

THE EFFECT OF THE USE OF DMPA INJECTION CONTRACEPTION ON WEIGHT

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ABSTRAK : PENGARUH PENGGUNAAN KONTRASEPSI INJEKSI DMPA TERHADAP BERAT BADAN

Salah satu masalah utama yang dihadapi oleh negara berkembang seperti Indonesia adalah ledakan penduduk.

Cakupan peserta KB aktif di Provinsi Lampung tahun 2019 sebesar 83,23% meningkat dibandingkan tahun sebelumnya yang telah mencapai target sebesar 70%. Tujuan penelitian untuk mengetahui pengaruh penggunaan kontrasepsi suntik dMP terhadap kenaikan berat badan di Desa Adi Luhur Kec. Panca Jaya Mesuji Tahun 2022.

Jenis penelitian kuantitatif, dengan desain cross sectional. Populasi dalam penelitian ini adalah ibu yang menggunakan kontrasepsi suntik DMPA. Variabel dalam penelitian ini adalah penggunaan injeksi DMPA dan penambahan berat badan. Teknik pengambilan sampel purposive sampling. Penelitian ini dilakukan pada bulan Juni hingga Juli 2022 di Desa Adi Luhur, Kec. Panca Jaya Mesuji.

Hasil pemakaian kontrasepsi DMPA kurang dari dan sama dengan 3 tahun tidak ada penambahan berat badan 23 (23,0%) dan yang mengalami kenaikan berat badan 31 (31,0%). Sedangkan untuk penggunaan kontrasepsi lebih dari 3 tahun, 21 (21,0%) tidak mengalami kenaikan berat badan dan 25 (25,0%) mengalami kenaikan berat badan. Nilai p adalah $0,916 > \alpha (0,05)$ artinya H_a ditolak dan H_o diterima. Kesimpulan tidak ada pengaruh penggunaan kontrasepsi suntik DMPA terhadap kenaikan berat badan di Desa Adi Luhur Kec. Panca Jaya Mesuji Tahun 2022. Saran dapat dijadikan sebagai sumber informasi tentang efek samping penggunaan kontrasepsi DMPA dan responden mampu menerapkan pola diet dengan baik untuk menghindari kenaikan berat badan yang drastis.

Kata kunci : DMPA, penambahan berat badan, kontrasepsi

ABSTRACT

Background One of the most important problems faced by developing countries, such as Indonesia, is the population explosion. The coverage of active family planning participants in Lampung Province in 2019 was 83.23%, an increase when compared to the previous year, having reached the target of 70%.

The purpose of the study was to determine the effect of the use of DMPA injectable contraceptives on weight gain in Adi Luhur Village, Panca Jaya Mesuji District in 2022.

Methods Quantitative type of research, with cross sectional design. The population in this study were mothers who used DMPA injectable contraceptives. The variables in this study were the use of injectable KB DMPA and weight gain. Purposive sampling technique. This research has been conducted from June to July 2022 in Adi Luhur Village, Panca Jaya Mesuji District.

Result of the category of length of use less than and equal to 3 years there is no weight gain of 23 (23.0%) respondents and those who experienced weight gain 31 (31.0%) respondents. As for the old category of contraceptive use for more than 3 years, there were 21 (21.0%) respondents and those who experienced weight gain were 25 (25.0%) respondents. A p-value of $0.916 > \alpha (0.05)$ means that H_a is rejected and H_o is accepted.

Conclusion there is no Effect of DMPA Injectable Contraceptive Use on Weight Gain in AdiLuhur Village, Panca Jaya Mesuji District in 2022.

Suggestions may increase knowledge and insight into dmpa acceptors the effects of using contraceptives on weight gain.

Keywords: DMPA, weight gain, contraception

INTRODUCTION

One of the most important problems faced by developing countries, such as Indonesia, is

population explosion. The population explosion resulted in a rapid rate of population growth. This is due to the lack of knowledge and cultural patterns in

the local community. To overcome these problems the Indonesian government has implemented a family planning (KB) program which began in 1968 by establishing LKBN (National Family Planning Agency) which later in its development became BKKBN (National Family Planning Coordinating Agency). The National Family Planning Movement aims to control the rate of population growth and also to improve the quality of human resources (Hartanto, 2013).

