

## Case Control Study of the Risk Under Weight Baby New Born Incidence in Hospital Mimika Regency

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### ABSTRACT

**Introduction:** There indicator of mortality of baby in Indonesia is still high, caused of underweight baby new born. There is influence underweight baby new born is internal factor and external factor.

**Target of research:** to knowing the case control study of the risk underweight baby new born incidence in hospital mimika regency.

**Method Research:** Retrospective with case control study design. Research executed on April until May 2018 in Hospital Mimika with population is a partus on year 2017 and amount of sample case counted 87 people and 174 control. Data approach used observation by medical record and analysed by Chi square test and logistic binary regression.

**Result of research:** The factors affecting of incidence underweight baby new born in Hospital Mimika is age (*p-value* 0,010; OR = 2,121; CI95% (1,231 – 3,654), antenatal care frequency (*p-value* 0,004; OR = 2,813; CI95% (1,412 – 5,601), anemia (*p-value* 0,000; OR = 10,063; CI95% (5,543 – 18,267), pre eclampsia (*p-value* 0,001; OR = 3,412; CI95% (1,627 – 7,151) and malaria (*p-value* 0,000; OR = 4,192; CI95% (1,993 – 3,818). And then factors affecting is not influencing of incidence underweight baby new born in Hospital Mimika is ethnic (*p-value* 0,964; OR = 1,051; CI95% (0,615 – 1,797), parity (*p-value* 0,923; OR = 0,790; CI95% (0,241 – 2,596) natal interval (*p-value* 0,081; OR = 1,930; CI95% (0,981 – 3,800). There is age anemia and malaria is that factor dominant incidence of underweight baby new born in Mimika hospital.

**Keyword:** Case Control, Under Weight Baby New Born Incidence

### 1. INTRODUCTION

Infant Mortality Rate (IMR) is the first indicator in determining the degree of child health. The cause of infant and under-five mortality is a problem that occurs in newborn / neonatal (aged 0-28 days). These neonatal problems include asphyxia (difficulty breathing at birth), Low Birth Weight (BBLR) and infections (MoH RI, 2011). Neonatal mortality consists of early neonatal mortality and late-term mortality. Early neonatal death is the death of a born-to-life baby within 7 days of delivery, whereas late death is a death born to a baby born more than 7 days to less than 29 days. Neonatal mortality is the number of neonatal deaths per 1,000 live births. LBW is one of the risk factors that have contributed to mortality especially in the neonatal period (Raharni, 2010).

According to the United Nation of Child Foundation (UNICEF) and the World Health Organization (WHO, 2014), the decrease in the incidence of BBLR is one of the important contributions in Sustainable Development Goal (MDGs) to reduce infant mortality. LBW is defined as an infant with a birth weight of less than 2.500gr regardless of gestational age. BBLR contributes 60-80% of all neonatal deaths. The global prevalence of LBW is 15.5%, which amounts to about 20 million BBLR born every year and 96.5% of them are from developing countries. There is a significant variation of the prevalence of LBW in some countries, with the highest incidence in Central Asia (27.1%) and low in Europe (6.4%). LBW may be due to preterm

delivery (delivery before 37 weeks of gestation) (WHO, 2016).

Basic National Health Research (Riskesdas, 2013) reported the prevalence of chronic energy deficiency (KEK) in pregnant women, nationally 24.2% of 5,298,285 pregnant women. Papua 38.5% from 57,203 pregnant women (Ministry of Health RI, 2014). This shows that Papua is higher than the national figure, so it needs to get attention. National LBW prevalence of 10.2% of 4,764,573 deliveries and in Papua 15.6% from 50,460 delivers (Kemenkes RI, 2014). Data on the occurrence of LBW in Papua Province in 2015 was found in 365 (1.1%) of 36,497 babies born, whereas in 2016 it increased to 390 (1.53%) from 25,409 babies (Papua Province Health Office 2017). the authors obtained from the District Health Office Mimika in 2014 the number of BBR as many as 301 cases (10.79%) of 2,789 babies born, in 2015 as many as 383 cases (15.52%) of 2,467 babies. This indicates an increase in cases of LBW. LBW infants is 20 times as likely to have deaths as compared to infants with severe badannormal (WHO, 2004). LBW causes various health problems, one of them long-term health problems. LBW has a higher risk of developing backwardness at the onset of growth, susceptibility to infectious diseases, and deaths during mashab and childhood (WHO, 2011).

