

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

Preterm birth becomes a global problem due to its high rate of morbidity and mortality. Based on WHO (2018), Africa and South Asia have more than 60% of the preterm birth rate. Nowadays, Indonesia is on the 5th place of the highest premature birth rate. In 2010, it is estimated approximately 15 premature birth cases per 100 lives birth in Indonesia (UNICEF, 2017). According to Norman et.al. (2005), there are several factors that affect preterm delivery, such as idiopathic, iatrogenic, infection, multiple pregnancy, maternal factors, reproductive history, and sociodemographic.

Premature infants have a high risk of mortality and morbidity. The high mortality rate mostly happened in the low-income country due to insufficient breastfeeding support, ineffective care, and lack of basic care for infections. Mostly, the highest mortality number is on children under the age of 5 years. In 2015, their main causes of neonatal deaths in Indonesia such as; prematurity (35.5 percent), birth asphyxia (21.6 percent), and congenital anomalies (17.1 percent)(UNICEF 2017). Preterm birth could be associated with seven developmental disabilities (cerebral palsy, autism spectrum disorder, intellectual disability, behavioral-conduct disorders, attention deficit hyperactivity disorder, learning disability, and another developmental delay (Schieve et.al.2016).

Due to the high incidence and morbidity, it is necessary to oversee the etiologies and risk factors of preterm birth. Due to a lack of premature birth rate on Surabaya, seeing the incidence rates of Low Birth Weight (LBW) could

reflect crude premature birth rate. In 2015, there were 217.873 children under five years old (toddlers), and 81.11 percent is weighed. The result showed the number of under five years old toddlers were under the red line (BGM) (approximately 1.304 and 0.74 percent) (Dinkes Surabaya 2015). The factor that associated with preterm birth in Surabaya has not reported yet and should be observed. Hence, there would be feasibility to decrease and prevent preterm delivery incidences and morbidity if the risk factors were observed.

The young mother might have a higher risk of preterm birth due to the maternal-fetal competition for nutrients or the incomplete physical growth (Kozuki et.al.,2013). According to Sayed et.al. (2012), maternal education affects psychosocial factors and socio-economic that might have related to preterm birth. The mother that works during pregnancy has higher risk preterm cases due to physical fatigue and stress (Casas et.al., 2020). According to a study that is conducted by Allen, L. (2001), Anemia causes preterm by increasing stress hormones that are norepinephrine, and cortisol. The recurrent spontaneous mid-trimester preterm birth might be caused by cervical insufficiency (Chamber et.al.,2016). Primiparity has a higher risk of Pregnancy Induced Hypertension that might induce preterm birth (Kaur.et.al., 2012). According to Murray et.al. (2018), multiple pregnancy causes spontaneous preterm birth through several mechanisms such as intrauterine infection, cervical insufficiency, and uterine stretch/distension.

According to Syarifa (2017), it is found the relation between maternal age ( $p=0.002$ ) and maternal occupation ( $p=0.001$ ) to preterm birth at Yogyakarta. According to Ningrum et.al. (2017), mother with anemia hemoglobin levels ( $p=0.003$ ) has higher risk of preterm birth. Another study

that is conducted by Hanifah (2017), Gemelli (OR= 3.573) has higher risk of preterm birth. According to Putri.R., (2018), The previous abortion history (p=0.020) have a significant difference with preterm birth. According to study that is conducted by Niswah.F. (2016), the previous preterm birth (p=0.003) is related with recent preterm. It is important to observe about risk factors of preterm. This study is conducted at Airlangga University Hospital as the biggest teaching hospital on Surabaya due to its high rate birth cases. This analysis has not been conducted since 3-5 years before at Surabaya.

## 1.2 Problem Formulation

What are the maternal risk factors that related to preterm birth at Airlangga University Hospital?

## 1.3 Objective of Research

Based on the problem formulation above then the purpose of this research was:

### 1.3.1 General Objective

To analyze the maternal risk factors towards preterm birth at Airlangga University Hospital.

### 1.3.2 Specific Objective

1. To identify preterm birth cases at Airlangga University Hospital Surabaya.
2. To identify about maternal age at Airlangga University Hospital Surabaya.
3. To identify about maternal education at Airlangga University Hospital Surabaya.

4. To identify about maternal occupation at Airlangga University Hospital Surabaya.
5. To identify about maternal hemoglobin levels at Airlangga University Hospital Surabaya.
6. To identify about history of obstetric complications at Airlangga University Hospital Surabaya.
7. To identify about parity at Airlangga University Hospital Surabaya.
8. To identify about multiple pregnancy at Airlangga University Hospital Surabaya.
9. To analyze the correlation between maternal age, maternal education background, maternal occupation, hemoglobin levels, history of obstetric complications, parity, and multiple pregnancy towards preterm birth

#### **1.4 Benefit of Research**

##### **1.4.1 Benefit for Researcher**

To give insight about the factors that have a significant difference preterm birth at Airlangga University Hospital for further scientific development

##### **1.4.2 Benefit for Society**

To increase understanding about the maternal risk factors that related to preterm birth at Airlangga University Hospital that might increase awareness for preterm birth and reduce the cases.

### **1.4.3 Benefit for Knowledge**

To give scientific information about the factors that related to preterm birth at Airlangga University Hospital for further scientific development

To provide an overview of the factors that related to preterm birth at Airlangga University Hospital, therefore that it can reduce the preterm birth cases and its morbidity.