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# Knowledge and Perception of Nutrition and Health among Pregnant Women in Rural Central Kalimantan, Indonesia

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## ABSTRACT

**Background:** Optimum nutrition for pregnant women is necessary for the healthy growth of the fetus including brain growth. For pregnant women can apply a balanced diet of food then they need sufficient nutritional knowledge to apply balanced nutrition in the daily menu. The purpose of this study to understand the knowledge and perception of pregnant women related to food and health.

**Method:** Using a qualitative research method, implemented in Sei Hanyo Village, Supang Village, and Bulau Ngandung Village, Kapuas Hulu area, Central Kalimantan. Data was obtained by observation technique and an in-depth interview with 34 participants, consisting of pregnant mothers (9 people), grandmothers (12 people) and husbands (12 people).

**Results:** Most of the menu of pregnant women is less balanced because pregnant women rarely consume vegetable and fruit. Furthermore, they still have the wrong perception about the nutritional needs of pregnant women. Most women have consumed liver, eggs, and fish but for iron tablets, almost all participants do not know the benefits and the diet rules. Food abstinence is still applied mainly by pregnant women with various sources of taboo such as the source of animal side dishes and vegetables. Hand washing habit has been done but not to use soap in running water. Besides, the role of the husband in supporting the fulfillment of nutrition in pregnant women is still low.

**Conclusion:** Maternal knowledge and perception related to nutrition and health are relatively low.

**Keywords-:** Perception, Nutrition, Health, Abstinence, Iron Tablet, Pregnant Mothers

## INTRODUCTION

Knowledge of nutrition is a set of knowledge known about food concerning optimal health. Nutrition knowledge includes an understanding of daily selection and consumption well and provides all the nutrients needed for normal body function<sup>(1)</sup>. The level of knowledge of nutritional effect on attitudes and behavior in the selection of food will ultimately affect the nutritional state concerned. Inadequate nutrition knowledge, lack of understanding of good eating habits, as well as a lack of knowledge of the nutritional contribution of different

types of food will lead to problems with intelligence and productivity. Increased nutrition knowledge can be done by running nutrition education programs conducted by the government. Nutrition education programs can affect the knowledge, attitudes, and behavior of children to their eating habits<sup>(2)</sup>.

The period of pregnancy is one period of the life cycle that is prone to nutritional problems. Optimum nutrition for pregnant women is necessary for the healthy growth of the fetus including the growth of the brain. Pregnant women experiencing malnutrition, especially chronically lack of energy, are at risk of giving birth to babies with low weight and impact on the growth and development of children, intellectual development, and productivity in the future. For pregnant women to have good nutritional status during pregnancy, then a mother

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should apply a balanced diet of nutrition <sup>(3)</sup>.

Maternal nutrition fulfillment is influenced by many aspects, especially knowledge of pregnant woman nutrition, education level, and support of husband, family, and the community <sup>(4)</sup>. In applying a balanced nutrition diet, an expectant mother needs to have sufficient nutritional knowledge to be able to use balanced nutrition in the daily menu. Previous research in other regions of Indonesia proved a relationship between the knowledge of pregnant women about the nutritional needs of pregnancy with nutritional status of pregnant women <sup>(5)</sup>. Similar research also confirms that there is a real relationship between nutritional knowledge and nutrition practices in pregnant women <sup>(6)</sup>. Furthermore, only about 2.5% of pregnant women who have good knowledge and the rest the knowledge of pregnant women on nutrition is still less, especially about causes of anemia, anemia symptoms, impact iron deficiency, factors that help and inhibit the absorption of iron and healthy weight gain during pregnancy <sup>(6)</sup>.

This study aims to understand the knowledge and perception of pregnant women related to nutrition and health, especially about pregnant women's food (types and quantities), consumption of liver, eggs, fish, use of iron tablets, pregnant women diet pattern, hand washing habit and the role of husband in supporting nutritious food diet intake and improving nutritional status of pregnant women in rural areas of Central Kalimantan, Indonesia.

## METHODOLOGY

This research used qualitative research methods, implemented in Sei Hanyo Village, Supang Village, and Bulau Ngandung Village, Kapuas Hulu sub-district, Central Kalimantan. Data was obtained by observation technique and an in-depth interview with 34 participants, consisting of pregnant mothers (9 people), grandmothers (12 people) and husbands (12 people). The implementation of the study was conducted in September through October 2017.

