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## Risk Factors of Underweight Baby Newborn at Manokwari Regency General Hospital, 2016

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### Abstract

The mortality baby range constituting first indicator deep determine child health. One of cause it is underweight baby newborn. underweight baby newborn at Manokwari Regency general hospital on three year up cases. There is puprpose was to analyse the Risk Factors of Underweight Baby Newborn At Manokwari Regency General Hospital , 2016. This study was an observasional by designs control case study ( *case control study* ). Population is baby come into the world on Jnauari's moon – October 2016 by total BBLR'S cases as much 106 cases and 106 controls. Acquired data of medik's recording data and dianalisis utilizes chi square and odd ratio. Result indocated that there is corelation mother age (*p value* 0,000 OR = 3,677; CI95% 1,876 – 7,205), distance bears (*p value* 0,004; OR = 3,585; CI95%= 1,529 – 8,407), hypertension (*p value* 0,013; OR = 3,858; CI95%= 1,368 – 10,884) and ANC frequency (*p value* 0,026; OR = 32,044; CI95%= 1,127 – 3,705). There is no corelation (*p value* 0,202; OR = 1,299; CI95% (0,916 – 1,650), parity (*p value* 0,407; OR = 0,700; CI95% =0,342 – 1,433) obstetrics history( *p value* 1,000; OR= 0,866; CI95%= 0,302 – 2,480). Dominant factor that regard underweight baby newborn is aged, distance bears and hypertension.

**Keywords:** Underwight baby; newborn; risks factors.

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## **1. Introduction**

Infant Mortality Rate (IMR) is the first indicator dalam menentukan health status of children. In addition, the infant mortality rate jugamerupakan reflection of the health status of the community. Most besar penyebab infant and child mortality is a problem that occurs at birth bayibaru / neonatal (age 0-28 days). The neonatal problems meliputi asfiksia (difficulty breathing at birth), Infant Low Birth Weight (LBW) and infection [1]. Neonatal death consists of early neonatal death and kematian neonatal further. Early neonatal death is the death of a bayi yang born alive within 7 days after birth, while kematian neonatal up is the death of a baby who was born hidu lebih from 7 days until less than 29 days. Adalah jumlah neonatal mortality rate of neonatal deaths per 1,000 live births. LBW merupakan salah of the risk factors that have a contribution to kematian bayi especially in the neonatal period [2]. LBW was defined as birthweight less dari 2.500gr irrespective of pregnancy. BLR give contribution of 60-80% of all deaths globally neonatal. Prevalensi LBW was 15.5%, which amounts to about 20 juta BBLR born each year, and 96.5% of them were from negara berkembang. There is significant variation of the prevalence of LBW in some countries, with the highest incidence in Central Asia (27.1%) dan terendah in Europe (6.4%). LBW can be caused by kelahiran prematur (birth before 37 weeks of gestation) [3]. National Basic Health Research (Riskesdas, 2013) reported the prevalence of Chronic energy deficiency (CED) in pregnant women, nationally as much as 24.2% of 5,298,285 pregnant women. Papua 38.5% of 57 203 pregnant women [6]. This indicates that Papua is higher than the national rate, so that needs to be addressed. The prevalence of LBW nationally 10.2% of 4,764,573 births in Papua and 15.6% of 50 460 births [4]. Data Papua on LBW in the province in 2014 was found in 365 (1.1%) of the 36 497 babies born, and in 2015 increased to 390 (1.53%) of the 25 409 babies are born (PHO Papua, 2016) The data is the authors obtained from Manokwari District Health Office in 2014 the number of BBR many as 301 cases (10.79%) of the 2,789 babies born, in 2015 as many as 383 cases (15.52%) out of 2,467 babies. This represents an increase in cases of LBW. Babies with low birth weight are at risk 20 times untuk mengalami death compared with babies weighing normal agency [5]. LBW cause a variety of health problems, one of which long-term health problems. LBW have high risiko lebih for retarded at the beginning of growth, are susceptible to infectious diseases, and death during masa bayi and childhood [6]. Risk factors of LBW in Indonesia, namely pregnant women yang berumur <20 or> 35 years, the distance pregnancy is too short, ibu mempunyai history lbw before, physical work yang berat, physical work several hours without a break, sangat miskin, weigh less and less nutrition, smoking, consumption of drugs, obat terlarang, alcohol consumption, anemia, pre-eclampsia or hypertension, infeksi selama pregnancy, multiple pregnancy, babies with congenital defects while in the womb dan infeksi. The data the authors obtained in Manokwari District Hospital in 2013 obtained LBW cases were 245 cases (10.68%) of the 2,249 babies born, in 2014 as many as 297 cases (12%) of the 2,475 babies born, and in 2015 as many as 342 cases ( 14.86%) of the 2,301 babies born. In January to October 2016 as many as 2,096 labor and LBW 289 (13.78%). Impact that occurred in 289 infants LBW infants by the number of deaths by 17 LBW infants. These data indicate an increase in cases of LBW dalam waktu last three years. This shows LBW still common. Dengan mengetahui risk factors on the incidence of low birth weight, maka dapat conducted targeted interventions that pada kelompok high-risk groups. In the end tersebut dapat program reduces the incidence of low birth weight and neonatal mortality rate in the district of Manokwari. The purpose of this research untuk know "factors - factors that affect the incidence of low birth weight (LBW) [7].

