*Original Article:*

# The Relationship between Food Myths and the Incidence of Anaemia among Pregnant Women in the Third Trimester of Pregnancy

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## Abstract

***Background***: Nutrition in pregnant women is an important factor affecting maternal and fetal health. Anaemia is one of the problems in pregnancy. Lack of protein and iron intake is one of the factors causing anaemia. Cultural beliefs and knowledge such as food myths and taboos can give bad impacts on maternal and child health. ***Objective***: To determine the relationship between food myths and the incidence of anaemia among pregnant women in the third trimester of pregnancy. ***Materials and Methods***: This observational research used a cross-sectional design. The determination of the subject used a simple random sampling and the obtained samples were Puskesmas Margasari, Puskesmas Kesambi, and Puskesmas Lebaksiu. The population was pregnant women in the third trimester of pregnancy in Tegal District with the subject of 120 pregnant women. The data were collected using a food myth questionnaire. Data were analysed using Chi-Square. ***Result:*** There was a relationship between belief in food myths and the incidence of anaemia among pregnant women in the third trimester of pregnancy in Tegal District (p-value: 0.002).

**Keywords:** Food Myths, Anemia, Pregnant Women

## Introduction

Anaemia in pregnant women is a global problem and is a serious health problem as it can affect fetal development, premature birth, infectious diseases, and maternal and fetal death[1]. A total of 40% of maternal deaths in the world are associated with anaemia[2]. Anaemia in pregnant women is caused by a lack of iron intake[3]. The recommended iron needs in the first trimester of pregnancy are 18 mg/day and increase to 27 mg/day[4] in the third trimester. Thus, if the increased need for iron is not balanced with the consumption of sufficient iron sources can cause anemia[5].

The global prevalence of pregnant women with anaemia reaches 38% (32.4 million)[2]. In Indonesia in 2013 pregnant women with anemia reached 37.1% and increased to 48.9% in 2018[6]. However, the prevalence of anemia in pregnant women in Central Java in 2015 was 50%[6] while in Tegal District it reached 3416 pregnant with anaemia (12.7%) in 2018 with an increase to 3909 pregnant with anaemia (13.6%) in 2019[7].

Food intake is related to a person's belief in consuming food, resulting in a habit and the emergence of a food myth culture[3]. Food myths are assumptions in a culture that are believed to have the truth for recommended and prohibited foods to be consumed during pregnancy[8]. Cultural beliefs and knowledge such as myths about food restrictions can have a negative impact on maternal and child health[8].

The socio-culture of each region also contributes

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to dietary behavior, especially for pregnant women and usually, there is a belief in food myths that limits the consumption of certain foods. In Java, myth related to pregnancy is passed down from one generation to the next to maintain the advice of the ancestors even though the truth has not been proven. Therefore, there are myths or beliefs during pregnancy that affect dietary habits or behavior[8].

The food myth in Bojonegoro is that pregnant women have taboos on eating pineapple and fishy foods. Belief in pineapple society can cause hot uterus and cause miscarriage. Food myths like do not consume food that are fishy, such as fish, because they are believed to cause the baby and amniotic fluid to smell fishy and cause bleeding during childbirth[8]. In Central Java, there is a food myth for pregnant women not to eat eggs and meat because they are believed to complicate childbirth and cause bleeding[9]. Food myth in India that pregnant women are prohibited from eating papaya, fish, peanuts, acidic foods, and green vegetables. Papaya is believed to cause miscarriage, fish causes itching in babies, vegetables are believed to cause reduced movement of babies in the womb[10].

## Materials and Method

This observational study used a cross-sectional design. The target population were third trimester pregnant women in Tegal District. The total of 115 pregnant women were included in this study. Reserve is added 10% in anticipation of the subject dropping out so that the subject becomes 120. The sample was determined using the simple random sampling technique obtained Puskesmas Margasari, Puskesmas Kesambi, and Puskesmas Lebaksiu.

Inclusion criteria were the third trimester of pregnancy, antenatal care at Puskesmas Margasari, Puskesmas Kesambi, or Puskesmas Lebaksiu. The exclusion criteria were pregnant women with mental disorders. The independent variable was the food myths. The dependent variable was anemia among pregnant women in the third trimester of pregnancy. Data collected through interviews include the identity of the subject and data about food myths. Food myth data were collected using a questionnaire containing some of the food restrictions and the reasons is available in the questinare. Data were analyzed using Chi-Square.

