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Pregnant Women's Views about Knowledge of Nutritional Needs During Pregnancy based on Characteristics

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Abstract---*Pregnancy is the initial stage of the first thousand days of life. This stage is a golden period because it can determine the health status of the fetus in the future. The purpose of this study is to identify the views of pregnant women about the knowledge of nutritional needs during pregnancy based on several characteristics. This study used a descriptive quantitative method to analyze 60 respondents. The research instrument used is a questionnaire that has been tested for validity and reliability. The results showed that the views of pregnant women regarding the knowledge of nutrition needs in the understanding sub-variables are in a good category (66.6%), the type of nutrition needs is in a good category (66.6%), the factor affecting nutrition is in a good category (53, 3%), the food consumed and avoided is in the sufficient category (46.8%), and the impact of less nutrition in the deficient category (41.8%). It is important to conduct public education and nutrition counseling regularly on the importance of fulfilling the nutrition needs of pregnant women.*

Keywords---*counseling, health status, nutritional needs, pregnant women*

Introduction

The 2019's Sustainable Development Goals (SDGs) include a goal that is related to nutrition for pregnant women. The first target of Goal 3 is reducing the number of maternal mortality to below 70 per 100.000 live births, whereas according to 2012 Indonesian Demographic and Health Survey (IDHS) in the Indonesia Ministry of Health in 2019, the maternal maternity rate (MMR) in Indonesia reached 359 per 100.000 live births which previously in 2007 was only 228 per 100.000 live births. The biggest causes of MMR in Indonesia are bleeding, hypertension in pregnancy, infection, prolonged or obstructed labor, and abortion. Bleeding is the main cause of MMR from 2010 to 2013 and the

highest causes of anemia in pregnant women is the condition of increased iron needs and the lack of iron or Fe consumption which is included in the nutritional needs (Kemenkes RI, 2019).

Nutritional problems in Indonesia and in developing countries are generally dominated by chronic energy deficiency (CED), iron-deficiency anemia, iodine deficiency, vitamin A deficiency, and obesity, especially in big cities. The cause of anemia is closely related to nutritional deficiencies in pregnant women, namely the deficiency of iron (Fe) and folic acid contained in daily food (Supariasa et al., 2012). The lack of nutritional knowledge problem in Indonesia is because pregnant women often not knowing and realizing the importance of nutrition intake during their pregnancy. 81% of pregnant women received or buy Fe tablets, but only 18% of them consumed the tablets as recommended, a minimum of 90 days Fe tablets consumption during pregnancy. The low Fe tablets consumption greatly affects the lack of nutritional intake, namely iron which will increase iron deficiency anemia in pregnant women. In dealing with nutritional problems during pregnancy, the government provides counseling, including counseling about nutrition for pregnant women.

The government also gives Fe and folic acid tablets and provides additional foods for pregnant women who are still lacking in protein (Unicef Indonesia, 2012). Nutrition in pregnant women is influential on the growth and development of the fetus. If a pregnant woman gets adequate and balanced nutrition, the fetus will be healthy. On the contrary, if pregnant women fail to fulfill the nutrition needed during pregnancy, it will have a negative impact or can cause abnormalities to the fetus in the womb. The nutritional status of the mother at the time of conception and pregnancy determines the growth and development of the fetus. Thus, pregnant women need to understand their nutritional needs during the period of conception and pregnancy. The nutritional status of pregnant women before, during, and after pregnancy plays a significant role in the health of mothers and their babies. If maternal nutrition is inadequate, it can cause pregnancy complications such as anemia, hypertension in pregnancy, diabetes in pregnancy, and failure to thrive (Lowdermilk et al., 2013).

