



A QUALITATIVE STUDY TO EXPLORE KNOWLEDGE, ATTITUDES AND DIETARY BEHAVIOR IN PREVENTING NUTRITIONAL PROBLEMS DURING PREGNANCY

Ratna Wulandari¹, *Ahmad Syafiq²

¹Student of Doctor of Public Health Study Program, Faculty of Public Health, University of Indonesia, Depok, Indonesia

²Lecturer of Public Health Study Program, Faculty of Public Health, University of Indonesia, Depok, Indonesia

*Corresponding Author : Email : asq@yahoo.co.uk

ABSTRACT

Anemia during pregnancy is a condition where hemoglobin levels are below 11 gr/dL during pregnancy. In Indonesia, one in two pregnant women experiences anemia. This is exacerbated by the occurrence of chronic energy deficiency during pregnancy. Conditions of anemia and chronic energy deficiency that continue during pregnancy will cause various health problems including the health of the fetus in the womb, even after birth, which has less than optimal growth and development. This research aims to identify determinant factors in preconception nutrition education and develop a framework for preconception nutrition education modules to prevent anemia and chronic energy deficiency during pregnancy. This research method is qualitative by conducting in-depth interviews with pregnant women, women in reproductive health, and health workers which location in Depok City, Indonesia. Data analysis uses thematic analysis. The results show how the importance of education for prospective brides regarding pre-conception nutritional preparation is provided by including elements of ideal pregnancy indicators, balanced nutritious food, and ways to prevent anemia and chronic low energy. The aim of preparing the module was to increase knowledge about healthy pregnancy and avoid nutritional problems, have an attitude that supports nutritional fulfillment and a healthy lifestyle, and have good dietary behavior, especially in regulating food intake. A digital educational media prototype has been created at the following link http://edukasiprakonsepsi.biz.id/Aplikasi_Catin/. The suggestion from this research is that health facilities need to give education about the pre-conception nutritional use of media to make it easier to access information repeatedly.

Keywords: Education; Pre Conception; Anemia



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INTRODUCTION

Adequate nutritional status during pregnancy needs to be considered because it will have a big influence on the child's growth and development. The pregnancy period is a short critical period of human growth and development (window of opportunity). Malnutrition that occurs during this period will cause initial damage to health, brain development, intelligence, school ability, and production capacity that is permanent and cannot be repaired. In pregnant women, if the fetus in their womb experiences malnutrition, their child will be at higher risk of suffering from degenerative diseases (diabetes, hypertension, heart disease, stroke) as an adult compared to those who do not experience malnutrition [1].

In general, babies do not depend on their mother's diet during pregnancy, the baby takes nutrients from the mother's stores, and changes protein and fat in the tissues, which is related to the mother's body composition. The nutritional status of the pregnancy is very important to ensure the availability of nutritional stores. A baby will be born with all the eggs it will have in its lifetime. Therefore, the quality of the eggs reflects the nutritional status of the mother. The quality of the egg (ovum) that will become a grandchild is determined by the nutritional status of the grandmother. This is what underlies the 100-year nutritional flow because it involves 3 generations of the risk of non-communicable diseases [2].

Previous research related to preconception education states that preconception health education is effective in improving health during conception, but is the most difficult in the screening process, and the results of the intervention can be seen during pregnancy [3]. Women who are healthy at the time of conception are more likely to have a successful pregnancy and a healthy child [4]. Fulfilling maternal nutrition affects the development and growth of the fetus which can impact the baby's weight at birth [5], preventing anemia and Chronic Energy Deficiency (CED) in pregnant women means preventing stunting [6], and increasing knowledge Pre-wedding is important to prepare for pregnancy [7]. The government has implemented a Marriage Guidance program where every prospective bride and groom undergoes a health check and is given health counseling as one of the marriage requirements [8]–[10].

