INTRODUCTION

The malnutrition problems in Indonesia are occurred at the every stage of the life cycle. However, the government policy and program is mainly addressed to the malnutrition at under five years and pregnant women. The figure of nutrition problem is not always available, especially on the micronutrient deficiency and at the group of pre-pregnancy and lactating mothers.

In the human life cycle, young women (10-19 years) is one of the vulnerable groups who suffering from anemia. This group is also considered as a pre-pregnant women. The national prevalence of anemia is quite high, i.e. 26.5% in young women and 26.9% in women of childbearing age (MOH 2005). Meanwhile, the national health survey in 2008 showed that prevalence of anemia in adult women (> 15 years) was 19.7% (MOH 2008). About 10-25% of young women living in rural areas have already married or have been pregnant (MOH 2003).

The pregnant women who sufferings from nutritional deficiency are major cause of the mortality in pregnant women as well as infant. The maternal mortality rate (MMR) and infant mortality rate (IMR) in Indonesia is considered to be relatively high compared to the other countries in South-East Asia, which are 350 per 100,000 childbirths and 51.0 per 1000 live birth. The other indicator of outcome pregnancy is low birth weight (LBW) which is considerably high (16.6-27%) in some Indonesian
The macro-nutrient deficiency as indicated by the rate of chronic energy deficiency (CED) among women aged 15-45 is about 13.6%. The long impact of LBW on children is very wide including decreased intelligent, growth retardation, low immunity, increased morbidity and mortality, and in the long time related to the cause of the degenerative diseases. Micro-nutrient deficiency is also common among the pregnant women, however currently only the anemia data is available. The prevalence of anemia is quite high (40-50%) among pregnant women. The anemia in this group may cause LBW, bleeding, long partus, after birth infection, and brain dysfunction.

In the pregnant women may also suffer from other micronutrient deficiencies like folic acid, zinc, vitamin A, and vitamin B12. Pregnant women who were supplemented with 15 micro-nutrients showed the significant response on the outcome of infant. A double-blind cluster-randomized trial of multi-micro nutrient (MMN) supplementation was conducted in Lombok, Indonesia by involving almost 40,000 pregnant women (SUMMIT 2008). Infants of those women consuming MMN supplements had an 18% reduction in early infant mortality. Infants weighed showed a 14% decreased risk of low birth weight for those in the MMN group.

Folic acid deficiency at the beginning of pregnancy can cause neural tube defect (NTD). The impact of folic acid deficiency on pregnant women is growth retardation of the embryo. Zinc plays important role in infant growth and development since zinc is important part in various enzyme structures for various metabolic processes. Zinc suplementation has been proved to decrease the incidence of growth retardation of infants when delivered to pregnant women with high risk to bear LBW infants. Vitamin A along with iron suplementations may decrease anemia prevalence on pregnant women at higher level than iron suplementation alone. Iron and vitamin A are useful to promote the growth of body weight during pregnancy.

Meanwhile, the figure of nutritional status of lactating mother is almost similar with the pregnant women. A study done in Bogor showed the prevalence of anemia among lactating mothers was 33.9% (Aritonang 2007). As a comparison, the Japan national survey in 1995-1999 found that 11.1% of lactating mothers suffered from anemia (Takimoto 2003). In Vietnam there were 39% of anemia in lactating mother, while 55.4% and 21.4% of serum Zn and Cu below the standard respectively (Nakamori 2009).
Considering the very broad impact of nutritional deficiency on the pregnant women, developing nutritious food products for the pre-pregnancy as well as lactating mother is a good way to improve their nutritional status. Accurate information is needed to determine the magnitude of malnutrition problem, including the amount of nutrient required for these three groups. Based on above consideration, the SEAFAST Centre IPB in collaboration with PT Sari Husada is planning to conduct study on the nutritional status of pre-pregnancy, pregnant women, and the lactating mothers.

OBJECTIVES

1. To identify nutritional status in the pre-pregnant women, pregnant women and lactating mother group.
2. Mengkaji kebiasan makan dan asupan zat gizi pada pada kelompok ibu pra-kehamilan, ibu saat hamil, dan ibu menyusuiTo assess food habits and nutrients intake in the pre-pregnant women, pregnant women and lactating mother group
3. To quantify the amount of nutrients required by pre-pregnant women, pregnant women and lactating mother group to fulfill adequate standards

OUTPUT

1. Informasi jumlah (prevalensi) dan tingkat keparahan defisiensi zat gizi pada kelompok ibu pra-kehamilan, ibu saat hamil, dan ibu menyusuiInformation on the prevalence and the severity of nutritional status in the pre-pregnant women, pregnant women and lactating mothers
2. Preferensi makanan tambahan yang sesuai dengan kebiasaan makan kelompok ibu pra-kehamilan, ibu saat hamil, dan ibu menyusuiInformation the food preferences and food habits including snack foods on the pre-pregnant women, pregnant women and lactating mothers Rekomendasi tambahan zat gizi yang dibutuhkan oleh ibu pra-kehamilan, ibu saat hamil, dan ibu menyusui
3. Recommendations of additional nutrients required by the pre-pregnant women, pregnant women and lactating mothers