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The Correlation Between Birth Spacing and Low Birth Weight Cases

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ABSTRACT

A number of factors could cause low birth weight, such as mother with premature and low birth weight history, malnutrition during pregnancy, mother's age, pregnancy and birth spacing, maternal diseases, pregnancy factors, fetus factors, and habitual factors. Baby birth weight of less than 2.500 gram could have the risk of having child with physical and mental disorder that eventually will effect on the child intelligence. Low birth weight is also one of the factors of infant mortality during perinatal period. This study aims to measure the correlation between birth spacing and LBW cases using chi – square test. The population of this study are all babies who were born on January to December 2016. The result shows that gap between pregnancies under two years correlates with LBW. Under two years, the uterus and maternal health has not yet recovers. Another pregnancy, will cause poor fetal growth and low birth weight (LBW).

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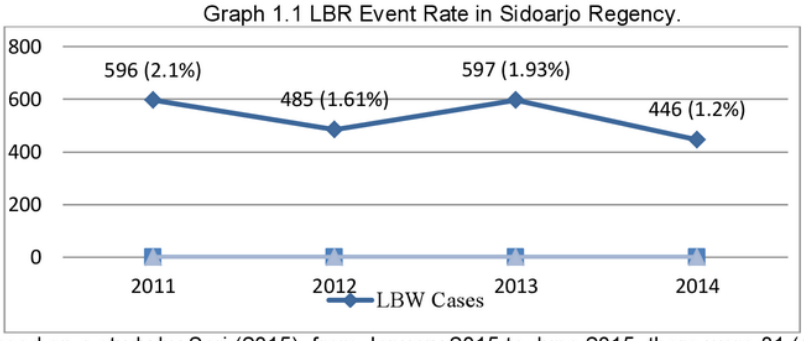
1. INTRODUCTION

Low birth weight or LBW are "babies born under the weight of 2,500 grams". The causes of LBW are maternal factors (previous birth with premature and LBW history), malnutrition during pregnancy, maternal age (age less than 20 years and over 35 years), too close pregnancy spacing and birth, mother's chronic illness (hypertension, heart and vascular disorders), pregnancy factors (hydramnios, multiple pregnancy, and pregnancy complications (preeclampsia, eclampsia, and premature rupture)), fetal factors (congenital abnormalities, uterine infections, and congenital anomalies), and habits (work, smoking, environmental factors) (Ridha, 2014)(Maryunani, 2013).

The impacts of infants weighing 2,500 grams or less are such asphysical and mental disorders as well as other serious impacts that can inhibit the growth and mental development of the children. LBW is one of the risky factors of infant mortality during perinatal period because it affects the declining of intelligence (Amiruddin, 2014).

To reduce the incidence of LBW, the government launched a program on nutrition improvement towards healthy Indonesia in 2010, increased the coverage of antenatal visit, increased the coverage of neonatal visit, conducted a gold program in 2012, and others.The results of Riskesdas in 2013 showed that the percentage of infants with LBW was 10.2%. The highest percentage of LBW was in Central Sulawesi Province (13.8%) and the lowest percentage was in North Sumatera Province (7.2%). Based on the result of 2015 health profile in Sidoarjo Regency in 2014, there were 446 (1.2%) LBW, in 2013 there were as many as 597 babies (1.93%), in 2012 there were485 babies (1.61%) of all live births which slightly decreased compared to the year 2011 in which the number of BBLR were 596 babies (2.1%) of all live births (KepMenKes RI, 2013).

Graph 1.1 LBR Event Rate in Sidoarjo Regency.



Based on a study by Sari (2015), from January 2015 to June 2015, there were 81 (42%) LBW out of 191 deliveries. Based on the data, the rate of LBW at RSIA Kirana Sepanjang Sidoarjo is still high compared to the government's target of 10.2% in 2013. Some of the problems of LBW that can interfere with the infants are such as hypothermia, asphyxia, hyperbilirubin, and respiratory syndrome, which are interesting for further research (Nurmalasari, 2014).

2. RESEARCH METHOD

This research uses analytical research method using Chi Square Tests test. The population of this study were all infants born at RSIA Kirana Sepanjang in January 2016 until December 2016. The entire population was subjected to the study with these criteria: the mothers have no history of premature birth and LBW, normal LILA (≥ 23.5 cm), maternal age excluded risk category, the mothers have no chronic diseases such as hypertension and heart disorders, no hydramnios, single pregnancy, and no complications of pregnancy (preeclampsia, eclampsy, and KPD), non-heavy-duty mothers recorded in medical records.

Data collection was done with secondary data retrieval. The secondary data was taken from medical record at RSIA Kirana Sepanjang. The collected data was recapitulated in the recapitulation table and then data management was performed and presented in the form of frequency table, and the cross-table was analyzed descriptively by performing statistical test to know the relation of birth spacing to the occurrence of LBW. The research period was started from October 2016 until April 2017, and the data retrieval was started in February 2017. The place of study was conducted at RSIA Kirana Sepanjang.

3. RESULTS AND ANALYSIS

3.1 Characteristics of Parity, Occupation, Education, and Respondents' Age

Table.1 Parity Frequency Distribution

Parity	Total	Percentage (%)
Primipara	37	56.06
Multipara	29	43.93
Total	66	100
Occupation	**Total**	**Percentage (%)**
Work	25	37.87
Not working	41	62.12
Total	66	100
Education	**Total**	**Percentage (%)**
Low	10	15.1
Middle	45	68.1
High	11	16.8
Total	66	100
Age	**Total**	**Percentage (%)**
Risky	29	43.93
Not Risky	37	56.06
Total	66	100

Source: Medical Record January 2016-December 2016.

