

## RELATIONSHIP OF INJECTABLE CONTRACEPTIVE USE DEPO MEDROXYPROGESTERONE ACETATE WITH BLOOD PRESSURE ACCEPTOR KB IN THE WORK

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### ABSTRAK : HUBUNGAN PENGGUNAAN KONTRASEPSI SUNTIK DEPO MEDROXYPROGESTERONE ASETAT DENGAN AKSEPTOR TEKANAN DARAH KB DI KERJA

Latar Belakang Alat kontrasepsi yang sering menjadi pilihan PUS adalah alat kontrasepsi suntik. Kontrasepsi suntik merupakan metode kontrasepsi jangka panjang yang bekerja lama (panjang) dan sangat efektif, penggunaannya sangat praktis, harganya murah, aman dan tidak memerlukan penggunaan setiap hari atau setiap kali berhubungan. Prevalensi hipertensi berdasarkan diagnosis dokter di Provinsi Lampung tahun 2020 sebesar 15,10%, dengan kejadian tertinggi di Kabupaten Way Kanan sebesar 25,9% dan terendah di Kabupaten Tanggamus sebesar 10,0% sedangkan Kabupaten Lampung Selatan sebesar 12,5%.

Tujuan penelitian ini adalah untuk mengetahui hubungan penggunaan kontrasepsi suntik depo medroxyprogesterone acetate dengan tekanan darah akseptor KB di wilayah kerja Puskesmas Penengahan Kabupaten Lampung Selatan.

Metode Jenis penelitian ini adalah kuantitatif dengan pendekatan cross sectional. Populasi dalam penelitian ini adalah ibu akseptor KB suntik 3 bulan dengan sampel sebanyak 152 responden dengan teknik total sampling. Pengumpulan data dengan kuesioner dan pengukuran tekanan darah. Analisis data adalah univariat dan bivariat (chi square).

Hasil penelitian menunjukkan bahwa 120 responden (78,9%), dengan penggunaan alat kontrasepsi suntik dari Depo Medroxy Progesterone Acetate selama 2-3 tahun, dan 126 (82,9%).

Kesimpulan Ada hubungan antara penggunaan alat kontrasepsi suntik di Depo Medroxy Progesterone Acetate dengan tekanan darah akseptor KB di wilayah kerja Puskesmas Penengahan Kabupaten Lampung Selatan dengan nilai ( $p\text{-value} = 0,036 < 0,05$ ).

Saran kepada Puskesmas agar dapat memberikan edukasi kepada akseptor KB baru dan lama mengenai efek samping KB terhadap tekanan darah serta cara pencegahan dan pengobatannya.

Kata Kunci : Alat Kontrasepsi, Akseptor KB, Depot Medroxy, Tekanan Darah

### ABSTRACT

Contraceptive devices that are often the choice of EFA are injectable contraceptives. Injectable contraception is a long-term contraceptive method that works long (long) and is very effective, its use is very practical, the price is cheap, it is safe and does not require use every day or every time you have intercourse. The prevalence of hypertension based on doctor's diagnosis in Lampung Province in 2020 was 15.10%, with the highest incidence in Way Kanan District at 25.9% and the lowest in Tanggamus District at 10.0% while South Lampung District was 12.5%. The purpose of this study was to determine the relationship between the use of depo medroxyprogesterone acetate injectable contraception and the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency.

This type of research is quantitative with a cross-sectional approach. The population in this study is mothers with 3 months injection family planning acceptors with a sample of 152 respondents with total sampling technique. Data collection by questionnaire and blood pressure measurement. Data analysis was univariate and bivariate (chi square).

The results showed that 120 respondents (78.9%), with the use of injectable contraceptives from Depo Medroxy Progesterone Acetate for 2-3 years, and 126 (82.9%). There is a relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in

the work area of the Penengahan Health Center, South Lampung Regency with a value ( $p\text{-value} = 0.036 < 0.05$ ). Suggestions to the Puskesmas to be able to provide education to new and old family planning acceptors regarding the side effects of family planning on blood pressure and how to prevent and treat it.

Keywords: Blood Pressure, Contraceptive devices, family planning acceptors, Medroxy Depot

## INTRODUCTION

According to the World Health Organization (WHO), family planning is an action that helps individuals or married couples to get certain objectives, avoid unwanted births, regulate the interval between pregnancies, control the time of birth in a husband and wife relationship and determine the number of children in the family. (Hartanto, 2014).

