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Contribution to the Number of Pregnancy *(Gravida)* Complications of Pregnancy and Labor

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Abstract

Background: Emergency obstetric and newborn is a condition that can be life-threatening and can occur during pregnancy and childbirth. The cause of such emergencies include comorbidities, complications of pregnancy and childbirth in which this condition can arise because of risk factors during pregnancy, one of them is *gravida*. Pregnant women with *primigravida* and *grand multigravida* are one of the risk factors for complications of pregnancy and childbirth. **Objectives**: The purpose of this study was to determine the contribution of the number of pregnancies (gravida) to women who experience complications of childbirth in Hospital Pandan Arang Boyolali. **Methods**: The study was a retrospective descriptive quantitative approach, data collection using notes or other documents in the form of health information for pregnant women with gestational comorbidities are taken based on data from January 1 to December 31, 2018, with total sampling. **Results**: From the data 224 pregnant women with comorbidities and complications of labor, based on the characteristics of the highest responder status occurs at age 20-35 years old in 185 (82.5%), multigravida status of 190 (84.8%), co-morbidities pregnancy Preeclampsia 124 (55.3%) and the handling of labor SC 152 (67%). The highest contribution to the multigravida gravida with the highest labor complication is bleeding 101 (53.2%). **Conclusions:** The importance of monitoring the mother's pregnancy and regulating the number of pregnancies (gravida) to prevent complications of pregnancy and childbirth and to improve the degree of life of a mother.

Keywords: Number of pregnancies (gravida), complications of labor

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1. Introduction

Emergency obstetric and neonatal care is a condition that can be life-threatening, it can occur either during pregnancy or childbirth. Indicators of success of the health care system and the health of obstetrics are the Maternal Mortality Rate (MMR). The maternal mortality rate worldwide scale based on the research of [1] in 2017 still showed

a high rate with the number of 289,000 inhabitants. In the Southeast Asian countries, Indonesia was ranked first by the number of maternal mortality reached 190 / 100,000 live birth rate, followed by the State of Vietnam as much as 49 / 100,000 live birth rate, Malaysia at 29 / 100,000 live birth rate, Brunei Darussalam 27 / 100,000 birthrate life, and Thailand as much as 26 per 100,000 live birth rate [1].

Increased efforts to reduce Maternal Mortality Rate (MMR) should be done as one of the quality indicators in assessing the degree of public health. Besides, most of the causes of maternal deaths that occur are preventable things to avoid the complications of pregnancy and childbirth. Early detection and prevention of complications of pregnancy can be done by considering the factors for pregnancy complications. The same is expressed by Mc. Carthy & Maine 1992, like steps taken to reduce the number of maternal deaths, is to prevent or minimize the chances of pregnant women experiencing complications in pregnancy and childbirth [2].

Maternal death can occur a direct result of complications that developed during pregnancy, childbirth, or postpartum factor. The incidence of pregnancy complications may be due to risk factors during pregnancy and the presence of comorbidities during pregnancy. The prevalence of comorbidities increased over time for patients, which showed that an increase in pregnant women who are getting sick [3]. This condition can lead to problems or complications during childbirth in women. Complications of labor is a life-threatening state of the mother or fetus due to interruption as a direct result of the process labor [4].

Factors that may affect the appearance of a problem pregnancy and childbirth complications are the socio-demographic factors, factors maternal obstetric history, history of non-obstetric factors, factors of access to health services. Factors maternal obstetric history consists of maternal age, gravida, parity, history of abortion, birth spacing, mode of delivery, and a history of complications. Age safe for a woman to experience pregnancy and childbirth is 20-35 years. Category too young age (<20 years) and too old (> 35 years) have a high risk of pregnancy. Gravida is the total number of maternal pregnancies, including normal and abnormal intrauterine pregnancy, abortion, ectopic pregnancy and hydatidiform mole [5], Parity is the number of births experienced by the mother. The safest parity is 2-3 children. Birth spacing is the spacing between the last delivery with the previous delivery. The birth spacing ideal is 2-4 years. How to previous labor affect the delivery of current and previous disease complications also determine the health condition of pregnant women and maternity [6]

The incidence of pregnancy complications may be due to risk factors during pregnancy, one of them is gravida. This is consistent with the theory [7] which describes

the relationship between gravida with the incidence of complications of pregnancy and childbirth. Primigravida and gravida ≥ 4 be one factor in the emergence of problems in pregnancy and childbirth. Mothers with gestational primigravidae more susceptible to blood pressure problems that pre-eclampsia pregnancy**,** bleeding, miscarriage, preterm labor (premature), disorders and congenital abnormalities, fetal growth in the womb disrupted [7].

Regional General Hospital Pandan Arang is a referral hospital for health care services and midwifery in the district of Boyolali. Data obtained as many as 204 pregnant women with a high risk of complications of labor with a history of pregnancy-morbidities. This phenomenon makes the researcher is interested to identify the contribution of the number of pregnancies (gravida) maternal complications of pregnancy and childbirth.

