NUTRITIONAL STATUS OF PREGNANT WOMEN IN RELATION TO THE PREVALENCE OF INFANT LOW BIRTH WEIGHT (LBW)
(Case Study in Sugihwaras, Bojonegoro during 2017)

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Abstrak

Penelitian ini bertujuan untuk menganalisis hubungan status gizi ibu hamil dengan prevalensi Berat Badan Lahir Rendah (BBLR). Penelitian kuantitatif dengan desain deskriptif analitik dilakukan dengan menggunakan pendekatan cross-sectional di Puskesmas Sugihwaras, Bojonegoro.Tujuan penelitian ini adalah seluruh bayi dengan BBLR di Puskesmas Sugihwaras Bojonegoro. Oleh karena itu, teknik pengambilan sampel adalah total sampling. Data dikumpulkan menggunakan instrumen data sekunder seperti rekam medis dan laporan kesehatan ibu-anak (KIA) dari Puskesmas Sugihwaras. Status gizi ibu hamil dinilai berdasarkan pengukuran Mid-upper Arm Circumference. Uji korelasi rank spearman menunjukkan bahwa ada hubungan yang signifikan (p-value < 0,05) antara status gizi ibu hamil dengan prevalensi BBLR di Puskesmas Sugihwaras, Bojonegoro.

Kata kunci: *Berat Badan Lahir Rendah (BBLR), Status Gizi, Wanita Hamil.*

Abstract

This study aims to analyse the relationship of nutritional status of pregnant women with the prevalence of LBW. A quantitative study with the descriptive analytic design was conducted using cross-sectional approach in primary health care(Puskesmas) Sugihwaras, Bojonegoro.The subject of this study is all babies with Low Birth Weight (LBW) at Puskesmas Sugihwaras Bojonegoro. Hence, the sampling technique was total sampling. Data was collected using secondary data instrument such as medical record and mother-child healthreport (KIA)from Puskesmas Sugihwaras. Nutritional status of pregnant women was assessed based on measurement of Mid-upper Arm Circumference. The spearman rank correlation test showed that there is a significant correlation (p-value <0,05) between nutritional status of pregnant mother with the prevalence of LBW in Puskesmas of Sugihwaras, Bojonegoro.

Keywords: Low Birth Weight (LBW), Nutritional Status, Pregnant Women.

1. INTRODUCTION

Nutritional status is an important thing to consider during pregnancy, as it will significantly affect the development and growth of the fetus. Hence, maternalnutritional factors both before

and during pregnancy account for the quality of newborn. Nutritional status of the pregnant women is assessed using mid-upper arm circumference determination, body weighing, and laboratory test. Undernutrition status in pregnant women needs immediate treatment due to the risk and complication for both mother and fetus such as anemia, bleeding, mother's weight does not grow normally, and infectious diseases. Furthermore, it may result in difficult and prolonged labor, preterm delivery, bleeding after delivery, and eventually cesarean delivery tends to increase. While the impact of malnutrition in pregnant women to the fetus that can affect the process of fetal growth and can lead to miscarriage, abortion, stillbirth, neonatal death, congenital defects, anemia, asphyxia intrapartum (dead in the uterus), infant low birth weight (LBW) (Fajrin, 2017).

In facts, there are many pregnant women who have nutritional problems especially undernutrition or known as Chronic Energy Deficiency (CED). The results of the National Socio-Economic Survey (SUSENAS) 1999 showed that there were 27.6% of CED pregnant women is associated with LBW (Lubis, 2003 in Hanifa, 2009). Then, it also can cause premature and immatureLBW (Kusparlina, 2016).MostLBW infants in developing countries are affected by intrauterine growth restriction(IUGR)due to malnutrition, anemia, malaria and sexually transmitted disease (STD) before conception or during pregnancy. It was reported in Bojonegoro during 2016 that the cases of LBW were 879 infants (4,9%) from a total of 17,041 live births. While there was no significant difference

between male and female infants were 429 out of 8,834 and 450 out of 8,207 respectively.Moreover, it was found in Bojonegoro that LBW is the highest cause of infant mortality compared to other causes such as asphyxia, birth trauma, infection, congenital abnormalities and others. Some risk factors that exist in pregnant women who will give birth to babies with LBW are pregnant women with CED, anemia, hypertension, and preeclampsia (DINKES KAB Bojonegoro, 2016).Infant mortality due to LBWslightly increased from 40%in 2015 to 41.48% in the following year then it is still increasing from year to year (DINKES KAB Bojonegoro, 2016).To our knowledge, there are no available data of the cause of LBW in Bojonegoro especially in the matter of the nutritional status of the pregnant women. So that the objective of the present study was to determine relationship between the nutritional status of the pregnant women and the prevalence of LBW.