Pregnant women need to have adequate knowledge regarding nutritional needs during pregnancy since knowledge or cognitive is a predominant domain and it influences the actions of a person, including pregnant women. Pregnant women who have good knowledge regarding nutrition during pregnancy will mostly have the awareness to meet their nutritional needs properly. On the other hand, if their knowledge of nutritional needs during pregnancy is lacking, they might meet their nutritional needs incorrectly. Knowledge is the result of knowing or sensing a person's object through all senses that they have (eyes, nose, ears, and so on) (Notoatmodjo, 2005). Every person has a different level of knowledge and it is influenced by several factors, both internal factors (age, experience, and education) and external factors (information, environment, socio-cultural, and economic).

Based on a preliminary study on February 17, 2021, the data from West Bandung District Health Office (2020) show that there are 130 pregnant women who are malnourished in Cipongkor sub-district 2020. The Cipongkor community utilizes health service facilities at the Citalem Health Center located in Cipongkor district and every month, there are 62 pregnant women who visit the health center. Additionally, researchers conducted interviews with 10 pregnant women during service hours. The result showed that 7 pregnant women did not know about nutrition for pregnant women, including the nutritional needs and the recommended foods they need to consume. Rooting from the aforementioned phenomenon, the purpose of this study is to identify the views of pregnant women regarding the knowledge of nutritional needs during pregnancy based on several characteristics.

Research Method

This research used a descriptive quantitative method that is describing the views of pregnant women about nutritional needs during pregnancy including the understanding of nutrition for pregnant women, the nutritional needs of pregnant women, the factors that affect nutrition for pregnant women, the foods that should be consumed and avoided during pregnancy, and the impact of inadequate nutrition. The form of sampling technique in this research is total sampling which was carried out on 60 respondents. The research took place in the work area of the Citalem Health Center, Cipongkor district, West Bandung Regency.

The research instrument used a questionnaire containing 25 questions that had been tested for validity and reliability. The validity test was carried out in the working area of the Mukapayung Health Center since it has similar equality and characteristics as the Citalem Health Center in West Bandung Regency. The result of the validity test obtained an r-value of 0.976; meaning that the questions are valid. Additionally, the result of the reliability test showed that Cronbach's Alpha value is 0.86 which can be concluded that the questionnaire is reliable. The research data collection was carried out while still implementing strict health protocols starting from washing hands thoroughly, using masks, and maintaining distance when collecting the data. The research was conducted in April 2021 by providing an informed consent form to respondents regarding the aims and objectives of the research.

Respondents are those who are willing to fill in the research questionnaire and the consent form by signing an agreement in the format provided by the researchers. In conducting this study, the researchers paid close attention to research ethics such as informed consent, anonymity, and confidentiality (Nagarajan & Goodman, 2020; Lee et al., 2018; Mulyani et al., 2017).

Result and Discussion

Table 1
Frequency distribution of respondents' characteristics

No	Characteristics	Criteria	Frequency	Percentage
1	Age	16-25 years old	20	33,3%
		26-35 years old	33	55,1%
		36-45 years old	7	11,6%
		Total	60	100%
2	Education Background	Primary School	29	48,3%
		Middle School	20	33,3%
		High School	11	18,4%
		Total	60	100%
3	Profession	Entrepreneur	8	13,3%
		Labourer	10	16,6%
		Housewife	42	70,1%
		Total	60	100%

Table 1 shows that the majority of the 60 respondents are pregnant women around 26 – 35 years old with 33 people (55, 1%), the educational background characteristics of the respondents is dominated by the primary school that is 29 people (48,3%), and the profession of the respondents is mostly housewife that reached 42 people (70,1%).

Table 2
Frequency distribution of views of pregnant women about nutritional needs knowledge during pregnancy at Citalem Health Center, West Bandung Regency

Category	Frequency	Percentage
Good	14	23,3%
Sufficient	34	56,6%
Deficient	12	20,1%
Total	60	100%

The presented results in Table 2 show that out of the 60 respondents, there are 34 of them (56,6%) have sufficient knowledge. In addition, 14 out of 60 respondents (23,3%) have good knowledge. Lastly, 12 respondents (20,1%) have deficient knowledge regarding nutritional needs during pregnancy.