The risk factors for LBW occurrence in Indonesia are pregnant women aged <20 or> 35 years, labor spacing is too short, mother has previous BBLR history, does heavy physical work, does physical work several hours without rest, is very poor, weighs less and malnutrition, consumption of drugs, alcohol consumption, anemia, pre-eclampsia or hypertension, infections during pregnancy, multiple pregnancies, infants with congenital defects and infections during pregnancy (MoH RI, 2014). WHO (2014), risk factors for LB incidence - nutritional status, economic status, education, pregnancy complication, heavy work, gestational age, maternal age, previous LBW history, alcohol, smoking,

drugs, history of disease, pregnancy, height and living in altitude areas.

A study conducted by Festy (2009) in Kabupaten Sumenep (East Java) found that variables associated with LBW were maternal Hb levels, maternal upper arm (LILA), weight gain during pregnancy and maternal education. Research conducted by Trihardiani (2011) in Singkawang District (Kalimantan Barat) found that maternal body mass index, kehamillan anemia, LILA, maternal weight gain during pregnancy, associated with LBW. Variables associated with the occurrence of BBLR according to research conducted by Nurfilaila (2012) in Aceh is the mother's age. Princess (2013), suggests that there is a frequency relationship to make a pregnancy visit (ANC) with the incidence of LBW. LBW problems can be prevented through ANC visits including comprehensive maternal health care by health workers, improving pregnant women's nutritional intake and risk factor detection, so ANC for women should be done regularly. Infant mortality rate in Mimika Regency in 2015 is 4.1 per 1000 Childbirth Mimika and there are 56 babies with Low Birth Weight in 23 puskesmas. Based on data from RSUD Kabupaten Mimika, there were 267 babies (13.25%) and 277 infants (13.43%) of the total number of deliveries and 46 infant deaths due to complications from BBLR. This shows the occurrence of LBW is still common in Mimika District Hospital from year to year increasing and never done research about the occurrence of LBW in the hospital. By knowing the factors that are at risk of LBW occurrence, the targeted intervention activity is targeted at high-risk groups. Ultimately the program can reduce the incidence of LBW and neonatal mortality in Mimika District. Based on this, the researchers are interested to conduct a study entitled Case Control Study Risk Factors Affecting the Incidence of Low Birth Weight in Mimika District Hospital.

## 2. MATERIALS AND METHODS

Retrospective design of case control study. The study was conducted from April to May 2018 at RSUD Mimika with popuasi was maternal mother in 2017 with the number of case samples were 87 cases and control were 174. The data were obtained using observation sheet of medical record data and analyzed using chi square test and logistic binary regression.

## 3. RESEARCH RESULTS

### 3.1 Analisa Bivariat

#### a. Influence of Mother Age on LBW Occurrence

**Table 1. Influence of Mother Age on LBW Occurrence in RSUD Mimika**

No	Mother age	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	< 20 year ,	37	42,5	45	25,9	82	31,4
2	> 35 year 20 – 35 year	50	57,5	129	74,1	179	68,6
Total		87	100	174	100	261	100
<i>p-value = 0,010; OR = 2,121; CI95% (1,231 – 3,654)</i>							

Table 1 shows that in the case of LBW at age <20 years, >35 years 37 persons (42.5%) were higher in respondents with age 20-35 years as many as 50 people (57.5%). The result of chi square statistic = 0,05) obtained p-value 0,010 or ptest at significance value of 95% ( <α (0,05), hence there is significant mother age influence to the occurrence of LBW in RSUD Mimika. When viewed from the value OR = 2.121; CI95% (1,231-3,654) interpreted that mothers aged <20 years, >35 years were at risk 2.121 times greater with LBW incidence compared with mothers aged 20-35 years.