Reproductive health is an important part of the health program and is the focal point of human resources. Reproductive health services must include four essential components that are able to provide effective and efficient results. These four components are included in the essential reproductive health service package, namely maternal and newborn health, family planning, adolescent reproductive health and prevention or control of sexually transmitted diseases (STDs) including HIV/AIDS (Wahid, 2014 in Sukmalara, 2018).

Family planning services, which are one of the essential reproductive health service packages, need serious attention, because quality family planning services are expected to increase the level of maternal health and welfare (Wahid, 2014 in Sukmalara, 2018). Family planning services are carried out by using or using contraceptives. The use of contraception is an attempt to prevent a pregnancy. The use of contraception needs to be considered, especially the side effects on reproductive function and general welfare. One of the reasons for discontinuing or changing the use of contraceptives is the side effects they cause. Until now there is no 100% ideal contraceptive method (Prawiroharjo, 2016).

According to *World Health Organization* (WHO) (2014) contraceptive use has increased in many parts of the world, especially in Asia and Latin America and is lowest in Sub-Saharan Africa. Globally, the use of modern contraception has not increased significantly from 56% in 2019 to 59.4% in 2020. Regionally, the proportion of couples of childbearing age 15-49 years reporting the use of modern contraceptive methods has increased for at least the last 6 years. In Africa from 23.6% to 27.6%, in Asia it has increased from 60.9% to 61.6%, while in Latin America and the Caribbean it has increased slightly from 66.7% to 67.0%. An estimated 225 million women in developing countries wish to delay or stop fertility but do not use a contraceptive method anything for the following reasons: limited choice of contraceptive methods and experience of side effects. The unmet need for contraception is still too

high. Inequality is driven by population growth (WHO, 2020).

Coverage of active family planning participants in Indonesia in 2019 with the number of Reproductive Age Couples (PUS) using KB of 25,268,532 which includes the highest KB being injectable KB, namely 16,269,114 (68.90%), 4,534 pills in second place .405 (19.02%), the third place is 1,989,062 (8.25%) KB IUD, the fourth place is implant 1,924,706 (7.11%), the fifth place is MOW as much as 708,259 (4.72%)), the sixth place is condoms with 399,018 (1.22%) and the lowest is MOP with 229,084 (0.50%) (Ministry of Health RI, 2019).

The coverage of active family planning participants in Lampung Province in 2019 was 83.23%, an increase compared to the previous year, having reached the target of 70% (Lampung Provincial Health Office, 2016) and in 2016 it was still below the National target of 71.93% (Ministry of Health Republic of Indonesia, 2017). When viewed based on the distribution of urban districts in 2015, the City Regencies that achieved more than 71.14%, namely Pringsewu, Mesuji, West Coast, Metro, Tanggamus and West Lampung Regencies, while Central Lampung District was still below the target of 76.67% (Dinas Lampung Province Health, 2019).

Hormonal contraceptive methods are considered one of the methods with a high level of effectiveness, but on the other hand, hormonal contraceptives, especially those containing progestin, can change menstruation. These changes are unpredictable, varying between each woman to some degree towards the contraceptive method. In most users, there is an increased incidence of irregular and scanty blood spots or bleeding outside the cycle, prolonged cycles, and oligomenorrhea or even amenorrhea (Manuaba, 2013).

Injectable contraceptives *progestinis* an injectable contraceptive that contains only hormones *progestin*. Injectable contraceptives *progestin* there are 2 types, among others *depo medrosi progesterone acetate* (*Depoprevera*), contains 150 mg of DMPA given every 3 months by intramuscular injection (in the buttocks). The way it works is to prevent ovulation, inhibit the transport of gametes by the tubes, make the uterine mucous membrane thin and atrophy (Saifuddin, 2015).

Weight gain in 3-month injectable birth control acceptors is due to the fact that the contraceptive contains the hormone progesterone which has the side effect of increasing body weight, the DMPA content stimulates the appetite control center in the hypothalamus which causes acceptors to eat more

than usual. thus causing weight gain (Handayani, Sri. 2010 in Vista, 2017).

