spotting, delayed return of fertility after discontinuation of use and weight gain ⁷. The most common side effect of

injectable contraceptives is weight gain. Body weight is the most important anthropometric measure which is the result of an increase or decrease in all tissues in the body, including bone, muscle, fat, body fluids and others ⁸. The side effect of weight gain is the body's adjustment to hormonal changes so that the possibility of weight gain that occurs does not last long ¹.

Changes in body weight of injectable birth control acceptors occur due to the strong progesterone hormone that stimulates the appetite hormone in the hypothalamus. With an increase in appetite that is more than usual the body will 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. In addition to causing increased appetite progesterone hormones can also reduce physical activity ⁹.

Complications that occur if injectable birth control acceptors are overweight will risk obesity, high cholesterol, high blood pressure, type 2 diabetes mellitus, kidney stones, and depression. These side effects can cause acceptors to drop out of injectable contraception or withdraw injectable contraception before reaching the predetermined period ¹⁰.

Based on the results of a preliminary survey conducted on January 3, 2023 on 1-month and 3-month injectable family planning acceptors at PMB Siti Nur Azizah from January to September 2022, 12 (100%) injectable family planning acceptors were obtained. 9 (75%) family planning acceptors injecting 1 month and 3 (25%) family planning acceptors injecting 3 months. From the results of patient medical records, all 3-month injectable birth control acceptors 100% experienced an average weight gain of 2.7 kg per 6 months, while all 1-month injectable birth control acceptors (100%) experienced an average weight gain of 3 kg/ year.

METHOD

This study uses a Quantitative Analytical method, namely comparing weight gain between 1-month injectable birth control acceptors and 3-month injectable birth control. The approach model used is Cross Sectional. Conducted at the Pearl Delta Maternity Clinic and House in May 2023. The population of this study were all birth control acceptors injecting 1 month and 3 months at the Delta Mutiara Clinic and Maternity Home, namely 50 people. The sample taken was 44 people (Calculation Attached in accordance with the Slovin Formula) in accordance with the inclusion and exclusion criteria. Inclusion criteria are 1-month and 3-month injectable family planning acceptors who are willing to become respondents, have used injectable contraceptives for at least 1 year, have a family planning card. While the exclusion criteria are women who consume slimming drugs. The sampling technique used was nonprobability sampling with quota sampling technique. Data collection was done

using a questionnaire.

Researchers distributed questionnaires to respondents containing identity, length of use of injectable contraceptives 1 month or 3 months, weight before and after using injectable birth control. Before being given a KB injection, the researcher weighs the body weight. The data analysis technique in this study uses 2 ways, namely univariate analysis to see the results of measuring the weight gain of each variable which will be divided into 2 groups, namely the group of 1-month injectable birth control acceptors and 3-month injectable birth control acceptors. Respondents who fit the inclusion and exclusion criteria were encouraged to sign informed consent. Meanwhile, bivariate analysis was used to analyze differences in weight gain in 1-month or 3-month injectable birth control acceptors, so an Independent T Test was conducted with an error rate of 5% (0.05).

RESULTS

Table 1. Frequency Distribution of Respondents' Characteristics at Delta Mutiara Maternity Clinic and House

Characteristics	N	%
Age		
20-30 Years	15	34.1
31-40 Years	20	45.5
41-50 Years	9	20.5
Education		
Bachelor	13	29.5
Senior High School	19	43.2
Vacational High School	1	2.3
Junior High School	11	25.0
Job		
Self-employed	14	31.8
Housewife	17	38.6
Trader	4	9.1
Teacher	7	15.9
Private Employee	2	4.5

Based on Table 1 above, the characteristics of respondents in this study that the most KB users when viewed in terms of age are 31-40 years old as many as 20 respondents (45.5%). Meanwhile, when viewed in terms of education, the most acceptors with at least high school education were 19 respondents (43.2%). And when viewed in terms of occupation, the most KB acceptors are housewives, namely 17 respondents (38.6). Housewives have a high routine because besides having to take care of the house, they also have to take care of all the needs of children and husbands¹¹.

