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THE EFFECT OF NUTRITIONAL STATUS TO THE BLOOD VOLUME AT LABOR AND POSTPARTUM BLOOD PRESSURE

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ABSTRACT

Background: The maternal mortality rate is one of the goals of the SDGs that continues to be a concern, because the effort to reduce it is considered to be very maximal but does not produce a good impact. In Tuban Regency, the highest maternal mortality rate is due to Bleeding and Preeclampsia. The number of maternal deaths in Tuban 2016 recorded a total of 11 cases with details of 3 during pregnancy, 2 during labor, and 6 during postpartum. If seen from the age group that is 1 case in the age group of 35 years. The purpose of this research was to analyze the effect of the nutritional status of pregnant women to the bleeding volume and postpartum blood pressure in Puskesmas Tuban 2017.

Method: The design of this research was an observational analytic research with a cross sectional study approach. The sample in this research was taken using simple random sampling with a sample of 74 patients.

Result: There was a significant and positive effect on the nutritional status variable of pregnant women (Mid-upper arm circumference (MUAC)) to the postpartum blood pressure in Puskesmas Tuban 2017 and there was a significant and negative effect on the nutritional status variable of pregnant women (MUAC) to the maternal bleeding volume in Puskesmas Tuban 2017

Conclusion: The nutritional status of pregnant women can affect blood volume at labor and postpartum blood pressure. Periodic monitoring through quality ANC is needed so that the changes in pregnant women can be controlled and have an impact on maternal health after birthing.

Keywords: Nutritional Status, Bleeding, Blood Pressure, Labor

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1.0 INTRODUCTION

Postpartum hemorrhage is the cause of maternal death for many years. Besides the cause of infant death is also preeclampsia. The large volume of bleeding and changes in maternal blood pressure are rarely considered carefully unless there have been abnormalities before. Improving the quality and quality of health workers and health services are the main focus of reducing maternal mortality (Manuaba, 1998).

Maternal death in Indonesia is one of the most contentious issues. The maternal mortality rate is one aspect in determining whether a nation's health is progressing or not. Maternal deaths according to the limitations of The Tenth Revision of the International Classification of Diseases (ICD-10) is death of women that occur during pregnancy or within 42 days after pregnancy, irrespective of the duration and site of the pregnancy, caused by anything related to pregnancy, or aggravated by the pregnancy, or treatment, but not death caused by accident or accident.

A portion of maternal deaths are caused by bleeding both during pregnancy and after delivery or postpartum. Two thirds of all postpartum hemorrhage cases are experienced by mothers without known risk factors. Postpartum hemorrhage that usually occurs suddenly, will be more deadly if it occurs in women and is not immediately handled properly, the woman can die in less than an hour. Direct or indirect maternal death is very influential on the quality of growth and development of babies during the perinatal period, even until the toddler and school age. Or it can be said that maternal death can affect the quality and survival of her baby and her children in the future. At present Indonesia is still facing the problem of high maternal mortality rate (Rochjati, 2003).

Maternal Mortality Rate in East Java tends to decrease in the last three years, but in 2016 it increased again. This does not mean to show a declining performance result, but there is a support factor both in terms of MCH program management and an improved recording and reporting system. Improvement of the clinical skills of field workers is still being carried out by involving various parties from the East Java Province and Regency / City Penakib Forums. According to Supas in 2016, the target for MMR is 305 per 100,000 live births. In 2016, the MMR of East Java Province reached 91.00 per 100,000 live births. This number has increased compared to 2015 which reached 89.6 per 100,000 live births. Whereas AKI Regency / City in East Java in 2016 is as below (Depkes, 2017).

MMR refers to the number of maternal deaths associated with pregnancy, childbirth and puerperium. The number of maternal deaths in Tuban 2016 recorded a total of 11 cases with details of 3 during pregnancy, 2 during childbirth, and 6 during postpartum. The cause can be caused by several diseases that can worsen the condition of mothers after giving birth. As for when viewed from the age group that is 1 case in the age group of 35 years. When compared with 2015 the number only decreased by 1 case from 12 cases to 11 cases of maternal deaths in 2016.

Postpartum hemorrhage has a large role in the high maternal mortality rate. Many factors behind the incident. Among those of concern today is the weight of pregnant women. Currently

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there are many obesity in women and will be a pregnancy problem. For this reason, this research would analyze the effect of maternal weight on postpartum hemorrhage in Tuban Regency used multiple regression.

2.0 MATERIAL AND METHOD

This research used an observational analytic research with cross sectional study approach. The research was conducted using secondary data in the form of weight data of pregnant women and the bleeding volume that was written in the medical records of patients who gave birth at Puskesman Tuban in 2017 (Lemeshow, 1997).

The population in this research were all of Puskesmas in Tuban Regency and it was selected Poned Puskesmas which provided standardized delivery services and accredited delivery procedures and 3 puskesmas were selected randomly, a total sample of 74 patients was obtained. The analysis in this study used multiple linear regression because the weight factor was measured in 3 measurements during pregnancy with a distribution of 1 time in each trimester.