The prevalence of DMPA contraceptive use in Adi Luhur village in 2021 was 230 acceptors, while in 2022 there were 298 DMPA contraceptive users, of all acceptors who used DMPA contraception had different side effects, 52 (23%) acceptors experienced pain in desminor , 29 (12%) lost weight, 42 (22%) experienced menstrual cycle disorders and 166 (43%) experienced weight gain.

Based on the results of interviews conducted with 5 DMPA family planning acceptors who experienced side effects of increasing weight, most of the mothers did not want to change contraceptives because it was easier and did not need to come for consultations every month or did not need to take pills every day.

METHOD

The type of research used is quantitative, with a research design *cross sectional*. The population in this study were mothers who used DMPA injection contraception. The variables in this study were the use of DMPA injections and weight gain. Sampling technique using *purposive sampling*. This research was conducted in June-July 2022 in Adi Luhur Village, Kec. Panca Jaya Mesuji.

Table 1
DMPA Injection Variable Normality Test Results and weight change test of normality

Score value test	Kolmogrov value- smirnov
DMPA injection	0.065
Weight change	0.053

Based on research data known value *kolmogorov-smirnov* on the DMPA cut-off variable of $0.065 > 0.05$, and the value of the weight change variable is $0.053 > 0.05$. Thus it can be concluded that the data for the two groups in this study were normally distributed.

Homogeneity Test

Based on table 2, it shows that the research data is known by using the homogeneity test, it is found that the sig value is $0.579 > 0.05$, which means that the variable to be tested is homogeneous.

Table 2
DMPA and Injection Variable Homogeneity Test Results Weight Change

Information	Df1	Df2	Sig
DMPA contraceptives	1	198	0.579

Characteristics of Respondents

Table 3
Characteristics of Respondents Using DMPA Injectable Contraceptives in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Characteristics of Respondents	f	Percentage (%)
Respondent Age		
28-35 years	66	66.0%
37-46 years	34	34.0%
Respondent's occupation		
Honorary	6	6.0%
IRT	56	56.0%
Trader	10	20.0%
employee	12	12.0%
Farmer	8	8.0%
civil servant	8	8.0%
Education		
SD	12	12.0%
JUNIOR HIGH SCHOOL	34	34.0%
SENIOR HIGH SCHOOL	31	31.0%
BACHELOR	23	23.0%
Number of children		
Multipara	67	67.0%
Primipara	33	33.0%

Based on table 3, it can be seen from the 100 research respondents based on age category with a vulnerable age of 28-35 years there were 66 (66%) respondents, while there were 34 (34.0%) aged 37-46 years. While the characteristics based on the mother's occupation in the category of not working or as housewives there were 56 (56.0%) respondents, jobs as traders were 10 (10.0%) respondents, jobs as farmers were 8 (8.0%) respondents, there were 8 (8.0%) respondents who worked as civil servants, 6 (6.0%) mothers worked as honorary workers, 12 (12.0%) worked as employees.

Characteristics based on undergraduate education were 23 (23.0%) respondents, elementary education were 12 (12.0%) respondents, junior high school education were 34 (34.0%) respondents, high school education were 31 (31.0%) respondents, there were 23 (23.0%) respondents with undergraduate education. There are 33 (33.0%) respondents with 1 (primipara) number of children, 2 or more (multipara) 67 (67.0%) respondents.

Univariate analysis

Distribution of DMPA Contraceptive Use in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Table 4
Distribution of DMPA Contraceptive Use In Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Use	Amount	Presentation
DMPA contraception		
Less ≤3 years	54	54.0%
More > 3 years	46	46.0%

Based on table .4 above, it can be seen from 100 research respondents conducted in Adi Luhur Village, Kec. Panca Jaya Mesuji In 2022 using DMPA contraception for less than 3 years and the same as using 3 years there were 54 (54.0%) respondents and who used DMPA contraception for more than 3 years there were 46 (46.0%)

Distribution of Weight Gain Against DMPA Contraceptive Use in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Table 5
Distribution of Weight Gain Against Use of DMPA Contraceptives in the Village Adi Luhur Kec. Panca Jaya Mesuji Year 2022

Weight change	Amount	Presentation
No weight gain	44	44.0%
There is weight gain	56	56.0%

Based on table 5 above, it can be seen from 100 research respondents conducted in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022 with weight gain or change in DMPA contraceptive acceptors in the category of no weight gain there were 44 (44.0%) respondents while acceptors who experienced weight gain were 56 (56.0%).