According to the United Nations (2019) the use of contraceptives in the world as many as 842 million using modern contraceptive methods and 80 million using traditional methods, as many as 190 million women want to avoid pregnancy and do not use any contraceptive method. According to WHO, in 2017 there were more women with hypertension (30%) than men (29%). This is because the use of hormonal contraceptives is one of the risk factors for hypertension. In a study conducted by Barikani and Saeedi among 328 Iranian women over 30 years, the prevalence of hypertension was reported to be 32%, and 8.8% of those with hypertension were pill contraceptive acceptors for  $9.8 \pm 6.1$  years (Afshari, 2021).

According to the BKKBN, active family planning participants among fertile age couples (PUS) in 2020 amounted to 67.6%. This figure increased compared to 2019 of 63.31% based on data from the Indonesian Family Profile, 2019. In 2020, Bengkulu Province family planning participation had the highest percentage of 71.3%, while Papua Province had the lowest family planning participation rate of 24.9%, for Lampung Province 68.7% (Ministry of Health, 2021). Based on riskesdas data, hypertension sufferers in Indonesia are 17.64%, of which 11.57% are female (Riskesdas, 2018) Several studies in Indonesia have found that there is an effect of using hormonal contraception on increasing blood pressure (Nurhidayati, 2020).

The coverage of active family planning participants in Lampung Province in 2020 was 72.4%, the highest was in Pesawaran Regency at 99.5% and the lowest was in Pesisir Barat Regency at 46.9% while South Lampung Regency was at 71.7% (Lampung Health Office, 2021). The prevalence of hypertension based on doctor's diagnosis in Lampung Province is 15.10%, with the highest incidence in Way Kanan Regency at 25.9%

and the lowest in Tanggamus Regency at 10.0% while South Lampung Regency is 12.5%, while by gender, 16.99% of hypertension sufferers are women (Riskesdas Lampung, 2018).

The coverage of active family planning participants in 2020 was 71.13% (123,306 active family planning participants), with the highest coverage at Bumidaya Health Center at 100% and the lowest at Katibung Health Center at 15.7% while at Penengahan Health Center at 54.0%. The prevalence of hypertension sufferers in South Lampung Regency is 91,522 people, with the highest sufferer at Karang Anyar Health Center at 8,278 and the lowest at Talang Jawa Inpatient Health Center at 1,288 while the Penengahan Health Center was 3423 cases (South Lampung Health Office, 2020).

Based on the initial data obtained at the Puskesmas Mediation, the number of family planning acceptors from January to December 2021 was 866 acceptors. The most commonly used contraceptive methods were 419 acceptors 3 months injection, 323 1 month injections, 83 pills acceptors, 29 acceptors Implant, and 12 IUD acceptors. The data shows an increase in blood pressure at the 3-month injection, there are 61 mothers with an increase in blood pressure for 1 year. Mediation, 2020).

Healthy behavior is an activity that hormonal family planning acceptors need to do as an effort to maintain and improve health, namely by eating a balanced menu, namely a daily diet that meets nutritional needs that meet the body's needs both in quantity and quality (Notoatmodjo, 2014).

In addition, understanding and knowledge of hormonal contraception methods need to be given to hormonal family planning acceptors, so that after getting sufficient knowledge about hormonal contraception, it is hoped that hormonal family planning acceptors can have a policy in choosing a contraceptive method that suits their circumstances. Efforts that midwives can do to deal with the side effects of hypertension in acceptors are by providing KIE (Education Information Communication) which includes explaining the cause of the occurrence and explaining that the symptoms or complaints are in the context of temporary and individual adjustment, motivating them to continue using hormonal contraception and furthermore. take medical action according to the side effects experienced

(Nurhidayati, 2020).

The results of the preliminary study showed that there were 152 mothers who received a 3-month injection of family planning injection with a duration of 1-3 years at the mediation health center. Based on the results of a survey conducted on March 3-5, 2022 to 20 family planning acceptors, 16 people used injectable contraception and 4 people used pill contraception. In users of PIL contraception, 1 (25%) acceptors complained of frequent headaches. Of the 16 injectable family planning acceptors, 5 (31.2%) people said they experienced an increase in weight of 1-2 kg while using injectable family planning while 8 (50%) said they often complained of headaches and it was seen on the acceptor card that the mother's blood pressure had increased.

