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Factors Associated with the Occurrence of Anemia in Pregnant Women in the Work Area of Baraka Public Health Center, Enrekang District, South Sulawesi Indonesia Kalma Health Polytechnic of Ministry of Health in Makassar, Indonesia ABSTRACT Study of factors related to anemia in pregnant women in the work areas of Baraka Public Health Facility of Enrekang District aimed to know the parity, mother's age, and inter-pregnancy interval with anemia in pregnant women was conducted.

The method used in this study is a laboratory observation method with a descriptive approach, where each respondent was examined for hemoglobin (Hb) levels as a dependent variable and data about independent variables. The study was conducted from June to October 2017. The results showed that the parity factor and age of pregnant women had a relationship with the incidence of anemia, where the p-value (0.05), distance pregnancy not a relationship the incidence of anemia, where the value of p> ? (0.05).

From the results of the study concluded that the age of women the influential in incidence anemia pregnant in Public Health Center, Enrekang District. Keywords: age, anemia, Baraka, inter-pregnancy interval, parity, pregnant women Corresponding Author: Kalma Health Polytechnic of Ministry of Health in Makassar, Indonesia, Wijaya Kusuma Raya Street 56 Makassar, Indonesia, Email: kalmaanalis@gmail.com INTRODUCTION Public health development in Indonesia is mainly aiming to increase life expectancy, improve the quality of life of human resources, and improve the quality of life in order to improve family welfare so that it can deliver optimal levels of public health.

Health is one of the basic human needs, so it needs to endeavor so that every citizen is

increasingly aware of the importance of health for himself and his environment, and can increasingly behave good healthy life. Undermutrition is one of the main problems of public health in Indonesia. Especially in poor pupulation (9). Nutrition problem, especially in pregnant women, is a big problem because it is a supporting factor for anemia in pregnant women.

Anemia during pregnancy is a significant problem order improve health. Regarding maternal and child health, anemia is a major nutritional problem in developing countries including Indonesia. Anemia is one of the factors that become an indicator of the success of a nation's health development that describes socio-economic capabilities in meeting the needs of quality and quantity of people's nutrition (1). Anemia pregnancy a health problem to improve the degree of public health related to public health.

Regarding maternal and child health, anemia is a major nutritional problem in developing countries, including Indonesia. Data from the World Health Organization (WHO) in 2010 showed that anemia in pregnant women ranged from with levels = g/dL). In developing countries including Indonesia, the infant mortality rate and the percentage of anemia during pregnancy are the most sensitive indicators to describe health status, especially maternal health in infants.

The Indonesian Health Demographic Survey (SKDI) in 2012 showed that maternal mortality (MMR) in Indonesia was 228/100,000 live births. The causes of maternal 450 Indian Journal of Public Health Research & Development, February 2019, Vol. 10, No. 2 deaths due to bleeding were 29.67%, infections 5.51%, abortion 1.77%, prolonged labor 1.65%, and others 34.35%. Maternal mortality is one indicator of the success of health services in a country.

The direct cause of maternal death is bleeding, eclampsia and indirect causes are anemia (4). Pregnancy is a natural process and not a pathological process. Pregnancy usually develops and results in the birth of a term healthy baby through the birth canal, but this is not always as expected, normal conditions can be pathological/abnormal.

From the medical record data of Baraka Health Center in 2015 showed the number of pregnant women who had their pregnancies examined in 2015 as many as 196 people with some cases of anemia as many as 72 pregnant women. Nowadays, researchers interested to do research to determine factors related to the incidence of anemia in pregnant women in the working area of Baraka District Enrekang Health Center. The factors studied included: parity, age, and inter- pregnancy interval (2).

Anemia is a decrease in the number of red blood cells or the concentration of

hemoglobin in the blood circulation. Causes of anemia include malnutrition, lack of iron, malabsorption, massive blood loss such as labor, abnormal menstruation, chronic infectious diseases such as pulmonary tuberculosis, intestinal worms, malaria, and others.

According to World Health Organization, anemia pregnant is based Hb levels of pregnant women into three categories as follows: (Hb 11 mild (Hb g/dL), and severe anemia severe (Hb <8.0 g/dL) (10). MATERIAL AND METHOD The type of research used in this study was observational with a descriptive cross-sectional study approach. Pregnant women who examined themselves at the Baraka Public Health Center in Enrekang District included in this study were examined their hemoglobin (Hb) levels.

Data on dependent and independent variables are collected simultaneously, to obtain information about the relationship of several factors to the incidence of anemia in pregnant women in the working area of the Baraka Public Health Center in Enrekang District. This study was carried out from June to October 2017. The populations in this study were pregnant women who were in the working area of the Baraka Health Center in Enrekang Regency who came to have their pregnancies examined during the study period. The samples in this study were pregnant women who had their pregnancies examined at Baraka Health Center in Enrekang Regency.

The sample size in this study was 65 people. The sampling technique in this study is the total sampling technique. The independent variables in this study were factors related to the incidence of anemia in pregnant women: parity, the age of pregnant women, and inter-pregnancy interval. The dependent variable in this study was anemia in pregnant women.

The data obtained in this study include primary data, namely hemoglobin levels examined directly in pregnant women with the Sahli method. Also, other primary data obtained this is in distributed to pregnant women to identify data relating to knowledge, education, age, parity, and inter-pregnancy interval. Other than that, secondary data also obtained including profile the of of Enrekang District and the medical record of the patients from Baraka Public Health Center in Enrekang District.