Table 2. The results of measuring the average weight gain of 1-month and 3-month injectable family planning acceptors

Age and Weight Gain	Minimum	Maximum	Mean ±SD
Weight before using 1-month injectable birth control	51	70	59.95 ±5.269
Weight After 1 Month of Injectable Contraceptive Use	56	74	64.86 ± 5.294
Weight Before 3 Months of Injectable Contraceptive Use	50	71	61.32 ± 6.614
Weight After 3 Months of Injectable Contraceptive Use	59	82	71.27 ± 5.767

Based on Table 2 above, the average age of 1-month injectable family planning acceptors is 35.45 years. Meanwhile, the average age of 3-month injectable family planning acceptors is 34.55 years. Furthermore, the youngest respondent in 1-month injectable family planning acceptors was found to be 27 years old and the oldest was found to be 45 years old. And for the youngest respondent in the 3-month injectable family planning acceptor, the age of 26 years for the oldest was found to be 44 years old. The initial body weight of 1-month injectable family planning acceptors has an average of 59.95 kg. While the final weight after the use of 1-month injectable birth control has an average of 64.86 kg, while for the initial weight of 3-month injectable birth control acceptors has an average of 61.32 kg and for the final weight after the use of 3-month injectable birth control has an average of 71.27 kg. This shows that there is an increase in the average body weight of birth control acceptors injecting 1 month and 3 months. After obtaining the average value of weight gain of injectable birth control acceptors, the Shapiro-wilk normality test was carried out because the number of samples used was less than 50 in order to produce accurate decisions and determine the appropriate analysis method. The results of the normality test can be seen in Table 2.

Table 3. Uji Normalitas Shapiro-Wilk

Injectable family planning acceptors	Shapiro-Wilk		
	Statistic	df	Sig.
Before using 1-month injectable birth control	.967	22	.631
After 1 Month of Injectable Contraceptive Use	.959	22	.460
Before using the 3-month injectable contraceptive	.946	22	.259
After 3 Months of Injectable Contraceptive Use	.987	22	.989

Based on the results of the Shapiro-Wilk test, the data is said to be normally distributed if the significant value (p) obtained is greater than 0.05 ($p > 0.05$). The results of the normality test in table 2 above show that the significant value before the use of 1-month injectable birth control is $0.631 > 0.05$,

while after the use of 1-month injectable birth control, a significant value of $0.460 > 0.05$ is obtained. And for the significant value obtained before the use of KB injections 3 months is $0.259 > 0.05$ while after the use of KB injections 3 months obtained a significant value of $0.989 > 0.05$. The results obtained are greater than 0.05 so that the data is said to be normally distributed.

Table 4. Independent T-test Results of Weight Gain of 1-Month Injectable Birth Control Acceptors

	t-test for Equality of Means						
	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Before 1-month injectable family planning	0.011	0.916	0.004	-4.909	1.592	-8.123	-1.695
After 1-month injectable family planning			0.004	-4.909	1.592	-8.123	-1.695

Based on table 4, the results of the Independent T-test test for weight gain of 1-month injectable birth control acceptors are known to be significant (2-tailed) value of $0.004 < 0.05$, so the results show that H_0 is rejected and H_1 is accepted, so it can be concluded that there is a significant difference between weight gain before and after 1-month injectable birth control.

Table 5. Independent T-test of Weight Gain of 3-month injectable family planning acceptors

	t-test for Equality of Means						
	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
Before 3-month injectable family planning	-5.321	42	0.000	-9.955	1.871	-13.730	-6.179
After 3-month injectable family planning	-5.321	41.234	0.000	-9.955	1.871	-13.732	-6.177

Based on table 5, the results of the independent T-test test for weight gain of 3-month injectable family planning acceptors, it is known that the significant value (2-tailed) is $0.000 < 0.05$, so the results show that H_0 is rejected and H_1 is accepted, so it can be concluded that there is a significant difference between weight gain before and after 3-month injectable family planning.