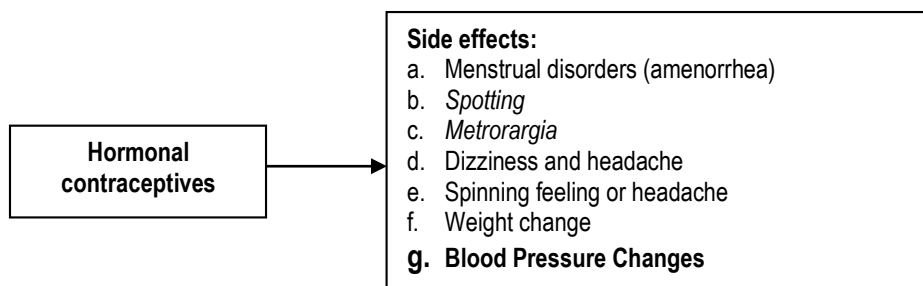
So the researcher is interested in conducting a study with the title "The Relationship between the Use of Depo Medroxy Progesterone Acetate Injectable Contraceptives and the Blood Pressure of Family Planning Acceptors in the Work Area of the Penengahan Health Center, South Lampung

Regency".

**METHOD**

This type of research is a type of quantitative research. Quantitative research method is a research method based on the philosophy of positivism which is used to examine certain populations or samples, collecting data using research instruments. The analysis can be quantitative or / statistical, with the aim of testing the established hypothesis (Sugiyono, 2017). The population in this study were mothers with 3 months injection KB acceptors within 1-3 years in the Work Area of the Penengahan Health Center, South Lampung Regency, as many as 152 participants. The sample size was taken using the sample size formula from the entire population, so the number of samples in this study was 152 respondents. After the number of samples is known, then random sampling *Total Sampling*. Sampling by Total Sampling is a sampling technique where the number of samples is the same as the population (Sugiyono, 2017)

**Figure 1**  
**Theoretical framework**

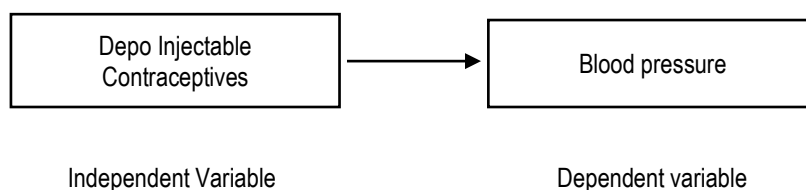


Source: Affandi (2012)

Conceptual framework is a description and visualization of the relationship or relationship between concepts or variables that will be observed

or measured through research to be carried out (Notoatmodjo, 2018).

**Figure 2**  
**Conceptual framework**



**RESULT**

**Characteristics of Respondents**

**Table 1**

**Characteristics of Respondents**

Variable	Category	N	%
Age	> 35 years old	61	40.1
	20-35 years old	91	59.9
	D4	1	.7
Education	PT	4	2.6
	SD	52	34.2
	SENIOR HIGH SCHOOL	50	32.9
	JUNIOR HIGH SCHOOL	45	29.6
Work	IRT	144	94.7
	Working	8	5.3
	1	30	19.7
	2	73	48.0
Parity	3	33	21.7
	4	14	9.2
	5	2	1.3

Based on table 1, it is known that respondents aged 20-35 years as many as 91 (75.9%), respondents with elementary education as many as 52 (34.2%), respondents with household work as many as 144 (94.7%), and respondents with parity 2 as much as 73 (48.0%).

**Univariate Analysis**

Frequency distribution of injectable contraceptive use at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency

**Table 2**  
**Frequency distribution of injectable contraceptive use at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency**

Variable	N	%
2-3 years	120	78.9
1 - < 2 years	32	21.1

Based on table 2, it is known that 120 respondents (78.9%), using injectable contraceptives Depo Medroxy Progesterone Acetate for 2-3 years, and 32 (21.1%).