## 2. Materials and Methods

This study was an observational study with case control study design (case-control study). The case control study was an epidemiological study design which studied the relationship between exposure (risk factors) to a disease or health status by comparing the case group and control group based on the status paparanya. In a case-control study, the effects (health status) identified in this seat, whereas the risk factors identified in the past (retrospective). Selection is based on the case of a group of subjects kejadian lbw on medical records, while the control subjects were randomly sampled from babies born. Data collection was conducted from July - August 2016 by collecting secondary data. The population in this study are all mothers who gave birth and recorded in the registration book in Manokwari District Hospital padabulan January to October of 2016sebanyak 289 cases (13.78%) out of 2,096 babies is born with smapel number of cases were 106 cases and 106 controls. Data obtained from the data rekammedik and analyzed using chi-square, odds ratio and multivariate binary logistic regression.

## 3. Results

### 3.1 Education and Employment

**Table 1:** Distribution of Education and mother occupation in Manokwari Hospital Maternity in 2016

No	Variabel	(n)	(%)
1	<b>Education</b>		
	No School	11	5,2
	Baic school	18	8,5
	Junior High School	46	21,7
	Senior High School	122	57,5
	Higher education	15	7,1
2	<b>Occupation</b>		
	Not work	196	92,5
	Work	16	7,5
	<b>Total</b>	212	100

Based on Table 1, by as many as 122 people a high school education (57.5%) and does not work with 196 people (92.5%).

3.2 Independent and Dependent Variables

**Table 2:** Distribution of respondents Mother Maternity Hospital Manokwari in 2016

No	Variables	(n)	(%)
1	<b>Age</b>		
	< 20 year, > 35 year	55	25,9
	20 - 35 year	157	74,1
2	<b>Tribe</b>		
	Papua	132	62,3
	Non papua	80	37,7
3	<b>Parity</b>		
	≥ 5 children	14	6,6
	< 5 children	198	93,4
4	<b>Parity</b>		
	Risk (< 2 year )	22	10,4
	No risks (≥ 2 year)	190	89,6
4	<b>Hipertention</b>		
	Yes	32	15,1
	No	180	84,9
5	<b>ANC frequency</b>		
	Regularly	146	68,9
	Not	66	31,1
6	<b>Obstetrik history</b>		
	Yes	15	7,1
	Not	197	92,9
7	<b>BBLR occurrence</b>		

BBLR	106	50
Non BBLR	106	50
Total	212	100

Based on Table 2, showed that most respondents in the age group 20-35 years as many as 157 people (74.1%) and less in women aged <20 years and> 35 years as many as 55 people (25.9%). Most of the respondents were from the tribe of Papua as many as 132 people (62.3%) and slightly non-Papuans as many as 80 people (37.7%). Most respondents had a number of children <5 children sbanyak 198 persons (93.4%). Respondendenganjarak bore no risk of 180 people (84.9%) and the risk of a total of 32 people (15.1%). A total of 190 people (89.6%) no hypertension and 22 (10.4%) there is hypertension. Of 212 people, mostly irregular frequency of ANC as many as 146 people (68.9%) and organized as many as 66 people (31.1%). Apenilaian pad obstetric history of placental abruption and placenta previa than 212 people, mostly no obstetric history with 197 people (92.9%).

