

Contribution of Eating Habits Behavior in Women Towards Iron Nutrition Anemia

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Abstract

Iron nutrition anemia is still a major nutrition problem in Indonesia, especially that happens in women of productive age. Various attempts have been made to overcome, but the result is not quite satisfactory, so it needs to review how the most appropriate response. Based on some of the research results conducted by the writer on the study of eating habits in women, suggesting that women generally have less good eating habits for various reasons, so it has the impact on health that results in anemia. Anemia is a term used in a state of decline in hemoglobin concentration in the blood caused by a lack of iron required for the formation of hemoglobin. Hemoglobin is a substance in red, it is in the form of solution in the red blood cells, whose main function is to carry oxygen to all parts of the body. Hemoglobin formation is strongly influenced by the intake of nutrient, especially from the food containing nutrients needed by the body, which refers to the balanced nutrition menu. The fact that there is in the Java community, especially in rural area is still attached to the eating habits oriented to the gender discrimination, namely, prioritizes the father as head of the family, then boys, girls, and mother gets the final turn and always succumbs in the distribution of family meal. This case is unwittingly, will gradually form a pattern of eating habits in women that is not healthy, which will be detrimental to their own health condition and the children are born with a variety of risks that are very detrimental to the future generation. One of ways to change or shift the eating habits, is recommended through the nutrition education and training for women of productive age, especially marginal women.

Keywords: Eating habits behavior, iron nutrition anemia

INTRODUCTION

Food and nutrition are an important dimension in development, particularly that is related to the improvement of the human life quality. Development of Human Resources (HR) is related to many factors, one of them is nutrition factor. This factor has a very important role. Improving nutrition status becomes the basis for the improvement of intellectual, productivity, and job performance, while the decline in nutrition status will give the opposite effect. The program target of nutrition improvement is prioritized in communities with high risk to improve malnutrition such as toddlers, women of productive age, pregnant and lactating women.

The main concern in improving the quality of human resources at this time is an attempt to prepare the young generation through nutrition training early on, starting from training women of prospective mother, continued to the maintenance of the fetus, infants, toddlers, and school children. This effort attention focus primarily on the relation of nutrition status with the process of child's intellectual development and physical growth. Proper nutrition intake will be able to optimize the development of the child and vice versa, lack of nutrients such as essential fatty acids and micronutrients will result in the delay of the vital organs growth such as brain, heart, and other organs, and even malnutrition in pregnant women may lead to birth defects that is difficult to repair (Venny, 1997). According to Jalal (1998: 222) the pregnancy time is a period that will determine the quality of human resources in the future, because the development of the child is determined by the condition when the fetus in the womb. Anemia in pregnant women may cause interference for the process of childbirth, among others long delivery, bleeding, infection of childbed, and for the fetus can result in immaturity, low birth weight, may be malformation or malnutrition in infants born.

The problem faced today is more than 50% of pregnant mothers in Indonesia get iron nutrition anemia, that is anemia due to iron deficiency, folic acid and vitamin B12. The study results indicate that in Indonesia the dominant cause is iron deficiency in the body, either because the input is less, spending or excessive requirements. Nutrition anemia is still one of the major nutrition problem in Indonesia in addition to three other nutrition problems, that is deficiency of protein energy, iodine, and vitamin A. It is evident from the prevalence of anemia in Indonesia is still very high, that is in pregnant women 63.5%, toddler 55.5%, and school-age children 24-35%, in adults age 30-40%, adult workers 20-30%. Special for the prevalence of anemia in pregnant women in Central Java is 58.1% (Soeharyo, 1999:28). Anemia is generally due to lack of nutritious food causes in some fundamental things in women, as reported by WHO that malnutrition in pregnant women supports the occurrence of mother health problems, fetus, and infant. According to Jalal (1998: 231) the problem that is more complex in the group of pregnant women in Indonesia is about 41% suffer from chronic energy deficiency, approximately 50% suffer from iron deficiency anemia, and about 25% suffer from iodine deficiency. The unfavorable mother condition has resulted in the height of infant birth rates with weight below 2500 grams, which is about 14% in 1994 (UNICEF in Jalal, 1997: 238). Sharif in Jalal (1998: 237) reminds that the infant is

born with low birth weight (LBW) has high risk of death at very early age and if life will experience the trouble of growth and development due to lack of proper brain volume. Some of research results (Vermeersch, 1981; Crawford, 1993) reveal that the growth of brain cells is very rapid in the fetus time in the womb until the infant is born (approximately 70%), after this the growth is slow and reaches a maximum size at the age of about 18 months.