DISCUSSION

Family planning is an effort that regulates the number of pregnancies in such a way that it has a positive impact on the mother, baby, father and family concerned will not cause harm as a direct result of the pregnancy. It is expected that with careful planning of pregnancy, it will avoid the act of terminating pregnancy by abortion ¹².

Hormonal contraceptives that are widely used include 1-month injections (cyclofem) and 3-month injections (DMPA). Cyclofem injectable contraceptives contain a combination of the hormones Medroxy Progesterone Acetate (progestin hormone) and Estradiol Cypionate (estrogen hormone) ¹³. Before the injection, the mother must be examined first to ensure that she is in good condition and not pregnant. In general, birth control injections work to thicken the uterine mucus making it difficult for sperm to penetrate. In addition, birth control injections also help prevent the egg from attaching to the uterine wall so that pregnancy can be avoided ¹⁴.

The results of the study stated that there was a significant difference in weight gain between 1-month and 3-month injectable birth control acceptors at the Delta Mutiara Clinic and Maternity Home with an average increase in body weight in 1-month injectable birth control acceptors was 4.9 kg (before the use of 1-month injectable birth control the average = $59.95 \pm 5,269$, after the use of 3-month injectable birth control was 64.86 ± 5.294) while the average weight gain in 3-month injectable birth control acceptors was 9.9 kg (before the use of 3-month injectable birth control, the average = $61.31 \pm 6,614$, after the use of 3-month injectable birth control was $71.27 \pm 5,767$). this is because the progesterone hormone content in 3-month injectable birth control (DMPA) is more than 1-month injectable birth control, where the hormone can make the mother's appetite increase so that the mother experiences a lot of weight gain. In addition, the use of injectable birth control for a long period of time will cause the progesterone hormone to continue to increase in the body so that it can make the appetite continue to increase and carbohydrates and sugar in the body will be converted more quickly into fat so that weight will be easier to increase.

The results of this study are in line with the results of Anitasari's research (2018) entitled Differences in Acceptor Weight Before and After Using Injectable Contraceptives in the Lamasi Health Center Work Area, Luwu Regency based on the results of the study found that there was a difference in the average body weight before and after using injectable birth control, which was 2.94 and the difference showed a significant difference seen from the p value = 0.000 which means p value <0.005. Thus, there is a difference in weight gain in birth control acceptors before and after using injectable birth control ¹⁵.

This is also in line with research conducted by (Sumantri, 2018) which explains that 3-month injectable contraceptives are more likely to affect weight gain because DMPA stimulates the appetite control center in the hypothalamus which can cause acceptors to eat more than usual, so they have the potential to increase body weight. Weight gain is caused by the hormone progesterone facilitating the change of carbohydrates and sugar into fat, so that fat under the skin increases and causes increased appetite¹⁶.

CONCLUSION

Based on the results obtained in this study, it can be concluded that there is a significant difference between the weight gain of birth control acceptors injecting 1 month and 3 months at the Delta Mutiara Clinic and Maternity Home. Evidenced by the results of the independent T-Test test, it is known that the significant value (2-tailed) is ($p=0.004$) for KB injections 1 month and ($p=0.000$) for KB injections 3 months.

