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# The Relations History of Premature Birth and Hidramnion with Low Birth Weight

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**Abstract.** The aims of this study was to determine the association of history of premature and hidramnion with the case of Low Birth Weight that it can decrease infant mortality during perinatal period. Many causes factors of low birth weight include maternal factors with a history of premature and previous low birth weight, maternal nutrition during pregnancy less, maternal age, distance of pregnancy and childbirth are too close, maternal disease, pregnancy factors include hydramnios, mul tiple pregnancy and pregnancy complications, fetal factors and habit factors. This study illustrates the relations of history premature birth and hydramnion to the occurrence of LBW by using analytical design with Chi - Square Tests technique. The study population of all infants born in January to December 2016. The results obtained almost a few births have a history of prematur birth is 49% with the result  $P = 0.0001 < \alpha = 0.05$  means there is a relations between history of premature birth with the case of LBW and most of the infants experiencing and not experiencing hydramnions occur LBW also proved by Chi-Square test results  $P = 0.1 > \alpha = 0.05$   $H_0$  is accepted which means there is no hydramnion relation with the occurrence of LBW. Based on the results, the researcher conclude that there is a history of premature birth with low Birth Weight events.

## 3 Introduction

Low birth weight or LBW is an infant born with a weight of 2500 grams or less, regardless of length of pregnancy [5] whereas according to be LBW if babies born with weight less than 2500 grams or up to 2499 gram and according to WHO in 1961 all newborns weighing less than 2500 grams are called Low Birth Weight Infant or LBW [4].

Low Birth Weight issues are basically related to many factors, including maternal factors (history of premature birth, lack of nutrition during pregnancy, infections, hydramnios, chronic illness, hypertension, maternal age less than 20 years or more than 35 years, antepartum bleeding, distance of two pregnancies too close, parity and trauma); fetal factors (congenital defects, multiple pregnancies, hydramnios, KPD). In addition, habits (exhausting work and smoking) and low socioeconomic conditions are also factors that cause LBW [5]. Impact of Low Birth Weight infants may experience mental and physical disorders at the age of growth and the baby born with LBW is one of the risk factors that contribute to infant mortality especially during the perinatal period [3]. LBW associated with high infant and under-five mortality rates, can also seriously impact future generational quality, which will slow the growth and development of children and the affect is decreasing the intelligence [2]. In addition to growth disorders, the occurrence of hypertension, heart disease and diabetes after reaching the age of 40 years is a high risk factor for individuals with a history of low birth weight. Infants with LBW in general will experience long-term life processes that are less good. If not dying at the onset of birth, LBW infants will have a risk of growing and developing more slowly than babies born with normal weight [4].

To reduce the case of LBW, the government is trying to launch a program of nutrition improvement towards healthy Indonesia in 2010, increasing the coverage of antenatal visit, increasing coverage of

neonatal visit, Gold 2012 program, and others [1]. Some efforts to reduce infant with LBW include: 1) By improving periodic pregnancy examination that is at least 4 times during pregnancy period and can be started since the age of 1st trimester, pregnant women suspected of risk, especially mother factor that can risk giving birth baby LBW must quickly reported, monitored and referred to better health services; 2) With the utilization of IEC to pregnant women, among others, counseling of nutritional needs in pregnant women, the risk of pregnant women with high parity, the signs of danger to pregnant women, growth and development of the fetus in utero during pregnancy and care of pregnant women during pregnancy can maintain good health and well-being of the fetus; 3) Preferably the mother can plan her delivery at healthy reproductive age (20-34 years); 4) Need support from other related sectors to contribute in improving mother's knowledge and economic status of the family so that they can improve access to antenatal care and mother's nutritional status during pregnancy. In addition, efforts to prevent LBW infants from experiencing barriers to growth and development are: 1) supervision of child development at birth; 2) Prevention and early prevention of infectious diseases through immunization and sanitation maintenance; 3) Proper and correct food arrangement [7].

Riskesdas results in 2013 states that the percentage of infants with LBW by 10.2% [1]. The highest percentage of LBW was found in Central Sulawesi Province (16.8%) and lowest in North Sumatera (7.2%). The result of health profile in 2015 in Sidoarjo Regency in 2014 was 446 (1.2%), in 2013 as many as 597 babies (1.93%), in 2012 as many as 485 babies (1.61%) of all live births, still slightly decreased compared to the year 2011 the number of LBW 596 babies (2.1%) of all live births. In addition, to achieve the fourth Millennium Development Goals target of reducing child mortality, especially in developing countries, efforts should be taken to prevent the occurrence of LBW in the future, one of them by closely monitoring the risk factors that can affect the occurrence of LBW [6]. Based on the data above, it is necessary to examine the relations of history of premature birth and hydramnion with the case of LBW.