Based on the background above, it is known that pre-conception education programs already exist, but have not focused on preventing pregnancy nutritional problems. Researchers are interested in identifying the determinant factors for the success of preconception nutrition education and then developing a preconception nutrition education module framework by conducting research on the Analysis of Preconception Nutrition Preparation Education in Efforts to Prevent Anemia and CED during Pregnancy in Depok City.

Objective

This research aims to identify the determinants of preconception nutrition education and develop a framework for a preconception nutrition education module to prevent anemia and CED during pregnancy which was developed into a digital education module prototype.

Novelty

Several previous similar studies related to pre-conception counseling potentially playing a key role in reducing the risk of maternal obesity are associated with potential risks and complications for

mother and child [11]. The period surrounding conception through early embryonic development, and parental lifestyle may influence the long-term risk of offspring cardiovascular, metabolic, immune, and neurological morbidity. Preconception health campaigns need to take a three-pronged approach namely; obesity, malnutrition, and non-communicable diseases [12]. Almost all women will be open to being asked about future pregnancies, women want to receive advice. Preconception care approaches can be carried out according to each condition [13]. Based on previous research, the current research will more specifically identify the determinant factors for the success of preconception nutrition education and develop a framework for preconception nutrition education modules to prevent anemia and CED during pregnancy in the Depok City area.

METHOD

Qualitative research is designed to identify determinant factors in preconception nutrition education and develop an educational module framework. Data collection using in-depth interviews with informants. The location of this research is the Public Health Center in Depok City, Indonesia.

The informants in this research were some categories of informants at each research center health center, with details; Pregnant Women, Prospective Brides, Health Workers and Family.

The duration of this research is 2-6 months. In this chapter, the research results will be explained which consisted of 2 research stages, namely the development of a research education module obtained from a qualitative study regarding the perceptions of research informants and things experienced by research informants, then the development was carried out into the preparation of a health education module.

RESULT

The results of qualitative research will produce themes identified from the results of deep interviews. Qualitative analysis begins by writing down the results of the interview into a transcript. Next, the informants' answers were grouped based on research questions and the research determined keywords in each answer. The same keywords are grouped into the same category and then grouped into sub-themes. Based on the interview data, the researcher will describe the informant's experience in identifying perceptions related to health conditions, the impact of disease, the benefits of carrying out recommended activities, things that hinder behavior change, things that motivate behavior change, behavior that can be done to maintain or improve health, and trigger factors to change health behavior.

The themes found include; a) Have good dietary behavior so that you can regulate food intake thereby reducing risk factors for anemia and CED, b) Have knowledge about healthy pregnancy, and c) Have an attitude that supports fulfilling nutrition to prepare for pregnancy.

The first theme found from the results of qualitative research is having good dietary behavior, especially in regulating food intake to reduce risk factors for malnutrition, which consists of the sub-themes of motivation in maintaining health and self-confidence that will change behavior.

In this theme, the informant feels that the problem of malnutrition should be avoided, if he becomes

ill due to malnutrition it will certainly affect his family's condition, therefore the informant feels that the risk factors for malnutrition can be minimized.

This certainly requires sufficient knowledge for them to know what food is needed in conditions, especially preconception, and what signs that the body already has ideal nutritional status, apart from that, knowledge about the impact of not meeting nutritional needs will have fatal and long-lasting impacts. If someone does not know that the condition or complaint they have been feeling has a serious impact, of course, they will feel that there is no problem with their health condition and will not have the desire to reduce the complaint they are feeling. This is as revealed in the research of Utina et al. which states that there is a relationship between knowledge and the incidence of CED, insufficient knowledge can increase the risk of CED in pregnant women [14]. This is also explained in Bandura [15], that self-perception and self-confidence are the most important things in taking action to maintain health and behave healthily, this is reinforced by Francois [16] in his research revealed that knowledge, beliefs, and attitudes influence health behavior, perceptions of disease susceptibility and compliance with self-care.