Table 1 shows the mothers giving birth at RSIA Kirana, for the most part (56.06%) the parity is primipara (a woman giving birth for the first time), most (62.12%) are not working, mostly (68.1%) obtain secondary education, and most (56 , 06%) of the age is not at risk.

3.2 Description of Birth Frequency Distribution at RSIA Kirana Sepanjang

Table.2 Frequency of Birth at RSIA KiranaSepanjang

Birth Spacing	Total	Percentage(%)
Primi	66	31.3
< 2 Years	49	23.2
≥ 2 Years	96	45.5
Total	**211**	**100.0**

Based on Table.2, the frequency of birth spacing at RSIA Kirana Sepanjang showed that almost all birth at RSIA Kirana Sepanjang is on birthspacing≥2 years that is equal to 96 (45.5%). This corresponds to the theory that the child's age from 27 to 36 months is a safe birth spacing between one child and the other. At this spacing, the mother is most likely to have healthy babies and survive as they pass through the process of pregnancy. This is because the reproductive function has returned to normal. If the next pregnancy can function normally, the growth and development of the baby can be more optimal. At RSIA Kirana Sepanjang, almost births are> 2 years apart, this is probably because the mother has used contraception and obtained information about the ideal pregnancy spacing from various sources so that the mother can set a safe birth spacing.

While the pregnancy with birth space distance <2 years can be at risk especially on the mother because it increases the risk of bleeding after birth and the mother's womb is not ready to be the place of implantation by the fetus. In addition, maternal age factor is also an important factor in determining the birth spacing. If the age is less than 30 years and there are no health problems, the pregnancy might have the ability to adjust to the birth spacing (Siswosuharjo,2010).

3.3 Description of Frequency Distribution of LBW Occurrence at RSIA Kirana Sepanjang

Table.3 Frequency of LBW Occurrence at RSIA Kirana Sepanjang

LBW	Total	Persentase (%)
LBW	130	61.6
Not LBW	81	38.4
Total	**211**	**100.0**

Table.3 shows that most maternity mothers at RSIA Kirana Sepanjang givebirth to baby with BBLR which is equal to 130 (61.6%). The high number of LBW incidents at RSIA Kirana Sepanjang is due to the fact that RSIA Kirana is a referral hospital equipped with complete health equipment and obgyn and child specialist doctors. Infants with LBW have high risk of infant mortality, especially during perinatal period and LBWcan seriously impact the quality of future generations since it will inhibit the growth and mental development of the children and also decrease their intelligence (Amiruddin, 2014).

In conclusion, low birth weight (LBW) is the case in which a baby is born with a weight less than 2,500 grams. The causes of LBW are maternal factors (previous birth with previous premature and LBW history), lack of maternal nutrition during pregnancy, maternal age (less than 20 years and over 35 years), too close pregnancy and birth spacing, maternal illness (hypertension, heart and vascular disorders), pregnancy factors (hydramnios, multiple pregnancy, and complications of pregnancy (preeclampsia, eclampsia, and premature rupture), fetal factors (congenital abnormalities, uterine infections, and congenital anomalies), and work, smoking, environmental factors (Ridha, 2014)(Maryunani, 2013).

3.4 The Correlation Between Birth Spacing to LBW Occurrence at RSIA Kirana Sepanjang

Table 4 Relation of Birth Spacing to LBW Occurrence

		BW		Total
		LBW	Not LBW	
Birth Spacing	< 2 Years	41	8	49
		83.6 %	16.4 %	100 %
	≥2 Years	60	36	96
		62.5 %	37.5 %	100 %
Total		101	44	145
		69.6 %	30.4 %	100 %

Chi Square Tests (p = 0.009< α = 0.05)

Table 4 shows that infants born with LBW are mostly (83.6%) with the birth spacing of <2 years compared to infants born with ≥ 2 years spacing, whereas infants who are not born with LBW are almost partially (37.5%)with the birth spacing of≥2 years compared to babies born within <2 years. This shows that the shorter the pregnancy spacing, the higher incidence of LBW. In Chi Square Tests analysis, p = 0.009 <α = 0.05), which means that H0 is rejected and H1 is accepted, i.e. there is a relation between pregnancy spacing with the occurrence of LBW.

In accordance with other research, the results indicate that the gestational spacing of less than 2 years will increase the risk of LBW by 1,414 times compared to the spacing of pregnancy of more than 2 years. It is because women pregnant in less than 2 years after birth, the condition of the maternal womb has not returned perfectly. Therefore, the mechanism of nutrition to the fetus will experience a disturbance which can indirectly affect the baby's weight. To prevent pregnancy, contraception (KB) can be used to reduce unwanted pregnancy, especially if the spacing of pregnancy is too close. (Manuaba,2012)(Yanti, 2013).

4. CONCLUSION

The conclusion of this research is that there is a correlation between pregnancy spacing to LBW. It is expected that health workers can provide counseling to pregnant women to plan their pregnancies with a spacing of more than 2 years and if there are pregnant women with a gestational spacing of less than 2 years, they should recommend routine pregnancy check and anticipate the occurrence of LBW.

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