Distribution of blood pressure frequency of injectable contraceptive acceptors at the Depo Medroxy

Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency in 2022

**Table 3**  
**Distribution of blood pressure frequency of injectable contraceptive acceptors at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency in 2022**

Variable	N	%
Hypertension	26	17.1
Not	126	82.9

Based on table 3, it is known that respondents with high blood pressure (hypertension) acceptors of injectable contraception Depo Medroxy Progesterone Acetate as many as 26 (17.1%), and respondents with normal blood pressure (not hypertension) acceptors of injectable contraceptives Depo Medroxy Progesterone Acetate as many as 126 (82.9%).

**Bivariate Analysis**

The relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency

**Table 4**  
**The relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health**

Center, South Lampung Regency

Contraception	Blood pressure				N	%	p-value	OR 95% CI
	Hypertension		Not					
	n	%	n	%				
2-3 years	25	20.8	95	79.2	120	100.0	0.036	8,158 (1,061-62,706)
1 - < 2 years	1	3.1	31	96.9	32	100.0		

Based on table 4, it is known from 120 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years as many as 25 (20.8%) had hypertension and as many as 95 (79.2%) did not have hypertension. Of the 32 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 1- < 2 years 1 (3.1%) had hypertension and 31 (96.9%) had no hypertension.

The results of the statistical test showed p-value = 0.036, which means  $p < \alpha$  (0.05), to the conclusion that there is a relationship between the use of injectable contraceptives at Depo Medroxy Progesterone Acetate and the blood pressure of family planning acceptors in the work area of the Penengahan Health Center, South Lampung Regency. With OR value 8.1 means respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years have a chance 8.1 times greater to experience events hypertension when compared with respondents using Depo Medroxy Progesterone Acetate injection contraception 1- < 2 years.

## DISCUSSION

### Univariate Analysis

Frequency distribution of injectable contraceptive use at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency

Based on the results of the study, 120 (78.9%) respondents used injectable contraceptives with Depo Medroxy Progesterone Acetate for 2-3 years and 32 (21.1%).

In line with Norlita's research (2018), the majority of respondents using injection contraceptives at Harapan Raya Pekanbaru Health Center used 3-month injectable contraceptives as many as 24 respondents (75%). Nurhidayati's research (2020) The results of the study found that the duration of giving hormonal family planning was mostly 68 people (70.8%) in the old category (> 3 years).

Contraceptive devices that are often the choice of EFA are injectable contraceptives. Injectable contraception is a long-term contraceptive

method that works long (long) and is very effective, its use is very practical, the price is cheap, it is safe and does not require use every day or every time you have intercourse. However, injectable contraceptives also have many side effects such as changes in blood pressure, menstrual disorders, depression, increased vaginal discharge, acne, changes in libido, changes in body weight, dizziness, headaches and hematomas (Hutasoit, 2019).

Side effects of excessive levels of the hormone progesterone on the cardiovascular system can cause changes in blood pressure. The risk of an increase in blood pressure will increase with increasing age and duration of contraceptive use. Acceptors of Depo Medroxy Progesterone Acetate (DMPA) long term 3-5 have a risk of developing hypertension compared to acceptors who have not used contraception for a long time or 3 years. Long-term use without interruption causes constriction and blockage of blood by fat which will spur the heart to pump blood more strongly in order to supply blood to the tissues, which will result in an increase in blood pressure (Wahyuningsih, 2016).

According to the researcher, based on the results of the study, it was found that the use of family planning (DMPA) is a housewife where housewives also have the same rights as other couples of childbearing age to choose good and suitable contraceptives to use. In addition, most DMPA family planning users have basic education, mothers choose contraceptives that are easily available and widely used in the community. Contraception is part of reproductive health services to regulate pregnancy, and is the right of every individual as a sexual being.

According to the researchers, mothers who chose DMPA were more with the age of use > 2 years. DMPA contraception is mostly used by mothers after giving birth which does not reduce milk production and is easy to obtain and the injection time is not too close, which is once every 3 months. There are still many factors that influence mothers to use DMPA including the economy, the distance of health services that are close and easy, husband's support, the role of health workers and the environment.

According to researchers, mothers can use

DMPA KB if they have no complaints while using it, if they have side effects that can interfere with activities such as continuous dizziness or long menstruation, disturbing spots when worshipping, very drastic weight gain, you can consult a health worker with your husband. to find a solution in changing the next contraceptive method.