### 3. 3. Analysis Bivariat

#### 3.3.1 Effect of Age mother of Genesis LBW

**Table 3:** Effect of Age mother of Genesis LBW in hospitals Manokwari

No	Mother age	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	< 20 year, > 35 year	40	37,7	15	14,2	55	100
2	20 – 35 year	66	62,3	91	85,8	157	100
Total		106	100	106	100	212	100
<i>p-value</i> = 0,000; OR = 3,677; CI95% (1,876 – 7,205)							

Table 3 shows that in the case group LBW at age <20 years,> 35 years as many as 40 people (37.7%) was higher among respondents aged 20-35 years with as many as 66 people (62.3%). The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained *p-value*0,000 or  $p < \alpha$  (0.05), thus there is the effect of maternal age on the incidence of LBW in hospitals Manokwari. When viewed from the value of OR = 3.677; CI95% (1.876 to 7.205) which interpreted that mothers aged <20 years,> 35 years over 3,677 times greater risk with LBW compared to mothers aged 20-35 years.

#### 3.3.2 Influence of Ethnicity on Genesis LBW

**Table 4:** Effect of Genesis Capital Tribe LBW in hospitals Manokwari

No	Tribe	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	Papua	71	67	61	57,5	132	62,3
2	Non Papua	35	33	45	42,5	80	37,7
Total		106	100	106	100	212	100
<i>p-value</i> = 0,202; OR = 1,299; CI95% (0,916 – 1,650)							

Table 4 shows that in the case group LBW among respondents with Papua tribe as many as 71 people (67%) is higher than the rate Non Papua as many as 35 people (33%). The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained *p-value* of 0.202 or  $p > \alpha$  (0.05), thus no effect on the mother tribe of LBW in hospitals Manokwari. When viewed from the value of OR = 1.299; CI95% (0.916 to 1.650) does not include one, so it is not a risk factor.

a. Parity influence on the incidence of low birth weight

**Table 5:** Effect of Genesis Capital Parity LBW in hospitals Manokwari

No	Parity	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	$\geq 5$ children	5	4,7	9	8,5	14	6,6
2	$< 5$ children	101	95,3	97	91,5	198	93,4
Total		106	100	106	100	212	100
<i>p-value</i> = 0,407; OR = 0,700; CI95% (0,342 – 1,433)							

Table 5 shows that in the case group LBW with parity  $> 5$  children 5 people (4.7%) higher than parity  $< 5$  children as many as 101 people (95.3%).

The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained *p-value* 0,407 or  $p > \alpha$  (0.05), and thus no influence maternal parity against LBW in hospitals Manokwari. When viewed from the OR = 0,700; CI95% (0.342 to 1.433) so it is not a risk factor.

a. Effect of Distance Delivery of Genesis LBW

**Table 6:** Effect of distance birthing mother of genesis LBW in hospitals manokwari

No	distance birthing	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	< 2 years	24	22,6	8	7,5	32	15,1
2	≥ 2 years	82	77,4	98	92,5	180	84,9
Total		106	100	106	100	212	100
<i>p-value</i> = 0,004; OR = 3,585; CI95% (1,529 – 8,407)							

Table 6 shows that in the case group LBW with a distance of childbirth <2 years as many as 24 people (22.6%) lower than the distance bore > 2 years as many as 82 people (77.4%). The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained *p-value* 0,004 atau  $p < \alpha$  (0.05), thus no influence within the mother gave birth to LBW in hospitals Manokwari. When viewed from the value of OR = 3.585; CI95% (1.529 to 8.407) so that the distance maternal <2 years with LBW risk 3,585 times greater than women with childbirth distance > 2 years.

