

The Difference Between The Use Of Combination Injection Contraception And Medroxyprogesterone Acetate (DMPA) Contraception With Changes In Body Weight At Tpmbsri Haryati

Sri Haryati^{1*}, Rahmadiyahanti²

^{1,2}Abdi Nusantara College of Health Sciences, Indonesia

*Corresponding Author:

Email: hjsriharyati29@gmail.com

Abstract.

Background: Combined injectable contraceptives contain the hormones estrogen and progestin, while DMPA contraceptives only contain progestin. This difference can affect the response of the tube to the contraception. *Purpose of Writing:* to determine the difference between the use of combined injection contraception and medroxyprogesterone acetate (DMPA) contraception with changes in body weight in TPMB Sri Haryati. *Research Methods:* The method in this study was an experimental design (quasi experiment) with a two group pretest posttest design. In this study, there were divided into two groups, namely the group using combined injection contraception and the group using the medroxyprogesterone acetate contraception (DMPA). *Research Results* The results of the independent test sample test obtained *Asymp. Sig (2 – Sided)* has a value of 0.946, because $0.946 > 0.05$, the hypothesis is rejected. This means that there is no difference between combination injections and DPMA injections on weight changes before and after the use of combination injections and DPMA injections. *Conclusions and Suggestions:* The results of this study are expected that midwives can provide health education about family planning using injections in providing counseling both combination and DPMA have a risk of weight gain.

Keywords: Combination injection contraception, medroxyprogesterone acetate (DMPA) contraception and weight change.

I. INTRODUCTION

According to (BKKBN, 2015) family planning is an effort to create a quality family through promotion, protection, and assistance in realizing reproductive rights and providing services, arrangements and support needed to form a family with the ideal age of marriage, regulate the number, spacing, and the ideal age for childbearing, managing pregnancies and fostering resilience and child welfare. Injectable contraception is a drug used to prevent pregnancy by injecting the drug into fertile women (Maryani, 2007). According to Saifuddin (2010), the type of 3-month injection contraception, namely Depo medroxyprogesterone acetate (DMPA) contains 150 mg of DMPA which is given every 3 months by way of intramuscular injection (in the buttocks area). According to Saifuddin (2010), the disadvantages of 3-month injection contraception include: Often found menstrual disorders, such as: Menstrual cycles that shorten or lengthen, bleeding a lot or a little, irregular bleeding or spotting bleeding, no menstruation at all. In addition, it is very dependent on the location of the health service facility (must return for injections), Cannot be stopped at any time before the next injection., Weight problems are the most common side effect, Delayed return to fertility after discontinuation of use, Delayed return to fertility not due to damage/abnormalities in the genital organs, but because injection drugs have not yet been released from the depot (injection site),

Changes occur in serum lipids with long-term use, Long-term use can slightly reduce bone density (density), Long-term use can cause vaginal dryness, decreased libido, emotional disturbances (rarely), headache, nervousity, acne. According to Rahayu and Prijatni (2016), the workings of progestin injections are: Preventing ovulation, Thickening of cervical mucus thereby reducing sperm penetration ability, Making the uterine mucous membrane thin and atrophic, Inhibiting gamete transport by the tubes. Based on the research of Febriani, R., & Ramayanti, I. (2020). Analysis of changes in body weight using Depo Medroxy Progesterone Acetate (Dmpa) injections In the study, the results obtained were 77.8% of respondents experienced weight gain when using DMPA injections for >12 months. In an initial survey by researchers on 3-month injectable birth control users, it was found that there was an increase in body weight after use, the weight gain before use was an increase of 1 kg. Based on the statements of family planning acceptors, the researchers were interested in conducting research on the differences between the use of combined injection contraception and medroxyprogesterone acetate (DMPA) contraception with changes in body weight at TPMB Sri Haryati”

II. METHODS

This research was conducted to find out the difference between the use of combined injection contraception and medroxyprogesterone acetate (DMPA) contraception with changes in body weight and the time of study from April to June 2023. This study used a two-group experimental research method before and after. Sampling technique purposive method. The dependent variable is an increase in body weight, the independent variable is combined injectable contraceptives and medroxyprogesterone acetate contraception (DMPA).

III. RESULT AND DISCUSSION

A. Univariate analysis

1. Frequency Distribution of Weight Before and After Using Combination Injection Contraception at TPMB Sri Haryati in 2023.

Table 1. Distribution of Weight Frequency before and after Use of Combination Injection Contraception at TPMB Sri Haryati in 2023.

Weight Gain	Number of respondents	Percentage %
Fixed or not	30	60%
There is an increase	20	40%
Total	50	100

Table 5.1 shows the results of the body weight before and after the use of combined injection contraception, the majority of the body weight remains constant or there is no increase in 30 people (60%).