It has become the agreement of nations in the world through Millennium Development Goals (MDGs) which delivers eight point agreement, one of them is to improve maternal health and reduce the risk of maternal mortality with the target in 2015 the maternal mortality rate and childbirth are 102 per 100.000 live births. The maternal mortality rate in Indonesia is still very high, the rate is the largest mortality rate in ASEAN and becomes a national concern. Based on the Indonesian Demographic and Health Survey in 2007, the maternal mortality rate is 228 per 100.000 live births. Almost one between three pregnant women suffers from anemia with all due to the complications on pregnancy, delivery, childbed, and also on the condition of the infant is born. The latest data compiled by the Department of Health Magelang shows the maternal mortality rate in 2010 increases compared in 2009. Anemia is generally due to lack of nutritious food results in some fundamental things in women, as reported by WHO that malnutrition in pregnant women supports the occurrence of maternal health problem, fetus, and infant.

The fact that there is in the Java community, especially in rural area is still attached to the eating habits oriented to the gender discrimination, namely, prioritizes the father as head of the family, then boys, girls, and mother gets the final turn and always succumbs in the distribution of family meal. As said by Royston (1994) the most people, adult women and small children usually eat after the men, as a result they tend to get less nutritious food. Similarly, the research result of Zahrulianingdyah (1995: 77), that the group of middle-class people have eating habits that prioritize men in every eating occasion, whether at home or at the chance to eat together. The research result of Zahrulianingdyah et al (2009: 25), concludes that on the low socio-economic communities, the family member that preceded to take food is the father, the person who is respected and after that the mother. In the food division the father gets first priority, then the child, and the mother gets the ultimate priority. The evidence of similar pattern of gender discrimination in the allocation of household resources since the beginning of life is also found in the countries of the Middle East and North Africa and sub-Saharan Africa. The report of health status of mothers in Lesotho confirms that the main contributor of poor women status is tradition of giving food to the men and boys before women and girls, nutritious food on the men member of the family, while women enjoy food left. Additionally still met the abstinence or taboos against certain food, for example in lactating women are not allowed to eat food derived from fish, eggs, milk, fried foods, and so on because of damaging milk aroma, and affect the health of her baby. Similarly, some women still think the existence of food that is prohibited for pregnant women. This certainly is slowly but surely, will affect the nutrition status of women, which in turn will impact on the occurrence of iron nutrition anemia.

Reviewing the illustration above shows that eating habits in women has correlation to the occurrence of anemia which effects on declining the health status of women, which in turn will affect on the height of maternal mortality rate of productive age. Anemia is a term used in a state of decline in hemoglobin concentration in the blood caused by a lack of iron required for the formation of hemoglobin. Hemoglobin is a substance in red, it is in the form of solution in the red blood cells, whose main function is to carry oxygen to all parts of the body (Drummond and Brefere, 2004: 260; Royston, 1996: 134). According to the definition of the Department of Health, nutrition anemia is deficiency of hemoglobin level (Hb) in the blood caused by lack of iron is required for the formation of hemoglobin. Iron deficiency that often causes nutrition anemia is the lack of iron, folic acid and vitamin B 12. In Indonesia, most of the anemia caused by lack of iron (Fe) so-called iron nutrition anemia. According Arisman (2004: 145) the limitation of anemia is (1) it is a state of declining hemoglobin level, hematocrit, and number of red blood cell below the normal value is set for the individual, (2) Iron nutrition anemia is a condition in which the level of hemoglobin, hematocrit, and red blood cell is lower than the normal value, as a result of a deficiency in one or more of the essential elements of food that can affect the appearance of the deficiency. Iron, folic acid, vitamins, and other mineral elements are needed for the formation of hemoglobin, which is formed in the bone marrow. These materials derive from animal foods (liver, meat, bowel, yolk) and plant foods (green vegetables, staple food, and grains).

According Vijayaraghavan (2009: 279) the human body needs iron for the synthesis of protein that carries oxygen, hemoglobin, and myoglobin in the body, and for the synthesis of enzyme that contains iron and participates in electron transfer reactions and oxidation-reduction reactions. Active process in the duodenum absorbs iron, then the iron is absorbed it is taken through mucous membranes and serous into the blood and from here the carrier protein (transferrin) that exists in the plasma transports it into the cell or bone marrow for erythropoiesis purposes. Transferrin takes iron into the tissue through specific cell membrane receptor on the transferrin. The cell receptor binds complex transferrin and iron on the cell surface and brings them into the cell to release iron.