2. Methods

This type of research is descriptive research using *cross sectional* study using a retrospective approach. Collecting data using the record or other documents which contains information on the health of pregnant women with comorbidities of pregnancy. The sampling technique used is total sampling in patients diagnosed with comorbidities of pregnancy and deliver at the District General Hospital Pandan Arang with the number of 224 samples from 2016-2018. Place of research conducted in Regional General Hospital Pandan Arang in March 2019. The instrument used is a service with a table containing data Patient's demographic, pregnancy-accompanying diseases and the complications of is happening. This study used univariate analysis in the form of central tendency. The frequency distribution is used to calculate the frequency of the data and contributed gravida to complications of pregnancy and childbirth.

3. Result

3.1. Patient Characteristics

Characteristics of patients according to the results of research in PHC Gatak, Sukoharjo with sample data of high risk pregnant women as much as 224 people on January 1, 2017- December 31, 2018 taken by total sampling through secondary data, the information given medical records clerk Hospital Pandan Arang, Characteristics of the study sample included age, gravida status, co-morbidities of pregnancy and childbirth handling obtained the following results:

3.1.1. Age

Table 1: Distribute characteristics of the sample based on age, gravida, morbidities and handling labor in the study period January 1, 2017, until December 31, 2018.

Characteristics	Frequency (n)	Percentage (%)
Age		
<20	10	4:46
20-35	185	82.5
> 35	29	12.94
Gravida		
Primigravidas	28	10.71
Multigravida	190	84.8
Grandemulti	6	2.67
Morbidities		
Diabetes mellitus	1	0.47
Anemia	79	35.2
preeclampsia	124	55.35
Hepatitis	7	4.5
Heart disease	2	3.1
Hipertioid	4	1.78
asthma bronchial	5	2.23
Pulmonary TB	2	0.89
Handling Labor		
SC	152	67.86
Spontaneous	64	28.57
Vacuum	8	3:57

According to table 1 are known of the 224 respondents in this study shows the results of the most aged between 20-35 years is 185 (82.5%), shows that most of the samples had many pregnancies (Gravida) are multigravida 190 (84.8%), the majority of the sample had comorbid disease Preeclampsia Anemia is 55.35% and amounted to 35.2%, and do handling labor is SC 152 (67.86%).

3.2. Contributions Gravida against Childbirth Complications

Based on Table 2 shows that the contribution of the gravida to complications of pregnancy and occurs labor in pregnancy multigravida 190 samples with complications of pregnancy and childbirth bleeding occurred is 101 (53.2%).

Table 2: Contributions Gravida against Complications Pregnancy and the Delivery period January 1, 2017, until December 31, 2018.

gravida	Complications of Pregnancy and Childbirth			Total
	Bleeding	Pre-eclampsia	convulsions	
Primigravida	16	12	0	28
	57.1%	42.9%	0.0%	100.0%
Multigravida	101	87	2	190
	53.2%	45.8%	1.1%	100.0%
Grandemulti	1	4	1	6
	16.7%	66.7%	16.7%	100.0%
Total	118	103	3	224
	52.7%	46.0%	1.3%	100.0%

4. Discussion

4.1. Age

According to the table 3.1 age unknown sample of pregnant women, 20-35 years at 82.5%, maternal age> 35 years amounted to 12.94% and maternal age <20 years at 4.46%. 20-35 years old is mature reproductive age of a woman. The process of the safest pregnancy and childbirth occur in women 20-35 years of age, it is because of reproductive age (20-35 years) risk of complications during pregnancy are lower. While less than 20 years of age and above 35 years old is the age at high risk of complications during pregnancy [8].

However, the results of this study showed mothers aged 20-35 years become the largest age group of pregnant women who have concomitant diseases or complications of childbirth. This is according to research [9] which showed that the majority of pregnant women aged 20-35 years have the disease anemia of pregnancy as much as 63.2% [9].

One of the factors associated with the occurrence of concomitant diseases of pregnancy is age. Because reproductive systems mature and ready to accept the pregnancy is in the age range of 20-35 years. The process of the mother's pregnancy under age 20 can lead to preeclampsia because it pregnancy poisoning because the reproductive system is not yet ready to use. While pregnancy with age above 35 years of changes in the tissues of the womb and birth canal this inflexibility causes the mother prone to hypertension and preeclampsia [10]. Not all women aged 20-35 years did not experience problems during pregnancy. In women with a young age are often exposed to preeclampsia and this is because the process of immunological mechanisms in addition

to endocrine and genetic. Mother with first pregnancy occurs the process of forming the blocking antibody to the antigen rudimentary placenta, blocking antibodies may occur completely in subsequent pregnancies [11].

4.2. Gravida

Based on a sample table 3.1 multigravida known gravida 84.8%, primigravida 10.71% and grand multigravida 2.67%. Gravida factor contributing and influencing the process of pregnancy and childbirth, especially in women who had first pregnancy [12]. It is powered by an immunological theory, mentioning that at first pregnancy occurred blocking the formation of antibodies against antigens that result is not perfect, so it can hinder the process of invasion of maternal spiral arteries by trophoblast to a certain extent and as a result, can disrupt the function of the placenta. Reduced excretion vasodilator prostacyclin by the endothelial cells of the placenta and increased secretion cause deterioration vasoconstriction generalized and aldosterone secretion. It is the cause of the increased incidence of preeclampsia [13].