#### b. The Effect of the Tribe on LBW Occurrences

**Table 2. Influence of Mother Tribe on LBW Occurrence in RSUD Mimika**

No	Tribe	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	Papua	56	64,4	110	63,2	166	63,6
2	Non Papua	31	35,6	64	36,8	95	36,4
Total		87	100	174	100	261	100
<i>p-value = 0,964; OR = 1,051; CI95% (0,615 – 1,797)</i>							

Table 2 shows that in the case of BBLR in respondents with tribe of Papua counted 56 people (64,4%) higher than Non Papuan counted 31 people (35,6%). The =αresult of chi square statistic test at significance value of 95% (0,05) obtained p-value 0,964 or p> α (0,05), thus there is no significant maternal influence on LBW occurrence in RSUD Mimika. When viewed from the value OR = 1.051; CI95% (0.615 - 1.797) does not include 1, so it is not a risk factor.

#### c. Effect of Parity on LBW Occurrences

**Table 3. Influence of Mother Parity on LBW incidence in RSUD Mimika**

No	Parity	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	≥ 5 children	4	4,6	10	5,7	14	5,4
2	< 5 children	83	95,4	164	94,3	247	94,6
Total		87	100	174	100	261	100
<i>p-value = 0,923; OR = 0,790; CI95% (0,241 – 2,596)</i>							

Table 3 shows that in the case group LBW with parity > 5 children as many as 4 people (4.6%) higher than parity <5 children as many as 831 people (95.4%). The result of chi square statistic test at = 0,05) obtained p-value 0,923 or pαsignificance value of 95% (> α (0,05), hence no significant mother parity effect to the occurrence of LBW in RSUD Mimika. When viewed from the value OR = 0.790; CI95% (0.241 - 2.596) so parity is not a risk factor.

#### d. Influence of Birth Distance to LBW Occurrence

**Table 4. Influence of Maternal Distance to LBW Occurrence in Mimika General Hospital**

No	Maternal Distance	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	< 2 year	19	21,8	22	12,6	41	15,7
2	≥ 2 year	68	78,2	152	87,4	220	84,3
Total		87	100	174	100	261	100
<i>p-value = 0,081; OR = 1,930; CI95% (0,981 – 3,800)</i>							

Table 4 shows that in the case of BBLR with birth spacing of <2 years as many as 19 people (21.8%) lower than birth distance >2 years as many as 68 people (78.2%). The result of chi square statistic = 0,05) obtained p-value 0,081 orαtest at significance value 95% ( p>α (0,05), thus

there is no significant effect of maternal distances on LBW occurrence in RSUD Mimika. When viewed from the value OR = 1,930; CI95% (0,981-3,800) so that maternal distance <2 years is not risky with LBW incidence.

e. Effect of ANC Frequency on LBW Occurrence

Table 5. Effect of ANC Frequency on LBW Occurrence in Mimika General Hospital

No	Frekuensi ANC	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	Irregular	75	86,2	120	69	195	74,7
2	Regular	12	13,8	54	31	66	25,3
Total		87	100	174	100	261	100

*p-value* = 0,004; OR = 2,813; CI95% (1,412 – 5,601)

Table 5 shows that in the case of BBLR with an irregular ANC frequency of 75 people (86.2%) higher than the regular response of ANC frequency of 12 people (13.8%). The result of chi square statistic test at = 0,05) obtained *p-value* 0,004 or *p* significance value of 95% ( $<\alpha$  (0,05), thus there is influence of significant ANC frequency to the occurrence of BBLR in RSUD Mimika. When viewed from the value OR = 2,813; CI95% (1,412 - 5,601) so that mothers with irregular ANC frequency are at risk with the incidence of LBW 2.813 times greater than women who regularly frequent ANC.