Stages of iron deficiency anemia are started from several levels, namely:

- (1) Iron depletion is iron deficiency beginning, in which the reserves of iron in the body is reduced or none but the iron in the plasma is still normal, hemoglobin and hematocrit are still normal.
- (2) Iron deficiency is iron reserves in the plasma is reduced but hemoglobin is still normal.
- (3) Iron deficiency anemia, the iron in the plasma and hemoglobin is less than normal (Supriasa, 2001: 169).

The cause of anemia is partly caused by (1) shortage of raw material inputs of iron (iron deficiency), (2) bone marrow disorders (aplastic anemia), the formation of hemoglobin is not normal, as in thalassemia resulting in short the life span of red blood cells, (3) folic acid deficiency also becomes another cause of anemia, Royston and Armstrong (1996: 180). According Wirakusumah (1999: 2) that the nutrient that is the most instrumental in the process of nutrition anemia is iron. Iron deficiency is a major cause of anemia compared with other nutrient deficiency, such as folic acid, vitamin B12, protein, vitamin, and other trace elements. Therefore, anemia is often associated with iron nutrition anemia. According DeMaeyer (1993: 2) anemia can be also due to other causes, such as malaria, hookworm, malnutrition, infection, poverty, underdevelopment, lack of knowledge, and low education levels. Another cause of anemia is iron nutrition needs increases as a result of growth. Infants, toddlers, children, and adolescents need iron in larger quantities, as period of growth needs more high nutritious food substances. According Arisman (2004: 145), in general, there are three causes of iron deficiency anemia, namely: (1) chronically blood loss, as a result of chronic bleeding such as peptic ulcer disease (sprue intestine), hemorrhoids (ambein), parasite infestation and malignant process, (2) iron intake is insufficient and inadequate absorption, (3) increasing needs of iron for the formation of red blood cells which commonly takes place during the baby's growth, puberty, pregnancy, and lactation. Meanwhile, according to Emma (1999: 78), the occurrence of iron nutrition anemia is caused by several factors, including the shortage of iron content in the daily meal, the absorption of iron from food is very low, the presence of substances that inhibit the absorption of iron, and the presence of parasites in the body such as hookworm or whipworm, diarrhea or loss of blood due to an accident or surgery. In general, the main factor that causes nutrition anemia is the number of blood loss, the destruction of red blood cells and lack of red blood cell production. According to Wirakusumah (1999: 2) classifies the cause of anemia on: 1) the absorption of iron as in gastrectomy, 2) Deficiency of protein, because protein is used as a carrier of hemoglobin and several enzymes that are directly or indirectly related to iron metabolism. 3) The presence or absence of co-factor such as copper, ascorbic acid affect iron metabolism from the blood to the heart. Ascorbic acid affects iron absorption of intestinal wall. 4) Daily meal that is deficient in iron. 5) Loss of blood due to injury, bleeding due to a disease and hookworm infection. In line with the opinion of Husaini et al (1989: 37) describes the presence of three important factors that cause anemia, the blood loss due to bleeding, destruction of red blood cells, and red blood cell production are insufficient.

The main factor that becomes the cause of anemia is a lack of consumption of iron from food, or poor absorption of iron in the meal, in other words the foodstuff that gets into the body is poorly absorbed the iron because it is inhibited by other substances, such as tannins that contains to drinking tea, because the habit of drinking tea after meal, eventually suffers from anemia. In addition to the factors above, the loss of blood in large quantities such as menstruation, childbirth, accident or surgery, and hookworm infection. Wirakusumah (1999: 2) suspects that the main factor that causes anemia is the amount of blood loss, destruction of red blood cells and a lack of red blood cell production. There are four basic approaches the prevention of iron deficiency anemia according Arisman (2004: 151), namely (1) the provision of tablet or iron injection, (2) education and efforts in connection with increasing iron intake through food, (3) control of infectious diseases, and (4) fortification of staple food with iron. This is in line with the opinion of Wirakusumah (1999: 30) the prevention and control of iron can be done by (1) increasing the consumption of iron from food, (2) iron supplementation, (3) fortification of iron and prevention of infectious diseases and parasites. Added by Kardjati (in Zahrulianingdyah, 2012: 41) counseling is one of ways for prevention of anemia. The writer agrees and suggests that the occurrence of anemia in women, especially women of productive age, is due to the lack of good nutrition intake due to their eating habits. It is based on some results of research conducted by the writer, that the eating habits in women correlates with the occurrence of anemia. The solutions offered to overcome the occurrence of iron nutrition anemia is changing wrong eating habits by conducting education and training in nutrition for women of productive age of the lower middle class.

