

The Correlation between Cultural Internalization and the Incidence of Iron Deficiency Anemia on Pregnant Women

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Keywords: Belief, Culture, Iron deficiency anemia, Pregnancy, Taboo

Abstract: Unhealthy practices in community during pregnancy can cause complications during pregnancy, one of them is iron deficiency anemia. Some pregnant women avoid some foods and adhering to certain beliefs. This study aims to determine the relationship between cultural internalization with iron deficiency anemia prevalence among pregnant women. This study used cross-sectional study design, involved 126 pregnant women from working areas of a Community Health Center in the western part of Indonesia. The participants were recruited using purposive sampling method. Data were collected by self-report questionnaires developed by the researchers. Data analysis was done using chi-square test. Finding show that there was a relationship between taboo in food and norm/belief with the incidence of iron deficiency anemia among pregnant women. It is recommended that community health center should consider the use of cultural practices in the community in their health education and information design and promote positive cultural practices to reduce the negative impact on pregnant women..

1 INTRODUCTION

Maternal Mortality Rate (MMR) is one of important indicators in upholding women's health status. MMR was 305 per 100,000 live births in Indonesia and was 30 per 100.000 live birth (23%) in Aceh (Dinkes Aceh, 2016). In Aceh Besar, MMR was 88 per 100,000 live births in 2015 (Dinkes Aceh Besar, 2016). Factors affecting maternal mortality include a history of illness, family planning history (named *keluarga berencana*), history of complications and anemia status (Jayanti, Basuki and Wibowo, 2016).

Anemia during pregnancy is a serious global public health problem. It is estimated that more than half of pregnant women have hemoglobin levels that indicate anemia, which is <11.0 g / dL (Onyeneho *et al.*, 2016). The prevalence of anemic pregnant women in Indonesia was 37.1% (Kemenkes RI, 2013). Iron deficiency anemia is one of the most common disorders during pregnancy. Pregnant women generally experience iron depletion. So that, the iron in mother's body was given to the fetus. Iron

is needed for hemoglobin formation and blood volume will increase due to changes in the pregnant women's body and fetal blood supply. Iron deficiency can cause disorders to fetal growth both in body and brain cells, fetal death in the womb, abortion, low birth weight and anemia in infants (Kemenkes RI, 2014).

Iron deficiency anemia during pregnancy is caused by nutritional deficiencies, one of them is iron that can occurs due to inadequate intake of iron and lack of availability of iron in food (Vir, 2011; Silverberg, 2012). Other factors that cause iron deficiency anemia was diet, socioeconomic, environmental, health status, knowledge and culture (Masrizal, 2007; Vir, 2011; Hartinah and Eswantii, 2017). The result of the study conducted by Kaphle, Hancock, & Newman (2013) in Nepal found that women in highland area considered tradition and belief to be positive contributors to their safety and survival and also their babies during pregnancy. The behavior of the people in the village is based on their belief in supernatural powers that directly oppose to

medical views, where they will not abandon the tradition of seeking medical care during pregnancy.

Acehnese culture has several traditions during pregnancy. First, there was a tradition named *Ba Boh Kayee* (bringing fruit) to pregnant women by mother-in-laws after enter a 3-month pregnancy period. Second, *Me Bu* (tradition of carrying rice) was done when pregnant women enter 7-8 months of pregnancy and the tradition of abstaining from food during pregnancy (Puspitawati and Batubara, 2015; Samad, 2015). The study conducted by Puspitawati & Batubara (2015) in Aceh Utara found that many pregnant women were still abstaining from certain types of food, such as not being able to eat pineapple because it can cause miscarriages, should not eat sea fish such as cuttlefish, octopus or other types of strange fish, and forbidden to eat eggplant, jackfruit and gummy vegetable. Based on this phenomenon, researchers want to assess "The Relationship of Cultural Internalization with the Incidence of Iron Deficiency Anemia in Pregnant Women in Aceh Besar".

2 METHODS

This research was a quantitative research with descriptive correlative method, carried out with a cross sectional study approach. This study used a questionnaire developed by researchers based on theoretical objectives consisting of 3 parts, which included demographic data, taboo in food, and

norms/beliefs about eating food during pregnancy, as well as the use of Hb meters to measure maternal hemoglobin levels.