f. Effects of Anemia on LBW Occurrences

Table 6. Effect of Mother Anemia on LBW Occurrence in Mimika General Hospital

No	Anemia	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	Anemia	63	72,4	36	20,7	99	37,9
2	Not Anemia	24	27,6	138	79,3	162	62,1
Total		87	100	174	100	261	100

*p-value* = 0,000; OR = 10,063; CI95% (5,543 – 18,267)

Table 6 shows that in the case group of BBLR with anemia as much as 63 people (72.4%) higher than respondent that there is no anemia as much as 24 people (27,6%). The result of chi square statistic test at = 0,05) obtained *p-value* 0,000 or *p* significance value of 95% ( $<\alpha$  (0,05), thus there is significant anemia effect to the

occurrence of LBW in RSUD Mimika. When viewed from the value OR = 10,063; CI95% (5,543-18,267) so that mothers with anemia at risk with the incidence of BBLR 10,063 times greater than mothers who are not anemic.

g. The Effects of Pre Eclampsia on LBW Occurrences

Table 7. Influence of Pre Eclampsia Mother to LBW Occurrence in RSUD Mimika

No	Pre Eklampsia	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	Yes	20	23	14	8	34	13
2	Non	67	77	160	92	227	87
Total		87	100	174	100	261	100

*p-value* = 0,001; OR = 3,412; CI95% (1,627 – 7,151)

Table 7 shows that in the case group of LBW with pre eclampsia as many as 20 people (23%) were lower than respondents who had no hypertension as many as 67 people (77%). The result of chi square statistic test at = 0,05) obtained *p-value* 0,001 or *p* significance value 95% ( $<\alpha$  (0,05), hence there is significant influence of hypertension to the occurrence of BBLR in RSUD Mimika. When viewed from the value OR = 3.412; CI95% (1.627 - 7,151) so that women with pre eclampsia at risk with LBW incidence 3.412 times greater than mothers with no history of hypertension.

h. The Effects of Malaria on LBW Occurrences

Table 8. Effect of Malariater on LBW Occurrence in RSUD Mimika

No	Malaria	LBW occurrence				n	%
		LBW		Non LBW			
		n	%	n	%		
1	Malaria	22	25,3	13	7,5	35	13,4
2	Not Malaria	65	74,7	161	92,5	226	86,6
Total		87	100	174	100	261	100

*p-value* = 0,000; OR = 4,192; CI95% (1,993 – 3,818)

Table 8 shows that in the case of BBLR that there is malaria as much 22 people (25.3%) of LBW is lower than respondents who have no malaria as much as 65 people (74.7%). The  $\alpha$  result of chi square statistic test at significance value of 95% (0,05) obtained *p-value* 0,000 or *p*  $<\alpha$  (0,05), thus there is significant malaria effect on LBW

occurrence in RSUD Mimika. When viewed from the value OR = 4,192; CI95% (1,993 - 3,818) interpreted that mothers with malaria were 4.192 times higher for LBW events than mothers with mothers without malaria.

### 3.2. Multivariate analysis

Multivariate analysis was used to find out which factors influenced the occurrence of LBW, bivariate analysis was needed and continued on multivariate test. Bivariate modeling using logistic regression test begins with bivariate modeling using enter method where each independent variable is tested against dependent variable.

**Table 9. Bivariate Analysis Between Dependent and Independent Variables**

No	Variables	p-value	OR	95% CI	
				Lower	Upper
1	Age	0,010	2,121	1,231	3,654
2	Tribe	0,964	1,051	0,615	1,797
3	Parity	0,923	0,790	0,241	2,596
4	Maternal distance	0,081	1,930	0,981	3,800
5	Frekuensi ANC	0,004	2,813	1,412	5,601
6	Anemia	0,000	10,063	5,543	18,267
7	Pre Eklampsia	0,001	3,412	1,627	7,151
8	Malaria	0,000	4,192	1,993	3,818

Table 9. above shows the age variables, birth spacing, ANC frequency, anemia, pre eclampsia and malaria fall into the p-value category <0.25, thus entering the multivariate model and tested together with the logistic binary test. The result of multivariate analysis obtained p-value <0,05 as in Table 10 below.