## RESULTS

Maternal knowledge about nutrition is very influential in the selection of nutritious food and the ability to prepare a balanced menu following the needs and tastes. In this research knowledge and perception of pregnant woman's food including the type of food

consumed and the amount of food consumed. Most pregnant mothers at the beginning of pregnancy (<1 month) experience cravings, and all expectant mothers as much as possible to fulfill craving desire because they do not want something wrong happens to the fetus. In the 1st month, they mostly only consume (there are also until 4-5 months) just started to consume rice, vegetables, and side dishes. What happened reflected in the results of interviews with the following informants: *"Everything the pregnant women want must be fulfilled in order the baby will be healthy and nothing less."*

Most of the menu of pregnant women consists of carbohydrates, sources of animal meats, and vegetable. The food sources rarely consumed are the dish from vegetable and fruit. Most pregnant women make use of local food that easily found in their area.

Most participants said that the quantity of food consumed during pregnancy less than when they were not pregnant. Their appetites were going down during the early period of pregnancy. Besides, some other pregnant women consume less food because they were afraid that their fetus would be more significant and challenging to give birth. Only 1 person answered more food during pregnancy (about 3 cups of rice), and one person said she had the equal portion before and during pregnancy.

This is reflected in the results of interviews with the informants as follows:

Eat less during pregnancy, disorder and eat depending on taste.

Eat more time before pregnancy because when being pregnant the appetite was decreased.

Eat more when they were not pregnant because if they eat more on pregnancy period would make them difficult to breathe.

According to pregnant women in the research, good food is in the form of vegetables, fish, milk for mother and fetus healthy. There is also an opinion the best food for pregnant women is the source of plants grown not with pesticides / harmful fertilizers such as cucumber, spinach, bamboo shoots, young local ferns, and young rattan. Most participants believe that milk for pregnant women has the significant role in improving maternal and fetal health.

Based on interviews with pregnant women obtained the results that the portion of food in the period of

pregnancy and not pregnant is just the same as they proved from her previous pregnancy that they did not experience any severe problems. (2 participants). There is also another idea that the amount of food consumed by a pregnant mother less than usual is related to carvings, nausea, and vomiting experienced by pregnant women (3 participants). Further, participants said liver, fish, and eggs are perfect for the health of pregnant women. The most commonly consumed food ingredients are eggs, especially liver of chicken while liver of pork is rare because the price is quite high. The cost of chicken and fish is also high especially for freshwater fish.

Based on interviews with pregnant women, those with low socio-economic conditions do not know about iron tablets (Fe) and do not consume Fe tablets. Besides, based on interviews, most pregnant women apply food taboo such as not to drink banana heart because it can cause thick /hard membrane, pineapple can cause weak content/miscarriage, deer can cause death in children, cork-like fish can cause death in children, taro shoot cause the fetus challenging to get out and local fish named *lawang* and *telan* cause fetus hard to get out. Furthermore, the women also avoid eating *suna* - a traditional type of onion that is usually used as a spice of cooking and also to make chili sauce as it is believed it can cause the baby too big in the womb and cause bleeding. Also, yellow pumpkin, cucumber, and zucchini shoots are thought to cause the placenta to survive, and sticky and attached bananas can produce twin-born babies like the attached bananas. The tradition of dietary restrictions is strong enough in the villages of Bulau Ngandung, Supang and Sei Hanyo. But not all pregnant women follow the ban. Of the nine participants, four pregnant women did not observe the taboo, and the five participants still followed the abstinence imposed by their family. Of the five participants who went through abstinence, most of the participants had an inferior education.

Based on the interview it was found that all pregnant women do hand washing but not all using soap. Washing hands with soap are only done if the hands really look dirty and smelly. Hand washing mostly not in running water. The most frequent hand washing time is before eating. All participants have not been socialized with hand washing steps.

## DISCUSSIONS

Because of carving, women in this research

consumed whatever they wish to destroy. Cravings are the effect of hormonal changes in pregnant women that lead to increased sensitivity to the smell and taste of food. Desires are universal during early pregnancy and are not related to particular physiological needs<sup>(8)</sup>. However, the pregnant women in respective rural areas have consumed the standard food containing carbohydrate, protein, and vegetables available in the neighborhoods for the fetus to be healthy. Commonly consumed food ingredients are as follows: carbohydrate source: rice, cassava, bread yams. For protein sources are: shrimp, a type of catfish, fish, dried fish, pork, liver (of chicken, pork), chicken (domestic and poultry) and for vegetable sources are: spinach, kale, carrots, cucumber, cabbage).