### **Distribution of blood pressure frequency of injectable contraceptive acceptors at the Depo Medroxy Progesterone Acetate in the Work Area of the Penengahan Health Center, South Lampung Regency in 2022**

Based on the results of the study, it is known that respondents with high blood pressure (hypertension) acceptors of Depo Medroxy Progesterone Acetate injectable contraception as many as 26 (17.1%), and respondents with normal blood pressure (not hypertension) acceptors of Depo Medroxy Progesterone Acetate injectable contraception as many as 126 (82.9%).

In line with Nurhidayati's research (2020) The results of the study found that the incidence of hypertension in most respondents, namely 52 people (54.2%) had hypertension. Norlita's research (2018) found normal blood pressure for 25 respondents, hypertension for 7 respondents

Blood pressure is the force or push of blood against artery walls when blood is pumped out of the heart throughout the body.

The impact or consequences of hypertension can cause severe disease and complications, including stroke, myocardial infarction, kidney failure, and heart failure. Myocardial infarction that occurs in the coronary arteries can cause changes in the time of electrical conduction across the ventricles, resulting in dysrhythmias, cardiac hypoxia, and an increased risk of clot formation (Saputro, 2020).

According to researchers from the results of the study, 17% of respondents with high blood pressure or hypertension, this increase in blood pressure is due to many factors including the use of DMPA family planning, genetics, lifestyle, smoking habits, consuming too much salty food, consuming too much sweet food, and lack of physical activity.

According to researchers, blood pressure in Kb DMPA users is caused by: Women who have not experienced menopause have hormone regulation that is still quite good and the hormone estrogen plays a role in increasing HDL levels. High HDL levels become a protective factor that prevents the process of atherosclerosis and protects against the risk of hypertension. Women will lose little by little the hormone estrogen which protects blood vessels from damage. Decreased estrogen will cause LDL to

increase and HDL to decrease so that plaque buildup in blood vessels will be easier to occur. Women of childbearing age should be more careful in choosing contraceptives so as not to endanger the health of the mother. If the mother feels that there are disturbing side effects of family planning, she is expected to be able to carry out an examination and consult the nearest health service.

### **Bivariate Analysis**

The relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency

Based on the results From the statistical test, it was found that  $p\text{-value} = 0.036$ , which means  $p < \alpha$  (0.05), until it was concluded that there was a relationship between the use of injectable contraception at Depo Medroxy Progesterone Acetate and the blood pressure of family planning acceptors in the work area of the Penengahan Health Center, South Lampung Regency. With OR value 8.1 means respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years have a chance 8.1 times greater to experience events hypertension when compared with respondents using Depo Medroxy Progesterone Acetate injection contraception 1- < 2 years

Princess Research (2022) The results showed that there was a relationship between the use of 3-month injections and weight gain with  $P$  (sig) = 0.000 ( $< 0.05$ ) or  $r = 0.775$  ( $r < 1$ ). Nurhidayati's research (2020) shows that there is a long-term relationship between giving hormonal family planning to the incidence of hypertension at BPM Nurhidayati, Kedungadem District, Bojonegoro Regency.

Contraceptive devices that are often the choice of EFA are injectable contraceptives. Injectable contraception is a long-term contraceptive method that works long (long) and is very effective, its use is very practical, the price is cheap, it is safe and does not require use every day or every time you have intercourse. However, injectable contraceptives also have many side effects such as changes in blood pressure, menstrual disorders, depression, increased vaginal discharge, acne, changes in libido, changes in body weight, dizziness, headaches and hematomas (Hutasoit, 2019).

Side effects of excessive levels of the hormone progesterone on the cardiovascular system can cause changes in blood pressure. The risk of an increase in blood pressure will increase with increasing age and duration of contraceptive use. Acceptors of Depo Medroxi Progesterone Acetate

(DMPA) long term 3-5 have a risk of developing hypertension compared to acceptors who have not used contraception for a long time or 3 years. Long-term use without interruption causes constriction and blockage of blood by fat which will spur the heart to pump blood more strongly in order to supply blood to the tissues, which will result in an increase in blood pressure (Wahyuningsih, 2016).

