



## Pregnant Woman Hemoglobin Levels and Baby Birth Weight

Mareza Yolanda Umar<sup>\*1</sup>); Psiari Kusuma Wardani<sup>1</sup>

<sup>1</sup>) Universitas Aisyah Pringsewu

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### ABSTRACT

Neonatal mortality rate is one indicator to ensure public health status. One of the main factors that influence perinatal and neonatal mortality is low birth weight (LBW). Low birth weight babies (LBW) and anemia in newborns are caused by pregnant women who are iron deficient or anemic. This research aims to determine the hemoglobin levels of pregnant women with infant birth weight in the working area of the UPT Puskesmas Karang Anyar, Jati Agung Regency. South Lampung in 2021. This type of research is quantitative, with an analytic design and a case control approach. This research was carried out in June with the population used in the form of maternal data in 2021 in the working area of the Karang Anyar Health Center UPT, while the number was 70. The sampling technique was a purposive sampling system. This research uses univariate and bivariate analysis with chi square test. The results of the analysis showed that there was a relationship between hemoglobin levels of pregnant women and birth weight in the working area of the Karang Anyar Public Health Center, Jati Agung District, South Lampung Regency, the p-value was 0.000 (<0.05) and the odds ratio was 9.264 (28.462 – 3.015). It is hoped that the results of this study can increase the mother's knowledge about the dangers of low hemoglobin and the mother can further increase the ANC and check hemoglobin levels so that it does not pose a risk of low birth weight or other complications and can prevent anemia in pregnant women.

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#### Kata kunci:

Kehamilan  
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#### <sup>\*</sup>) corresponding author

Mareza Yolanda Umar

Midwifery, Health Faculty, University  
of Aisyah Pringsewu

Email: [marezaumar@gmail.com](mailto:marezaumar@gmail.com)

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### ABSTRAK

Angka kematian neonatal jadi Salah satu penunjuk guna memastikan derajat kesehatan masyarakat. Salah satu factor utama yang pengaruhi kematian perinatal serta neonatal ialah Berat Bayi Lahir Rendah (BBLR). berat bayi lahir rendah (BBLR) serta anemia pada bayi yang baru saja dilahirkan dikarenakan oleh ibu hamil yang Kekurangan zat besi ataupun anemia, Riset ini bertujuan mengetahui kadar hemoglobin ibu hamil dengan berat badan lahir bayi di daerah kerja UPT Puskesmas Karang Anyar Kecamatan Jati Agung Kabupaten Lampung Selatan tahun 2021. Jenis penelitian adalah kuantitatif, dengan desain analitik dan pendekatan case control. Penelitian ini telah dilaksanakan pada bulan juni dengan populasi yang digunakan berupa data ibu bersalin tahun 2021 di wilayah kerja UPT Puskesmas Karang Anyar, adapun jumlah nya yaitu 70. Teknik pengambilan sampel adalah dengan system purposive sampling. Penelitian ini memakai analisis univariat serta bivariat dengan uji chi square. Hasil analisis menunjukkan ada hubungan kadar hemoglobin ibu hamil dengan berat badan lahir di wilayah kerja UPT Puskesmas Karang Anyar Kecamatan Jati Agung Kabupaten Lampung Selatan, didapatkan p-value 0.000 (<0.05) dan odds ratio sebesar 9.264. Diharapkan hasil penelitian ini dapat menambah pengetahuan ibu tentang bahayanya hemoglobin yang rendah dan ibu dapat lebih meningkatkan ANC dan pemeriksaan kadar hemoglobin agar tidak menimbulkan resiko BBLR ataupun komplikasi lain serta dapat mencegah anemia pada ibu hamil.

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**INTRODUCTION**

Normal Newborn Babies are fetuses born through childbirth and are able to live outside the womb with a gestational age between 37- 40 weeks and a birth weight of 2500- 4000 g. The neonatal period is a very meaningful period in life. Research shows that more than 50% of infant deaths occur in the neonatal period in the early months of life. (Elmeida, 2015).

It is estimated that 15% -20% of all births in the world experience low birth weight (LBW), (WHO, 2015). In Indonesia, the prevalence of normal birth weight (2500-4000 g) was 89.5%, increasing to 90.1% in 2018. On the other hand, the incidence of LBW (< 2500 g) in 2013 was 5.7%, increasing to 6.2. % in 2018. (Rikesdas, 2018).

Development in the health sector cannot be separated from efforts to realize children's health as early as possible since in the womb. One of the problems found in pregnant women is a lack of hemoglobin (Hb) levels. Hb levels less than 11 grams / dl indicate pregnant women have anemia (Izzah, 2013).