a. Effect of Hypertension on the incidence of low birth weight

**Table 7:** Effect of Hypertension Mother of Genesis LBW in hospitals Manokwari

No	Hipertention	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	Yes	17	16	5	4,7	22	10,4
2	None	89	84	101	95,3	190	89,6
Total		106	100	106	100	212	100
<i>p-value</i> = 0,013; OR = 3,858; CI95% (1,368 – 10,884)							

Table 7 shows that in the case group LBW with hypertension were 17 (16%) lower than respondents who no hypertension as many as 89 people (84%). The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained *p-value* 0,013 or  $p < \alpha$  (0.05), thus there is the effect of hypertension on the incidence of LBW in hospitals Manokwari. When viewed from the value of OR = 3.858; CI95% (1.368 to 10.884) so that mothers with LBW hypertension risk by 3.85 times greater than those who are not a history of hypertension.

a. Effect of Frequency ANC of Genesis LBW

**Table 8:** Effect of Frequency ANC of Genesis LBW in hospitals Manokwari

No	ANC Frequency	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	Irregularly	81	76,4	65	61,3	146	68,9
2	Regularly	25	23,6	41	38,7	66	31,1
Total		106	100	106	100	212	100
<i>p-value</i> = 0,026; OR = 2,044; CI95% (1,127 – 3,705)							

Table 8 shows that in the case group LBW with irregular frequency ANC as many as 81 people (76.4%) higher than the frequency of respondents who regularly ANC as many as 25 people (23.6%). The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained  $p\text{-value} = 0,026$  or  $p < \alpha$  (0.05), thus no influence on the ANC frequency LBW in hospitals Manokwari. When viewed from the value of OR = 2.044; CI95% (1.127 to 3.705) so that women with irregular frequency ANC with LBW risk 2,044 times greater than those of regular ANC frequency.

a. Obstetric history influence the incidence of low birth weight

**Table 9:** Effect of Obstetric history of Genesis LBW in hospitals Manokwari

No	Obstetrik histoty	BBLR Occurrence				n	%
		BBLR		Non BBLR			
		n	%	n	%		
1	Yes	7	6,6	8	7,5	15	71,1
2	None	99	93,4	98	92,5	197	92,9
Total		106	100	106	100	212	100
<i>p-value</i> = 1,000; OR = 0,866; CI95% (0,302 – 2,480)							

Table 9 shows that in the case group LBW existing obstetric history of 7 people (6.6%) LBW lower than respondents who no obstetric history as many as 98 people (92.5%). The test results on the value of chi square statistic significance of 95% ( $\alpha = 0.05$ ) was obtained  $p\text{-value} = 1,000$  or  $p > \alpha$  (> 0.05), thus no effect on the incidence of low birth weight obstetric history in Manokwari Hospital. When viewed from the value of OR = 0.866; CI95% (0.302 to 2.480) does not include the value of 1, so that the obstetric history is not a risk factor.



## **4. Discussion**

### **4.1 Effect of Age mother of Genesis LBW**

The result showed that there was the influence of maternal age on the incidence of LBW in hospitals Manokwari (p-value 0,000), the respondents were aged <20 years, > 35 years as many as 40 people (37.7%) higher compared to non LBW LBW as many as 15 people (14.2%). The results are consistent with research conducted Nurfaila (2012), that the age effect on the incidence of LBW. Young age <20 years, and the older the age > 35 years a ibuyang is pregnant, will influence the need for gizi yang required. A young age need extra nutrition yang banyak because in addition be used for growth dan perkembangan itself must also share with janinyang contains. While old age need a mighty energy as well as organ function is weakened dandiharuskan to work optimally it requires tambahan energi enough to support pregnancy sedang berlangsung [8]. Respondents age 20-35 years with umu safe pregnancy by 62.3% had low birth weight is higher than the age <20 years and > 35 years. It is associated with the presence of other factors such as distance delivery, obstetric history and frequency of ANC. It terbutki test result value prevalence ratio OR = 3.677; CI 95% (1.876 to 7.205) which interpreted that mothers aged <20 years, > 35 years over 3,677 times greater risk with LBW compared to mothers aged 20-35 years.