**Table 10. Analysis of Multiple Logistic Regression Variables**

No	Variabel	B	p-value	OR	95% C. I. for Exp (B)	
					Lower	Upper
1	Age	0,721	0,029	2,057	1,079	3,923
2	Anemia	2,315	0,000	10,125	5,415	18,931
3	Malaria	1,499	0,001	4,477	1,874	10,696
	Constant	1,177	0,000	0,001		

Table 10 above, then age, anemia and malaria have p-value <0,05 so age, anemia and malaria are the dominant factor for LBW incidence in RSUD Kabupaten Mimika.

## 4. DISCUSSION

### 4.1. Influence of Mother Age on LBW Occurrence

The result of this research shows that there is a significant effect of maternal age on LBW occurrence in RSUD Mimika (p-value 0,010). group of cases of LBW at age <20 years,> 35 years as many as 37 people (42.5%) higher in respondents with age 20-35 years as many as 50 people (57.5%). The results of this study are in line with the research conducted Nurfaila (2012), that age affects the incidence of BBLR. Respondents with age 20-35 years with safe pregnancy age of 57.5% experienced LBW higher than the age <20 years and >35 year. This is related to other factors such as birth spacing, obstetric history and ANC frequency. This is evident from the results of the prevalence ratio test that is interpreted that mothers

aged <20 years,> 35 years are more at risk 2.121 times greater with the incidence of LBW compared with mothers aged 20-35 years.

Researchers assume that the mother <20 years is due to the imperfect reproductive organs and is related to the mental unpreparedness of being a mother, thus affecting the care of pregnancies and mothers aged > 35 years due to decreased organ function is increasingly weakened and required to work optimally and the existence past obstetric history risk factors. It needs attention from health workers in mothers aged <20 years and >35 years, because it proved to have risk factors for the occurrence of LBW. So with the counseling, pregnant women with a risky age can do the treatment of pregnancy.

### 4.2. The Influence of the Tribe on LBW Occurrences

The result of this research showed that there was no significant influence of maternal rate on LBW occurrence in RSUD Mimika (p-value 0,964), that is Papuan

respondent with LBW incidence (64,4%) higher than Non Papuan with Non BBLR 35,6%.

The results of this study are not in line with Rosdiana (2014) research on mothers with Papuan tribe have an effect on health, especially in pregnancy care, so that influence the happening of hypertension or preeklampsia. From the data obtained, mothers with Papuan tribes have a higher proportion with LBW incidence. This is related to health habits and behavior.

According to Notoatmodjo (2011), that various ethnic groups may differ in customs, lifestyles and so on that can lead to differences in morbidity or mortality. According to Sinatra (2010), suggests that education levels are the underlying factors for decision making. Education determines the ability to receive and develop knowledge and technology. The higher the mother's education will be the more able to take the decision that health services during pregnancy can prevent disturbance as early as possible for mother and fetus. Education is also closely related to the mother's level of knowledge about pregnancy and nutrition care during pregnancy. The results of the study found that the education of mothers of 261 people, mostly with low education (elementary and junior high) as much as 64.6% and few who are highly educated above junior high. The low level of education in mothers in the work area of Mimika Regency has an impact on low thinking patterns of care during pregnancy such as visits to health services coupled with the remote access of puskesmas services to obtain information about pregnancy care. In addition, with low education, mothers do not understand the information given when compared with mothers who berpendidikan high, so that the tribe factor is meaningless.