The study population were all pregnant women who visited a selected Community Health Center, between September 2017 and February 2018. The sample of this study was 126 pregnant women who recruited by non-probability sampling, using 3 inclusion criteria as follow: (1) Acehnese pregnant women; (2) pregnant women who did not experience blood disorders, and; (3) pregnant women in their second and third trimesters.

Data collection was started by asking for approval from the research place/community, the visited the respondents and explained them the study purpose and objectives. Next, the researchers asked the respondent's approval by signing an informed consent sheet. Then, the researchers distributed questionnaires and measured the respondent's hemoglobin. Data were analyzed using Chi-Square test. This study was approved by the Ethical Committee of Nursing Faculty, Syiah Kuala University.

3 RESULTS

3.1. Characteristic of Respondents

The distribution of respondents based on their demographic characteristics is shown in Table 1.

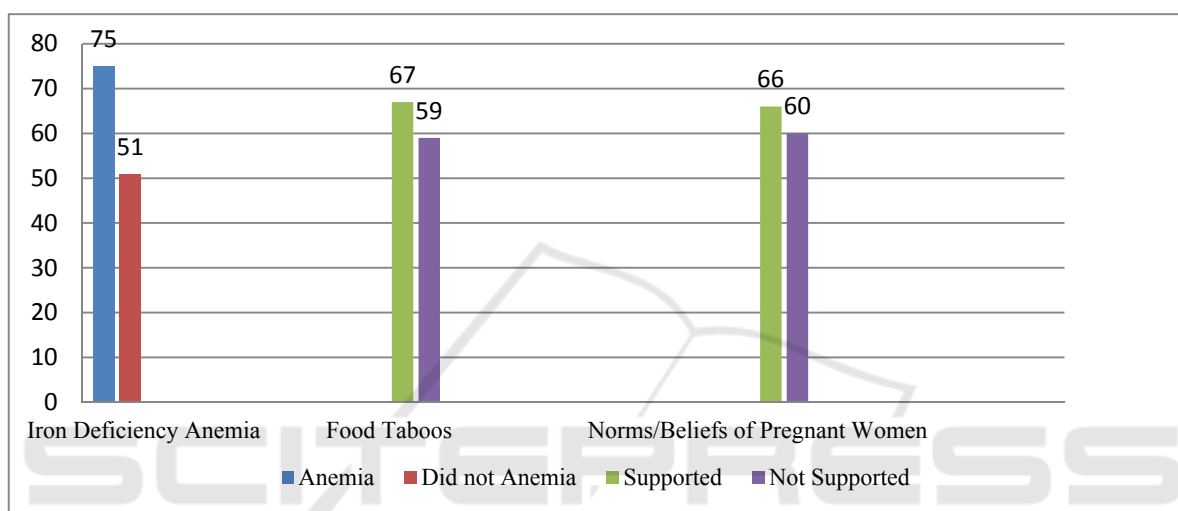
Table 1: Demographic Characteristics of pregnant women (N=126).

Characteristics	F (%)
Age	
Risk age (<20 and >35 years old)	27(21.4)
Not risk age (20-35 years old)	99(78.6)
Education	
Low	8(6.3)
Middle	79(62.7)
High	39(31.0)
Job	
Not Working	110(87.3)
Work	16(12.7)
Gestational Age	
2 nd trimester	78(61.9)
3 rd trimester	48(38.1)
Number of Deliveries:	
Primiparous	32(25.4)
Multiparous	94(74.6)
Lived with	
Parents	64(50.8)
Husband	62(49.2)

Table 1 shows that most of the respondents were in not at risk age (20-35 years), half of the respondents have last education in the middle category, two thirds of respondents did not work, and the respondent's gestational age was mostly in the second trimester category. The majority of respondents were multiparous and half of the respondents lived with their parents

3.2. Distribution of Food Taboos, Norms/Beliefs and Iron Deficiency

The distribution of food taboos, norms/beliefs and iron deficiency is shown on Graph 1. The incidence of iron deficiency anemia in pregnant women was 59.5%; 53.2% of respondents supported taboos in food; and 52.4% of respondents supported norms/beliefs during pregnancy.



Graph 1. Distribution of Food Taboos, Norms/beliefs and Iron Deficiency Among Pregnant Women.