Researchers assume that the mother <20 years due to the reproductive organs are rudimentary and associated with unprepared mentally to be a mother, so the effect on prenatal care and maternal age > 35 years because of the decline in organ function is weakened dandiharuskan to work optimally and their factors risk and poor obstetric history. The need for attention from the health authorities of mothers aged <20 years and > 35 years, because it proved to have risk factors for LBW. So with the counseling of pregnant women with age-risk pregnancy can perform maintenance.

### **4.2 Effect of Genesis LBW Tribe**

No effect of maternal tribe against LBW in hospitals Manokwari (p-value 0,202), the respondent Papuan tribe with LBW as many as 71 people (67%) is higher than the rate of LBW Non Non Papua with as many as 45 people (42.5%). The results of this study are not consistent with research in women with Papuan tribal health effects, especially in prenatal care, so the effect terhadap hypertension or preeclampsia. From the data obtained, mothers with Papua tribe has a high proportion yang lebih with LBW. This ni habits and behaviors related to health. According Notoatmodjo [10], that various ethnic groups may differ in habits, lifestyle and so on which can result in differences in morbidity or mortality.

Education determines kemampuan menerima and develop knowledge and high teknologi. Semakin mother's education will be increasingly able mengambil keputusan that health care during pregnancy can prevent disorder as early as possible for the mother and janinnya. Pendidikan also very closely related to the level of pengetahuan ibu about prenatal care and nutrition during pregnancy. The results showed that maternal education of 212 people, mostly with high school education as many as 122 people (57.5%) and 7.1% with higher education and the rest over 30% of education is low. The low educational level of the mother in the working area of Manokwari regency impact on patterns of thought were less likely to care during pregnancy such as visits to

health services coupled with access to health center services away to get information about prenatal care. In addition to low education, mothers do not understand the information given when compared with mothers who berpendidikan high, so the tribe is not significant factors.

#### ***4.3 Effect of Parity of Genesis LBW***

The results showed that there was no effect of maternal parity against LBW in hospitals Manokwari (p-value 0,407), namely parity with LBW as many as five people (4.7%) higher than respondents <5 children many as 101 people (95, 3%). Research Oktaviana in 2011 shows that there is a relationship of parity with birth weight. Parity broadly to include gravida / number of pregnancies, premature / number of births, and abortion / miscarriage amount. Being in a special sense that the number or the number of children born. According to the MOH [6] parity is said to be high when a mother / woman give birth to five or more. A woman who already had three children and become pregnant again his state of health will begin to decline, often experience anemia (anemia), bleeding through the birth canal and breech or transverse layout. the number of children > 4 people need to watch out the possibility of prolonged labor, because the more children, the mother's womb is getting weak. The results showed that women with <5 children have a high percentage (95.3%) with LBW than those who do not LBW (91.5%). More mothers delivered by secure parity <5 children due to other Fator associated with LBW, such as age, distance delivery, nutritional status and other economic sosial, so that parity is not a risk faktrot. This is evident from the results of the value of the odds ratio OR = 0,700; CI95% (0.342 to 1.433) so it is not a risk factor.

#### ***4.4 Effect of Distance Delivery of Genesis LBW***

The results showed that there is an influence within the mother gave birth to LBW in hospitals Manokwari (p-value 0,004), ie, respondents with a distance of childbirth <2 years as many as 24 people (22.6%) with low birth weight lower than the distance bore > 2 years with non LBW as many as 98 people (92.5). Research conducted by Nurfilalila [12] found that link between pregnancy spacing with kejadian BBLR. This relationship because the distance kehamilan berpengaruh against my growth process fetus in the womb, so that when someone very close pregnancy spacing or dalam jangka less than two years, the possible occurrence of LBW. Distance pregnancy pregnant women are strongly affect the weight bayi yang born. A mother whose pregnancy dikatakan berisiko distance when pregnant within a period of less than two years, and obviously cause disruption halini growth of the conceptus, often immaturitas, prematurity, congenital defects, or janin lahir with low weight. This situation disebabkan karena lack of blood supply of nutrients for oxygen in placentayang will affect the function of the fetal present [3]. The result showed that the majority of mothers to give birth spacing > 2 years lower (77.6%) with LBW compared to non LBW (92.5%). However, mothers with childbirth distance <2 years (22.6% higher than that of non LBW (7.5%). This is evident from the test results OR = 3.585; CI95% (1.529 to 8.407) so that the distance maternal <2 years risk with LBW 3,585 times greater than women with childbirth distance > 2 years.

