

Effect Of Depo Medroxy Progesterone Acetat (DMPA) Injection Contraceptive Use On Blood Pressure In Regions Work Puskesmas Padang Door Tapanuli Selatan District Year 2022

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ABSTRACT

Contraception is a device or drug used to prevent pregnancy. One type of injectable contraceptive that is widely used is Depo Medroxyprogesterone Acetate (DMPA). The use of Depo Medroxyprogesterone Acetate (DMPA) must be considered because in addition to having a positive effect, it also has a negative effect, one of which affects blood pressure. This study aims to determine the effect of the duration of contraceptive use. Injection of Depo Medroxy Progesterone Acetat (DMPA) Against Blood Pressure in the Working Area of Pintu Padang Health Center, South Tapanuli Regency in 2022. This study uses parametric statistical analysis with an observational approach. The population in this study were all mothers who used depo medroxyprogesterone acetate contraception in the working area of the Pintu Padang Health Center as many as 257 mothers. The sampling technique using the Accidental Smpling technique was 26 people. The results showed that the duration of the use of Depo Medroxy Progesterone Acetat (DMPA) injectable contraceptives in the working area of the Pintu Padang Health Center was mostly 2-4 years, the maternal blood pressure in the Pintu Padang health center was mostly 120-139/80-89 mmHg. The results of the Paired Sample-Test test obtained a p-value of $0.031 < 0.05$, then H_0 is rejected, meaning that there is an effect of the duration of the use of Depo Medroxy Progesterone Acetat (DMPA) injectable contraception on blood pressure in the working area of the Pintu Padang Health Center, South Tapanuli Regency in 2022. The suggestion in this study is that the work of the Pintu Padang Health Center in South Tapanuli Regency can inform mothers about the side effects of injectable contraceptives 3 months before being injected to the mother.

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1. INTRODUCTION

The family planning program (KB) is an attempt to space pregnancies or limit pregnancies. Family planning programs can be carried out by using contraception [1]. Contraception is a tool or drug used to prevent pregnancy [2]. One method of contraception that is of great interest to mothers is injection because it is effective, practical, relatively inexpensive, safe and does not interfere with milk production. One type of injectable contraceptive that is widely used is Depo Medroxyprogesterone Acetate (DMPA). Contraceptive Injection Depo Medroxy Progesterone Acetat (DMPA) is a contraceptive given at a dose of 150 mg every three months, with ideal use of the first 5 days during the menstrual cycle. DMPA does not affect the composition and quantity of breast milk but can be detected in breast milk[3].

The use of Depo Medroxyprogesterone Acetat (DMPA) must be considered because apart from having positive effects, it also has negative effects, one of which is affecting blood pressure. According to research by Ardiansyah and Fachri [1] states that the effects of using injectable contraception can be in the form of menstrual pattern disturbances, weight gain, headaches, and stomach discomfort. The most important side effects of injecting contraceptives are disruption of menstrual patterns, while other effects that are no less important are an increase in blood pressure and an increase in body weight between 1-5 kg. Side effects that arise due to the use of Depo Medroxy Progesterone Acetat (DMPA) are changes in increased renin substrate (angiotensin) and serum lipids in long-term use, where it is

found that there is a decrease in High Density Lipoprotein-cholesterol (HDL-cholesterol) levels which can increase the risk of increased blood pressure [1].

According to Adi's research (2019) it states that there is a relationship between the use of combined and single substance injections for family planning on the blood pressure of family planning acceptors[2]. This is in line with Ningsih's research (2012) which states that there is a relationship between the use of combined substance and single substance injections on the blood pressure of family planning acceptors[4]. Based on the initial survey conducted in the Pintu Padang Health Center area, the number of medroxy progesterone acetate depo contraceptive acceptors in 2020 was 723 mothers. In 2021 the number of contraceptive acceptors depo medroxy progesterone acetate will be 819 women. From 2022 to April 2022, the number of acceptors for depo medroxy progesterone acetate contraception is 257 women (Profile of Pintu Padang Health Center, 2022). Based on the results of interviews with 10 mothers who used the medroxy progesterone acetate depot at Pintu Padang Health Center, it was found that 6 mothers mentioned that their blood pressure had changed to high after using the medroxy progesterone acetate depot for more than 5 years. Meanwhile, 4 other people stated that their blood pressure sometimes rose or stabilized when using depo medroxy progesterone acetate for <3 years. This aims to find out about "The Influence of Duration of Contraceptive Use of Depo Medroxy Progesterone Acetate (DMPA) Contraceptives on Blood Pressure in the Working Area of Pintu Padang Health Center, South Tapanuli Regency in 2022".