REFERENCES

1. Sembiring JB. Faktor - Faktor Yang Berhubungan Dengan Peningkatan Berat Badan Pada Akseptor Kontrasepsi Suntik Di Puskesmas Batahan Kecamatan Batahan Kabupaten Mandailing Natal. *Gaster*. 2019;17(1):36. doi:10.30787/gaster.v17i1.328
2. Yanti LC, Lamaindi A. Pengaruh Pengaruh KB Suntik DMPA Terhadap Gangguan Siklus Menstruasi pada Akseptor KB. *J Ilm Kesehatan Sandi Husada*. 2021;10(1):314-318. doi:10.35816/jiskh.v10i1.596
3. 2018 KR. *Profil Kesehatan Indonesia Tahun 2020*. Vol 48.; 2006.
4. BKKBN PJT. Jumlah Pasangan Usia Subur dan Peserta KB Aktif Menurut Kabupaten/Kota di Provinsi Jawa Timur, 2021. Badan Pusat Statistik Provinsi Jawa Timur. Published 2021. <https://jatim.bps.go.id/statictable/2022/11/07/2395/jumlah-pasangan-usia-subur-dan-peserta-kb-aktif-menurut-kabupaten-kota-di-provinsi-jawa-timur-2021.html>
5. Puskesmas DI, Kota L. Pengaruh kontrasepsi suntik terhadap peningkatan berat badan dengan lamanya penggunaan pada akseptor kb di puskesmas lompo kota parepare 1. *J Kesehat Lentera Acitya*. 2017;4(4):5-12. Accessed August 16, 2023. <https://lppmfatimaparepare.org/index.php/acitya/article/view/13>
6. Purba D. Hubungan Penggunaan KB Suntik 3 Bulan Dengan Kenaikan Berat Badan Pada Wanita Usia Subur di Puskesmas Maga Kabupaten Mandaling Natal Tahun 2022. *Junal Inov Ris Ilmu Kesehat*. 2023;1 No 1(2963-2005):106-115.
7. Zainiyah H, Wahyuningtyas D, Alchoini AM. Perbedaan peningkatan berat badan antara akseptor KB suntik 1 bulan (cyclofem) dengan akseptor KB suntik 3 bulan (depo medroksi progesterone asetat/DMPA). *J Ilm Obs*. 2021;11(2):1-. <https://stikes-nhm.e-journal.id/JOB/article/download/485/524/>
8. Maryuni AS. Pengaruh KB Suntik Terhadap Kenaikan Berat Badan Akseptor. *Kesehat Reproduksi*. 2017;1(1):71-75.
9. Susila I, Oktaviani TR. Hubungan Kontrasepsi Suntik Dengan Peningkatan Berat Badan Akseptor (Studi Di BPS Dwenti K.R. Desa Sumberejo Kabupaten Lamongan 2015). *J Kebidanan*. 2018;7(2):8. doi:10.30736/midpro.v7i2.27
10. Handayani S, . S. Perbedaan Kenaikan Berat Badan Pada Akseptor Suntik Dmpa Kombinasi. *J Kebidanan*. 2019;11(01):86. doi:10.35872/jurkeb.v11i01.333

11. Sulastriningsih K, Wijayanti RU, Ernawati N. Pengaruh Kenaikan Berat Badan Pada Akseptor Kb Suntik Tiga Bulan Di TpmB Bidan K Tahun 2021. *Syntax Transform*. 2023;4(1):77-85.
12. Jember K. Fitriyah Nanik, Gambaran Kenaikan Berat Badan, Hal. 162 - 166. Published online 2012.
13. Febriani R, Ramayanti I. Analisis Perubahan Berat Badan Pada Pemakaian Kb Suntik Depo Medroksi Progesteron Asetat (DMPA) Departemen Fisiologi Fakultas Kedokteran Universitas Muhammadiyah Palembang 1 Semua Negara di dunia , baik Negara maju maupun Negara tentu berkembang , 34 ., *J 'Aisyiyah Med*. 2020;5:113-121.
14. Utari ARSDS. Hubungan Kb Suntik Dmpa Dengan Perubahan Berat Badan Di Bpm Sri Sulasmi Sragen. *Respiratory2UnwAcId*. Published online 2020:24.
15. Anitasari I. Perbedaan Berat Badan Akseptor Sebelum dan Sesudah Menggunakan Alat Kontrasepsi KB Suntik di Wilayah Kerja Puskesmas Lamasi Kab. Luwu. *J Fenom Kesehat*. 2018;1(01):237-242.
16. Sumantri AW. Hubungan Suntikan Kb 3 Bulan Dengan Kenaikan Berat Badan. *Babul Ilmi J Ilm Multi Sci Kesehat*. 2018;8(0). doi:10.36729/BI.V8I0.92