The second theme is having knowledge about Healthy Pregnancy which is described by informants who have Anemia and CED conditions and bride who is at risk. From the results of this interview, information was obtained that in general the participants had insight, knew the causes, knew that they were at risk, and knew the impact of being exposed and the risks that might be experienced during pregnancy, and know how to prevent anemia and CED. Even if you dig deeper into the interview process, the understanding and most of the insights you have are only perceptions based on the experiences of other people and your family, so the activities carried out to prevent anemia and CED are also based on your perceptions. It is known that even though the level of education and awareness about the importance of illness is quite good if a person does not have a comprehensive understanding of the condition of the illness, it will have a significant impact on the ability to carry out self-care [17]. This was explained by Orem that someone who is in a situation of physical, psychological, social, and spiritual limitations can carry out self-care to meet their needs and adapt to the environment according to their abilities [18].

The third theme describes the efforts of informants to check themselves and minimize complaints related to the risk of anemia and CED, such as controlling food, controlling activities, and regularly checking complaints they feel.

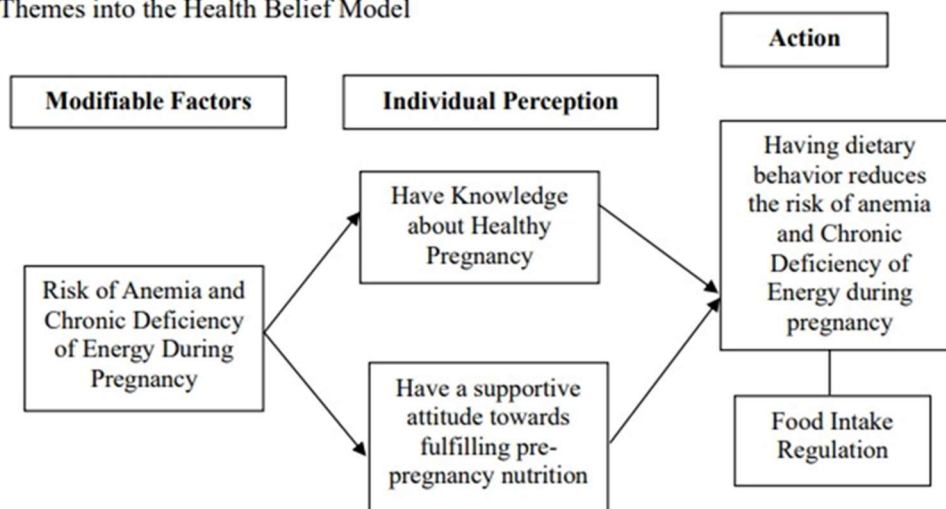
A comprehensive understanding of a healthy pregnancy, factors that aggravate symptoms, and the impacts that can be experienced if this condition is left untreated must be well informed to the prospective bride and groom so that they have optimal conditions before pregnancy. Providing information can be used as skill capital in preparing oneself independently to make efforts to reduce the risk factors one has. From the four themes of qualitative research results, it can be concluded that the role of health workers in promotive and preventive efforts, especially in nutritional problems, is to provide education about risk factors and how to prevent malnutrition during pregnancy so that prospective brides and grooms who are at high risk are those who experience anemia and or CED since the bride will have the self-efficacy (self-confidence) to take care of themselves.

Theme analysis obtained from the results of qualitative research is integrated into the Health Belief Model, several factors that influence informants' health beliefs obtained from the results of deep interviews, namely demographic factors, in this case, age, social psychological factors, namely culture, lifestyle, and level of education, while The structural factors are the risk factors that are owned.

Components of the Health Belief Model obtained from the results of quality training are in-depth interviews with participants' perceptions regarding the vulnerability felt by informants regarding the risks they may experience, perceptions regarding the seriousness of the perceived illness, perceptions about the benefits felt if changes in behavior occur, perceptions about obstacles or Barriers to carrying out these actions and health motivations are grouped into the same category, with sub-themes and themes, so that 2 (two) individual perceptions are obtained, namely trying to adopt a healthy lifestyle. Furthermore, in the action group, it can be modified, namely that there is a signal to act, the informant knows about healthy pregnancy, and armed with this knowledge the informant feels that they have good dietary behavior to reduce their risk factors.