2. METHOD

This study uses parametric statistical analysis, namely to see the difference between the values of one variable and another at different times, this study uses more than one sample [5]. The variable that will be seen the difference in this study is how the effect of duration of use of Depo Medroxy Progesterone Acetate (DMPA) injection contraception on blood pressure in the Working Area of Pintu Padang Health Center, South Tapanuli Regency in 2022. The research design used observational. Observations were made once, namely to determine the effect of duration of use of Depo Medroxy Progesterone Acetate (DMPA) injection contraception on blood pressure in the Working Area of Pintu Padang Health Center, South Tapanuli Regency in 2022.

The population is the entire object of research or the object under study [6]. The population in this study were all mothers who used depo medroxy progesterone acetate contraception in the working area of Pintu Padang Health Center as many as 257 mothers. The sample is part of the number and characteristics possessed by the population [5]. Sampling uses Accidental Smpling, namely sampling by taking cases or respondents who happen to exist or are available somewhere according to the research context. So that the sample size in this study was 26 people.

Data collection was carried out using primary data, namely from mothers in the Pintu Padang Health Center Work Area, South Tapanuli Regency who used the Medroxy Progesterone Acetate Depo and those who did not use the Medroxy Progesterone Acetate Depo. feedback consisting of 3 answer choices given to the mother, namely not long, if the mother uses Depo Medroxy Progesterone Acetate (DMPA) for 0-2 years, Long enough, if the mother uses Depo Medroxy Progesterone Acetate (DMPA) for 3-4 Years, Old, if the mother uses Depo Medroxy Progesterone Acetate (DMPA) for > 5 years. The instrument used to measure blood pressure used a flip worksheet which consisted of 4 answer choices given to the mother, namely Normal Blood Pressure <130/85 mmHg, Normal High Blood Pressure 120-139 mmHg/80-89 mmHg Mild Blood Pressure 140- 159 mmHg / 90-99 mmHg, Moderate Blood Pressure 160- 179 mmHg / 100-109 mmHg.

Data obtained through questionnaires is raw data. Data processing can be done with statistical techniques. According to A.Aziz Alimul Hidayat (2015) in the data processing there are steps that must be taken, including Editing (Data Checking), Coding (Coding on data), Tabulation (Data grouping), Entry (Data entry) and Data Processing (Data Process)

3. RESULTS AND DISCUSSION

Data from the results of the study used instruments obtained from variable data. Effect of Length of Contraceptive Use of Depo Medroxy Progesterone Acetate (DMPA) Contraceptive Use on Blood Pressure. This research was conducted in the working area of Pintu Padang Public Health Center, South Tapanuli Regency. This research was conducted for 10 days from 8-17 October 2022, with a total

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sample of 26 respondents in the working area of the Pintu Padang Health Center. By collecting respondents and making observations.

Characteristics of respondents

The characteristics of the respondents studied in this study include: Age, occupation, education and number of child births can be seen in table 1

Table 1. Characteristics of Respondents in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

No	Characteristics	Frequency (f)	Percentage (%)
1	Age of Respondents		
	20-25 Years	3	11,5
	26-30 Years	13	50,0
	31-35 Years	6	23,1
	36-40 Years	4	15,4
	Amount	26	100,0
2	Work		
	Self-employed	7	26,9
	Private sector employee	7	26,9
	Housewife	10	38,5
	civil servant	2	7,7
	Amount	26	100,0
3	Education		
	Junior high school	5	19,2
	Senior high school	18	69,2
	College	3	11,5
	Amount	26	100,0
4	Number of children		
	1	7	26,9
	2	12	46,2
	3	7	26,9
	Amount	26	100,0

Based on table 1, it can be seen from the 26 respondents in the Work area of Pintu Padang Health Center, South Tapanuli Regency in 2022, it can be seen that the age of the majority of the respondents is aged 26-30 years as many as 13 people (50.0%), the employment status of the respondents is not working/mother household as many as 10 people (38.5%), education of respondents is high school as SMA 18 people (69.2%) and the number of children is mostly 2 people as many as 12 people (46.2%).

Frequency Distribution of Injecting Contraceptive Use Depo Medroxy Progesterone Acetate (DMPA) in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

To see the results of the Old Frequency of Use of Depo Medroxy Progesterone Acetate Contraceptive Injection (DMPA) in the Pintu Padang Health Center Work Area, South Tapanuli Regency in 2022, it can be described in Table 2:

Table 2 Distribution of the Old Frequency of Use of Medroxy Progesterone Acetate (DMPA) Injecting Contraceptives in the Working Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

No	Duration of DMPA Contraceptive Use	Frequency (f)	%
1	0-2 Years	9	34,6
2	2-4 Years	13	50,0
3	>5 Years	4	15,4

Amount	26	100
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From table 2 it can be seen that the duration of use of Depo Medroxy Progesterone Acetate (DMPA) Injectable Contraception in the working area of Pintu Padang Health Center, South Tapanuli Regency in 2022 is mostly 2-4 years with 13 people (50.0%).