3.3. Relationship between Food Taboos, Norms/Beliefs and Iron Deficiency

The proportion of anemia among pregnant women who supported food taboos (68.7%) differed significantly with respondents who did not support (49.2%) food taboos in food (p-value = 0.04). The proportion of anemia among pregnant who supported the norms and beliefs (69.7%) differed

significantly with respondents who did not supported the norms/beliefs (48.3) food taboos in food (p-value = 0.024). It can be interpreted that there was a statistical relationship between food and norms/ beliefs with the incidence of iron deficiency anemia. The Relationship between food taboos, norms/belief and the Incidence of Iron Deficiency Anemia in pregnant women is described in Table 2 as follows.

Table 2: The Relationship of Food Taboos and the Incidence of Iron Deficiency Anemia in Pregnant Women.

Sub-variables	Iron Deficiency Anemia		Total	p-value
	Anemia f (%)	Not Anemia f (%)		
Food Taboos				
Supported	46(68.7)	21(31.3)	67	0.041
Not Supported	29(49.2)	30(50.8)	59	
Total	75(59.5)	51(38.5)	126	
Norms/beliefs				
Supported	46(69.7)	20(30.3)	66	0.024
Not Supported	29(48.3)	31(51.7)	60	
Total	75(59.5)	51(40.5)	126	

4 DISCUSSIONS

The results of this study were supported by the research conducted by Martini dan Haryanti (2015) and found that there was an effect of food taboos on the incidence of anemia (p -value = 0.047). There are still many cultural beliefs in the society that potentially increase pregnancy complications. Pregnancy complications had an impact on maternal morbidity and mortality include anemia in pregnancy.

Culture gives different roles and values for food. There are certain foods that are considered taboo or should not be consumed during pregnancy. Community beliefs formed because of the meaning or word contained in every word of their parents (Humaeni, 2015; Mubarak, 2011).

One factor that contributes to problems during pregnancy in rural areas was food taboos during pregnancy. In several studies, it seen that pregnant women in various country of the world were forced not to consume nutritious food as part of their traditional eating habits (Ugwa, 2016).

Based on the results by respondents' answers, it is known that pregnant women in this study were still not consume shrimp (10.3%), did not consume fish (21.4%), did not consume goat meat (28.6%), did not consume vegetables (31.0%), did not consume fruits (34.1%), did not consume iron tablets (27.8%), and there were still many restrictions on pregnant women in the surveyed community.

This study result was similar with the result conducted by Sholihah & Sartika (2014) in Suku Tengger. From the interviews conducted on traditional birth practitioners (named *dukun beranak*), families and pregnant women, it is known that bananas, pineapple, fish, cabbage, and others are foods that often abstained during pregnancy. Research conducted by Nurrachmawati & Anggraeni (2010) in East Borneo found that pregnant women were still prohibited to eat salty fish, squid, shrimp, pineapple, durian and others. The same results are also obtained by Zerfu, Umata, & Baye (2016) in Arsi found that pregnant women also abstinence from foods such as spinach, cabbage, kale, meat, chicken and others. Research conducted by Eram, Tamanna, & Humaira (2016) mentioned that out of a total of 100 studied women in India, 78 pregnant women avoided papaya, 43 avoided fish, 33 avoided *badi* foods (which caused flatulence), 27 avoided citrus foods, and 8 avoided peanuts and tea or brinjil.

Food abstinence by pregnant women in this study is contradictory to the concept mentioned by Gluckman, Hanson, Seng, & Bardsley (2015); Almatier (2001). This study found that the foods they avoided were rich of such as fish, vegetables, fruits, meat, chicken, ducks and others. The iron is used to formed hemoglobin in red blood cells that acts as an oxygen carrier from the lungs to the tissues. In the condition of iron deficiency, the hemoglobin in the body will also decrease. This condition causes iron deficiency anemia in pregnant women.

Researchers assumed that food taboos during pregnancy occur due to a lack of information from health workers regarding the importance of nutrition during pregnancy, so that many pregnant women avoided some foods which were needed during pregnancy, especially iron. This research area still has cultures and beliefs trusted by local community, especially regarding food taboos that trusted by their parents. The pregnant women still affected to follow that beliefs because they were afraid to have several dangerous condition for themselves or their babies.

