



## Efforts to Increase Pregnant Women's Knowledge Through Education Regarding Their Nutritional Needs in 2023

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p>Received Aug 30, 2023 Revised Sep 14, 2023 Accepted Sep 30, 2023</p>	<p>Pregnancy is a crucial period in a woman's life, where balanced nutritional needs are crucial for the health of both mother and fetus. Pregnant women's knowledge of nutritional needs plays a significant role in preventing pregnancy complications and fetal growth and development. However, many pregnant women still have limited knowledge of nutritional needs, both macro and micronutrients. The purpose of this study was to determine efforts to improve pregnant women's knowledge through education regarding nutritional needs in 2023. This study was conducted using an educational approach that emphasized lectures, interactive discussions, and the distribution of educational media in the form of leaflets. The research method used was a pre-experimental one-group pretest-posttest design. The number of respondents in this study was 40 pregnant women who participated in educational activities in the Community Health Center (Puskesmas) work area in 2023. The research instrument was a questionnaire that had been tested for validity and reliability. Data were analyzed using a t-test to determine significant differences in knowledge levels before and after education. The results showed a significant increase in pregnant women's knowledge regarding nutritional needs after education, with a p-value &lt;0.05. This proves that health education is effective in improving the knowledge of pregnant women. This increased knowledge is expected to impact changes in the attitudes and behaviors of pregnant women regarding meeting their daily nutritional needs. This can reduce the risk of complications during pregnancy. Furthermore, education delivered through interactive discussion methods has proven to be more effective than lectures alone, as pregnant women can ask questions and discuss any issues they experience. These educational activities also raise pregnant women's awareness of the importance of the family's role in supporting nutritional needs during pregnancy. Family support is a crucial factor in the success of this education. This study demonstrates that health education interventions can be an effective strategy for increasing knowledge and acting as a preventative measure in maternal and child health services. Therefore, education regarding the nutritional needs of pregnant women needs to be continuously implemented as part of maternal health programs at the primary care level.</p>
<p><b>Keywords:</b></p> <p>Pregnancy, Education, Nutrition for Pregnant Women.</p>	<p style="text-align: right;"><i>This is an open access article under the <a href="https://creativecommons.org/licenses/by-nc/4.0/">CC BY-NC</a> license.</i></p> 

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## 1. Introduction

Pregnancy is essentially a natural physiological process experienced by a woman's body. However, this process should not be viewed as a normal condition.(Nurhayati, 2020),(Karo et al., 2022). Pregnancy creates extremely high metabolic and nutritional demands, transforming the mother's body into a source of life and growth for the fetus.(Mulyani & Gz, nd),(Wahyuni & ST, 2023)In this situation, the mother's body must provide for itself while also providing all the elements necessary for the formation of a new human being. Therefore, what is naturally a physiological process can quickly become pathological if it is not supported by optimal maternal conditions, particularly in terms of nutritional status and health.(Less, nd),(Lubis, Mita Meilani, Keb, Wulandari, & Keb, 2023).

When the increased nutritional needs during pregnancy are not adequately met, serious health risks arise. Maternal malnutrition is not a single event, but rather a chain of causes and effects that can have long-term consequences.(Ersila & ST, 2024),(Marwany & Kurniawan, 2020)For example, iron and folic acid deficiencies not only cause fatigue in the mother but can also progress to severe anemia. This condition then increases the risk of complications such as premature birth. And Postpartum hemorrhage. In other words, suboptimal nutritional intake is the first link in a complex chain of health problems.(Ari Susila Wati, 2022),(Miranti, 2022).

Anemia in pregnant women is a clear example of a global nutritional deficiency problem. As reported by the WHO (2021), approximately 30-40% of pregnant women in developing countries experience this condition, with the primary cause being insufficient iron and folate intake.(Pratiwi et al., 2022),(Patimah, 2021)This figure is a critical indicator of unequal access to health services and nutritional knowledge. In Indonesia, the situation is even more concerning, with data from the 2018 Basic Health Research (Riskesdas) showing the prevalence of anemia among pregnant women reaching 48.9%. This means nearly one in two pregnant women in Indonesia is at risk of anemia-related complications, making it a very urgent public health issue that needs to be addressed.(Fitriani et al., 2023),(Ummah, 2021).