Frequency Distribution of Maternal Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

To see the results of the Frequency of Maternal Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022, it can be described in Table 3:

Table 3 Distribution of the Frequency of Maternal Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

No	Blood pressure	Frekuensi (f)	%
1	<130/85 mm Hg	5	19,2
2	120-139/80-89 mm Hg	15	57,7
3	140-159/90-99 mm Hg	6	23,1
Amount		26	100

From table 3 it can be seen that the maternal blood pressure in the working area of the Pintu Padang Health Center, South Tapanuli Regency in 2022 is mostly 120-139/80-89 mmHg for 15 people (57.7%).

The Influence of Depo Medroxy Progesterone Acetate (DMPA) Contraceptive Use on Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

To find out the effect of duration of use of Depo Medroxy Progesterone Acetate (DMPA) injection contraception on blood pressure in the working area of Pintu Padang Health Center, South Tapanuli Regency in 2022, it can be described in table 4

Table 4. Effect of Depo Medroxy Progesterone Acetate (DMPA) Injectable Contraceptive Use on Blood Pressure in the Working Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

No	Treatment	Mean	N	Sig.
1	Length of Use	1,81	26	0,031
3	Blood pressure	2,04	26	

Based on Table 4 above, it can be seen that the use of depo medroxy progesterone acetate (DMPA) contraception is between 2-4 years, this can be seen from the mean value of 1.81 with an index (1 = 0-2 years, 2 = 2-4 years and 3 = >5 years). In terms of blood pressure, it can be seen that the mother's blood pressure is mostly 120-139/80-89 mmHg, this can be determined based on a mean (average) value of 2.04 with an index (1 = <130/85 mmHg, 2 = 120-139/80-89 mm Hg and 3 = 140-159/90-99 mm Hg). Then, based on the results of the Paired Sample -Test, the value of $p=0.031 < \alpha = 0$ is obtained, then H_0 is rejected, meaning that simultaneously there is an effect of the duration of Depo Medroxy Progesterone Acetate (DMPA) Contraceptive Use on Blood Pressure in the Work Area

DISCUSSION

Duration of Injecting Contraceptive Use of Depo Medroxy Progesterone Acetate (DMPA) in the Work Area of Pintu Padang Health Center, South Tapanuli Regency, 2022.

DMPA (Depot Medroxyprogesterone Acetate) is administered once every 3 months at a dose of 150 mg. It is injected intramuscularly in the buttock area and is recommended to be given no later than 12 weeks and 5 days after the last injection [7]. The mechanism of action of depo medroxy progesterone acetate is prevents ovulation, cervical mucus becomes thick and scanty thereby reducing the ability of

spermatozoa to penetrate, makes the endometrium thin and atrophic making it less favorable for implantation of a fertilized ovum, affecting the speed of ovum transport by the fallopian tube

Based on the results of the study, it was found that the duration of using Depo Medroxy Progesterone Acetate (DMPA) Injecting Contraception in the Pintu Padang Health Center Work Area, South Tapanuli Regency in 2022 is mostly 2-4 years. Depo Medroxy Progesterone Acetate (DMPA) injection contraception users can occur because acceptors feel DMPA injectable contraception meets their needs. Apart from that, the effect of contraception for 3 months means that mothers do not need to go to health facilities frequently. Benefits that are felt for a long time and affordable prices are still the reasons for choosing this contraceptive for most KB acceptors.

The use of the depo medroxy progesterone acetate type of contraception method also has negative effects on the mother's body, one of which is an increase in blood pressure. According to research by Rahayu and Wijanarko (2017) states that injecting DMPA with a duration of use after two years can cause menstrual disorders in the form of amenorrhea, vaginal discharge, and increased blood pressure [8].

The side effects of long-term use of DMPA injection contraception also affect bone mineral density. Another side effect of more than 36 months of contraception also significantly affects the fat fraction causing an increase in LDL cholesterol which can affect an increase in total cholesterol when compared to using cyclofem [9]

This use is influenced by the age of the respondent. Where from the results of the study it was found that the age of the respondents was mostly 26-30 years. Where this age is a productive phase. In addition, it is influenced by the number of children, most of whom are 2 people, so it is possible to find family planning acceptors aged 26-30 years who use contraception, where this age is the phase of delaying pregnancy so that the time for using injectable contraceptives tends to be long. This is different from injecting birth control acceptors who are >35 years old, where this is the old reproductive age for spacing pregnancies and may also have had more than two pregnancies or given birth so it tends to take longer [9].