Mother gave birth to a distance of > 2 years with low birth weight can be attributed to other factors that cause low birth weight. This ni line with research conducted by Trihardiani [13] partly on research ditelit besarsubyek

large isebagian has jarakkelahiran more than equal to two years. Short distance pregnancy will cause a ibu belum enough time to recover his previous setelah melahirkan. Pregnant women in body condition kurang sehat is this which is one of the causes kematian ibu and babies who are born and the risk of disruption sistem reproduksi. Impaired reproductive system will menghambat pertumbuhan and fetal development dikandungnya sehingga effect on birth weight. Pregnant women yang jarak kehamilannya less than two years, physical health dan kondisi her womb still need sufficient rest.

#### **4.5 Effect of Hypertension on the incidence of low birth weight**

The results show that there is an influence of hypertension on the incidence of LBW in hospitals Manokwari (p-value 0,013), ie respondents with hypertension were 17 (16%) LBW no lower than respondents who no incidence of hypertension with non LBW as many as 101 people ( 95.3%). The results are consistent with research conducted by Bahri in 2004 shows that Preeklamsia meningkatkan risks to the mother (approximately 1-2% perubahan perdarahan CNS, convulsions or other serious systemic illness) dan retardasi fetal development (10-15%). The study was done Mahayana that pre-eclampsia and eclampsia give risiko occurrence of LBW. Hypertension or Pre-eclampsia / eclampsia is a condition in pregnant women increases blood pressure and tekanan this situation is threatening the baby and mother [14]. Pre-eclampsia adalah penyakit with signs of hypertension, edema, and proteinuria yang arise because pregnancy can cause kematian pada mother and fetus. This disease generally occurs dalam triwulan 3rd pregnancy and can occur at the time of antepartum, intrapartum, and postpartum [15].

Hypertension usually occurs earlier than in other tanda yang signs. To make a diagnosis of pre-eclampsia, kenaikan tekanan should 30mmHg systolic or more above the pressure which usually is found, or achieve more tekanan 140mmHg or diastolic rose to 15mmHg or more or 90mmHg, then a diagnosis of hypertension can be enforced [16]. Results showed that mothers suffering from hypertension had a higher percentage (16%) compared with non LBW (4.7%). This is evident from the value of OR = 3.858; CI 95% (1.368 to 10.884) so that mothers with LBW hypertension risk by 3.85 times greater than those who are not a history of hypertension. Hypertension can be found before pregnancy (1-5%) and menetap selama pregnancy or may occur during pregnancy. Karena sistemik vascular resisted the decline in early pregnancy, hypertension is often not found until mid kedua kehamilan. This condition is called pregnancy-induced hypertension or toxemia at a gestational. When accompanied dengan proteinuria, leg edema, irritability SSP, elevated liver enzymes, coagulation disorders, the syndrome is disebut preeklamsia hypertension and disrupt fetal growth [17].

#### **4.7 Effect of Frequency ANC of Genesis LBW**

The results showed that the frequency adapengaruh ANC against LBW in hospitals Manokwari (p-value 0,026), ie respondents with irregular frequency ANC, as many as 81 people (76.4%) LBW no higher than respondents who regularly with the incidence of non LBW as many as 41 people (38.7%). The results of this study are consistent dengan study there is a relationship frequency of visits pregnancy (ANC) with LBW. LBW problem can be prevented through ANC include maternal health care by health professionals in a comprehensive manner, improve nutrition of pregnant women and the detection of risk factors, so the ANC for the mother should be

done regularly. Health services to pregnant women through visits of antenatal care (antenatal care / ANC) on a regular basis. Regularity of antenatal care can be seen from the coverage of antenatal visits, the coverage of the first visit (K1) and the fourth visit (K4). Scope K1 is the coverage of pregnant women who receive antenatal care according to the standards the first time during pregnancy and are not dependent gestational age (K1), while the visit coverage of pregnant women K4 is the coverage of pregnant women who already receive antenatal care in accordance with the standard of at least 4 times in one work area at a certain time. Pregnant women are encouraged to conduct surveillance antenatal least 4 times, namely the one in the first trimester, one trimester to the second, and twice in the third trimester that is useful for monitoring maternal health including nutritional status of pregnant women.