2. Frequency Distribution of Changes in Weight Using Medroxyprogesterone Acetate (DMPA) Injectable Contraceptives at TPMB Sri Haryati in 2023.

Table 2. Frequency Distribution of Weight Before and After the Use of Medroxyprogesterone Acetate (DMPA) Injectable Contraception at TPMB Sri Haryati in 2023

Weight gain	Number of respondents	Percentage %
Fixed or not	15	30%
There is an increase	35	70%
Total	50	100

Table 5.2 shows the results of the body weight before and after the use of Medroxyprogesterone Acetate (DMPA) injection contraception, the majority of the body weight has increased by 35 people (70%).

3. Average Weight Before and After Using Combination Injection Contraception at TPMB Sri Haryati in 2023.

Table 3. Average Body Weight Before and After Using Combination Injection Contraception at TPMB Sri Haryati Year 2023

Weight Assessment	N	Mean	standar deviasi	Min	Max
Before using combination injections	50	58,04	6,827	43	72
After using the combination injection		58,12	5,840	45	70

Based on Table 5.3, it is known that the use of combined injection contraception from 50 Kb acceptors before the use of combined injections averaged 58.04 kg while after the use of contraceptive injections the average child's weight was 58.12 kg with an average difference - the average before and after using combined injections, namely 0.008. Body weight before using the combination injection is a minimum of 43 kg and a maximum of 72 kg. Then after using the combined injection the body weight changes at least 45 kg and a maximum of 70 kg. These results can be seen if there is a change in body weight before and after using the combination injection

4. Average Body Weight Before and After Using Medroxyprogesterone Acetate (DMPA) Contraceptive Injection at TPMB Sri Haryati in 2023.

Table 4. Average Body Weight Before and After Using Medroxyprogesterone Acetate (DMPA) Contraceptive Injection at TPMB Sri Haryati Year 2023

Penilaian Berat Badan	N	Mean	standar deviasi	Min	Max
Sebelum pemakaian suntik DMPA	50	55,64	5,703	45	70
Sesudah pemakaian suntik DMPA		58,20	5,855	47	75

Based on Table 5.4, it is known that the use of Medroxyprogesterone Acetate (DMPA) injection contraception from 50 Kb acceptors before using Medroxyprogesterone Acetate (DMPA) injections averaged 55.64 kg while after using Medroxyprogesterone Acetate (DMPA) injections the average body weight the child is 58.20 kg with an average difference before and after using the combination injection, which is 2.942. Body weight before using Medroxyprogesterone Acetate (DMPA) injections of at least 45 kg and a maximum of 70 kg. Then after using the Medroxyprogesterone Acetate (DMPA) injection the body weight changes at least 47 kg and a maximum of 75 kg. These results can be seen if there is a change in body weight before and after the use of Medroxyprogesterone Acetate (DMPA) injections.

B. Normality Test

Prior to bivariate analysis, a normality test was carried out for pretest and posttest measurements of combined contraceptive use and DMPA with changes in body weight. The data normality test was carried out by the Shapiro Wilk test. After the normality test was carried out, homogeneity was carried out using the Levene's test. This test aims to determine that the change in average body weight occurs not due to variations in respondents, but due to the use of combined injectable contraceptives or Medroxyprogesterone Acetate (DMPA) injections. If the p value > 0.05 then the data is homogeneous.

Table 5. Normality test

	Kolmogorov - smirnov			Shapiro - wilk		
	statistics	df	sig.	statistik	df	sig.
Before the combination injection	.157	50	.003	.960	50	.090
After the combination injection	.122	50	.062	.962	50	.104
Before DMPA	.099	50	.200*	.973	50	.305
After DMPA	.099	50	.200*	.957	50	.064

Based on table 5, the results of the normality test assessment obtained the results of the Shapiro-Wilk value for the use of combined injections of 0.090 (before) and 0.104 (after). Then the Shapiro-Wilk values for the use of DMPA injections were 0.305 (before) and 0.064 (after) with a P-value <0.05, it can be concluded that the normality test is normally distributed. The results were normal, so the normality test used parametric statistics, namely an independent sample t test to compare two variables between combination injections and DMPA injections.

C. Bivariate Analysis

1. The difference between the use of combination injection contraception and medroxyprogesterone acetate (DMPA) contraception with changes in body weight at TPMB Sri Haryati

Table 5.6. Independent Test Sample Test Results

	t-test for Equality of Means	Sig	t	Asymp. Sig (2 – Sided)
Results	Combination injection	0,846	-0,68	0,946
	DMPA injection		-0,68	0,946

Based on 5.6 independent test results, the sample test was obtained asymp. Sig (2 – Sided) has a value of 0.946, because $0.946 > 0.05$, the hypothesis is rejected. This means that there is no difference between combination injections and DPMA injections on changes in body weight before and after the use of combination injections and DPMA injections.