Maternal Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

Blood pressure is the pressure in the blood vessels, this is due to the work of the heart as a pump [10]. Maternal blood pressure in the working area of Pintu Padang Health Center, South Tapanuli Regency in 2022 is mostly 120-139/80-89 mmHg.

The cause of an increase in blood pressure in general is multifactorial, one of which can cause it is hormonal birth control. Injection contraception is a type of hormonal contraception that contains progesterone, the use of synthetic progesterone can increase body sodium and blood pressure. In previous studies it was proven that long-term administration of progesterone can cause damage to the endothelial walls of blood vessels so that any changes in serum lipids require more frequent monitoring [1].

This narrowing and blockage by fat spurs the heart to pump blood even stronger so that it can supply blood to the tissues. As a result, blood pressure increases, then there is high blood pressure. So that it is known that the use of depo medroxy progesterone acetate contraception is one of the supporting factors for the emergence of high blood pressure when this contraceptive is used for a long time [1].

In line with Prawerti (2019) stated that injections of depo medroxy progesterone acetate affected the lipid profile, where it was found that there was a decrease in HDL-cholesterol levels after 12 months of use [9]. A decrease in HDL cholesterol levels will increase the risk of increasing cholesterol levels. Excess cholesterol will settle in blood vessels and will clog blood vessels. Another impact of excess cholesterol is hypertension, due to the large amount of pressure on the blood vessels due to blockages in the peripheral blood vessels.

In addition, the use of hormonal contraception has side effects that can cause stress for the mother. Uncontrolled stress can trigger an increase in blood pressure. In terms of work, most of the respondents' jobs are housewives, where the stress level is likely to be quite high with a lot of work and the boredom they experience when staying at home.

Judging from where the education level of the respondents is mostly high school. Where a person's education can affect the ability to absorb information, listen, solve problems, as well as the

behavior and lifestyle of someone with a higher education will have broader knowledge than someone with a lower level of education.

The Influence of Depo Medroxy Progesterone Acetate (DMPA) Contraceptive Use on Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency in 2022

Based on the results of the study, it was found that the use of depo medroxy progesterone acetate (DMPA) contraception was between 2-4 years, this can be seen from the mean value of 1.81 with an index (1 = 0-2 years, 2 = 2-4 years and 3 = >5 years). In terms of blood pressure, it can be seen that the mother's blood pressure is mostly 120-139/80-89 mmHg, this can be determined based on a mean (average) value of 2.04 with an index (1 = <130/85 mmHg, 2 = 120-139/80-89 mm Hg and 3 = 140-159/90-99 mm Hg).

Then, based on the results of the Paired Sample –Test, the value of $p=0.031 < \alpha = 0$ was obtained, then H_0 was rejected, meaning that simultaneously there was an influence of the duration of Depo Medroxy Progesterone Acetate (DMPA) Contraceptive Use on Blood Pressure in the Work Area of Pintu Padang Health Center, South Tapanuli Regency, Year 2022.

This is in line with Ningsih's research (2012) which states that there is a significant relationship between the duration of DMPA injection contraception (depo medroxy progesterone acetate) and changes in blood pressure at the Mergangsan Health Center. It is supported by research by Ardiansyah and Fachri (2017) which states that there is a relationship between the use of three-monthly injection contraception for one year with an increase in blood pressure[1].

Then it was supported by the research of Prawerti et al (2019) which stated that there was a significant relationship between the duration of DMPA injection contraception use and cholesterol levels in family planning acceptors in the working area of Puskesmas I South Denpasar[9].

According to Adi's research (2019) it states that there is a relationship between the use of combined and single substance injections for family planning on the blood pressure of family planning acceptors [2]. This is in line with Ningsih's research (2012) which states that there is a relationship between the use of combined and single substance injections for family planning on the blood pressure of family planning acceptors [4].

According to the researchers' assumptions, the length of time the use of the depo medroxy progesterone acetate (DMPA) contraceptive method is directly proportional to the increase in blood pressure. This means that the longer depo medroxy progesterone acetate (DMPA) contraception is used, the greater the potential for an increase in blood pressure in the mother.

4. CONCLUSION

The results of research conducted in the Simonis Community Health Center in North Labuhanbatu Regency in 2020 show that the duration of use of Depo Medroxy Progesterone Acetate (DMPA) Injectable Contraception in the Work area of Pintu Padang Health Center in South Tapanuli Regency in 2022 is mostly 2-4 years. Maternal Blood Pressure in the Pintu Padang Health Center Work Area, South Tapanuli Regency, in 2022 is mostly 120-139/80-89 mmHg. There is an Influence of Length of Use of Contraceptive Injection Depo Medroxy Progesterone Acetate (DMPA) on Blood Pressure in the Working Area of Pintu Padang Health Center, Tapanuli Regency South in 2022

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