The most common symptoms of anemia can be known are (1) easily tired, (2) look pale in the face, lips, tongue, palms and feet as well as nails, (3) dizzy vision, (4) weak (5) fast sleepy and lethargic, (6) short breath, often breathless, (7) fast beat heart, (8) constipation and stomach feels uncomfortable, (9) headache. According Arisman (2004: 147) signs and symptoms of iron deficiency anemia are usually not typical and often not obvious, such as pale, easily tired, palpitating, tachycardia, and hard to breathe, increased susceptibility to infection, certain behavioral disorders, intellectual performance and workability subside. Paleness can be seen on the palms, nails, and palpebra conjunctiva. Anemia can give a bad result for the sufferer (Wirakusumah, 1999: 27) that is to affect to work performance. Based on several research results, light anemia reduces the ability of labor on the plantation, in the fields or other workplace. This is due to the decline in passion of work, because the condition

of the body gets tired, fatigue, weak, and easily sleepy that the work motivation tends to decrease resulting in the decline of work productivity. Additionally it also affects to the body's resistance to infection.

One of efforts to prevent anemia is to consume animal foods, such as red meat, fish, liver, eggs in sufficient quantities, as the opinion of Barasi (2007: 81), useful sources of iron are: (1) lean red meat and eggs; (2) seed pods / dry beans; (3) green leafy vegetables; (4) dried fruit. The various foods have the most complete nutrients. The vegetable foods of iron source are green vegetables, nuts, cereals or grains, and fruits, especially vitamin C. Consuming food that is quite varied in quantity and quality, in accordance with the recommendation of balanced menu can help to prevent iron nutrition anemia. To improve the absorption of iron in the body is recommended to consume vitamin C and avoid drinking tea in conjunction with the main meal, two hours before meal and two hours after eating.

Extensive and persuasive effort is required to induce behavioral changes in society so that people in the community want to adopt food diversification. In the end the only lasting solution in solving the problem of anemia due to iron deficiency is by helping people to consume iron-rich foods regularly, to encourage the intake of iron absorption promoter such as vitamin C and prevent consumption of the excessive inhibiting factors. According Vijayaraghavan (2009: 285) in the prevention and control of nutritional anemia in general are (1) increasing the consumption of iron-rich foodstuff such as nuts, green vegetables, kind of other vegetables and meat, (2) encouraging regular consumption of foodstuff rich in vitamin C, such as citrus, guava and kiwi, (3) increasing the addition of iron-rich foodstuff on additional food for infants, (4) suggesting not to consume foodstuff that can inhibit the absorption of iron, especially for women and children. The most ideal prevention is if given nutritional counseling periodically in order to have a good understanding of nutrition that will have an impact on the formation of good and correct eating habits.

Changing or shifting the eating habits is not easy. Said by Foster and Anderson (2006: 123), the food is formed culturally. Something that will be eaten need to be endorsement of culture. There is not one group, even in a state of acute starvation, will use all available nutrients as food. Because of religious taboos, superstitions, beliefs about health, and a coincidence in history there are good nutritious foodstuffs that may not be eaten, that they are classified as "non-food". Thus, it is important to distinguish between nutrient and food. Nutrient is a concept of bio-chemistry, a substance that is able to preserve and maintain the health of organism that swallow. The food is a cultural concept, a real statement says these substances according to the needs of the body and which has been approved by the people to eat. The opinion is in line with the findings of researchers who say that cultural factors play an important role in the process of the occurrence of nutritional problems in various communities (Suhardjo, 2006: 124). Cultural factors are able to create an eating habits of the people that is sometimes in opposition to the principles of nutritional science. For example, certain ingredient (egg) by the culture of Indian society is considered taboo or abstinence to be consumed by children, especially girls, because it causes jaundice, swelling, and if it is big can be stealer (Suhardjo, 2006: 181). Whereas if viewed in terms of nutrition, the foodstuff has good and complex nutrient content. Sanjur (1982) also confirms the opinion that the daily eating habits is influenced by many factors, including environmental factor, income level, and the most important thing is the cultural factor. The eating problem is not just a matter of biological, but involves elements of psychological, social, and cultural. In line with the opinion, Khumaidi (1989: 112) and Suhardjo (2006: 130) say that the needs to eat is not the only impetus for overcoming hunger, but there is needs for the physiological, psychological, social, and cultural that influence. Martianto and Ariani (2004: 185) say that food consumption is influenced by many factors, not only economic factor but also cultural, the availability of food, education, lifestyle, and so on. Although tastes and choices of society based on the values of social, economic, cultural, religious, knowledge, and accessibility, but sometimes the element of prestige becomes very prominent.

