



Correlation of Between Hemoglobin Level of Pregnant Women With Birth Weight of Infants

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ABSTRACT

The availability of healthy body and its normal weight, it is expected that it will be done because of the birth weight of the newborn baby child which can affect these things immediately after birth. which can affect anyone. For example, birth weight is measured in terms of micronutrients, especially iron, anemia that occurs clearly but is not treated, serious problems such as premature birth. . Obtaining iron to be able to provide small amounts of iron to the fetus is essential for normal iron metabolism. The mother's hemoglobin level falls below 11 g/dL during the third trimester. Anemia in pregnant women can cause a lack of oxygen in the body and can prevent the growth of the fetus, and make the chances of pregnancy and the baby less. The purpose of this study is to determine the correlation between the hemoglobin level of mother in pregnancy and birth weight in the city of Tambusai Timur in 2022. is a linear regression. The sample in this study is mothers in the third trimester who are about to give birth in Tambusai Timur city using a comprehensive sampling method about 54 respondents. The results of this study showed that there is a significant correlation between the Hb levels of mother in pregnancy and the weight of newborns. This is one of the general and the most important of the Potosibau Maplelors. ($p = 0.045$). Suggestions for respondents to routinely check the nearest health service, to monitor the mother's Hemoglobin level during pregnancy in order to monitor the development of the baby in the mother's womb.

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Kata kunci:

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ABSTRAK

Berat badan lahir bayi adalah penimbangan berat badan bayi segera setelah lahir, salah satu faktor yang dapat mempengaruhi berat badan lahir bayi, misalnya pengukuran dalam bentuk zat gizi mikro terutama zat besi, anemia yang terjadi secara signifikan dan tidak diobati, dapat meningkatkan risiko komplikasi serius, seperti kelahiran prematur bayi. . Pengambilan zat besi sehingga hanya memberikan sedikit zat besi pada janin diperlukan untuk metabolisme zat besi yang normal. Kadar hemoglobin ibu turun di bawah 11 g/dl selama trimester ketiga. Anemia pada ibu hamil dapat mengakibatkan kekurangan oksigen ke jaringan dan akan mengganggu pertumbuhan janin, serta dapat meningkatkan risiko persalinan prematur dan bayi berat lahir rendah. Tujuan penelitian ini adalah untuk mengetahui hubungan kadar hemoglobin ibu hamil dengan berat badan bayi baru lahir di Desa Tambusai Timur Tahun 2022. Jenis penelitian ini adalah kuantitatif analitik dengan desain cross sectional study, uji statistik yang digunakan adalah Regresi Linier. Sampel dalam penelitian ini adalah ibu hamil trimester III yang akan bersalin di Desa Tambusai Timur sebanyak 54 responden dengan menggunakan teknik sampling jenuh. Hasil penelitian ini menunjukkan bahwa ada hubungan

antara kadar HB ibu hamil dengan berat badan bayi baru lahir dengan nilai ($p = 0,045$). Saran bagi responden agar rutin memeriksakan diri ke pelayanan kesehatan terdekat, memantau kadar hemoglobin ibu selama hamil agar dapat memantau perkembangan bayi dalam kandungan ibu.

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INTRODUCTION

Birth weight is influenced by 2 factors, namely: internal and external factors of mother in pregnancy. These internal factors include maternal age, parity during pregnancy, distance between pregnancies, nutritional status, disease during pregnancy, and genetic factors (Arum Dwi Anjani et al, 2018). External factors such as living habits of mother in pregnancy, characteristics of antenatal care, and socioeconomic conditions of the family, increased weight of mother in pregnancy, LILA size, and total maternal hemoglobin levels. Other factors that affect birth weight that cannot be ruled out as triggering factors are socioeconomic conditions, psychological stress and other factors (Karima K & EL, 2012).

Mother in pregnancy will experience a weight gain of 10-12 kg. In the 1st trimester, the mother's weight gain is not much, it doesn't even reach 1 kg, but after reaching the 2nd trimester the weight gain will increase by 3 kg and in the 3rd trimester it will increase to 6 kg. The increase is caused by the growth of the fetus, placenta and amniotic fluid. The ideal weight gain for obese mothers is 7 kg and 12.5 kg, for mothers who are not obese. If the mother's weight is abnormal, it will allow miscarriage, premature birth, low birth weight, disruption of the strength of the uterus during childbirth (contractions), and bleeding after childbirth (Hanson MA et al., 2015).