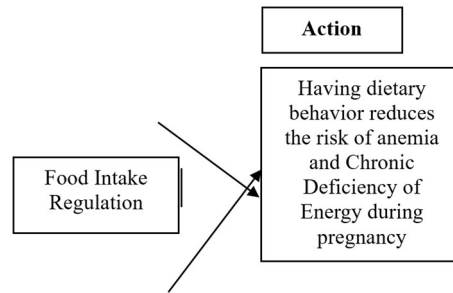
Scheme 5.4

Scheme for Integrating Qualitative Research Result Themes into the Health Belief Model



From the scheme above, it can be seen that individual perception, namely trying to know about healthy pregnancies and attitudes that support fulfilling pre-pregnancy nutrition, mediates between risk factors for anemia and CED during pregnancy and dietary behavior in reducing the risk of anemia and CED. In the results of in-depth interviews, it was found that the informant had tried to adopt a healthy lifestyle, meaning that the informant had knowledge and was aware that he might be at risk of experiencing malnutrition. The level of a person's dietary behavior is influenced by several factors, one of which is caused by the factor that a person has positive information about themselves and their ability to have better dietary behavior. So it can be related that informants who are at high risk of experiencing Anemia and CED during pregnancy already have knowledge and attitudes about the efforts that must be made to maintain their health, and will improve their

behavior in reducing the risk factors for Anemia and CED during pregnancy so that they can carry out self-care will be better.



DISCUSSION

The first theme is to increase knowledge about healthy pregnancy. The knowledge referred to in the module is knowledge about the definition of the pre-conception period, indicators of a healthy pregnancy, information about anemia and CED during pregnancy, and their prevention. Increasing knowledge of prospective brides during the preconception period is very important for prospective brides who are at high risk of experiencing malnutrition during pregnancy, updating information and providing a clear picture of the causes and impacts of anemia and CED during pregnancy. Increasing knowledge among prospective brides also increases women's awareness that after marriage they still need to pay attention to the nutritional needs of their families.

Women who may receive education earlier have a higher chance of good pregnancy outcomes [19]. The two most common factors that are important in preparing for pregnancy include a healthy diet prepared at home with minimally processed ingredients, and constant and comprehensive social support (Hopkins et al., 2018). So preconception nutrition education preparation material is one solution in providing health education.

Second theme is improve attitudes that support fulfilling pre-pregnancy nutrition. Increasing attitudes that support nutritional fulfillment in this module is expected to motivate to improve behavior that can improve the quality of food consumed before pregnancy. Various studies conducted regarding the prevention of anemia and CED during pregnancy are always carried out during pregnancy. It is hoped that this intervention can be carried out earlier so that it can improve the quality of the available egg cells.

The third theme is improving dietary behavior in regulating food intake. Dietary behavior to carry out self-care is the main goal in changing behavior. The results of qualitative research show that informants who have dietary behavior to reduce risk factors for anemia and CED during pregnancy have knowledge and attitudes in the form of efforts to carry out self-management and efforts to find solutions to their health problems. Although the efforts made have not been optimal to reduce the risk factors they have, commitment is needed to change the expected behavior. To change this behavior requires readiness and commitment to be able to modify the lifestyle which is a risk factor for nutritional disorders.

Dietary behavior is a major human agency factor regarding what one thinks, believes, and feels and can influence a person to act. Behavior can describe the extent of a person's knowledge,

emotions, and motivation [20]. The high and low levels of a person's particular behavior towards something are influenced by their motivation, interest, and commitment to acting on that thing [21].

Several studies state that if the behavior in the skills possessed to maintain health is high, then a person will be diligent in carrying out treatment, increase efforts, achieve higher goals, and will be successful in maintaining his health [22].