Bivariate analysis

The Effect of Contraceptive Use of DMPA Injection on Weight Gain in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Bivariate analysis using test *Chi-square* to determine the effect of using DMPA injection contraception on weight gain in Adi Luhur Village, Kec. Panca Jaya Mesuji in 2022. The results of the bivariate analysis are displayed in table form as follows:

Table 6
The Effect of Contraceptive Use of DMPA Injection on Weight Gain in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022.

Enhancement weight	DMPA birth control injection				Total		p-value	OR 0.400-
	There isn't any Increase BB		There is increase BB					
	N	%	N	%	N	%		
Less ≤3 year	23	23.0%	31	31.0%	54	54.0%	0.916	1,950
More > 3 year	21	21.0%	25	25.0%	46	46.0%		

Based on the results of table 6 above, it shows that of the 100 research respondents conducted in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022 for DMPA KB acceptors with a category of use less than 3 years and equal to 3 years there was no weight gain as many as 23 (23.0%) respondents and those who experienced weight gain 31 (31.0%) respondents. As for the category of contraceptive use for more than 3 years who did not experience weight gain there were 21 (21.0%) respondents and those who experienced weight gain were 25 (25.0%) respondents.

The p-value is $0.916 > \alpha (0.05)$ meaning H_0 was rejected and H_a was accepted, which means there was no effect of the use of DMPA injection

contraception on weight gain in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

DISCUSSION

Univariate analysis

Distribution of DMPA Contraceptive Use in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Of the 100 research respondents conducted in Adi Luhur Village, Kec. Panca Jaya Mesuji In 2022 using DMPA contraception for less than 3 years and equal to 3 years there were 54 (54.0%) respondents

and who used DMPA contraception for more than 3 years there were 46 (46.0%).

According to WHO (2012), family planning is an action that helps individuals or couples to get certain objects, avoid unwanted births, get births that are wanted, set the interval between pregnancies and determine the number of children in the family.

Family planning is an action that helps individuals or married couples to get certain objectives, avoiding unwanted births, obtaining desirable births, setting the interval between pregnancies, controlling the time of birth in relation to the ages of the husband and wife and determining the number of children in the family (World Health Organization, 2011). The family planning program does not only aim to control the rate of population growth, but also to meet the public's demand for quality family planning and reproductive health (KR) services, the total maternal mortality rate (MMR) and infant mortality rate (IMR) as well as overcoming reproductive health problems for form a quality small family (Sumiasih, 2018).

Injectable contraceptives *progestinis* an injectable contraceptive that contains only hormones *progestin*.

Injectable contraceptives *progestin* there are 2 types, among others *Depo medroxy progesterone acetate (Depo prevera)*, contains 150 mg of DMPA given every 3 months by intramuscular injection (in the buttocks). The way it works is to prevent ovulation, inhibit the transport of gametes by the tubes, make the uterine mucous membrane thin and atrophy (Saifuddin, 2015).

In intramuscular DMPA clinical trials, the failure rate was very low, ranging from 0.0 to 0.7/100 women/year, this could be because some women may not return in time or may not re-inject at all. No contraceptive failures were reported in clinical trials. Obesity or concomitant use of drugs has not been shown to reduce the effectiveness of DMPA (Prawirohardjo, 2016).

The side effects most often complained of by DMPA injectable contraceptive acceptors are menstrual disturbances (irregular or irregular menstrual bleeding). *amenorrhea* (Hartanto, 2013).

Women using contraception *Medroxy progesterone acetate depot* (DMPA) or known as the three-month injection KB, the average body weight increases by 11 pounds or 5.5 kilograms, and the body fat increases by 3.4% within three years of use, based on research conducted by *University of Texas Medical Branch* (UTMB) (Mansjoer, 2013). Whereas in monthly injection contraception the side effects on body weight are very mild, generally a little weight

gain (Hartanto, 2013). The main side effect of using DMPA is weight gain.