The frequency of visits ANC less in pregnant women can lead to lack kesehata officers monitor or detect abnormalities that occur in pregnant women. From the results of the study 76.4% of women experience irregular visits LBW. It also boosted the value of OR = 32.044; CI95% (1.127 to 3.705) so that women with irregular frequency ANC with LBW risk 2,044 times greater than those of regular ANC frequency. The necessity of counseling by health workers in providing information about the importance of the ANC in order to provide motivation to pregnant women in order to ANC visit at least 4 times in order to detect abnormalities or complications in pregnancy.

#### ***4.7 Effect of Obstetric history of Genesis LBW***

The results showed: There are no obstetric history influence the incidence of LBW in hospitals Manokwari (p-value1,000), ie, respondents no obstetric history, as many as 7 people (6.6%) LBW higher than respondents who no obstetric history with events non LBW many as 98 people (92.5%). Classification in the obstetric history in this research is placental abruption and placenta previa. The results of this study are not consistent with research Mahayana [18], that there is influence placental abnormalities the incidence of LBW. Hanyaditemukan risk factors for placental abnormalities in 19.4% of mothers with LBW babies, plasenta previa with 15.3% and as much KPD 4.2%. Menurut Manuaba placental abnormalities seperti solusio placenta previa and placenta can interfere with fetal supali nutrients, thus inhibiting the growth of the fetus. The same thing was found in this study. No influence obstetric history (placental abruption and placenta previa) is because of the 212 people ibubersalinyang as respondents only 7.1% with abnormalities of placental abruption and previa lasenta. It also reinforced the value of OR = 0.866; CI95% (0.302 to 2.480) does not include the value of 1, so that the obstetric history is not a risk factor. Multivariate analysis on binary logistic test showed that the dominant factor on the incidence of LBW in Manokwari District Hospital are age, distance childbirth and hypertension. This suggests a link between reproductive biology, where the age effect on the reproductive organs and affect hypertension, as well as the parity or the number of children that can cause changes in the uterus due to pregnancy and childbirth ago and distance delivery because the reproductive organs are not ready to get pregnant with a distance < 2 years, while the rate and frequency of ANC is a factor interactions.

## **5. Conclusion**

- a. There is the influence of maternal age on the incidence of LBW in hospitals Manokwari. p-value 0,000 OR

= 3.677; CI95% (1.876 to 7.205) and those aged <20 years,> 35 years over 3,677 times greater risk with LBW compared to mothers aged 20-35 years.

- b. There was no effect on the mother tribe of LBW in hospitals Manokwari (p-value 0.202; OR = 1.299; CI95% (0.916 to 1.650), but the factors for LBW 1.299 times greater in Papua susku compared with mothers from tribe Non Papua.
- c. No effect of maternal parity against LBW in hospitals Manokwari (p-value0,407; OR = 0.700; CI95% = 0.342 to 1.433) and is not a risk factor.
- d. There is a mother giving birth spacing effect on the incidence of LBW in hospitals Manokwarip-value0,004; OR = 3.585; CI95% = 1.529 to 8.407) with riisko factors within maternal <2 years with LBW risk 3,585 times greater than women with childbirth distance> 2 years.
- e. There is an effect of hypertension on the incidence of LBW in hospitals Manokwari (p-value0,013; OR = 3.858; CI95% = 1.368 to 10.884) ie mothers with LBW hypertension risk by 3.85 times greater than those who are not a history of hypertension.
- f. There is the influence of the frequency of the ANC against LBW in hospitals Manokwari (p-value0,026; OR = 32.044; CI95% = 1.127 to 3.705), yakniibu with ANC irregular frequency with LBW risk 2,044 times greater than those of regular frequency ANC.
- g. There was no effect on the incidence of LBW obstetric history in Manokwari Hospital (p-value1,000; OR = 0.866; CI95% = 0.302 to 2.480) and is not a risk factor.
- h. The dominant factor affecting the incidence of LBW in hospitals Manokawari are age, distance childbirth and hypertension.