This Healthy Pregnancy Preparation Education Module aims to provide education to prospective brides in the pre-conception group so that they have knowledge and attitudes that can improve dietary behavior to reduce the risk of anemia and CED during pregnancy. Previous research states that addressing maternal malnutrition and the causes of malnutrition is very important in Southeast Asia, requiring strong partnerships between policymakers, health professionals, and other related sectors [23].

There is still a high prevalence of CED pregnant women in WUS aged 15-19 years and 20-24 years (33.5% and 23.3%). Pregnancy at an early age can increase the risk of malnutrition because during adolescence there is still physical growth. The prevalence of CED in adolescent girls (aged 15 – 19 years) is 36.3% [24]. The prevalence of anemia in pregnant women is 48.9% [25]. This is an urgent need for nutritional preparation before pregnancy, to prevent anemia and CED during pregnancy. Also remember that in general, babies are not dependent on their mother's diet during pregnancy. What happens is that the baby takes nutrients from the mother's stores, and changes protein and fat in the tissues, which is related to the mother's body composition. Therefore, nutritional status during life before pregnancy is very important to ensure the availability of nutritional stores that will be utilized by the baby. Apart from the mother's nutritional stores, the shape and size of the placental surface will also influence the smooth transportation of nutrients from the mother to the fetus [26]. The importance of preparing the mother's body composition is one of the foundations for the need for nutritional preparation during the preconception period.

Previous research on prospective brides and grooms from a cluster randomized trial study found that not a single respondent could meet all indicators of preconception nutritional readiness [27]. Women aged 20-35 years are the most appropriate age for activities to prevent nutritional problems, especially CED, knowledge about nutrition plays an important role in fulfilling a person's nutritional needs, from research in Semarang it is known that there is a significant difference in knowledge which is higher in the group that was given education. preconception nutrition than the group that was not given education [28] and others [29]–[31].

The attitude referred to in this research is the idea of supporting the fulfillment of pre-conception nutrition which is to be instilled through providing education. Increasing knowledge and understanding about healthy pregnancies, as well as information about the risks of anemia and CED and the impacts they cause are expected to improve the attitude of prospective brides in fulfilling nutrition during their pregnancy. Previous related research stated that only a few women acknowledged the importance of preconception nutrition. Based on interviews, it was found that regarding the importance of formal preconception health checks and examinations with health professionals, they were not yet accustomed to carrying out, informants from preconception stated

that they lacked conceptual information about food supplementation. Awareness of perceived health is still limited, so broader awareness is needed regarding preconception health efforts [32]. A woman who is healthy at the time of conception is more likely to have a successful pregnancy and a healthy child. Pregnancy planning is associated with diverse health behavior patterns before conception. Utilizing the preconception period is not always only related to embryonic development and so on; a sharper focus on preconception interventions is needed to improve maternal health and thereby reduce the burden of disease [4].

Poor dietary behavior in the periconceptual period can be modified to encourage behavioral changes in food intake to improve perinatal outcomes and long-term child health [33]. Other research explains that a higher dietary pattern score during pre-pregnancy or early pregnancy is significantly associated with fewer premature births, and dietary behavior during pre-pregnancy and early pregnancy has been proven to be associated with maternal and neonatal health outcomes [34].

CONCLUSION

The results of the analysis show that education for prospective brides about pre-conception nutritional preparation is well provided by including elements of ideal pregnancy indicators, balanced nutritious food, and how to prevent anemia and CED. The benefits of preparing a pre-conception nutrition education module are that there will be increased knowledge about healthy pregnancy and avoiding nutritional problems, having an attitude that supports fulfilling nutrition and a healthy lifestyle, and having good dietary behavior, especially in regulating food intake. A digital education module prototype has been prepared and can be accessed on the website http://edukasiprakonsepsi.biz.id/Aplikasi_Catin/php. The suggestion from this research is that health facilities that facilitate health checks before marriage and create educational media containing pre-conception nutritional preparations that can be taken home to make it easier to access information repeatedly. It is hoped that the bride-to-be can prepare time to meet nutritional needs before entering pregnancy, and can prevent anemia and chronic energy deficiency during pregnancy.

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