#### 4.3. Effect of Parity on LBW Occurrence

The results showed that there was no significant effect of mother parity on the occurrence of LBW in RSUD Mimika (p-value 0.923), ie high parity or more equal to

5 children with the incidence of BBLR of 4 people (4.6%) higher than respondents < 5 children as many as 83 people (95.4%). The Oktaviana (2011) study has a parity relationship with birth weight.

The results showed that mothers with <5 children had a high percentage (95.4%) with LBW incidence of other factors related to LBW occurrence, such as age, birth spacing, nutritional status and other economic socioeconomic, so parity was not a risk factor. This is evident from the result of odds ratio of OR values expressed parity is not a risk factor.

#### 4.4 Influence of Birth Distance to LBW Occurrence

The result of research showed that there was no significant effect of maternal distances on the occurrence of LBW in RSUD Mimika (p-value 0,081), ie respondents with birth spacing of <2 years as many as 19 people (21.8%) with LBW lower than birth spacing > 2 years with non BBLR counted 68 person (78,2%) and from OR test result stated not meaningful. Short birthday or less than 2 years will cause a mother not enough time to restore her body condition after delivery before but with behavior which is good in the treatment of pregnancy can prevent the occurrence of LBW regularly to visit the ANC, nutritional intake and avoid behaviors that are at risk of growth and development of the fetus such as smoking and consuming liquor.

#### 4.5 Effect of ANC Frequency on LBW Occurrence

The results showed that there was significant effect of ANC frequency on the occurrence of BBLR in RSUD Mimika (p-value 0.004), where 86.2% of mothers with irregular ANC frequency were 86.2% BBLR higher than regular responders with LBW incidence 13.8%. The frequency of inadequate ANC visitation in pregnant women may cause a lack of health personnel to monitor or detect abnormalities that occur in pregnant women where the mother's OR with an irregular ANC

frequency is at risk of a LBW occurrence of 2.813 times greater than that of regular ANC frequency. The importance of counseling by health workers in giving counseling about the importance of ANC in order to provide motivation for pregnant women to be able to visit ANC at least 4 times in order to detect abnormalities or complications in pregnancy.

#### 4.6 Effect of Anemia on LBW Occurrence

The result showed that there was significant anemia effect on LBW occurrence in RSUD Mimika (p-value 0,000), whereas in the case group of LBW with anemia as much (72,4%) was higher than the responder without anemia 27,6%. The results of this study in line with research Suhartati (2016) in Tabalong District revealed that mothers with low hemoglobin level or anemia at risk of LBW occurrence. The results of this study were 10,063 mothers with anemia at risk with LBW incidence and this study was in line with the study of Darmayanti (2013) showed that respondents with status anemia at risk 1.05 times so it can be concluded that pregnant women who suffer from high risk have a risk of giving birth to babies with LBW rather than pregnant women not anemia.

When pregnant a woman needs more nutritional intake considering other than the body's nutritional needs, pregnant women should provide enough nutrition for the fetus. Anemia status before and during pregnancy can affect the growth of the fetus being contained. Malnutrition in this case anemia in pregnant women may affect the process of fetal growth resulting in a miscarriage, stillbirth, congenital defects and anemia in infants, born with low weight. Anemia during pregnancy can cause adverse effects on the mother and to the baby to be born. This suggests meningu Manuaba (2013), that anemia can reduce oxygen supply in maternal metabolism because oxygen serves to bind oxygen. Nutrition supplies to a growing fetus depend on the amount of maternal blood flowing to

the placenta and the food substances it carries. In pregnant women who have oxygen supply, nutrient input is reduced so as to result in impaired growth and development of the fetus.

#### 4.7. Effects of Pre Eclampsia on LBW Occurrences

The result of this research shows that there is significant effect of pre eclampsia on LBW occurrence in RSUD Mimika (p-value 0,001), that is case of BBLR with pre eclampsia as much (23%) lower than non lbb responders in mothers with no pre eclampsia pre 92% with a large risk of mothers who suffer from pre eclampsia at risk 3.412 times with LBLR kejadian. Pre eclampsia that occurs in pregnant women occurs because the previous mother has a history of hypertension and persists during pregnancy or occurs during pregnancy. Because the systemic vascular resisted decreases early in pregnancy, this hypertension is often not found until the second half of pregnancy. This is called pregnancy-induced or gestational hypertension or toxemia. When accompanied by proteinuria, foot edema, CNS irritability, elevated liver enzymes, coagulation disorders; this hypertensive syndrome is called preeclampsia and interferes with fetal growth.