## References

- [1] Kemenkes RI (2011). Panduan Klinis Pelaksanaan BBLR. Jakarta: Kemenkes RI.
- [2] Raharni (2010). Prevalensi Kematian Neonatal. <http://www.kemenkesri.go.id>. diakses 2 Juni 2016.
- [3] WHO.2013. Care Of The Preterm And/Or Low-Birth-Weight Newborn. Diaksespada tanggal 19 Desember 2013 dari [Http://Www.Who.Int/Maternal\\_Child\\_Adolescent/Topics/Newborn/Care\\_Of\\_Preterm/En](Http://Www.Who.Int/Maternal_Child_Adolescent/Topics/Newborn/Care_Of_Preterm/En)
- [4] WHO. 2004. Low Birth Weight.
- [5] WHO.2011. Guidelines On Optimal Feeding Of Low Birth Weight Infants In Low-And-Middle Income Countries.

- [6] Kemenkes RI (2014). Riset Kesehatan Dasar Nasional. <http://www.kemkesri.go.id>.
- [7] Dinas Kesehatan Provinsi Papua. 2015. Profil Kesehatan Provinsi Papua.
- [8] Muazizah (2011). Hubungan Antara Kadar Hemoglobin Ibu Hamil Dengan Berat Bayi Lahir di RS Permata Bunda Kabupaten Grobogan. Skripsi. Universitas Muhammadiyah Semarang.
- [9] Primadona (2013). Hubungan Antara Usia Ibu Hamil Dengan Kejadian Berat Badan Lahir Rendah (BBLR) Di Rumah Bersalin Amanda Lembang Bandung. <http://www.fk.ui.co.id>. diakses 20 Mei 2016.
- [10] Notoatmodjo, S(2011). Ilmu Kesehatan Masyarakat, Ilmu dan Seni. Jakarta : Rineka Cipta.
- [11] Simarmata, M.T(2010) Perbedaan Prevalensi Anemia Defisiensi Besi pada Perempuan Hamil di Daerah Pantai dan Pegunungan di Wilayah Semarang. Majalah Obstetri Ginekologi Indonesia. Volume 33, No 2. April 2010.
- [12] Nurfilaila (2012) Faktor-Faktor yang Mempengaruhi Terjadinya BBBLR Periode Januari Sampai Desember 2012 Di Rumah Sakit Umum Daerah Dr. Zainoel Abidin. Jurnal Karya Tulis Ilmiah: STIKKes Ubudiyah Banda Aceh.
- [13] Trihardiani, I(2011). Faktor Risiko Kejadian Berat Badan Lahir Rendah di Wilayah Kerja Puskesmas Singkawang Timur Dan Utara Kota Singkawang. Semarang: Program Sarjana Pendidikan Kedokteran Universitas Diponegoro.
- [14] Maryunani, A(2013). Asuhan Bayi Dengan Berat Badan Lahir Rendah. Jakarta: Trans Info Media.
- [15] Parhusip, D (2010) Faktor- Faktor yang Mempengaruhi Tindakan Mencegah dan Mengatasi Komplikasi Kehamilan Oleh Bidan Desa. Skripsi. Fakultas Kesehatan Masyarakat Universitas Sumatera Utara.
- [16] Manuaba I.B.G(2013). Ilmu Kebidanan Penyakit Kandungan dan KB untuk Pendidikan Bidan. Jakarta : EGC
- [17] Anwar, B (2004). Wanita Kehamilan dan Penyakit Jantung. Bagian Kardiologi dan Kedokteran Vaskuler Fakultas Kedokteran Universitas Sumatera Utara.
- [18] Mahayana. S.S.A.S (2014) Faktor Risiko yang Berpengaruh terhadap Kejadian Berat Badan Lahir Rendah di RSUP Dr. M. Djamil Padang. <http://jurnal.fk.unand.ac.id>. diakses 20 Mei 2016.