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Factors Affecting Weight Gain in Hormonal Contraceptive Users at Midwife's Independent Practice in Cibatu Village

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Abstract

Background: Indonesian Health Profile data in 2023 shows that, most acceptors prefer hormonal contarceptors. Using injectable contraceptives was 35.3%, followed by pills at 13.2%, and implants at 10.5%. The use of hormonal contraception causes various side effects such as menstrual disorders, dizziness, nausea, headaches and also increases weight in the recipient. **Objective:** to discover the factors affecting weight gain in hormonal contraceptive users. **Method:** the method used is observational with *a cross-sectional approach.* The population of all women of childbearing age who use hormonal contraception in TPMB midwife N is 160 people. 62 respondents obtained the sampling technique using *Slovin*. The research instrument used a questionnaire to determine the influence of age factors, physical activity, diet, and length of use on the weight gain of birth control acceptors. **Results:** age p-value (0.016), physical activity p-value (0.017), diet p-value (0.002), length of use p-value (0.011). **Conclusion:** There is a relationship between age, physical activity, diet, and length of use with weight gain in hormonal contraceptive user

INTRODUCTION

Family Planning (KB) is an effort to shorten or plan the number and distance of pregnancies by using contraceptives to create a small, happy and prosperous family[1]. The Family Planning Program makes an essential contribution to the development of human resources and influences the improvement of the population's quality. Contraception is a tool or drug used to prevent pregnancy

Indonesian Health Profile data in 2023 shows that most acceptors prefer to use hormonal contraception. Using injectable contraceptives was 35.3%, followed by pills at 13.2%, and implants at 10.5%. The use of hormonal contraception causes various side effects such as menstrual disorders, dizziness, nausea, headaches and also increases weight in the recipient.

The use of hormonal contraceptives can cause a variety of side effects, including changes in the recipient's weight. Hormonal contraceptives use the hormones progesterone and estrogen to prevent male sperm from reaching and fertilizing a woman's egg and to prevent a fertilized egg from being implanted (attached) and developing in the uterus during ovulation. The hormone progesterone in hormonal contraceptives facilitates the conversion of carbohydrates and sugars into fat, which increases subcutaneous fat[8]. Weight gain is one of the complaints of hormonal contraceptive users, especially the injectable hormonal contraceptive Depo Medroxyprogesterone Acetate[9]. Other side effects such as menstrual disorders, dizziness, nausea and head palpitations are also caused by hormonal changes caused by hormone induction in the acceptor.

Weight gain is when a person's weight exceeds normal or original weight. Weight gain itself can be interpreted as weight gain due to food intake converted into fat and intersected under the skin[10]. The factors that affect weight gain include environment and lifestyle, age, psychological, genetic, physical activity, eating patterns, medications, hormones, and contraceptive use[11]

The purpose of this study is to find out the factors that affect weight gain in hormonal contraceptive users.

METHOD

This study uses quantitative research. The method used is an observational method with *a cross-sectional* approach. This research was conducted at the Independent Practice of Midwife N in October 2024. The population in this study is all women of childbearing age who use hormonal contraceptives in TPMB midwife N, which is 160 people. The total sample used was 62 people. The sampling technique in this study is *Simple Random Sampling.* The research results were obtained by collecting primary data directly taken in the field using a questionnaire, the variables were weight gain, age, physical activity, nutritional intake, and the duration of hormonal contraceptive use. The research results were processed with a computerized system using the SPSS (Statistical Package for the Social Sciences) version 2.0 program. Sample data collection with code of ethics number DP.04.03/F.XXVI.20/373/2024.

RESULTS AND DISCUSSION

1. Age Relationship with Weight Gain

Table 1. The Relationship Between Age and Weight Gain in Hormonal Contraceptive Users

No	Age of Respondents	Weight gain				Total		P value
		No		Yes				
		f	%	f	%	f	%	
1	20-35 years old	16	44,4	20	55,6	36	100	0,016
2	> 35 years old	4	15,4	22	84,6	26	100	

Table 1 shows that 20 respondents (55.6%) aged 20-35 have increased weight, and 4 respondents (15.4%) aged > 35 have not experienced weight gain.

2. The Relationship Between Physical Activity and Weight Gain

Table 2 Relationship between Physical Activity and Weight Gain in Hormonal Contraceptive Users

No	Physical Activity	Weight gain				Total		P value
		No		Yes				
		f	%	f	%	f	%	
1	Light	3	14,3	18	85,7	21	100	
2	Moderate	12	35,3	22	64,7	34	100	0,017
3	High	5	71,4	2	28,6	7	100	

Table 2 shows that 18 respondents (85.7%) experienced weight gain, and 5 respondents (71.4%) experienced weight gain.

3. The Relationship between Diet and Weight Gain

Table 3 Relationship between Diet and Weight Gain in Hormonal Contraceptive Users

No	Diet	Weight gain				Total		P value
		No		Yes				
		f	%	f	%	f	%	
1	Kurang Baik	7	17,9	32	82,1	39	100	0,002
2	Baik	13	56,5	10	43,5	23	100	

Table 3 shows that 32 respondents (82.1%) experienced weight gain, and 13 respondents (56.5%) did not experience weight gain due to poor diet.