Research conducted by Galuh (2018) with the title "Old Relationship Using Injection Hormonal Contraceptives *Depo Medroxy Progesterone Acetate* (DMPA) With an Increase in Kb Acceptor Body Weight in the Working Area of the Arjuno Health Center, Malang City" The type of research used was descriptive analytic with a cross-sectional research design or *cross sectional* by sampling techniques *simple random sampling*. The number of samples in this study were 47 respondents. Test statistics by using test *Corelation Pearson Product Moment* value results *asymp. Sig* (2-sided) is 0.140 with a significance value of a $> (0.05)$, a correlation value of 0.219 which means that there is no correlation between the duration of use of DMPA injection contraception and increased body weight. Based on the research results, it can be suggested for puskesmas to provide information about injectable family planning to acceptors, so that it can be used as material for consideration in choosing the right contraceptive method.

According to researchers, using contraception depends on the readiness of the individual itself and not because of external coercion. It can be seen from the results of the research above that the use of DMPA contraception is of great interest to those who are new to using it or to PUS who have often tried or exchanged contraception to see what type of contraception is suitable and good for use. In this case the length or duration of using DMPA contraception depends on the convenience and interest of the acceptor itself.

The results of the research that has been conducted show that there are more DMPA contraceptive users compared to other types of contraceptive use, because mothers think that if DMPA contraceptives do not have to come every month to inject, or have to take birth control pills every day and the number of conceded is lower.

Distribution of Weight Gain Against DMPA Contraceptive Use in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Of the 100 research respondents conducted in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022 with weight gain or change in DMPA contraceptive acceptors in the category of no weight gain there were 44 (44.0%) respondents while acceptors who experienced weight gain were 56 (56.0%).

Weight gain in 3-month injectable birth control acceptors is due to the fact that the contraceptive contains hormones *progesterone* which has the side

effect of increasing body weight, the DMPA content stimulates the appetite control center in the hypothalamus which causes acceptors to eat more than usual, causing an increase in body weight (Handayani, Sri. 2010 in Vista, 2017).

DMPA injectable hormonal contraceptives are contraceptives that contain hormones *progesterone*, which can stimulate the appetite control center in the hypothalamus, causing an increase in acceptor weight. Diet can be controlled by selecting respondents who have a regular eating pattern because the effect of the hormone progesterone here can increase appetite (Handayani, 2021).

Body weight is the energy metabolism in the human body regulated by various factors, either those that cause increased energy storage, or those that encourage energy consumption. The body's energy use is regulated in a state of balance. If the incoming energy is greater than the outgoing energy, the excess energy will be stored in fat tissue. Scientifically overweight (*overweight*) occurs due to consuming more calories than needed by the body. Cause of occurrence the imbalance between calorie intake and burning cannot be explained with certainty (Thamaria, 2019).

Research conducted by Noviantari (2019) with the title "Relationship Between Duration of Injecting Contraceptive Use *Depo Medroxy Progesterone Acetate* With an increase in acceptor weight at the Independent Practice Midwife Hs West Denpasar in 2019" This research was conducted at the Obstetrics Clinic "HS" with a sample of 60 DMPA acceptors with use for more than one year. This type of research is observational analysis. By design *cross sectional*, by way of approach to the research subject is Retrospective. The results of research conducted at the Obstetrics Clinic "HS" found that all DMPA contraceptive respondents gained weight. Statistical tests using the Spearman Rank test obtained a p-value of 0.000. Relationship between duration of injectable depot contraceptive use *medroxy progesterone acetate* and increase in acceptor body weight, it is hoped that midwives can provide counseling about the side effects of DMPA using contraception so they can intervene to handle it.

According to researchers, the increase in body weight in DMPA acceptors varies greatly, there is also an increase in the first and second year of use of contraception, there is also an increase in the 3rd year and so on, but the increase in body weight does not result in the mother becoming obese with excessive body weight and normal limits. The problem of increasing body weight varies greatly, this

is caused by many other factors that affect the problem of increasing body weight which were not observed in this study. Other factors such as genetics, type of work, activities or daily activities, food consumption patterns, and so on, also affect a person's weight. Likewise with the use of DMPA injection birth control, there are other side effects that were also not observed in this study.

The results of the research that has been carried out show that there is an increase in body weight for DMPA contraceptive acceptors for more than 3 years of contraception use, but there are some mothers whose increase does not exceed BMI obesity because in this case the increase can be controlled from the attitude and characteristics of the mother such as parity affects weight gain. In this study, the number of parity multiparas with increasing body weight was 38 respondents and primiparas who experienced increasing body weight were 18 respondents. It can be seen that mothers who have more than 1 child will gain weight more quickly because mothers sometimes do not pay attention to the consumption of food consumed every day and think that being fat is not a problem.