Maternal hemoglobin (Hb) levels will be in line with maternal nutritional consumption throughout pregnancy. Mothers with low nutritional status will generally show low hemoglobin levels as well. A decrease in Hb is called anemia, in pregnancy anemia is a complication that is very often found in pregnancy (Pramono, 2011).

One aspect that affects maternal health is maternal nutrition so that healthy mothers will give birth to healthy babies. In order to meet the needs of the body itself, various nutrients are also needed for the development and growth of the fetus in the womb, because nutritional deficiencies during pregnancy can have a detrimental impact on the mother or child. Iron deficiency or anemia can cause a mother to give birth to a low birth weight baby (LBW) and anemia in babies born (Pramono, 2011).

The group of pregnant women with anemia is one of the groups at great risk, which has an impact on nutritional disturbances and uteroplacental oxygenation. This leads to developmental disorders of the products of conception, immaturity, prematurity, congenital defects, or fetuses born with low birth weight. Babies born with a birth weight of less than 2500 g regardless of gestational age are called LBW (Cynthia, 2015).

The incidence of LBW is influenced by several aspects, including environmental aspects, maternal aspects and fetal aspects. environmental aspects include socioeconomic conditions, lifestyle (smokers, alcohol) and health facilities, maternal aspects include blood pressure), parity, pregnancy spacing, education, age, nutritional status (height and weight, hemoglobin, and maternal disease. Meanwhile, the fetal aspect includes multiple pregnancies, hydramnios or polyhydramnios, and fetal abnormalities (Hasbi, 2017).

Based on the background above, the author is interested in conducting a research on the relationship between hemoglobin levels of pregnant women and birth weight in the Work Area of the Karang Anyar Health Center UPT, Jati Agung District, South Lampung Regency in 2021.

**METHOD**

This research was conducted in the Work Area of UPT Karang Anyar, Jati Agung District, South Lampung Regency in 2021 in March using an analytical research design with a cross sectional approach. In this study, the population was mothers who gave birth in 2021 in the working area of the Karang Anyar Health Center UPT, while the number of samples was 70 respondents. The sampling technique in this study used purposive Sampling.

**RESULTS AND DISCUSSION**

**Tabel 1**  
**Pregnant Woman Hemoglobin Levels And Baby Birth Weight (n=70)**

Variabel	Frekuensi(n)	Presentase(%)
<b>Baby Birth Weight</b>		
Normal	35	50
BBLR	35	50
<b>Pregnant Woman Hemoglobin Levels</b>		
Normal	29	41.4
Low	41	58.6

Based on table 1, it is known that 50% normal birth weight of babies and 41.4% of pregnant women who have normal HB levels.

**Analisis Bivariat**

**Tabel 2**  
**Correlation of Pregnant Woman Hemoglobin Levels and Baby Birth Weight**

Kadar HB	Berat Badan Lahir				Total		P- Value	OR
	BBLR		Tidak BBLR		N	%		
	N	%	N	%				
Rendah	29	82.9	12	34.3	41	58.6	0.000	9.264
Normal	6	17.1	23	65.7	29	41.4		
Total	35	100.0	35	100.0	70	100.0		

A significant relationship was found with a value of 0.000 with an OR of 9.264, which means that mothers who have low HB levels have a 9.264 times greater risk of giving birth to low birth weight babies. Hemoglobin has two important transport roles in the human body, namely the transport of oxygen from the respiratory organs to peripheral tissues. Then not only that, hemoglobin also acts as the transport of carbon dioxide and various protons from peripheral tissues to the respiratory organs to be subsequently excreted out (Yanis, 2014). Mothers with chronic malnutrition during pregnancy often give birth to low birth weight babies, low vitality and high mortality, especially if the mother is anemic (Wulandari, 2015).

The weight of the baby to be born is greatly influenced by the mother's hemoglobin level. Pregnant women whose Hb is low will interfere with growth, development and endanger the life of the fetus and also the soul of the mother due to the lack of supply of nutrients and oxygen to the placenta which will affect the function of the placenta to the fetus. the risk of bleeding before and during delivery, moreover it can cause the death of the mother and her baby, if the pregnant woman has severe anemia. This causes the formation of low birth weight. Pregnancy complications are often found in the form of stunted fetal development and fetal distress due to too high hemoglobin levels (Pramono, 2011).

## CONCLUSIONS AND SUGGESTIONS

A significant relationship was found with a value of 0.000 with an OR of 9.264, which means that mothers who have low HB levels have a 9.264 times greater risk of giving birth to low birth weight babies.

To overcome this problem, it is recommended to carry out routine HB checks at TM 1 so that mothers with anemia can be treated immediately and repeat HB examinations at TM III in order to detect early risks that will occur.

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