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DESCRIPTION OF INCREASING BODY ON THE USE OF 3 MONTHS INJECTING CONTRACEPTION EQUIPMENT IN WOMEN OF RELIABLE AGE (WUS): LITERATURE REVIEW

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Abstract

The most widely used contraceptive method by active family planning acceptors in Indonesia is in the first position of injection, which is around (47.96%). The use of DMPA (Depomedroxy Progesterone Acetate) shows weight gain, this is due to injectable contraceptives containing the hormone progesterone. This study to description of weight gain on the use of injectable contraceptives for 3 months in women of childbearing age per year. This study uses a literature review of 11 journals selected based on criteria and keywords. Based on the results of a review taken from 11 reviewed journals, it was found that there was a relationship between the use of 3-month injections and weight gain in acceptors which was influenced by the hormone progesterone contained in 3-month injection drugs. From several research journals that have been reviewed according to topics and themes, the authors conclude that the description of 3-month injection family planning each year acceptors experience weight gain from 1-7 kg each year which is influenced by the hormone progesterone.

Keywords: Contraception, Weight Gain, Women of Childbearing Age

Introduction

Currently, almost 60% of reproductive age couples worldwide use contraception. Family planning is an action that can help individuals and married couples to manage the distance between pregnancies, control the time of birth, determine the number of children, and get the birth they want (Hartanto, 2013).

According to the World Health Organization (WHO) in 2016, which globally, the use of modern contraceptives has increased but not significantly, from 54% in 1990 to 57.4% in 2015. In Africa itself, it has decreased from 23, 6% to 8.5%. In Asia, it increased from 60.9% to 61.8%, while Latin America and the Caribbean the percentage remained stable at 66.7%.

The most widely used contraceptive method by active family planning acceptors in Indonesia is in the first position of injection, which is around (47.96%) while the second most is the pill type (22.41%), followed by implants (11.20%), then the IUD. (10.61%), Female Operation Method (MOW) (3.54%), and condoms (3.23%). Meanwhile, the method of contraception that is the least preferred by active family planning acceptors is the Male Operation Method (MOP) (0.64%) (2017).

Based on data from the Indonesian Demographic Health Survey (IDHS) in 2017, the use of contraception among married women aged between 15-49 years, most of them use modern contraceptive methods (57%) and the rest still use traditional contraceptive methods (6%). The modern contraceptive methods used include injections, which are the most used contraceptives (29%), followed by pills (12%). Young women tend to use contraceptives in the form of injections, while older women tend to use long-term contraception such as IUDs and female sterilization (BPS, 2017).

For acceptors who use progestin injections, weight gain may occur around 1-2 kg per year during routine use of injections, but this increase can also be a normal weight with age. Overweight women have the potential to gain more than 2 kg per year. On the other hand, there are also women whose weight actually decreases or there is no change at all. If there are women who experience weight gain when using hormonal contraceptives, there is a possibility that this is caused by internal and external factors. Internal factors can be a family history of obesity, while external factors are hormone content in contraceptives. Meanwhile, the hormone progesterone itself can stimulate the appetite control center in the hypothalamus which causes the acceptor to eat more than usual. Progesterone facilitates the accumulation of carbohydrates and sugars into fat. (Liza, 2019).

Many women use the 3-month injection for the reason that it is very effective, does not affect breast milk, has few side effects, can be used by women over 35 years of age until perimenopause, long-term prevention of pregnancy. But in its use there are several side effects, one of which is weight gain.

From the explanation above, it turns out that weight changes can be caused by many things. It's good, we keep our weight to stay ideal by living a healthy lifestyle. Eat nutritious foods and meet daily needs, avoid high-sugar and high-fat foods, exercise regularly, and get enough rest. Increased appetite will not cause obesity if what we consume is healthy food, as long as the portion is not excessive. Fat accumulation will not lead to weight gain as long as we are diligent in burning fat by exercising. By regulating what we consume wisely, the use of hormonal contraceptives will not have side effects on body weight (Liza, 2019).