The normal hemoglobin level in mother in pregnancy is 11 g/dl. It can be said that the state of anemia has a hemoglobin level below 11 g/dl, anemia in pregnancy is an increase in plasma volume that is slightly larger than red blood cells. It will cause a lack of oxygen in the body and hinder the development of the fetus, and can increase the risk of premature birth in low-birth-weight babies (Pramita F, 2019).

LBW is a baby whose birth weight is less than 2500 grams, regardless of gestational age. LBW is caused by premature birth. Other factors of the mother are age, gender and others. The placenta is a vascular disease, the fetus is a twin pregnancy. (gameli) (Siti, 2020).

Profile of Riau in 2012, the proportion of causes of death for low birth weight infants (LBW) was 36%, this number increased from the previous year which was only 29.79%. In Pekanbaru itself, the incidence of LBW was recorded at 20,931 (16.27%) from 128,663 cases in Riau Province. In 2013 there were 112 babies born, of which 107 (95.5%) had a normal weight of 2500-4000 grams, and 5 (4.5%) of them were born weighing <2500 grams.

Based on survey data in Tambusai Timur Village, there were 4 mother in pregnancy who gave birth to LBW babies with poor nutritional status. The cause of the incidence of LBW in East Tambusai Village.

METHOD

This type of research is quantitative research. This study was conducted on third trimester mother in pregnancy in East Tambusai district. The research used is cross-sectional, that is, looking at a population or sample of data only once at a time. The sample in this study was mother in pregnancy of the third trimester from 37 weeks to the time of delivery of about 54 people in East Tambusai township.

RESULTS AND DISCUSSION

Result

1. Analisis Univariat

Tabel 4.1 Distribution of Average Hemoglobin Levels in Third Trimester Mother in pregnancy with Baby Birth Weight in East Tambusai Village

Variable	Mean	± SD	Min	Max
Hemoglobin	11,60	0.73	10.00	13.00
Infant Weight	3188.8	408.7	2400	4000

Based on table 4.1, it is known that the average HB value for mother in pregnancy is 11.60g/dl with SD 0.73g/dl, the lowest HB size for mother in pregnancy is 10 g/dl, and the highest HB size for mother in pregnancy is 13g/dl, and the average value for mother in pregnancy is 13g/dl. The average birth weight is 3188.8 grams with SD 408.7 grams, the lowest birth weight is 2400 grams, and the highest is 4000 grams.

2. Analisis Bivariat

Tabel 4.2 The Correlation between Increased Hemoglobin Levels in Third Trimester Mother in pregnancy with Birth Weight in Tambusai Timur Village

Variable	Mean	SD	P Value
Hemoglobin	11,60	0.73	0.045

From the analysis of description on statistical analysis results on the hemoglobin level of mother in pregnancy, a value of $p = 0.045$ is also found, which means that it can be concluded that there is a significant correlation between Hb of mother in pregnancy and the weight of the baby.

DISCUSSIONS

1. Distribution of Average Hemoglobin Levels in Third Trimester Mother in pregnancy and average of Baby Birth Weight in East Tambusai Village

Based on table 4.1, it is found that the mean hemoglobin level of mother in pregnancy is 11.60g/dl with a SD of 0.73 g/dl, the lowest hemoglobin level of mother in pregnancy is 10 g/dl, and which highest among mother in pregnancy. High hemoglobin level. is 13g/dl, mean value is 13g/dl. The birth weight is 3188.8 grams with a standard of 408.7 grams, the lowest birth weight is 2400 grams, and the highest birth weight is 4000 grams.

Part of the health service for mother in pregnancy is to give 90 iron (Fe) tablets (Fitria et al., 2022). Iron is a mineral that the body needs to make red blood cells (hemoglobin). Anemia in mother in pregnancy is a condition where the red blood cells or hemoglobin decreases, which reduces the oxygen carrying capacity for the vital organs of the mother and fetus. During pregnancy, anemia is indicated if the total hemoglobin is less than 10.5-11 grams per day. (Abu-Ouf NM & MM, 2015).