Table 3
Frequency distribution of knowledge of nutritional needs during pregnancy at Citalem Health Center, West Bandung Regency

No	Knowledge	Criteria	Frequency	Percentage
1	The understanding of nutrition for pregnant women	Good	40	66,6
		Sufficient	18	30,1
		Deficient	2	3,3
2	Nutritional needs during pregnancy	Good	40	66,6
		Sufficient	14	23,3
		Deficient	16	10,1
3	Factors affecting the nutrition for pregnant women	Good	32	53,3

		Sufficient	21	35,1
		Deficient	7	11,6
4	Foods to consume and avoid during pregnancy	Good	25	41,6
		Sufficient	28	46,8
		Deficient	7	11,6
5	The impact of inadequate nutrition	Good	19	31,6
		Sufficient	16	26,6
		Deficient	25	41,8
		Total	60	100%

Table 3 shows that out of 60 respondents, there are 40 people (66,6%) have met the criteria of good knowledge about the meaning of nutrition, and there are also 40 people (66,6%) have met the criteria of good knowledge of nutritional needs. Additionally, there are 32 people (53,3%) who have good knowledge about the factors that affect nutrition for pregnant women, 28 people (46,8%) have sufficient knowledge about foods that must be consumed, and 25 people (41,8%) have deficient knowledge about the impact of inadequate nutrition.

The results of the research of pregnant women's views about the knowledge of nutritional needs during pregnancy at the Citalem Health Center, West Bandung Regency, listed in Table 1 show that 34 of the 60 respondents (56.6%) have sufficient knowledge. This result is caused by the fact that most of the respondents are primary school graduates as many as 29 people (48.3%), the majority of the respondents are around 26 – 35 years old as many as 33 people (55,1%) and the majority of the profession of the respondents is housewife as many as 42 people (70,1%).

This research is in line with the theory stated by [Mubarak & Chayanti \(2009\)](#), where the higher a person's educational background, the easier it is to receive information. On the other hand, if the educational background is low, it will hinder the introduction of new values; in this case, it is related to nutritional needs during pregnancy where the majority of the respondents have a low educational background. While the older a person is, there will be changes in their mental and psychological aspects so the way one's thinking is more mature; in this case, a large number of the respondents are in their early adulthood ([Arrish et al., 2014](#); [Segura et al., 2016](#); [Mulyani, 2018](#)). In add, the age of a person affects the level of ability and maturity in thinking and receiving information the older a person gets, the better they are when compared to the younger ones. The busyness of the mother, especially mothers who are housewives, often results in getting less information and experience related to nutritional needs during pregnancy. In this case, work or profession is a factor that affects knowledge. Evaluating the type of work, those who work that often interact with other people have more knowledge compared to the ones with less interaction with other people. The learning experience at work that is developed to provide professional knowledge and skills as well as a learning experience at work itself will be able to develop the ability to make decisions that are integration of scientific and ethical reasoning.

In table 2 it can be seen that from the 60 respondents observed, 34 respondents (56.6%) have sufficient knowledge. A person's knowledge can be in the form of several factors, namely internal age, experience and education factors. While external factors include Information, Environment, Socio-Cultural and Economic ([Gezimu et al., 2022](#)). Pregnant women are expected to have adequate knowledge related to nutrition during pregnancy because they need more food than usual for the health of themselves and their fetuses. For this reason, pregnant women should meet nutritional needs ranging from energy, folic acid, calcium, iron, protein, fruits and vegetables, lean protein, grains, and milk. The foods that are limited or avoided for consumption during pregnancy are caffeine, fish with low mercury levels, as well as foods that need to be avoided such as alcohol, fish with high mercury levels, unpasteurized foods, and raw meat ([Penney & Miller, 2008](#); [Khajehpour et al., 2013](#); [Fan et al., 2021](#)).