Bivariate analysis

The Effect of Contraceptive Use of DMPA Injection on Weight Gain in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022

Of the 100 research respondents conducted in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022 for DMPA KB acceptors with an old category of use of less than 3 years and the same as 3 years there was no weight gain in 23 (23.0%) respondents and those who experienced weight gain were 31 (31.0%) respondents. Meanwhile, for the category of old contraception use of more than 3 years who did not experience weight gain there were 21 (21.0%) respondents and those who experienced weight gain were 25 (25.0%) respondents. While the category with multiparous status did not gain weight as many as 29 respondents (29.0%) used DMPA contraception and those who experienced weight gain were 38 (38.0%), for the primipara parity category who did not gain weight 15 (15.0%) and that experienced an increase of 18 (18.0%). For the number of parity multiparas in the use of DMPA contraception less than and equal to 3 years as many as 37 (37.0%),

The p-value is $0.916 < \alpha (0.05)$ meaning H_0 was rejected and H_a was accepted, which means there was no effect of the use of DMPA injection contraception on weight gain in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022.

DMPA birth control injection (*Depo Medroxy Progesterone Acetate*) is a contraceptive in the form of an injection, every 3 months with a dose of 150 mg which is injected intravenously *intramuscularin* the buttocks. Family planning acceptors (KB) are couples of childbearing age (PUS) who use a contraceptive device or drug (BKKBN, 2019). Contraception is preventing the meeting of mature egg cells and sperm cells during intercourse, so that fertilization and pregnancy do not occur (Hartanto, et al, 2013).

The main problem with usedepo medroxyprogesterone acetate(DMPA) are bleeding, irregular menstruation, breast tenderness, weight gain, and depression. By far, the most common problem is menstrual changes (Speroff & Darney, 2011). In an international study, the most common medical reasons for discontinuing DMPA within 2 years of use were as follows: headache (2.3%), weight gain (2.1%), dizziness (1.2%), abdominal pain (1.1%), anxiety (0.7%). Depression, fatigue, decreased libido and hypertension are also found, but whether DMPA causes these side effects is hard to know because they are very common complaints among non-users (Prawirohardjo, 2016).

According to Hartanto (2013) one of the side effects of the injection method is weight gain. In general, weight gain is not too great, varying from less than one kilogram to five kilograms in the first year. The cause of the weight gain is unclear. It appears to be due to increased body fat, and not due to fluid retention. Expert hypothesis: DMPA (*Medroxy progesterone acetate depot*) stimulates the appetite control center in the hypothalamus which causes acceptors to eat more than usual.

Body weight is a parameter that gives an overview of body mass. The ideal body weight is for a certain height that is statistically considered the most appropriate and ensures longevity. The hormone estrogen is one of the factors in weight gain. When women experience menopause, levels of the hormone estrogen drop sharply and cause uncontrolled weight. This happens because estrogen can control weight. Another hormone that also controls weight is leptin. Leptin is in charge of sending signals to the brain when we feel full. Excess fructose or sweeteners derived from fruit or other foods can cause excess leptin. This excess makes the brain unresponsive to signals that tell satiety. The impact is that people will continue to eat without feeling full. (Handayani, 2021).

The occurrence of weight gain in acceptors of the 3-month injection was due to the fact that the contraception contains the hormone progesterone. The hormone progesterone has side effects, namely

for 3 months injection, DMPA stimulates the appetite control center in the hypothalamus which causes acceptors to eat more than usual, causing weight gain (Hartanto, 2013)

Depo provera is *6-alpha-medroxy progesterone* used for parenteral contraceptive purposes have an effect, *progestagen* powerful and very effective. Long-term use of DMPA (up to two years) also triggers weight gain, cancer, vaginal dryness, emotional disturbances, and acne because prolonged use of hormones can disrupt the balance of the hormones estrogen and progesterone in the body, causing normal cell changes to become abnormal. When it's been two years, we have to move to another family planning system, such as condom, spiral or calendar birth control (Handayani, 2021)