Pattern of food consumption is basically the application form of eating habits. Foster and Anderson (2006: 131) argue that efforts to change eating habits is the longest element to stand on the change. According to Berg (1986: 73), eating habits is formed in a person as a result of the socialization process that is obtained from the environment, including cognitive, affective, and psychomotor aspect. In line with the opinion that refers Bloom's taxonomy theory is Gronlund et al (1970), say that there are three areas of behavior that can be observed as a result of counseling activities, namely:

- 1) Cognitive region, starting from the level of knowing, understanding, using, analysis, synthesis up to evaluation.
- 2) Affective region, starting from the level of receiving, giving, responding, assessing, organizing, up to living.
- 3) Psychomotor region, starting from the ability to perceive, mental readiness, physical and emotional, guided response, mechanism up to complex physical response.

Similarly, the opinion of Graeff et al (1996: 138), say that human behavior is the result of experience and human interaction with the environment that is manifested in the form of knowledge, attitudes, and actions. In other words, behavior is a person reaction to the stimulus that comes from outside and inside him or herself. In connection with those opinions, Suhardjo (1989: 128), says that the eating habits is a social and cultural phenomenon that can give the behavior illustration of the values held by a person or group of people. Leagens, as

quoted from Zahrulianingdyah (2012), says that the individual behavior includes everything that becomes his or her knowledge, attitudes, and usual conducted by him or her (action). As such the behavior does not arise from within the individual, but rather the result of the individual interaction with the environment. Some of the factors that motivate the occurrence of the behavior are 1) the environment condition, 2) personal encouragement, such as wish, feelings, emotions, instincts, needs, desires, intentions, and 3) the objectives to be achieved.

The theory above shows that the behavior of human food consumption obtained with various efforts, since the consideration of what is appropriate and should be eaten, how to get, how to process it, how to eat, and so on. These activities occur repeatedly and eventually will be something the family eating habits. From the family eating habits, will evolve into group eating habits or community. Nutrition education and counseling to women of productive age, are expected to reach the three levels, because the ultimate goal of a nutrition counseling is to obtain a new knowledge, appreciation, and application of good and correct eating habits. Until now the household affairs, especially those related to the way to care of children and prepare food, those are still seen as the work to be performed by women (Zahrulianingdyah, 2009: 32). Thus it appears that the mother plays an important role in the affairs of the family food. The logical consequence of the opinion above is family food consumption behavior is largely determined by the knowledge, attitude, and skill of mother in providing family meal. The knowledge and skill acquired from education and experience that owned by the mother. Education in question can be either formal or non-formal education has contribution to the problem of family welfare. As said by Rogers and Shoemaker (1978), formal education is helpful to underlie the acceptance of non-formal education material that is skill. Maternal involvement in counseling activity of the nutritional problem is expected to positively impact in the provision of family meal. Thus it is expected if the mother's education level is high, then the mother's nutrition knowledge will be high as well and ultimately has an impact on the behavior of good eating habits.

CONCLUSION

The rate of iron nutrition anemia in Indonesia is still quite high, the highest in ASEAN, although the efforts never stop. Various ways have been done is by giving iron tablets, supplementary food, the provision of nutritional counseling, provision of biscuits fortified with iron, and so on. One of the efforts that needs to be intensified is the provision of counseling or education and training in nutrition to change eating habits in women of productive age. Women of productive age in Indonesia are still a cornerstone in the management of food in the family, so that through women of productive age are expected to be realized in good and right family eating habits. Although changing or shifting the eating habits is not easy, because the effort to change the eating habits is an attempt of the most difficult changes to do. But if it is done by persuasion and continuously through the understanding (cognitive), acceptance (affective), and application (psychomotor) in daily meal menu that refers to the balanced nutrition menu, is expected to appear new eating habits that meets nutritional requirements. Individual in the family that is the most responsible for the fulfillment of the nutritional needs of the family is mother, so she becomes the spearhead of the realization of nutritious food, balanced and safe. Nutrition education and training has been given to the mothers, they must be followed by post-training assistance for the change that has taken place is permanent and settling into a new behavior. In addition, there must be a concrete example given by traditional leaders, religious leaders, government and academic communities. It is hoped that the Government through the relevant departments, the various elements of society (social organization, Driving Team of PKK, women's organizations, religious organization) jointly or individually, have a strong commitment to provide nutrition counseling and training in order to form attitudes, good nutrition behavior, that will have an impact on the health of family, community and country.

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