Nutrition in pregnant women is very influential on the growth and development of the fetus. If a pregnant woman gets adequate and balanced nutrition, the fetus she contains will also be healthy. However, if a mother has problems in fulfilling nutrition during her pregnancy, it will have a bad impact or cause abnormalities in the fetus in her womb. If a pregnant woman experiences anemia due to iron deficiency and lasts a long time, it will affect a decrease in the amount of blood to carry oxygen, as a result, the fetus cannot get enough oxygen needed for normal growth, especially in the brain. Another consequence of anemia is the increased risk of preterm delivery. During delivery, the amount of bleeding that is more than normal (> 500 ml) allows the mother to experience infection after giving birth ([Fathonah, 2016](#)).

During the antenatal period, the nutritional needs of the mother increase to compensate for physiological and psychological changes as well as the calculation of nutritional needs for a growing fetus that requires energy, both macro and micronutrients. Pregnant women either in preconception or during pregnancy who do not get enough

nutrients in their diet can cause problems, especially in the poorest regions of the world (WHO Nutrition, 2018). The nutritional intake that must be consumed by pregnant women every day is 135-175 grams of carbohydrates, 80 grams of protein, 10 grams of fat, 25 mg of vitamin A, 10 mg of vitamin D, 15 mg of vitamin E, 70 mg of vitamin C, calcium and phosphorus for 1200- 1500 mg, iron for 15 mg, folic acid for 400 mg and iodine for 200 µg /day.

Malnutrition during pregnancy, especially in the early stages of fetal development, can have adverse effects on the mother and baby, including maternal and infant mortality. To be able to improve adequate nutrition during pregnancy until the puerperium period, the role of nurses or health workers is needed in helping to provide antenatal care (ANC). Therefore, knowledge and fulfillment of good nutrition for pregnant women have an impact on improving the quality of fulfilling nutritional needs. Mothers' knowledge about nutritional needs during pregnancy is important because pregnant women need an additional 300 calories per day during pregnancy (Bakara, 2019). Having a healthy diet during pregnancy is important for it supports the upcoming stage of life. Knowledge of nutrition is important in creating awareness of adequate nutritional intake in pregnant women (Mudor & Bunyarit, 2013). The lack of knowledge about adequate nutrition in pregnant women is one of the causes of malnutrition. Knowledge of nutrition in pregnant women is a predictor of change in dietary habits and is one of the factors that contribute to better nutrition. Thus, pregnant women are expected to have sufficient knowledge to meet increasing dietary demands and achieve optimal nutritional status during pregnancy (Lee et al., 2018).

Maternal body size, dietary practices, and nutritional status before and during pregnancy are important factors for fetal health. Inadequate nutrition, excessive nutrition, and weight gain before and during pregnancy contribute to complications related to fertility (maternal and paternal), fertilization, development of the placenta, embryo, and fetus, fetal size and perinatal complications, resulting in severe pregnancy consequences. not optimal for mother and baby. Women's nutrition and weight should be assessed and increased before, during, and after pregnancy to promote and improve the quality of women's health (Marshall et al 2021).

Therefore, the role of posyandu is very important in efforts to reduce the maternal mortality rate (MMR) and infant mortality rate (IMR) and under-five mortality rate (AKABA) through community empowerment. This requires awareness, willingness and encouragement from the community in utilizing the posyandu program, one of which is health services for pregnant women to regularly come to the posyandu to find out health developments that occur as a preventive measure to obtain easy information and basic health services (Suparto et al., 2022). This is also in accordance with the research results of Fallah et al. (2013), about the Effects of Nutrition Education on Levels of Nutritional Awareness of Pregnant Women in Western Iran that nutrition education interventions will have a positive effect on pregnant women about nutritional awareness (Fallah et al., 2013). The participation of health workers to assist in meeting nutritional needs during pregnancy and the need for improvement of available support systems such as leaflets to increase knowledge of pregnant women (Mundari, 2022).

Conclusion

It can be concluded that the overall knowledge of respondents about nutrition during pregnancy is sufficient. Therefore, it can be recommended to health workers to provide programmed counseling and education about nutrition during pregnancy so that the health status of mothers and babies continues to improve. In addition, further research related to the factors that affect the fulfillment of the nutritional needs of pregnant women during pregnancy need to be conducted.

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