Weight gain, caused by the hormone progesterone makes it easier to convert carbohydrates and sugar into fat, so that the fat under the skin increases, besides that the hormone progesterone also causes an increase in appetite and decreases physical activity, as a result the use of injections can cause weight gain. Weight gain that occurs is a side effect of injectable contraception, this side effect is the body's adjustment to hormonal changes so that the possibility of weight gain occurring does not last long (Handayani, 2021)

DMPA injection contraceptives can cause weight gain in women who accept injection contraceptives, weight gain due to the use of DMPA injection contraceptives of 3-6 kg per year. Generally, a weight gain of 10% of the initial body weight will be seen after one year of using injectable contraception. An increase in body weight in hormonal birth control acceptors can be caused by hormonal disturbances that become unbalanced between hormones *estrogen* and *progesterone* in the acceptor's body, which causes normal cells to become abnormal. The hormone progesterone contained in the 3-month injection contraception causes appetite stimulation centered in the hypothalamus, so that the appetite will increase than usual resulting in excess nutrition, weight gain due to the use of 3-month injection contraception not due to fluid retention (Handayani, 2021).

Research conducted by Kunang (2020) with the title "Relationship of Old 3-Month Injectable Kb Use *Depo medroxy Progesterone Acetate (Dmpa)* With an Increase in Body Weight "univariate analysis found that respondents with a duration of use > 4 years, namely 17 respondents (40.5%) and respondents who experienced an increase in body weight, namely as many as 31 respondents (73.8%). There is a relationship between the duration of the

use of 3-month injectable birth control *Depo Medrosik Progesterone Acetate* (DMPA) with an increase in body weight at BPM Selva Tiara, Bulok District, Tanggamus Regency in 2019 with *p-values* of 0.011. For users of DMPA injection contraception to be able to adopt a healthy lifestyle such as consuming healthy food and exercising as an effort to prevent weight gain due to side effects of DMPA hormonal contraception

According to the researchers, the results of this study showed that there was an increase in body weight when using DMPA acceptors, but respondents were still interested in using DMPA contraception on the grounds that if they used other types of contraception, the mother felt dizzy and felt weak, therefore even though she felt there was a change in the mother's weight There are no plans to replace contraception. Another reason for continuing to use DMPA contraception is that it is very practical in using injectable contraception. It is very easy and feels comfortable, so that mothers do not find it difficult to have family planning. The problem with increasing body weight is because DMPA contains the hormone progesterone, which causes acceptors to eat more than usual which makes it easier to convert carbohydrates and sugar into fat so that fat under the skin increases. Generally, body weight gain is not too great, varying from less than 1 kg to 5 kg in the first year of injection. The cause of weight gain occurs due to increased body fat and not due to retention of body fluids which are side effects of injecting the DMPA contraceptive injection, namely menstrual cycle disturbances, vaginal discharge, spotty, hair loss, weight changes and headaches.

Based on the results of the research that has been done, it shows that there is data that is not related because if it is processed using SPSS data it shows the result that there is an increase in body weight in DMPA contraceptive users but the increase that occurs is not too high because mothers who have used DMPA for a long time understand and understand about food consumption that causes an increase in appetite, while those with an increase of more than 5 kg are mothers who use contraception for more than 3 years. Other factors that cause mothers to continue using DMPA contraception even though they are gaining weight are because they say they are comfortable or do not want to use other contraception because before using DMPA contraception the mother has tried using other types of contraception but they experience problems with menstruation, headaches and there are also who have nausea.

In this study, more weight gain occurred in multiparous women with a total of 38 respondents

who experienced an increase because there were several causative factors that were not examined, such as diet, rest patterns, or mothers also rarely paid attention to their food consumption so that the side effects that caused increased appetite becomes uncontrollable in the mother.

CONCLUSION

No effect of the use of DMPA injection contraception on weight gain in Adi Luhur Village, Kec. Panca Jaya Mesuji Year 2022.

SUGGESTION

Hoped that respondents will be able to socialize and educate mothers who use DMPA-type contraception regarding the effects of the contraception itself and the advantages of using DMPA contraception so that mothers understand more about DMPA contraception and the side effects that can arise after using DMPA contraception for a long time. and add the types of variables that underlie the effect of DMPA contraception.

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