Discussion

A. *Body weight before and after combined injection contraception with medroxyprogesterone acetate (DMPA) injections*

The results of this study showed that the results of the body weight before and after the use of combined injection contraception showed that the majority of the body weight was constant or there was no increase in 30 people (60%). Meanwhile, the results of the body weight before and after the use of Medroxyprogesterone Acetate (DMPA) injection contraception showed that the majority of body weight increased by 35 people (70%). The results of this study are in line with the study of Kurniasari, et al (2020) which stated that there was an effect of 3-month injection contraception on weight gain, where it was known that the mean increase in body weight of 3-month injection contraceptive acceptors was 3.7 kg with an increase in body weight of at least 0 kg and a maximum of 9.0 kg. It is known that the mean increase in body weight for 1 month injection contraceptive acceptors weighs 1.8 kg with an increase in body weight of at

least 0 kg and a maximum of 8.0 kg. Weight gain affected by injectable contraception according to Sumantri, 2018 which in his opinion that 3-month injectable contraception contains DMPA which functions to stimulate the hypothalamic appetite control center so that it can stimulate the appetite control center to increase so that the use of 3-month injectable contraception is more eat more than usual, so that there is excessive hunger which has the potential to experience weight gain.

In addition, judging from the hormone content in the 3-month injection or DPMA injection, which only consists of the hormone progesterone, the function of the hormone progesterone is to cause increased appetite and decrease physical activity which can become a pile of fat in the body. This was confirmed by Arum's research, 2019, which according to his opinion in his research stated that the side effects of Depo Medroxyprogesterone Acetate (DMPA) which contain 150 mg contain only the hormone progesterone and do not contain the hormone estrogen. According to Handayani, S., (2019). The hormone progesterone can affect weight in some women because progesterone can cause water retention in the body and result in a more swollen and heavy body appearance, although this is not fat gain but can cause weight gain. In addition, progesterone can also affect appetite. As for the effect of progesterone on hunger, it is marked that progesterone is believed to interact with the nervous system and neurotransmitters involved in weight gain.

B. The difference between the use of combination injection contraception and medroxyprogesterone acetate (DMPA) contraception with changes in body weight at TPMB Sri Haryati

The results of this study show that Asymp. Sig (2 – Sided) has a value of 0.946, because $0.946 > 0.05$, the hypothesis is rejected. This means that there is no difference between combination injections and DPMA injections on changes in body weight before and after the use of combination injections and DPMA injections. In view of the results of this study, between combination injections and DPMA, there was a change in body weight. The results of this study are in line with Alfie Ardiana Sari, et al (2022), who explained the results of his research. The P value is indicated by the Asimp value. Sig. If the value of P Value $>$ Critical limit of research then the decision of the hypothesis is to reject H1 and accept H0 or which means there is no difference.

For BB $0.293 > 0.05$, it can be concluded that there is no difference between DMPA and Combination types of contraception on body weight. Hormonal contraceptives, especially injections, are the most popular among Indonesians. The side effects of weight gain are still being discussed among researchers due to this type of injectable hormonal acceptor. Progesterone is suspected to be the cause, because it can stimulate the appetite control center in the hypothalamus which can increase appetite. The excess of these substances will later be stored under the skin and gradually there will be a buildup of layers of fat in humans which automatically increase body weight. Based on the results of this study and previous research, the researchers argue that the combination injection and DPMA injection both have a change in weight gain. There was no significant difference in changes in body weight between the use of contraceptive injections with a period of 1 month (combination injections) or 3-month injections (DPMA injections) due to the hormonal influences contained in these injections. Changes in body weight can also be influenced by several other factors such as diet, genetic factors, therefore the effect of hormonal contraception on body weight is very individual and not everyone experiences the same changes.