#### 4.8. Effect of Malaria on LBW Occurrence

The results showed that there was significant effect of malaria on LBW occurrence in RSUD Mimika (p-value 0,000), the respondents suffered from malaria as much as 25.3% BBLR and in mothers with no malaria history of 92.5% non BBLR. Mothers with a history of malaria have a risk of a LBW incidence of 4.192 times higher than mothers with no history of malaria. Malaria in pregnant women may cause a variety of disorders, depending on the degree of immunity to malaria parasite and parity (total pregnancy) infections. Pregnant women from endemic areas who do not have immunity can suffer from severe clinical malaria to death. In

high endemic areas such as Mimika district malaria, clinical symptoms of malaria and density of the sitemia are affected by parity, so that it will be more severe in primigravida (first pregnancy) than primigravida (subsequent pregnancy). In pregnant women residing in maternal malaria endemic areas may be associated with a reduced birth weight. This is due to impaired growth of intra-urethrin, preterm delivery or both. During the epidemic have been reported high preterm births and is associated with symptoms of acute infection. Intra-urethral slow growth in maternal malaria is associated with placental malaria and this is due to reduced transfer of food and oxygen from mother to fetus and at risk of inhibiting intra-urethrin growth, due to low birth weight (LBW)

4.9 The dominant factor with the incidence of malaria

The results obtained that age, anemia and malaria is the dominant factor against the occurrence of LBW in RSUD Kabupaten Mimika. This is because the aging mother and the elderly mother are unsafe in reproductive health and are at risk of anemia. In addition, women with a history of malaria affected the incidence of anemia. It is also proven from the result of logistic binary regression test obtained OR value that anemia has 10,125 times highest risk to the occurrence of LBW.

## 5. CONCLUSIONS

5.1 There is a significant effect of maternal age on LBW occurrence in RSUD Mimika (p-value 0,010; OR = 2,121; CI95% (1,231 - 3,654)

5.2 There is no significant maternal influences on LBW occurrence in RSUD Mimika (p-value 0,964; OR = 1,051; CI95% (0,615 - 1,797).

5.3 There is no significant effect of mother's parity on LBW occurrence in RSUD Mimika (p-value 0,923; OR = 0,790; CI95% (0,241 - 2,596).

5.4 There is no significant effect of maternal distances on LBW occurrence in RSUD

Mimika (p-value 0,081; OR = 1,930; CI95% (0,981 - 3,800).

5.5. There is significant effect of ANC frequency on the occurrence of LBW in RSUD Mimika (p-value 0,004; OR = 2,813; CI95% (1,412 - 5,601).

5.6 There is significant anemia effect on LBW occurrence in RSUD Mimika (p-value 0,000; OR = 10,063; CI95% (5,543 - 18,267).

5.7 There is significant effect of pre eclampsia on LBW occurrence in RSUD Mimika (p-value 0,001; OR = 3,412; CI95% (1,627 - 7,151).

5.8 There is a significant effect of malaria on LBW occurrence in RSUD (p-value 0,000; OR = 4,192; CI95% (1,993 - 3,818).

5.9 Age, anemia and malaria are the dominant factors of LBW occurrence in RSUD Kabupaten Mimika.

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Sarjana Pendidikan KedokteranUniversitas Diponegoro.

How to cite this article: Wahyuni S, Makaba S, Sandjaja B et al. Case control study of the risk under weight baby new born incidence in hospital Mimika regency. *International Journal of Science & Healthcare Research*. 2018; 3(2): 148-158.

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