2. RESEARCH METHOD

A quantitative study with the descriptive analytic design was conducted using cross-sectional approach in primary health care (Puskesmas) Sugihwaras, Bojonegoro. All infant with LBW at Puskesmas Sugihwaras Bojonegoro was taken as the object during January to December 2017. Data was collected using secondary data instrument from the medical record and mother-child health (KIA) report that exists in Puskesmas Sugihwaras. Measurement of nutritional status of pregnant women based on mid-upper arm circumference. Data are presented in frequency distribution tables then it was analysed descriptively and

statistically tested using Spearman rank correlation test.

3. RESULT AND DISCUSSION
3.1 Maternal Nutritional Status

Based on Table 1 there were only 3% of the pregnant women having risk of CED while the others found to be normal.

Table 1. Frequency Distribution of Maternal Nutritional Status Based on Mid-upper Arm Circumference

No.	Mid-upper Arm Circumference	Frequency	Percentage (%)
1	CED risk (<23,5 cm)	18	3,0
2	Non CED risk (>23,5 cm)	585	97,0
Total		603	100

Source: secondary data

3.2 Infant Birth Weight

Based on Table 2 there were only 3.3% of the infant with LBW while the others found to be normal.

Table 2. Frequency Distribution of Infant Birth Weight

No.	Infant Birth Weight	Frequency	Percentage (%)
1	LBW	20	3,3
2	Non LBW	583	96,7
Total		603	100

3.3 Maternal Nutritional Status and Prevalence of LBW

Based on Table 3, it can be concluded that most CED pregnant women (17 out of 18) had LBW infant, even though a non-CED pregnant woman could deliver LBW infant.

Table 3. Cross-tabulation of maternal nutritional status and prevalence of LBW

No.	Nutritional Status	LBW	Non LBW	Total
1	CED risk (<23,5 cm)	17	1	18
2	Non CED risk (>23,5 cm)	3	582	585
Total				603

There is a significant correlation between the nutritional status of pregnant women with the prevalence of LBW as it has been depicted in table 3. Most of CED pregnant women (17 out of 18) experienced LBW, while only 1 pregnant women with CED who did not. This indicates that nutritional status at risk of CED has a greater tendency in experiencing LBW incidence. This shows that not many people in Bojonegoro are aware that malnutrition status of pregnant women at risk can result in LBW incidence. The results of this study also in line with the theory that the nutritional status of pregnant women greatly affects the growth of the fetus (Fajrin, 2017).

Undernutrition during pregnancy is often associated with economic, educational, social factors, mother's knowledge about nutrition or other circumstances such as pregnant women with certain infectious diseases. Assessingthe nutritional status of pregnant women should be carried at the beginning of prenatal care, and then followed continuously during pregnancy. An assessment of maternal nutritional status can be done through an interview related to dietary habits, consumed food, and problems associated with foods consumed

including a taboo on a particular meal (Fajrin, 2017).

The correlation test shows that $p < 0.05$ which means that there is a significant correlation between maternal nutritional status with the prevalence of LBW in Puskesmas of Sugihwaras Bojonegoro. A pregnant woman is stated having CED as she has a mid-upper arm circumference $< 23,5$ cm, this means pregnant women are expected to deliver an LBW infant. The CED incident is caused by an imbalance of nutrient intake so that the nutrients do not suffice for the body needs. It is required for the pregnant mother to add 200-450 calories per day and 12 -20 grams per day of protein. The anthropometric examination can be used to assess the nutritional status of pregnant women such as body weight, height, body mass index, and mid-upper arm circumference. Among those parameters, mid-upper arm circumference known to be less biased because malnourished pregnant mother sometimes shows edema but not at the mid-upper arm.

Another expert said that the appropriate weight during pregnancy is important, especially for the underweight women who have a high risk of LBW infants whenshe is unable to gain enough weight during pregnancy. Thus, the nutritional needs during pregnancy are higher than in non-pregnant women (Whitney et al., 2007). A mother who often gives birth has a risk of lack of nutrients in subsequent pregnancies when not paying attention to nutritional needs. Because during pregnancy nutrients will be divided between the mother and the fetus. Efforts that can be done to prevent the occurrence of LBW by fulfilling the nutritional intake, physical activity restrictions and the implementation of integrated antenatal care (ANC).

4. CONCLUSION

There is a significant correlation between the nutritional status of pregnant women with the prevalence of LBW. The correlation test shows that $p < 0.05$ which means that there is a significant correlation between maternal nutritional status with the prevalence of LBW in Puskesmas of Sugihwaras Bojonegoro.

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