Injectable contraceptives have several side effects including menstrual cycle disorders (amenorrhea, spotting, metrorrhagia and menorrhagia), depression, vaginal discharge, hair loss, headaches, and weight changes (Irianto, 2012). The side effect that injection acceptors often complain about is changes in body weight (Mudrikatin, 2012). Based on data from PMB Isti, the results that were recapitulated from January 2019-November 2020 from 50 acceptors were obtained, namely those who experienced an increase in body weight of 5 kg totaled 3 acceptors, weight gain of 2 kg amounted to 8 acceptors, weight gain of 1 kg amounted to 8 acceptors, weight

gain of 7 kg amounted to 2 acceptors, weight gain of 3 kg totaled 3 acceptors, weight gain of 4 kg amounted to 4 acceptors while those who experienced weight loss were 13 acceptors and those who did not experience weight change or remained were 7 people. Of the 50 acceptors who used 3-month injections, 28 of them experienced weight gain, meaning that each month the acceptors gained weight when using 3-month injections. (Source of Regis Bu Isti's Book).

Based on the background of the problem, the authors are interested in raising the theme of the literature review on "The Overview of Weight Gain Against the Use of 3-Month Injectable Contraceptive Devices in Women of Childbearing Age (WUS)".

Materials and Methods

The research method used is literature review. The literature sources used in this study were searched through Google Scholar using the keywords Weight Increase AND KB 3 Months Injection, Effect of DMPA (depo medroxy progesterone acetate) searches were carried out from November 2020 to February 2021.

Results and Discussion

The process of collecting literature is done by selecting the number of journals or articles from 2690 literatures to 11 literatures. The search process is carried out through an indexed electronic based such as Google Scholer (n=2690). According to the research of Pratiwi, D., Syahredi and Erkadius (2014) "The Relationship Between the Use of DMPA Injectable Hormonal Contraception and Weight Gain" According to the hypothesis of experts and several studies, the increase in body weight is caused by an increase in appetite due to the hormone progesterone contained In contraceptives DMPA stimulates the appetite control center in the hypothalamus. This is associated with a signal from glucocorticoid-like activity, which also signals fat cells to retain as much fat as possible. The increase in appetite was also self-reported by the acceptors after using DMPA injection contraception after 6 months in the study. Based on the research that has been done, it can be concluded that the average initial body weight using DMPA injections is 54.40 kg, while the average body weight after using KB is 58.10 kg. The average difference in body weight before and after the use of DMPA injection contraception was 3.70 kg. Based on the analysis with the T test, it was found that there was a relationship between the use of DMPA injectable hormonal contraception and the increase in body weight of family planning acceptors at the Lapai Health Center, Padang City.

According to the research of Haryani, DD, Santjaka, A., Sumarni (2010) "The Effect of DMPA Injecting Contraceptive Frequency on Weight Gain in DMPA Injectable Contraceptive Acceptors" The results of this study indicate that the average weight gain after respondents use DMPA injectable contraception at BPS Dian Yuni Purani, Klahang Village, Sokaraja District, Banyumas Regency is 6.8 kg. The average body weight before using DMPA injectable

contraception was 48.5 kg and the weight after using DMPA injectable contraception was 55.4. This means that there is an average increase of 14.23%. Weight gain of this value has not yet led to even mild obesity. This is due to the influence of the hormone progesterone contained in the contraceptive. Experts hypothesise, DMPA stimulates the appetite control center in the hypothalamus, which causes the acceptor to eat more than usual. This means that respondents experienced an increase in body weight after using DMPA injectable contraceptives (Hartanto, 2003).

According to research by Ambarwati, WN, Sukarsi, N. (2012) "The Effect of Long Use of DMP Injectable Contraceptives on Body Weight" Distribution of weight gain of respondents before and after using DMPA injectable contraception with a duration of use of 6-12 months the average weight gain is 2 ,68 kg. At duration of use >12-24 months the average weight gain was 4.16 kg. Meanwhile, for the duration of use >24 months, the average weight increase was 6.01 kg. The increase in body weight that occurs in DMPA injection contraceptive acceptors is due to the content of the hormone progesterone contained in DMPA injection family planning materials that facilitate the conversion of carbohydrates and sugar into fat. This is as stated by Hartanto (2004) which states that changes in body weight in DMPA injection contraceptive acceptors are caused because the hormone progesterone facilitates the conversion of carbohydrates and sugars into fat, so that the fat under the skin increases. reduce physical activity, as a result the use of injections can cause weight gain.

