



CHAPTER I

INTRODUCTION

A. Problem and significance of the problem

The problem of maternal death is a major public health issue all over the world. The 1995 estimates of maternal deaths for the world were 515,000. The maternal mortality ratio is estimated to be 400/100,000 live births. Of these deaths, 98 percent occur in the developing world (UN, 2002). Indonesia together with five other countries – Bangladesh, Ethiopia, Nepal, Nigeria and Pakistan- account for 30 percent of such deaths worldwide. Considering the causes of maternal death, life– threatening complications of pregnancy are responsible for nearly three-quarters of maternal deaths, and hemorrhage alone accounts for 25 percent of those maternal deaths (WHO, Safe Motherhood, 1995).

One of the most common health problems during pregnancy is anemia, which refers to less than normal hemoglobin levels in the blood. Anemia has broad consequences, as it will affect both the mother and baby. In terms of consequences to the mother, anemia can lead to some complications and disabilities during pregnancy, the intrapartum period (during delivery) and the postpartum period (after delivery). They are usually manifested in various conditions such as dizziness, fatigue and low immunity levels. These conditions can further lead to worse complications like postpartum hemorrhage and infection, which are considered the main causes of maternal mortality.

Indonesia is one of the developing countries, which continues to have a high maternal mortality ratio and morbidity of anemia in pregnancy. The maternal mortality ratio (MMR) in Indonesia was 334/100,000 live births in 1997. It is expected to decline to 125/100,000 live births by the year 2010. The main causes of maternal death in Indonesia in 1995 were hemorrhage 42%, eclampsia 13%, abortus 11%, infection 10%, prolonged labor 9% and others 15%(UN, 2000). In a follow-up study carried out in 1995, it was found that 50.7% pregnant women were anemic (Djaja,S&Suwandono,A,2002). From the study of Tjiat and Soedarmo, it was found that in The General Hospital in Jakarta, at least 50% pregnant women suffered from mild anemia, 40% from moderate anemia and 9.0% from severe anemia (Martoatmodjo,S et. al, 1995). In order to accelerate reductions in MMR, "evidence based practice" is one of the approaches applied in Indonesia.

In the literature, anemia has been cited as one of the risk factors of postpartum hemorrhage. However, most statements were made without supporting evidence such as research findings or other kinds of scientific evidence. Studies are, therefore, needed to examine the relationship between anemia in pregnancy and the occurrence of postpartum hemorrhage, so that more evidence of risk factors can be obtained in order to develop effective measures in postpartum hemorrhage prevention and management at clinical level, and strategic planning to reduce maternal deaths at higher levels.

Ideally, the research should take place in Indonesia, but due to limitations of time and budgets, this study was conducted at Uthai thani Hospital in Uthai thani Province, Thailand which also has a high prevalence of postpartum hemorrhage and Maternal Mortality Ratio (MMR).

The MMR in Thailand in 2001 was 23.79/100,000 live births. The causes of maternal death were hemorrhage (42.11%), pregnancy induced hypertension (PIH) (15.04%), infection (9.77%), embolism (10.53%) and others (22.5%) (Ministry of Public Health, 2002). In addition, the prevalence of iron deficiency anemia in pregnant women in Thailand was 12.9% (Ministry of Public Health, 1999). From the above information, the similarity in causes of maternal death between Indonesia and Thailand can be seen, and the main cause is just the same, namely hemorrhage. Further, information from the same source shows that the province with highest MMR in Thailand is Uthai thani Province with a MMR of 109.7/100.000 live births in the year 2001. Other information from Uthai thani Provincial Hospital indicates that the prevalence rate of postpartum hemorrhage in this hospital in the last three years was around 2%. However, the rate is declining overtime. Accordingly, Uthai thani province appears to be a suitable area for the study, and Uthai thani Provincial Hospital has been chosen for the setting up of the study.

B. Objectives of study

The general objective of this study is to examine the relationship between anemia in pregnancy and postpartum hemorrhage.

The specific objectives of this study are:

1. To identify the characteristics of the subjects.
2. To ascertain any relationship between anemia in pregnancy and postpartum hemorrhage.
3. To examine the relationships among variable

C. Research Questions

This study aims to obtain answers to the following questions:

1. What are the characteristics of the subjects?
2. Is there any relationship between anemia in pregnancy and the occurrence of postpartum hemorrhage?
3. What are the relationships among the variables?

D. Hypothesis

Null Hypothesis: Pregnant women with anemia will face the same degree of risk of postpartum hemorrhage as pregnant women without anemia.

Alternative Hypothesis: Pregnant women with anemia will face a higher degree of risk of postpartum hemorrhage than pregnant women without anemia.

E. Conceptual framework of the study

Figure 1 shows the conceptual framework of the study. The possibility of a cause-effect relationship between anemia in pregnancy and postpartum hemorrhage is substantiated here. Anemia can lead to general fatigue of the woman's body, and because of fatigue, prolonged labor and uterine muscle exhaustion can occur. Prolonged labor often results in forceps or vacuum extraction or cesarean section, and those procedures can result in laceration and bleeding.

Prolonged labor due to general fatigue can also lead to uterine muscle exhaustion, which is a cause of abnormalities of uterine contraction. When the uterus cannot contract effectively, the placental tissues often remain in the uterus and the blood vessels cannot close properly. Even if the placental tissues are removed, bleeding may still occur because the opened blood vessels cannot close properly. Another etiology of postpartum hemorrhage is abnormalities of coagulation, which is

caused by hereditary coagulopathies, liver disease, elevated blood pressure, fetal demise, fever, antepartum hemorrhage, and suddenly collapse.

Thus, there are four etiologies of postpartum hemorrhage, namely, abnormal uterus contraction, retained conception tissue, birth canal trauma, and abnormal coagulation, out of which the first three etiologies are associated with anemia in pregnancy. Therefore, there is justification for examining the relationship between anemia in pregnancy as an independent variable and the occurrence of postpartum hemorrhage as the dependent variable.

Figure 1. Conceptual Framework of the Study