## Result

The characteristics of the respondents are presented in table 3. A total of 56 pregnant women (46.7%) experienced anaemia, while 64 pregnant women (53.3%) did not experience it. A total of 44 pregnant women (36.7%) believed in food myths and 76 pregnant women (63.3%) did not believe them.

**Table 1.** Characteristics of Respondents

| Characteristics | Total | % |
|---|---|---|
| Incidence of anaemia | | |
| Anaemia | 56 | 46,7 |
| Not anaemia | 64 | 53,3 |
| Food myths | | |
| Believe | 44 | 36.7 |
| Not believe | 76 | 63.3 |

Table 2 shows that 35 anaemic pregnant women (47.3%) believe in food myths and 39 pregnant women (52.7%) do not believe in food myths. In the group of non-anaemic pregnant women, 9 pregnant women (19.6%) believed in food myths and 37 pregnant women (80.4%) did not believe them. The bivariate test obtained a p-value of 0.002 which means that there is a relationship between believing in food myths and the incidence of anaemia in pregnant women. Pregnant women who believe in food myths are at risk of developing anaemia even though the OR effect is only 0.271.

**Table 2.** The Relationship between Belief in Food Myths and the Incidence of Anaemia among Pregnant Women in Tegal District

| Variable | Incidence of Anemia | | | | P Value | OR |
| | Anemia | | Not Anemia | | | |
| | n | % | n | % | | |
|---|---|---|---|---|---|---|
| Myths | | | | | | |
| Believe | 35 | 47.3 | 9 | 19.6 | 0.002 | 0.271 |
| Not Believe | 39 | 52.7 | 37 | 80.4 | | |
| Total | 74 | 100 | 46 | 100 | | |

## Discussion

Based on the results of the study, 44 pregnant women still believe in food myths during pregnancy. The bivariate analysis indicated that food myths were related to the incidence of anaemia in pregnant women with a p-value of 0.002 although the risk was very small as seen by

the OR value of only 0.271.

The results of this study are supported by Martini and Haryanti (2015) who found that food myths have an effect on the incidence of anaemia in pregnant women[11] . A study by Mohammed et al (2019) revealed that believing in food myths during pregnancy had a 2.21% risk of developing anaemia than mothers who don't believe them[12] .

Belief in food myths can be influenced by cultural perceptions. Cultural perception is thought through the stages of selection, organization and interpretation including values, beliefs, strategy, expectations that take place comprehensively that determine actions, attitudes and habits. One of the problems resulting from cultural perceptions is the food myths in pregnant women[13] . The food myth believed by pregnant women in this study is that pregnant women are prohibited from eating fish as it is believed to cause the baby and amniotic fluid to smell fishy. Pregnant women are also prohibited from consuming seafood such as shrimp because they are believed to complicate the delivery process. Furthermore, eating eggs is also believed to complicate the delivery process.

The restriction to consume certain foods of animal protein is in contrast with science. Protein needs during pregnancy increase especially in the third trimester[14] . Protein needs in the first trimester reach 61 g/day, 70 g/day in the second trimester, and 90 g/day in the third trimester[4]. Pregnant women need nutritious food intake with high bioavailability, such as foods from animals and their refined products. Pregnant women need more protein nutrition during pregnancy for physical changes, blood plasma composition, changes in metabolism, and the growth of the fetus. Consumption of protein as a macronutrient is important as the main component of haemoglobin which is an indicator of anaemia is protein[15] .

Restriction in consuming high nutrients foods that are recommended during pregnancy becomes a problem for pregnant women. Therefore, it limits the type of food consumed by pregnant women and causes a lower intake of nutrients.

## Limitations of This Study

Researchers did not analyze food intake in pregnant women and other influences related to anaemia.

## Suggestions for Further Studies

The researcher hopes that further studies will analyze food intake so that it can be seen the relationship between food myths and food intake and its relation to the incidence of anaemia.

## Conclusion

There is a relationship between belief in the food myths during pregnancy and the incidence of anaemia among pregnant women in the third trimester of pregnancy in Tegal District with a p-value of 0.002.

## Conflict of interest

The authors state no conflict of interest

## Ethical Clearance

This research has been declared ethically feasible by the Research Ethics Committee of the Faculty of Medicine, Sebelas Maret University No:43/ UN27.06.6.1/KEP/EC/2021.

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## Authors' contribution

Study design: All authors

Data gathering: Aghnia

Writing and submitting manuscript: Aghnia

Editing and approval of final draft: All authors

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