3.0 RESULT

The location of this research is in Tuban Regency. The area of Tuban Regency is 183,994,562 Ha, and the sea area is 22,068 km2. The astronomical location of Tuban Regency is at coordinates 111 degrees 30 '- 112 degrees 35 east longitude and 6 degrees 40' - 7 degrees 18 'latitude. The coastal area is 65 km long. North side directly borders the Java Sea; South side is bordered by Bojonegoro Regency; East is bordered by Lamongan Regency; West side is bordered by Central Java Province, namely Rembang Regency in the north and Blora Regency in the south.

Tuban Regency is at the northern and western tip of East Java which is located directly on the Border of East Java and Central Java or between Tuban Regency and Rembang Regency. Tuban has the lowest point, which is 0 m above sea level which is in the Pantura Line and the highest point is 500 m located in Grabagan District. Tuban is also crossed by the Solo River that flows from Solo to Gresik.

MMR refers to the number of maternal deaths associated with pregnancy, labor and postpartum. The number of maternal deaths in Tuban in 2016 recorded a total of 11 cases with details of 3 during pregnancy, 2 during labor, and 6 during postpartum. The cause can be caused by several diseases that can worsen the condition of mothers after giving birth. As for when viewed from the age group that was 1 case in the age group of 35 years. When compared with 2015 the number only decreased by 1 case from 12 cases to 11 cases of maternal deaths in 2016. The number of maternal mortality during the last five years can be seen in the graph below (Sistiarni, 2008).

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Figure. The number of Maternal Mortality

Postpartum haemorrhage referred to in this research was the blood volume came out during labor or for 2 hours postpartum that was more than 500cc, those condition was an indication of taking appropriate action in handling of haemorrhage in order not to arrive at a dangerous condition and cause death. This research was conducted at the Poned Puskesmas which had facilities for emergency handling so that the case of these research data could be handled properly (Dinkes, 2016).

3.1 Partial Testing of Parameters for Maternal bleeding volume (Y1)

The nutritional status of pregnant women (MUAC) with a coefficient of -0.065 gave a value of Z value= -2435.2 which was smaller than Z table = -1.96, this showed that the nutritional status of pregnant women (MUAC) had a significant and negative effect to the bleeding volume at labor. This meant that any increased in the nutritional status of pregnant women (MUAC) will reduce the amount of maternal bleeding by 0,065.

3.2 Partial Testing of Parameters in Postpartum maternal blood pressure (Y2)

The nutritional status of pregnant women (MUAC) with a coefficient of 1,176 gave a calculated Z value = 19,256 which is greater than the Z table = 1,96, this showed that the nutritional status of pregnant women (MUAC) had a significant and positive effect to the postpartum maternal blood pressure. It meant that any increased in the nutritional status of pregnant women (MUAC) will increase post partum maternal blood pressure by 0,065.

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4.0 DISCUSSION

The nutritional status of pregnant women (MUAC) with a coefficient of -0,065 gave a value of Z value = -2435,2 which was smaller than Z table = -1,96, this indicated that the nutritional status of pregnant women (MUAC) had a significant and negative effect on the bleeding volume at labor. It meant that any increased in the nutritional status of pregnant women (MUAC) would reduce the amount of maternal bleeding by 0,065.

While the relationship with postpartum blood pressure obtained from the analysis of the nutritional status of pregnant women (MUAC) with a coefficient of 1,176 gives a value of Z value = 19,256 which was greater than Ztable = 1,96, this showed that the nutritional status of pregnant women (MUAC) had a significant and positive effect to postpartum maternal blood pressure. This meant that any increase in the nutritional status of pregnant women (MUAC) would increase postpartum maternal blood pressure by 0,065.

Anemia that occurs in pregnant women may be one of the causes because during pregnancy experiencing nutritional problems, namely the nutritional status of CED due to lack of food intake, so that iron reserves in the body decreases, the lack of utilization of care during pregnancy or ANC (Ante Natal Care) during pregnancy affect the occurrence of anemia in pregnant women who are not well monitored nutritional status and HB levels (Cunningham, 2005).

A fetus that develops and grows in the womb has so many nutritional needs that must be met through food that must be eaten by pregnant women. Nutritional intake in pregnant women is important because pregnant women eat for themselves as well as their fetuses. If the mother is malnourished, it will have a bad impact on the fetus and during labor. Mothers with poor nutritional status have a risk for postpartum hemorrhage and infection during the puerperium (Rustam, 1998).

Prospective mothers must be healthy and fit to get pregnant. Of course, weight gain during pregnancy must be monitored closely. Another way that can be used to determine the nutritional status of pregnant women is to measure upper arm circumference (MUAC). Measurement of MUAC is usually done in women of childbearing age (15-45 years) and pregnant women to predict the presence of energy and protein deficiencies that are chronic or have occurred in a long time (Dwi Kurnia, 2017)

MUAC size is closely related to maternal weight during pregnancy from trimester I to trimester III. The advantage when compared with the size of body weight, MUAC size is more describing the condition or nutritional status of pregnant women themselves. As we know, weight during pregnancy is a cumulative body weight between body weight gain, maternal blood volume and fetal weight in the womb. We do not know for sure whether maternal weight gain during pregnancy comes from maternal, fetal, or both weight gain. (Maryunani, 2009).