IV. CONCLUSION

From the results of research on the difference between combination injections and DPMA injections on changes in body weight before and after the use of combination injections and DPMA injections, it was found:

1. Obtained the results of body weight before and after the use of combined injection contraception, the majority of the body weight remained constant or there was no increase in 30 people (60%).
2. The results of the body weight before and after the use of Medroxyprogesterone Acetate (DMPA) injection contraception found that the majority of body weight increased by 35 people (70%).
3. The average value before using the combined injection was 58.04 kg while after using the contraceptive injection the average child's weight was 58.12 kg with the average difference before and after using the combination injection which was 0.008. Body weight before using the combination injection is a

minimum of 43 kg and a maximum of 72 kg. Then after using the combined injection the body weight changes at least 45 kg and a maximum of 70 kg. These results can be seen if there is a change in body weight before and after using the combination injection

4. The average value before using the Medroxyprogesterone Acetate (DPMA) injection was 55.64 kg, while after using the Medroxyprogesterone Acetate (DMPA) injection the average child's weight was 58.20 kg with the average difference before and after using the injection combination is 2,942. Body weight before using Medroxyprogesterone Acetate (DMPA) injections of at least 45 kg and a maximum of 70 kg. Then after using the Medroxyprogesterone Acetate (DMPA) injection the body weight changes at least 47 kg and a maximum of 75 kg. These results can be seen if there is a change in body weight before and after the use of Medroxyprogesterone Acetate (DMPA) injections.

5. The results of the independent test sample test are obtained by Asymp. Sig (2 – Sided) has a value of 0.946, because $0.946 > 0.05$, the hypothesis is rejected. This means that there is no difference between combination injections and DPMA injections on changes in body weight before and after the use of combination injections and DPMA injections.

REFERENCES

- [1] Devi Kurniasari¹, Susilawati¹, Nabela Gyandra Fenniokha² (2020). Effect of 3 Months Injectable Contraception on Mother's Weight Gain at Gedong Air Health Center, Bandar Lampung City
- [2] Febriani, R., & Ramayanti, I. (2020). Analysis of Changes in Body Weight in the Use of Depo Medroxy Progesterone Acetate (Dmpa) Injections. *Journal of 'Aisyiyah Medika*, 5(1), 113–121.
- [3] Hastono, Sutanto Priyo and Sabri, Luknis, 2010 "Health Statistics". Jakarta: Raya Grafindo Persada.
- [4] Kunang, A. (2020). The Influence of 3 Months of Depo Medrosic Progesterone Acetate (Dmpa) Injections on 3 Months of Use on Weight Gain. *Medical Journal: Health Scientific Work*, 5(1).
- [5] Marmi. 2016. Textbook of Family Planning Services. Yogyakarta: Student Library
- [6] Pratiwi,D.,Syahredi, S., & Eradius,E.(2014). The Influence Between the Use of DMPA Injectable Hormonal Contraceptives and Weight Gain at the Lapai Health Center, Padang City.*Andalas Health Journal*, 3, 365–369.
- [7] Prawita, A. A., & Gulo, A. S. (2019). The Effect of 3 Months Injection Contraceptive Use on Maternal Weight Gain at the Linez Clinic, Gunungsitoli City. *Journal of Community Midwives*, 2(3), 153.
- [8] Proverawati, Atikah, Islaley AD, Aspua S. Guide to Choosing Contraception. Yogyakarta: Nuha Medica; 2010
- [9] Rohmatin. (2015). The Influence of Age and Length of Use on Health Complaints in Women of Reproductive Age Using Hormonal Contraceptives in Java Island in 2012. In Statewide Agricultural Land Use Baseline 2015 (Vol. 1, Issue September).
- [10] Safitri, A., & Ilyas, H. (2015). The effect of the use of three months of injectable contraception depo medocratic progesterone acetate (dmpa) with changes in body weight. *Journal of Nursing*, XI(2), 204–210.
- [11] Nurhayati, Azwa, E. (2021). Related to the choice of injecting contraceptive methods by women of childbearing age during the Covid-19 pandemic in the Pmb region. 2020. <http://repository.stikesrspadgs.ac.id/429/>
- [12] Putriningrum, R. (2012). Factors Influencing Mothers In Choosing Injectable Contraceptives at Bps. Ruvina Surakarta. *Public Health Journal*, 3(1), 1–11.
- [13] Aryati, S., Sukamdi, S., & Widyastuti, D. (2019). Factors influencing the choice of contraceptive method (case in Seberang Ulu I District, Palembang City). Indonesian Geography Magazine, 33(1), 79.
- [14] Nurhayati, Azwa, E. (2021). Related to the Selection of Injection Contraceptive Methods by Women of Reproductive Age During the Covid–19 Pandemic in the 2020 Pmb Region.
- [15] Nurfitri, nisa fish. (2019). The rationality of decision making for PUS using the TUBEKTOMY KB in the santri community in the Jombang district. Ika Nisa Nurfitri, 2013–2015.
- [16] Handayani, S., & . S. (2019). Differences in Weight Gain in Combination Dmpa Injection Acceptors. *Journal of Midwifery*, 11(01), 86. <https://doi.org/10.35872/jurkeb.v11i01.333>.