The impact or consequences of hypertension can cause severe disease and complications, including stroke, myocardial infarction, kidney failure, and heart failure. Myocardial infarction that occurs in the coronary arteries can cause changes in the time of electrical conduction across the ventricles, resulting in dysrhythmias, cardiac hypoxia, and an increased risk of clot formation (Saputro, 2020).

Healthy behavior is an activity that hormonal family planning acceptors need to do as an effort to maintain and improve health, namely by eating a balanced menu, namely a daily diet that meets nutritional needs that meet the body's needs both in quantity and quality (Notoatmodjo, 2014).

Medroxy Progesterone Acetate Depot(DMPA) used for a long time can suppress estrogen levels in women. Estrogen has an important role in fat metabolism through estrogen receptor (ER $\alpha$ ) in skeletal muscle and increasing the activity of PPAR (Peroxisome proliferation activator receptors). PPAR is a hormone receptor that can stimulate the expression of protein genes and enzymes that enhance transport and oxidation of LCFA (long chain fatty acids) or long chain fatty acids (Nurmainah, 2020).

In long-term DMPA acceptors 3-5 years without interruption can result in constriction and blockage of blood by fat, which will spur the heart to pump blood more strongly in order to supply blood needs to the tissues, which will result in an increase in blood pressure (Uswatun, 2016).

Based on the results of the study, it was found that of 120 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years as many as 25 (20.8%) had hypertension. Of the 32 respondents with use of injectable contraceptives Depo Medroxy Progesterone Acetate 1- < 2 years 1 (3.1%) had hypertension. The results indicated that mothers who used DMPA for a longer period of time had a higher risk of developing high blood pressure or hypertension. There are mothers who use DMPA contraception but there is no high blood pressure this is because not all women have the same hormone levels, besides that there are many triggers for increasing blood pressure itself besides the use of DMPA KB.

According to user researchers Medroxy

*Progesterone Depot* Acetate poses a risk of an increase in blood pressure because women who have not experienced menopause have hormone regulation that is still quite good and the hormone estrogen plays a role in increasing HDL levels. High HDL levels become a protective factor that prevents the process of atherosclerosis and protects against the risk of hypertension. Women will lose little by little the hormone estrogen which protects blood vessels from damage. Decreased estrogen will cause LDL to increase and HDL to decrease so that plaque buildup in blood vessels will be easier to occur.

According to field researchers, it was found that an increase in blood pressure is a complaint experienced by some acceptors, although the percentage is not so large, but an increase in blood pressure (hypertension) gets special attention, because if it is not observed properly it will become hypertension with a higher level and have a negative effect. fatal. So couples of childbearing age must increase their knowledge about contraceptives so that they can decide to use the right contraceptive method and do not have side effects for the mother. EFA is expected to increase knowledge about the long-term side effects of using 3-month injectable contraceptives. In the use of hormonal contraception, at least a resting phase is carried out.

## CONCLUSION

The results showed that There are 5 (five) distributions of the frequency of stunting risk factors, which are known to respondents with the use of injectable contraceptives Depo Medroxy Progesterone Acetate 2-3 years as many as 120 (78.9%), and respondents with the use of injectable contraceptives Depo Medroxy Progesterone Acetate 1- < 2 years as many as 32 (21.1%). It is known that respondents with blood pressure of Depo Medroxy Progesterone Acetate injection contraceptive acceptors are 26 (17.1%), and respondents with blood pressure of Depo Medroxy Progesterone Acetate injection contraceptive acceptors are 126 (82.9%). There is a relationship between the use of injectable contraceptives at the Depo Medroxy Progesterone Acetate with the blood pressure of family planning acceptors in the working area of the Penengahan Health Center, South Lampung Regency ( $p$ -value = 0.036) and it is known that respondents who use Depo Medroxy Progesterone Acetate injectable contraception for 2-3 years have an 8.1 times greater chance of experiencing hypertension than respondents with Depo Medroxy Progesterone Acetate injectable contraceptives 1- < 2 years.

## SUGGESTION

For Intermediate Health Center the results of this study can be used by Community Health Center as an evaluation to provide education to new and old family planning acceptors regarding the side effects of family planning on blood pressure in order to prevent and treat it as well as to improve women's health status, especially in the use of contraception.

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