This study result was supported by a study conducted by Zerfu et al., (2016) in Arsi. It is known that there were still many pregnant women who believe that body weight should not be increased during pregnancy; milk and eggs should not be consumed because it can caused large babies. They also belief that pregnant women should not allowed to consume green leaf vegetables because it was dangerous for themselves and their fetuses. Results of research conducted by Zepro (2015) found that from 49.8% of total respondents avoided one or more foods during pregnancy. Honey and milk/yogurt are usually avoided because they believe it can make the baby were fat so it would be difficult for giving birth, can cause abortion and fetal abnormalities. More than 82.4% of respondents believe that reducing food intake during pregnancy was very important.

The recapitulation of respondents' answers in previous study found that pregnant women in the surveyed area were still believed things that were contrary to health during pregnancy. It was found that 42.9% believed that consuming too much food caused a large baby. Pregnancy is the most important stage and requires adequate nutrition. During pregnancy, the mother needs extra calories and essential nutrients every day to support fetal growth. Incorrect belief in avoidance of food can drain important body nutrients that will affect the mother and fetus growth (Ugwa, 2016).

From total 26.2% of respondents believed that consuming iron tablets can cause large babies. Iron (Fe) is an essential mineral that is important in the formation of hemoglobin, myoglobin and collagen and has a good function for fetal growth and development (Kemenkes RI, 2016). Without iron therapy, pregnant women who consume adequate nutrients would experience iron deficiency during pregnancy. Diet alone cannot replace iron loss during pregnancy. Oral iron should be given for at least 6 months to correct anemia and to replenish iron reserves (Bobak, Lowdermilk and Jensen, 2005; Silverberg, 2012).

There was 34.1% respondents believed that eggs can make a big baby, 47.6% trusted milk can cause large babies and difficult to give birth. Milk and eggs contained protein which was one of the factors that can facilitate iron absorption (Adriani and Wirjatmadi, 2012), 69.8% respondents believed that pineapple can cause miscarriages. Pineapple is one of the fruits that contain vitamin C. Vitamin C was good to be consumed because iron from plants cannot be absorbed effectively without it. So, the pregnant women need to consume vitamin C to help iron absorption (Mariana, Wulandari and Padila, 2018). There was 30.2% respondents believed that consuming goat meat can cause cramps in the stomach or miscarriage. Goat meat is one of the foods that contain heme iron. Heme iron has a small iron content, but it would be well absorbed by the body (Gluckman, Hanson, Seng, & Bardsley, 2015; Almatier, 2001).

The beliefs held by pregnant women in this study were still contradicted from the health sector, the results above was evidenced. Actually, what they believe is about the nutrients needed during pregnancy. Energy metabolism during pregnancy is increases, therefore they need energy and other nutritional that also increased for fetal growth and development and the changes of the composition and metabolism of mother's body. Basically, pregnant women need all the additional nutrients, but what often becomes deficiency was iron (Sukarni & Margareth, 2013).

The beliefs about pregnancy can also change the mother's eating habits so that nutritional intake is not in balance with the needs, this can cause the metabolism of hemoglobin formation is inhibited and the body's need for nutrients cannot be fulfilled, such as iron, vitamin C, protein and others. This condition can cause iron deficiency anemia during pregnancy (Widyawati *et al.*, 2015; Mariana, Wulandari and Padila, 2018).

Pregnant women in study who have different beliefs from the medical concepts majority lived with their parents. This makes the researchers assumed that pregnant women who have these beliefs were obtained from their parents. Researchers also assumed that pregnant women feel anxious and fear that something will happen to their pregnancy if they did not obey what the other people or who are more experienced about pregnancy said. It caused the pregnant women tend to obey or trust everything related to pregnancy, whether that was true or contrary to health concepts. Pregnant women in this study mostly in the middle school level category. This condition can cause the level of trust held by pregnant women was high, because pregnant women tend to take information without thinking about the effects of that good or bad information.

This study also has limitation. It is very difficult to find the respondent address because the selected Community Health Center working area has a large area, it consists of 47 villages and there are several villages that are difficult to reach, so this study implemented in a long time period.

5 CONCLUSION

Based on the results and discussion in this study, it can be concluded that food taboos and norms/beliefs were associated with the incidence of iron deficiency anemia in pregnant women. It is recommended that the community health center providers must consider the cultural practices that apply in the community for designing health education and information. They should consider to internalize positive cultural practices for health life so it can reduce the negative impact on pregnant women.

ACKNOWLEDGEMENTS

The authors thank the pregnant women for their participation and enthusiasm, also for the health workers and other personnel from Kuta Baro Community Health Center and Aceh Besar Health Office for the permission and support provided for this research process.

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