According to research by Nurmainah, Wahdaningsih, S., Innas, SQ (2020) "Analysis of the Effect of the Use of Depot Medroxyprogesterone Acetate on Acceptor Weight Gain" the average weight gain before and after 6 months of DMPA use experienced a weight gain of 50.7 kg to 54.9 kg. The difference in weight gain was statistically significant, p-value = 0.001. That is, the use of DMPA significantly affects the weight gain of the acceptors. The use of DMPA can affect weight gain by influencing appetite hormones through glucocorticoids. Glucocorticoids are important hormones that play a role in the synthesis and release of neuropeptides in the hypothalamus. This condition can affect food intake and the central nervous system. In addition, glucocorticoids also stimulate human protein and carbohydrate intake. DMPA that binds to the glucocorticoid receptor will exhibit properties similar to those of glucocorticoids. The resulting effect is an increase in body fat composition and changes in neurohormonal appetite regulation. The effect of glucocorticoids on appetite and high energy intake can cause an increase in Body Mass Index (BMI) (Mayniar, 2018). The increase in BMI can occur around 3-4 kg or more (Pratiwi, 2014). In addition, based on the results of research conducted by Bonny (2014) that DMPA has a low Cmax level with a low elimination rate, so it can increase the Area Under Curve (AUC). AUC describes the degree of drug absorption in the body. If the AUC increases, the body will be

exposed to DMPA for a long time, so that in this condition a process of weight gain occurs. Another mechanism, DMPA can increase body weight by affecting the availability of the hormone estrogen in the body.

According to research by Febriani, R., Ramayanti, I. (2020) "Analysis of Changes in Body Weight in the Use of Depo Medroxi Progesterone Acetate (DMPA) Injectable Family Planning" Based on the results of this study, it was found that the increase in body weight using DMPA injections for 6-12 months at most many did not experience changes in body weight (fixed weight) as many as 44.4% of respondents. Meanwhile, the use of DMPA injection KB > 12 months was found to experience weight gain as much as 77.8% of respondents. In a retrospective study by Oshodi et al. (2019), the results of the highest weight gain were found in the use of DMPA contraception for more than 1 year. The same thing was also found in Rani's research (2017) where there was an increase in body weight in DMPA injection contraceptive users compared to the control group (p-value This is presumably because DMPA can stimulate the appetite control center in the hypothalamus so that appetite increases. In addition, the hormone progesterone contained in DMPA will facilitate the conversion of carbohydrates into fat, thereby increasing fat deposits under the skin.Progesterone hormone (DMPA) also stimulates the appetite control center in the hypothalamus which causes appetite to increase so that a person will eat more than usual.Increased quantity eating more than usual will cause excess carbohydrates to be stored in the form of body fat, thus causing weight gain. As a result, the use of contraception can cause changes in body weight including weight gain (Prawirohardjo, 2014).

According to Pertiwi's research, LB (2019) "The Correlation of Long Use of DMPA with the Occurrence of Weight Gain in Old Acceptors of DMPA KB" (72.6%) with use >3 years, then followed by use >2–3 years as many as 13 respondents, then the lowest presentation with use 1-2 years as many as 8 people (57.2%) so it can be concluded that there is no relationship between the duration of DMPA contraceptive use and the occurrence of weight gain. This may be due to various factors that affect the hormone progesterone (Soetjiningsih, 2014).

According to research by Jannah, M., Suharmi, Endriyani, A. (2019) "Overview of the Characteristics of DMPA Injectable Alcon Acceptors With Weight Gain" 3 years as many as 18 (35%) respondents with an increase of 3-4 Kg This study is in accordance with the results of research by Efi.S (2010) where this study shows a relationship between the length of use of hormonal contraceptives and weight gain, namely in the period of use more from one year most of the respondents experienced weight gain and only four respondents did not experience weight gain, while the period of use of less than one year most experienced weight gain and 17 respondents did not gain weight. Weight gain, possibly due to the hormone progesterone facilitates the conversion of carbohydrates and sugars into fat, so that the fat under the skin

increases, besides that the hormone progesterone also causes appetite to increase and decrease physical activity, as a result, the use of injections can cause weight gain (Hartanto, 2010).).