4. The Relationship Between Long-Term Use and Weight Gain

Table 4 Relationship between Long-Term Use and Weight Gain in Hormonal Contraceptive Users

No	Long Usage	Weight gain				Total		P value
		No		Yes				
		f	%	f	%	f	%	
1	< 3 years	14	48,3	15	51,7	29	100	0,011
2	≥ 3 Years	6	18,2	27	81,8	33	100	

Based on table 4 shows that for the duration of hormonal contraceptive use ≥ 3 years, as many as 27 respondents (81.8%) experienced weight gain and the duration of hormonal contraceptive use < 3 years, as many as 14 respondents (48.3%) did not experience weight gain.

DISCUSSION

1. Age

The age of 20-35 years is a healthy reproductive age, and the age of <20 years is the phase to delay or prevent pregnancy. The age of 20-35 years is the reproductive age in the phase of sparse pregnancy, not to end the pregnancy, so it requires effective contraception; most of the time, at the age of 20-35 years, the mother has weight gain or is fixed. Because this age is a reproductive age in working and doing other activities. The age of >35 years is the old reproductive age, high risk in pregnancy and childbirth. As we age, we tend to lose muscle, and the function of the reproductive organs decreases. Muscle mass loss will reduce calorie burn rates, especially if not eating a balanced diet and not doing physical activity regularly will lead to weight gain[12].

This is in line with research conducted by Sesca D. Solang, et al. (2019) said that there is an influence between weight gain and the age of hormonal contraceptive acceptance. This is because the age of 20-35 years is a productive age for a woman, where they quickly experience weight gain, which is also caused by the hormones contained in contraception[36].

2. Physical Activity

Physical activity is body movement produced by skeletal muscles that require energy. It includes activities performed during work, play, household chores, travel, and recreational activities [20].

Physical activity tends to require a certain amount of energy. When the energy provided by food is insufficient, energy is obtained from the breakdown of fat in the body. If more fat is converted into energy during activity, fat storage will not occur [21]. Physical activity affects weight, meaning that the weight will be higher if physical activity is low. People who regularly exercise often have a normal weight. On the other hand, people who don't move much are usually overweight or obese[22].

The results of research conducted by Juliana Br Sembiring, Razia Begum Suroyo and Leni Asnita on Factors related to the increase in BB in injectable contraceptive acceptors at the Batahan Health Center, Batahan District, Mandailing Natal Regency in 2019. The data analysis used was univariate and bivariate analysis with a chi-square statistical test. Based on research that has been conducted, there is a relationship between activity and weight gain in injectable birth control acceptors because physical activity can help prevent overweight or maintain weight. Excessive physical activity makes the body very tired, so it will be hungrier faster, and energy intake is depleted. So it can be concluded that there is a relationship between physical activity and weight gain in injectable contraceptive acceptors[10]

3. Diet

Diet is a way for a person to meet their nutritional needs manifested through various foods consumed, the time and frequency of eating, and eating habits[24]. An unhealthy diet is low in fibre and high in fat, which can lead to weight gain. The amount and type of food, meal schedule, and processing of foodstuffs are included in the diet[25]. The hormone progesterone in hormonal contraceptives can stimulate the appetite control centre in the hypothalamus. The more progesterone hormone stimulates the hypothalamus, the more appetite increases. Weight gain

occurs due to progesterone, which increases appetite and converts carbohydrates into fat, causing fat to accumulate and leading to weight gain[27].

Research conducted by Sembiring (2019) on factors related to weight gain in injectable contraceptive acceptors shows that there is a relationship between diet and weight gain. The use of hormonal contraceptives has the main side effect, namely weight changes. The factor that affects the weight change of hormonal contraceptive users is the presence of the strong hormone progesterone, which stimulates the lateral hypothalamus. With more appetite than usual, the body will have excess nutrients.

4. Long Usage

Weight gain occurs due to one of the risk factors of hormonal contraception, an increase in the hormones progesterone and estrogen in the body that causes an increase in appetite. Weight gain of up to 2-4 kg within 2 months progressively continues to increase during the second year due to the influence of the hormone progesterone. The role of progesterone in contraceptives is to thicken the cervical mucus and reduce the ability of the uterus to receive fertilized cells. This hormone also facilitates the conversion of carbohydrates into fat, which often results in fat accumulation as a side effect, leading to weight gain and decreased sex drive. In the use of contraceptives, DMPA causes a significant increase in weight. Weight gain occurs in the first 6 months, with a substantial weight gain up to the 36th month.

Previous research conducted by Mentari Moloku, titled "The Long Relationship between 3 Months of Injectable Contraceptive Use and Weight Change at the Ranomuut Manado Health Center," states that there is a relationship between the length of 3 months of injectable contraception use and weight changes in mothers at the Ranomuut Manado Health Center.

5. Weight gain in contraceptive use

Weight gain is when a person's weight exceeds normal and natural weight. Various factors, including the environment, psychological age, physical activity, eating habits, and the use of hormonal contraceptives, can cause weight gain. Weight gain is a side effect of using contraceptives. The effect of weight gain is that the hormones it contains facilitate the conversion of carbohydrates and sugars into fats and stimulate the appetite control centre in the hypothalamus, causing contraceptive users to eat more than usual[13].

CONCLUSION

There is a relationship between age, physical activity, diet, and length of use with weight gain in hormonal contraceptive users.

RECOMENDATION

Weight control in hormonal family planning needs to be done by paying attention to factors that affect weight gain, namely through diet and activity regulation.

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