MUAC measurements can be used for early detection and to screen the risk of babies with low birth weight (LBW). After going through special research for Indonesian women, MUAC standards were obtained as follows: If MUAC is less than 23.5 cm: the nutritional status of

pregnant women is lacking, for example the possibility of CED (Chronic Energy Deficiency) or chronic anemia, and a higher risk of giving birth to a LBW baby. If MUAC is equal to or greater than 23.5 cm: means that the nutritional status of pregnant women is good, and the risk of giving birth to a LBW baby is lower (Wibowo, 1992).

5.0 CONCLUSION

To reduce the risk of postpartum hemorrhage, pregnant women are expected to carry out her labor at health worker and antenatal care at least 4 times during pregnancy to detect high-risk pregnancies with bleeding, especially for women who have poor nutritional status or chronic energy deficiency (CED). And health worker must be trained to manage postpartum hemorrhage.

REFERENCES

Azwar S, (2007). *Sikap Manusia Teori dan Pengukurannya*, Yogyakarta; Pustaka Pelajar Offset.

Cunningham, F. Gary. Leveno, Kenneth. Bloom, Steven. Acuse. Spong. (2005). *Obstetrics Williams* Ed. 21 Alih bahasa Huriawati Hartono. EGC, Jakarta.

Depkes RI, (2005), *Standard Pelayanan Kebidanan*, Jakarta.

Dinas Kesehatan Kabupaten Tuban, *Profil Dinas Kesehatan Tahun 2016*, Tuban : Dinas Kesehatan Kabupaten Tuban Hal 3, 20 dan lampiran 18

Dwi Kurnia, Kuntoro, Arief W, (2017), The Effect Of Hemoglobin Levels And Pregnant Women's Weight On Postpartum Hemorrhage In Tuban District, International Journal Of Public Health Clinical Sciences, 7, No. 4. 240-248.

http://books.google.co.id/books?id=nxD6uRCpZOcC&printsec=frontcover&hl=id#v=onepage&q&f=false (diakses 12 desember 2017, pukul 14.36)

https://kehamilan.obgyn.com/read/2010/05/27/07271997/penyebab.kenaikan.berat.badan.saat.hamil. (diakses 15 Mei 2018, Pkl. 18.30)

Lemeshow, (1997). *Besar Sampel Dalam Penelitian Kesehatan* (Terjemahan Pramono Dibyo), Yogyakarta; Gadjah Mada University Press.

Manuaba, I B G. (1998). *Ilmu Kebidanan Penyakit Kandungan & Keluarga* Berencana untuk Pendidikan Bidan, Jakarta; EGC.

Maryunani, (2009). *Asuhan Kegawatdaruratan dan Penyulit pada Neonatus*, Jakarta;

Trans Info Media.

Muslihatun, . (2010). *Asuhan Neonatus Bayi dan Balita*, Yogyakarta; Fitrama

Notoatmodjo, S. (2007). Promosi Kesehatan dan Ilmu Perilaku. Jakarta; Rineka Cipta.

Rochjati, Poedji. (2003). Skrining Antenatal Pada Ibu Hamil. Airlangga University Press, Surabaya

Rustam, M., (1998). *Sinopsi Obstetric*. Jakarta : EGC

Simarmata O S, (2010). Hubungan Kualitas Pelayanan Antenatal terhadap kejadian Bayi Berat lahir Rendah di Indonesia (Analisis Data Sekunder Survei Demographi dan Kesehatan Indonesia Tahun 2007), *Tesis* Fakultas Kesehatan Masyarakat Program Studi Ilmu Kesehatan Masyarakat Kekhususan Kesehatan Reproduksi Universitas Indonesia.

Sistiarni, C. (2008). Faktor Maternal dan Kualitas Pelayanan Antenatal Care yang Berisiko terhadap Kejadian Bayi Berat Lahir Rendah , *Tesis*, Universitas Diponegoro, Semarang.

Suriani, O, (2010). Hubungan Kualitas Pelayanan Antenatal terhadap Kejadian BBLR di Indonesia, *Tesis*, Fakultas Ilmu Kesehatan Masyarakat Program Studi Ilmu Kesehatan Masyarakat Kekhususan Kesehatan Reproduksi Universitas Indonesia

Varney H. (2001). Buku Saku Bidan, jakarta; EGC.

WHO, (2012) Global Health Observatory (GHO) Antenatal Care; http://www.who.int/gho/Maternal-health/reproduktivehealth/antenatal-care-text/en/index/html Diakses 13 Desember 2017

Wibowo A, (1992). Pemanfaatan pelayanan Antenatal: Faktor – Faktor yang Mempengaruhi dan Hubugannya dengan Bayi Berat Lahir Rendah, *Disertasi*, Universitas Indonesia Fakultas Kesehatan Masyarakat.