Pregnancy and childbirth are repeatedly can result in damage to the blood vessel wall of the uterus and decreased elasticity of tissues due to the repeated stretching during pregnancy, so it tends to cause aberration, abnormal fetal growth and placental growth [12]. In accordance with Redowati research shows that there is a relationship between gravida with anemia of pregnancy, where the mother with multigravida have 0,156 times more bear the risk for anemic compared to primigravida.

4.3. Comorbidities Pregnancy

Based on Table 3.1 shows that the majority of the sample had comorbid disease Preeclampsia Anemia is 55.35% and amounted to 35.2%. Preeclampsia is a condition of reduced organ perfusion due to vasospasm and endothelial activation that occurs after the 20th week of pregnancy with a marked increase in blood pressure proteinuria and edema [12]. Preeclampsia is also one disease during pregnancy can cause disability, severe illness and can even cause death in mothers, fetuses, and neonates [8]. In preeclampsia occurs vasoconstriction of blood vessels in the uterus, which causes an increase in peripheral resistance, this causes an increase in blood pressure. Vasoconstriction of blood vessels in the uterus can lead to decreased blood flow to supply oxygen and nutrients to the fetus is reduced. When this happens, it can cause intrauterine growth retardation (IUGR) and giving birth to low birth weight [14]

Pre-eclampsia is an impact on the transformation of blood from the mother to the placenta, which can cause poor growth of the fetus in the womb. Pre-eclampsia is a complication of pregnancy with the characteristics of a decrease in blood flow and ischemic placenta are the most dominant risk factor for complications of childbirth [9].

Pregnancy Anemia occurs due to the increased iron requirement for the mother and fetus because of the increased demand for blood volume during pregnancy. One factor is the risk of low birth weight of pregnant women suffers from anemia. This is because hemodilution (relative plasma volume more stout than erythrocytes) which is a physiological adaptation of the circulatory system in pregnant women to fulfill the needs of a large vascularization for uterus and fetus [15].

4.4. Handling Labor

The delivery handling that occurs in patients is the kind of labor, cesarean section (SC) of 67.86%. SC delivery can occur because of delivery complications associated with maternal factors so that to save the mother and baby should be taken SC and some women were no complications but suffered SC this case based on women's requests SC to take action. At this time many women who have sex outside of marriage, causing the first pregnancy under the age of 20 years and at the age of mothers under 20 years can affect his intensity that causes the SC. Many women pursue careers and become involved in the first pregnancy at the age above 30 years and the age of 30 years and older have high pregnancy complications such as maternal mortality [9]. SC due to several factors, one of which is pre-eclampsia in pregnancy has an indication of pregnant women to labor SC. If in an emergency a pregnant woman with preeclampsia compulsory labor by SC [15].

4.5. Contributions Total Pregnancy (Gravida) against Childbirth Complications

Contributions number of pregnancies (gravida) patients showed the largest number occurred in species multigravida with delivery complications of bleeding. On the condition of the mother multigravida, reproductive function tends to decrease so that the possibility of bleeding becomes larger. The number of pregnancy mothers affects the pregnancy conditions that are at risk of pregnancy complications. In pregnancy multigravida increases the risk of complications of pre-eclampsia pregnancy which can lead to complications of childbirth. This in accordance with the research of [2] mentions

that pregnancy complications have a risk of childbirth complications, where the mother who has complications during her pregnancy is at risk of 2.72 times complication in her pregnancy [2]. [16] states that the most dominant factor in relation to childbirth complications is the history of pregnancy complications [16].

Bleeding that occurs during childbirth is bleeding that occurs in both the intrapartum and postpartum. Bleeding often occurs is postpartum hemorrhage, is bleeding more than 500 cc happens after the baby is born vaginally or more than 1000 cc after abdominal delivery in 24 hours and before 6 weeks after delivery. The factors that influence the incidence of postpartum hemorrhage is prolonged labor, parity, excessive stretching of the uterus, oxytocin drip, anemia, and labor with action. Prolonged labor is labor lasting more than 24 hours on a primigravida and more than 18 hours in a multi. Prolonged labor can cause uterine inertia due to fatigue in the muscles - the muscles of the uterus so weak uterus after birth[14].

5. Conclusion

Conclusions This study shows that the characteristics of the respondents in the study women with comorbidities of pregnancy and childbirth complications in hospitals Pandan Arang period 1 January to 31 December 2019 is the highest status at the age of 20-35 years old in 18 (82.5%), the status of the highest gravida on multigravida 190 (84.8%), comorbidities pre-eclampsia pregnancy 124 (55.3%), and the handling of labor SC 152 (67%). The highest contribution of gravida is multigravida with the highest labor complication is bleeding 101 (53.2%). The importance of monitoring the mother's pregnancy and regulating the number of pregnancies (gravida) to prevent complications of pregnancy and childbirth and to improve the degree of life of a mother.

Disclosures

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Conflict of Interest

The authors have no conflicts of interest to report.

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