Mother in pregnancy should pay more attention to their food, especially those that contain lots of nutrients such as vitamins B6, B9 or B12 which are found in types of food such as tuna, meat, potatoes, nuts and vegetables and fruit, mother in pregnancy who experience anemia have a risk for themselves and the fetus it contains, such as the risk of preeclampsia, premature birth, small fetus, and low birth weight. (Hanson MA, 2015).

Birth weight is a number indicated by weighing the baby immediately after birth using a baby weighing device, the baby's weight is said to be normal if the baby's weight reaches 2500-4000 grams, said LBW if the baby's weight is <2500. A child who has a mother with a thick genetic structure of fat (fat) then her child will also have a genetic inheritance from his mother by having a fat body posture as well.

2. The Correlation between Increased Hemoglobin Levels in Third Trimester Mother in pregnancy with Birth Weight in Tambusai Timur Village.

Based on table 4.2 that the average hemoglobin level of mother in pregnancy is 11.60 g/dl with SD of 0.73 g/dl, the lowest hemoglobin level of mother in pregnancy is 10.00 g/dl, and the highest hemoglobin level of mother in pregnancy is 13.00 g/dl. . with p value = 0.045 means that there is a correlation between mother in pregnancy with total hemoglobin levels with birth weight.

One of the hemoglobin levels is determined by iron consumption. Iron is needed during pregnancy for the growth and development of fetal organs, namely the liver, kidneys, brain, and central nervous system. Fetal iron requirement is highly dependent on maternal hemoglobin concentration during pregnancy, the cause of maternal iron deficiency anemia can cause various complications such as low birth weight, abortion, congenital defects (AL & Nemet E, 2017). Anemia in mother in pregnancy will increase maternal and fetal morbidity and mortality and increase the incidence of prenatal mortality. Lack of iron consumption can interfere with the immune system so that it is susceptible to infection, low hemoglobin causes fetal hypoxia which then stimulates the body to produce corticotropin hormone so that it inhibits fetal growth (Abu-Ouf NM & MM, 2015).

The study resulting something which is consistent with the statement that there is a correlation between the

amount of hemoglobin in mother in pregnancy and the weight of the newborn. and inhibits growth and development and endangers fetal life. Low levels of hemoglobin due to lack of nutrients and oxygen in the placenta can lead to low birth weight babies, which affects placental function in the fetus (Ariani et al., 2020). Low hemoglobin in mother in pregnancy increases the risk of low birth weight (LBW), intrauterine and postpartum hemorrhage, and maternal and infant mortality. Yes, if the mother in pregnancy is seriously ill. Hemoglobin deficiency.

The results showed that mother in pregnancy with anemia were 25.58% and low birth weight babies were 6.97%. Pearson correlation test showed that the correlation coefficient between HB levels and newborn weight was 0.815. The HB level of mother in pregnancy in the third trimester has a strong correlation with the birth weight of the baby. Health workers must always actively monitor mother in pregnancy's HB levels. The HB sahli measuring instrument can be used to detect the onset of anemia and KEK if the means for treatment to a more complete health facility are too far away, but it would be better if every mother in pregnancy had her HB level checked in the laboratory (Sari, 2017).

The conclusion of another study is that there is a significant correlation between hemoglobin (Hb) levels of mother in pregnancy and the incidence of LBW at Prof. RSU. Dr. W. Z. Johannes Kupang, where mothers with Hb levels <11g/dL had a 5,464 times higher risk for LBW (LUSI et al., 2019)

CONCLUSIONS AND SUGGESTIONS

Based on the results of the researchers' research on birth weight, upper arm circumference and hemoglobin levels of mother in pregnancy in the third trimester of pregnancy in East Tambusai village, the following conclusions were drawn:

1. The hemoglobin level of mother in pregnancy is 11.60g/dl with a SD of 0.73 g/dl, the minimum hemoglobin level of mother in pregnancy is 10g/dl, and the highest hemoglobin level of mother in pregnancy is 13g/dl, and children The birth of The mean weight is 3188.8 g with a standard deviation of 408.7 g, the minimum birth weight is 2400 g, the highest birth weight is 4000 g.

2. There is a correlation between the hemoglobin level of mother in pregnancy in the third trimester and the birth weight of babies in Tambusai Timur with a p-value of 0.045, which means that there is a significant correlation between the hemoglobin of women and the weight of newborn baby.

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