Materials and tools used in this study are 3 mL syringe, tourniquet, cotton, lancet, a reaction tube, 20 µl micropipette, Sahli hemometer, alcohol 70%, and HCl 0.1 N solution. DATA ANALYSIS The analysis used in this study is regression analysis which aims to determine the relationship of each independent variable to the dependent variable.

Regression analysis also used to know which variable, from the three independent

variables, is the most dominant relationship with the incidence of anemia in pregnant women. FINDING Hemoglobin level of pregnant women in the working area of Baraka Public Health Center displayed in Table 1. Twenty-six of respondents (40%) suffered from anemia based on their hemoglobin level while the other 39 pregnant women (60%) not.

Table 2 displayed that as much as 84.6 % (55 pregnant women) are low- risk parity while 15.4 others are high-risk parity. Indian Journal of Public Health Research & Development, February 2019, Vol. 10, No. 2 451 Table 1 Distribution of Respondents Based on Occurrence of Anemia in Pregnant Women in Baraka Health Center in Enrekang District in 2017 Hemoglobin level (n) (%) Anemia 26 40 Normal 39 60 Total 65 100 Source: Primary Data 2017 Table 2 Distribution of pregnant women who examined their pregnancies according to parity at the Baraka Public Health Center in Enrekang District in 2017 Parity (n) (%) High Risk 10 15.4 Low Risk 55 84.6

Total 65 100 Source: Primary Data 2017 Table 3 Distribution of pregnant women who check their pregnancies according to the age of pregnant women at the Baraka Health Center in Enrekang Regency in 2017 Age (n) (%) High Risk 11 16,9 Low Risk 54 83,1 Total 65 100 Source: Primary Data 2017 Based on the age, it is shown in Table 3 that 11 of respondents (16.9%) are high risk, while the majority of them (83.1% or 54 people) are low risk.

It is displayed in Table 4 that all (100%) of women included in this study were at low risk based on the inter-pregnancy interval. Table 4 Distribution of pregnant women who check their pregnancies according to the inter-pregnancy interval at the Baraka Public Health Center, Enrekang District in 2017 Inter-pregnancy interval (n) (%) High Risk 0 0 Low Risk 65 100 Total 65 100 Source: Primary Data 2017 DISCUSSION Anemia in pregnancy is a condition where the hemoglobin (Hb) level is lower than the standard value which is less than 11.0 g/dL. Pregnant women whose hemoglobin levels 8.1-10 g/dL, 6.5-8 g/dL, and < 6.5

g/dL classified suffering moderate, severe anemia, respectively (Tabrizi and Barjasteh 452 Indian Journal of Public Health Research & Development, February 2019, Vol. 10, No. 2 2015). Anemia in Indonesia is still considered a public health problem since its high prevalence, especially for pregnant women. Anemia in adults can cause fatigue and weakness which resulting in lowering productivity and the declining of work capacity(3).

Anemia can be caused by malnutrition, lack of iron, malabsorption, massive blood loss (such as labor and abnormal menstruation), and chronic infectious diseases (including pulmonary tuberculosis, intestinal worms, malaria, and others)(6)(7). Parity is the number

of deliveries performed or experienced by a woman with live births or stillbirths. The number of births can affect the body's metabolic process.

The present data of prevalence of anemia in pregnant women (40%) was higher compared to national health survey conducted by Ministry of Health (5) . The using with 0.05 that that there is strong association between parity and the incidence of anemia among pregnant women in Baraka Public Health Center of Enrekang District (p-value 0.000). result that risk parity (or pregnancy more than 3 times) has a higher chance of anemia compared to low risk parity.

High risk parity in pregnant women usually relates to the level of knowledge that the mother lacks in the impact of the number of pregnancies. There is still lack of dissemination of information through counseling about the normal number of pregnancies by every woman. Age is one factor that cannot be changed. Epidemiological attention is made to certain age groups because it has its own important problems.

Age grouping is usually based on the presence of a problem and specifically with health The age referred to in this study is the age of pregnant women with high risk i.e. less than 20 years and more than years. 's is influential the development of reproductive organs. This relates to the physiological state of the mother's body in accepting presence and supporting the development of the fetus.

A woman entering the age of marriage will experience a certain phase in her life where healthy reproductive age is between 20-35 years. There was a significant relationship (p value = between age pregnant with the incidence of anemia among pregnant women in Baraka Public Health Center of Enrekang District based on chi-squared test. Inter-pregnancy interval is the interval between two consecutive births of a woman.

Setting the interval between pregnancies has an impact on the health of the mother and her baby, the inter-pregnancy interval that is too tight (<2 years) is more risky than the longer inter-pregnancy interval (> 2 years). This is because the anatomy of a woman needs time to restore her health and adequate nutritional intake. Based on this research, there is no association between interpregnancy interval and the incidence of anemia in pregnant women in Baraka Public Health Center of Enrekang District based on chi-square test (p-value = 0.40).

CONCLUSION there a association parity the incidence of anemia in pregnant women in Baraka Public Health Center of Enrekang District there significant between age pregnant women and the incidence of anemia in pregnant women in Baraka Public Health Center

of Enrekang District there is no association between the inter-pregnancy interval with the incidence of anemia in pregnant women in Baraka Public Health Center of Enrekang District the age of pregnant women is the most factor that associated with anemia in pregnant women in Baraka Public Health Center of Enrekang District.

Conflict-Of-Interest : In this study between researchers and research, subjects did not have a of because did have personal or informal relationships with researchers. Source of Funding : The source of funds in this study came from the Research of Health Workforce Development of the Ministry of Health of the Republic of Indonesia. Ethical Clearance : The ethics of this study were obtained from the Ethics Commission for Health Research, Poltekkes Kemenkes Makassar. REFERENCES 1. Arisman.

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