

## The Relationship of Vitamin D Giving on Blood Pressure of Pregnant Women

St. Munawwarah. M

Institut Ilmu Kesehatan Pelamonia Makassar

Corresponding Author: [sittimunawwarah361@gmail.com](mailto:sittimunawwarah361@gmail.com)

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### ABSTRACT

Vitamin D is an important prohormone because vitamin D receptors (VDR) are present in many cells and tissues throughout the body. This research method is quantitative with a cross sectional study approach. This research was carried out in Makassar in 2021, the sample taken was 100 people. Analysis of the data used using the chi square test with  $\alpha = 0.05$  provided that if the value of  $p < 0.05$  then there is a significant relationship between the dependent and independent variables. The data were analyzed using SPSS Version 23. The results of this study with a significance value of 0.00, it means that there is a relationship between giving Vitamins D to Blood Pressure. the intake of nutrition and vitamins for pregnant women should be a concern so that it becomes a preventive effort in preventing premature death and other pregnancy diseases, health workers and all stakeholders are expected to be able to take their respective roles.

### INTRODUCTION

Vitamin D is an important prohormone because vitamin D receptors (VDR) are present in many cells and tissues throughout the body (1). During pregnancy, vitamin D plays an important role in embryogenesis, especially fetal bone development and calcium homeostasis. Several studies have shown that vitamin D deficiency in pregnancy can cause complications for the mother, such as gestational diabetes mellitus (GDM), preeclampsia, caesarean section, and postpartum depression. Meanwhile, vitamin D deficiency in the fetus can cause complications such as low birth weight (LBW), premature birth, Intra Uterine Growth Restriction (IUGR), respiratory infections, effects on anthropometry, risk of autism, and impact on lung maturation. (1).

Vitamin D is needed to maintain calcium homeostasis and bone health, (2). Vitamin D is a fat-soluble vitamin that is produced after the skin is exposed to sunlight and is found naturally in only a few foods, such as fish liver oil, fatty fish, egg yolks and liver. Compared to sunlight, diet provides less than 10% of the individual's vitamin D requirement (3).

### METHODOLOGY

The research used in this study is a quantitative research using a cross sectional approach which is a research with observations at the same time.

This research was carried out in 2021, the sample taken was 100 people. Analysis of the data used using the chi square test with  $\alpha = 0.05$  provided that if the value of  $p < 0.05$  then there is a significant relationship between the dependent and independent variables. Data were analyzed with SPSS Version 23.

### RESULTS

Table 1. Distribution of Respondents

No	Age	Frekuensi	%
1	6-11Month	50	50
2	12-59 Month	50	50

	Gender	Frekuensi	%
1	Pregnancy	100	100
Pemberian Vitamin D		Frekuensi	%
1	Given Vitamin D	70	70
2	No Given Vitamin D	30	30
<b>Total</b>		<b>100</b>	<b>100</b>

Table 1 shows that respondents based on the age of children are mostly in the 6-11 month age group, as many as 50 people (50%) and a small proportion are in the 12-59 month age group, as many as 50 people (50%), based on the pregnancy people (100%) and a small portion based on the provision of vitamin D to 70 people (70%) were given complete vitamin D and 30 people (30%) were not given complete vitamin D.

**Table 2.** The Effect of Giving Vitamin D to Blood Pressure

Vit D	Blood Pressure				Total		p-value
	No Normal		Normal		F	%	
	F	%	F	%			
Yes	10	14,2	60	85,7	70	100	0,000
No	5	16,7	25	83,3	30	100	
Total					100	100	

Based on the results of the study, of the 100 respondents studied, 10 respondents (14,2%) of yes given vitamin D, while 60 respondents (85,7%). The results of the Chi-Square test with p-value = 0, 000 means that given Vitamin D has a relationship with blood presure.

## DISCUSSION

### Giving Vitamin D To Blood Pressure Pregnant

The results of this study show a significance value of  $p = 0.000$  meaning that having given vitamin D has a relationship with the blood presure, There are more and more reports about

a high prevalence of low circulating serum 25(OH)D concentrations is associated with limited sun exposure and inadequate vitamin D intake in women of childbearing age and in children in many countries (4). Maternal vitamin D deficiency during pregnancy was also documented in a two-decade study in the UK (5). The importance of vitamin D in pregnant women is a note and needs to be considered so that it becomes an effort to prevent early maternal and infant mortality. (6)

This study also explains the importance of uptake and adequacy of Vitamin D on the blood pressure of pregnant women, this is also in accordance with Novianti's research which explains the relationship between vitamin D and blood pressure of pregnant women (7). Blood pressure in pregnant women is very sensitive, many studies say that blood pressure affects the weight of newborns, such as the Andammori study which states that there is a relationship between blood pressure of pregnant women and birth weight at RSUP dr. M. Djamil Padang  $p = 0.00$  ( $p < 0.05$ ) (8).

Blood pressure in pregnant women can actually be prevented with various alternatives, for example, Ambarsari's research which combines classical music and warm water immersion and results in a decrease in

blood pressure in pregnant women (6) is in line with Aryani's research that warm water therapy has been shown to reduce blood pressure for treatment. at the clinic (9).

Vitamin D deficiency in pregnant women not only affects blood pressure but can cause various other diseases as explained that Vitamin D deficiency in pregnant women can also cause preeclampsia, Rahma's research states that there is a relationship between vitamin D intake and the incidence of preeclampsia at Dr.M Hospital. Jamil Padang City (10). Pregnancy and childbirth nutrition must be monitored (11)(12).

In the future, the intake of nutrition and vitamins for pregnant women should be a concern so that it becomes a preventive effort in preventing premature death and other pregnancy diseases, health workers and all stakeholders are expected to be able to take their respective roles.

## **CONCLUSION**

This study concludes that the significance value of 0.00 means that there is a relationship between the administration of Vitamin D to blood pressure.

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