## 2. Experimental Method

This research uses analytical research design with Chi Square test. The population in the study were all babies who were born in RSIA Kirana Sidoarjo during January - December 2016 that were subjected to the study. Instrument of research in taking data using medical record with secondary data. Data for the history of preterm delivery were taken from the record in the medical record in January-December 2016 with the criteria of having a history of premature birth and no history of premature delivery, while the data for hydramnios were also taken from the record in the medical records from January to December 2016 under the criteria of experiencing hydramnios and no hydramnios.

While the data for Low Birth Weight case is taken from the recording of medical records with Low Birth Weight criteria if weight <2500 gram and not Low Birth Weight if weight > 2,500 gram. The collected data is recapitulated first in the recapitulation table and then the data is analyzed, and the table of frequency and cross tables are analyzed by using statistical test to describe the history of preterm birth and hydramnios with low birth weight occurrence.

## 3. Results and Discussion

### 3.1 The Description History of Premature Birth or LBW at RSIA Kirana Sepanjang.

History of Premature Birth	Total	Percentage (%)
Yes	147	69.7
No	64	30.3
<b>Total</b>	<b>211</b>	<b>100</b>

Table 3.1 shows that almost all births have a history of premature birth or LBW of 147 (69.7%).

### 3.2 The Description of Hidramnion at RSIA Kirana Sepanjang

Hidramnion	Total	Percentage (%)
Yes	24	11.4
No	187	88.6
<b>Total</b>	211	100

Table 3.2 shows that almost none of the hydramnion were 187 (88.6%).

### 3.3 The Description of Low Birth Weight Cases at RSIA Kirana Sepanjang

Low Birth Weight Cases	Total	Percentage
Low Birth Weight	130	61.6
No Low Birth Weight	81	38.4
<b>Total</b>	211	100

Table 3.3 shows that most of the laboring mothers gave birth to babies with LBW at 130 (61.6%).

### 3.4 The Relation History of Premature Birth with Low Birth Weight Cases at RSIA Kirana Sepanjang

History of Premature Birth/LBW	2 Low Birth Weight Cases		Total
	Low Birth Weight	No Low Birth Weight	
Yes	72 (49%)	75 (51%)	147 (100%)
No	58 (90.6%)	6 (9.4%)	64 (100%)
<b>Total</b>	130 ( 61.6%)	81 (38.4 %)	211 (100%)

Table 3.4 shows that almost half of births have a history of premature birth 49% with  $P = 0.0001 < \alpha = 0.05$ , which means there is a history of premature birth with Low Birth Weight cases.

A recurrent premature history usually occurs due to an anatomical abnormality of the uterus such as the uterine septum. The septum reduces the capacity of the endometrium to inhibit fetal growth, leading to miscarriage of the trimester and prematurity or LBW delivery [6]. The known causes of premature birth and BBLR can be corrected with perfect prenatal care, reduction of other risk factors and activity restrictions may help prevent it from happening again. If the cause of premature and LBW birth can be prevented or corrected, premature and LBW birth can be delayed [7].

### 3.5 The Relation of Hidramnion with Low Birth Weight Cases at RSIA Kirana Sepanjang

Hidramnion	2 Low Birth Weight Cases		Total
	Low Birth Weight	No Low Birth Weight	
Yes	15 (62.5%)	9 (37.5%)	24 (100%)
No	115 (61.5%)	32 (38.5%)	187 (100%)
<b>Total</b>	130	81	211

Table 3.5 shows that most of the infants experiencing and not experiencing hydramnion occur LBW also as evidenced by Chi-Square test results  $P = 0.1 > \alpha = 0.05$  so that  $H_0$  is accepted which means there is no hydramnion relationship with Low Birth Weight cases.



In accordance with Dina Oktavilesia research in Padang shows that there is no hidramnion relationship with Low Birth Weight. Pregnancy with more than 2 liters of amniotic fluid is an understanding of hydramnios. The occurrence of labor before the 28th week of pregnancy is the result of pregnancy with hydramnios, which may lead to premature birth and may increase the case of LBW [2]. This situation starts to appear in the third trimester, this can occur slowly or very quickly. In normal pregnancy, the amount of amniotic water is  $\frac{1}{2}$  to 1 liter. It can arise from hydramnios are pregnancy poisoning, congenital defects in infants, abnormalities, postpartum hemorrhage, preterm labor and infants born with LBW dangersly [2].

#### **4. Conclusion**

This study investigated the relations history of premature birth and hidramnion with low birth weight. shows that almost half of births have a history of premature birth 49% with  $P = 0.0001 < \alpha = 0.05$ , which means there is a history of premature birth with Low Birth Weight cases and that most of the infants experiencing and not experiencing hydramnion occur LBW also as evidenced by Chi-Square test results  $P = 0.1 > \alpha = 0.05$  so that  $H_0$  is accepted which means there is no hydramnion relationship with Low Birth Weight cases. Based on the results, we can conclude that there is a relationship history of premature with Low Birth Weight.

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