Most pregnant women have the wrong perception of the nutritional needs of pregnant women as most respondents reduced the quantity of food consumed during pregnancy. This will reduce the supply of energy as two aspects influence the energy needs: the increase in basal metabolic rate to support the growing needs of the fetus and the accompanying network, as well as physical activity<sup>(9)</sup>. This means that the energy and nutrient needs of mothers during pregnancy should be higher than when they were not pregnant which applied by the women in the research. This is by Regulation of Minister of Health Republic of Indonesia No. 75 the Year 2013 about nutrition adequacy rate Indonesia that stipulates that the additional energy needs of pregnant women in the first trimester of 180 kcal above the needs before pregnancy and the addition of 300 kcal in trimesters II and III. Furthermore, according to Regulation of Minister of Health No. 41 the Year 2014 about balanced nutrition guidelines writes that during pregnancy a mother should increase the amount and type of food eaten to meet the needs of infant growth and the needs of infant and mother to produce breast milk.

All pregnant women have not been exposed to the balanced nutrition messages and have not been exposed to information that milk is not a perfect food, but the nutrient of milk is equivalent to the nutrients found in animal side dishes. This is per the written in Minister of Health Regulation no. 41 The year 2014 that states one portion of milk is equivalent to one part of animal side dishes. For example, one serving of fresh fish in one medium slice (40 grams) equal to one cow milk (200 ccs). Participants who answered that the number of pregnant women eating less during pregnancy is mostly low-educated, who responded to the needs of both pregnant

and non-pregnant, most of them were middle-educated, while those who answered the number of pregnant food more than before pregnant were mostly highly educated. It indicates that one's education level influence the level of knowledge and that pregnant women with low education tend to be reluctant and embarrassed to visit health facilities so rarely exposed to health information, especially information about nutrition. This is in line with the theory that the level of education determines the level of knowledge of a person, the higher the level of a person's formal education the level of expertise will be higher <sup>(10)</sup>.

The knowledge of the women in the rural areas of Central Kalimantan on Fe tablets is minimal. This situation occurs because the pregnant women never come to community health facilities. Furthermore, for other pregnant women have seen and know the tablet Fe but do not know the benefits and rules of taking the tablet. Because of this lack of knowledge, pregnant women do not consume Fe tablets every day as recommended leading to a deficiency in iron intake. The additional iron intake in pregnant women is needed to increase iron deposits of the mother <sup>(11)</sup>. Of the iron deposits of the mother, the fetus also deposits iron that will be used to meet the needs of the baby born until the age of 46 months, especially if the milk is less iron. Besides, iron plays a role to meet the needs of the placenta and fetus and for the preparation of the mother to give birth is to replace the blood that is much missing due to the process of increased blood volume of the mother <sup>(12)</sup>.

Most pregnant women avoided a sure to cultural belief. This is natural as, in Central Kalimantan mostly reside, the cultural beliefs leading too taboo is firmly believed and maintained as local wisdom <sup>(13)</sup>. Pregnant women argue if abstinence is broken it will affect the fetus could be sick even died, difficult to give birth and also can change other family members. The average food that is challenged is a kind of food that cannot be consumed by a family for generations so that the food that is challenged between pregnant women varied with one another. The reason for abstinence is because they believe that whoever broke this prohibition will have difficulties during childbirth as well as abnormalities in infants. The figures generating tradition of the ban are their parents who received it from their grandparents. Abstinence is always reminded when daily chats even begin to be implanted since they are children to challenge some of these foods. Reactions that occur in society if

there is a breaking taboo then the pregnant woman will be the topic of discussion and judged negatively by the public.

In general, husbands pay less attention to their wife's intake during pregnancy. Participants are more concentrated as a breadwinner, while the management of food is left to the wife in full.

## CONCLUSION

Knowledge and perception of pregnant mother related to nutrition and health especially about pregnant woman's food, consumption of liver, egg, and fish, use of the iron tablet, hand washing habit with soap in running water and husband role in supporting nutritious intake and improving the nutritional status of pregnant women are still relatively low. Most pregnant women still apply local taboos, the food abstinence during pregnancy. There are a needs of education about nutrition for pregnant mother continuously and evenly in all society and support from husbands and community so that pregnant mother can apply balanced diet in order the fetus born will be healthy and intelligent.

**Ethical Clearance:** The Ministry of Health Polytechnic approved this research in Central Kalimantan, Indonesia. Ethical clearance was obtained from the Faculty of Medicine Palangkaraya University, Indonesia. A research permit was requested from the local health authorities. We also wish to thank all the participants who contributed to this study.

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