According to research by Sari, I. (2019) "The Relationship Between 3 Months Injectable KB on KB Acceptors 3 Injections and Metrorgia on Weight Gain" The strong hormone progesterone affects weight gain so that it stimulates hormones to increase appetite in the hypothalamus. With an appetite that is more than usual, the body will have excess nutrients. Excess nutrients by the hormone progesterone are converted into fat and stored under the skin. This weight change is caused by the accumulation of excess fat as a result of the synthesis of carbohydrates into fat. In general, weight gain varies from 2.3-2.9 kg in the first year. The increase in body weight in the 3 month injection family planning acceptor occurs because the hormone progesterone stimulates the mother's appetite to be greater than usual so that the body will have excess nutrients and will be converted into fat so that the mother will gain weight.

According to research by Bayuningrum, P. (2017) "Overview of the Use of Depo Progestin Injectable KB Against Maternal Weight Gain" The results obtained by this researcher showed that of the 40 acceptors of KB injections with depo progestin, the highest group was in the group with duration of use > 1 year as many as 34 people (85%) and the lowest was in the group for duration of use 1 year as many as 6 people (15%). The results of this study are in line with the results of research obtained by Marliandiani Y (2015) where he explained that there was a significant relationship between duration of use and weight gain in the working area of BPM H. Suprihatin Sidoarjo, this condition was due to the number of family planning acceptors in the >1 year period. very dominant 78 (75.73%) so that it can have an impact on the long use of progestin-depo injection contraception to increase maternal weight. Hormones do not monitor the presence of fat in the body, but also help in the smooth functioning of daily physical processes. In other words, a person's weight is influenced by his body. Certain hormones can be the cause of slow metabolic performance as well as being able to add weight to the body.

According to the research of Yuliana and Erlita, C. (2020) “The Difference Between Body Weight Before and After Using Three-Month Injectable Family Planning” From the average body weight before using injectable KB which is 48.67 kg, and after using injectable KB it becomes 52.77 kg which means the range between body weight before and after using injectable KB Three months is 4.1 kg. The results of this study are supported by Hartanto's theory (2004), which states that weight gain in injectable family planning acceptors is due to the influence of the hormone progesterone which stimulates the appetite control center in the hypothalamus which causes acceptors to eat more than usual.

According to the research of Tristiawati, SE and Utami, NW (2017) "Overview of the Characteristics of Weight Gain in 3 Months Injectable KB Acceptors" The results showed that

the weight of 3 months injectable KB acceptors had increased from before using 3 months injectable KB which was originally in the group 55-60 kg to >60 kg after 1 year of injectable contraceptive use or 4 injections. As well as from 36 respondents who experienced an increase of 20 respondents (55.6%) with an average increase of 1-2 kg in one year or after 4 injections. according to the theory of Irianto (2014) which suggests that the cause of weight gain is because the hormone progesterone facilitates the conversion of carbohydrates and sugar into fat under the skin. The hormone progesterone can also stimulate appetite and reduce physical activity, as a result injectable contraceptives can cause weight gain. This study is also supported by the theory of Wiknjosastro (2007) which suggests that one of the side effects of increasing body weight is caused by DMPA injection contraception, resulting in a lack of water and sodium expenditure which results in fluid retention, thus having an impact on weight gain caused by increased appetite and increased appetite. metabolic effects of hormones.

Conclusion

From several research journals that have been reviewed according to topics and themes, the authors conclude that the description of 3-month injection KB every year, acceptors experience weight gain from an increase of 1-7 kg each year. Based on the results of a review taken from 11 journals reviewed, it was found that there was a relationship between the use of 3-month injections with weight gain in acceptors which was influenced by the hormone progesterone contained in 3-month injection drugs. So the conclusion from the results of the journal review above, the authors conclude that some acceptors experience weight gain which is influenced by the progesterone hormone contained in the 3-month injection contraceptive device, where the hormone will facilitate the change of carbohydrates and sugar into fat, so that the fat under the skin increases, In addition, the hormone progesterone also causes an increase in appetite.

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Declaration of Interest Statement

The author declares no conflict of interest in preparing this article.

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