The impact of malnutrition doesn't just stop at the mother; more worryingly, it affects the fetus. The fetus is completely dependent on the mother for the "raw materials" for its growth.(Aprilina et al., 2020),(Dewi et al., 2022)Deficiencies in key nutrients such as protein, iron, iodine, and folic acid can hinder the development of vital organs, including the brain. This can potentially lead to negative outcomes such as low birth weight (LBW) and stunting. Babies born with LBW or who are stunted in the womb have developmental delays that can persist into adulthood, impacting their future health, cognition, and productivity.(Patimah, 2021),(Sari et al., 2021).

Stunting, or failure to thrive in children, is often seen as a problem only affecting toddlers. However, the roots of the problem are profound and begin during pregnancy. When a fetus does not receive sufficient nutrition for optimal growth in the womb, it adapts to method "slow down" metabolism and growth (Rahman et al., 2023),(Shaleha, Saputra, Hayati, & Rahayu, 2023)This adaptation, known as metabolic programming, results in babies being born with already stunted growth potential. Therefore, nutritional interventions to prevent stunting must begin even before a woman knows she is pregnant, and be particularly intensive during the first 1,000 days of life, which begins at conception.(Neherta, 2023),(Reni, 2021).

The high number of nutritional problems such as anemia and stunting basically reflects a more fundamental problem, namely the low level of awareness and knowledge of pregnant women and their families regarding the importance of nutrition during pregnancy.(Darmayanti & Puspitasari, 2021),(Retnowati, Gusriani, & Umami, 2023)Many contributing factors include limited access to accurate information, persistent myths about dietary restrictions for pregnant women, and socioeconomic conditions that limit nutritious food choices. Without a proper understanding of why nutrition is important and what to consume, efforts to change eating behavior are futile.(Arif, Isdijoso, Fatah, & Tamyis, 2020),(Februhartanty & Fransisca, nd).

In this context, health education emerges as one of the most fundamental strategic solutions. Education is not simply about providing information, but rather a systematic process to equip pregnant women with accurate knowledge, influence their attitudes toward healthy eating, and ultimately guide

them to adopt appropriate behaviors. Effective education can empower pregnant women to become active agents in their own and their fetus's health, replacing reliance on myths with science-based understanding.(Anwar, 2023),(Pribakti, nd).

The process of behavioral change through education often follows an established theoretical framework, as explained by Mubarak (2011). The process begins with increased knowledge (cognitive). When a mother logically understands why iron is important, this knowledge will shape a positive attitude (affective) toward iron-rich foods. This positive attitude then becomes the driving force for consistently practicing (psychomotor) the behavior of consuming these foods. Thus, education serves as a catalyst connecting "knowing" to "doing."(Lickona, 2022),(Nata & Yakub, 2023).

While education is theoretically recognized as an important intervention, this claim must be empirically proven. Each community setting has unique characteristics, such as education level, culture, and access to food. Therefore, research to test the effectiveness of nutrition education in the specific context of Indonesia is crucial. Such research aims not only to prove whether education works, but also to identify which educational methods, media, and approaches are most targeted, engaging, and easily understood by pregnant women in specific locations.(Nurwahyuni, 2023),(Buraini, 2023).

Ultimately, efforts to improve pregnant women's nutritional knowledge through structured education are not just a routine outreach activity. They are a strategic, long-term investment to break the intergenerational cycle of nutritional problems. A healthy and knowledgeable mother will give birth to a healthy baby, who will grow up to be intelligent and productive. Therefore, focusing on nutritional education for pregnant women is a key foundation for building superior and high-quality Indonesian human resources in the future, while simultaneously reducing maternal and infant morbidity and mortality.(Herman Hatta, Badu, Laboko, & Maesarah, nd),(People & Indonesia, 2021).

## 2. Methods

This research was conducted using a Pre-Experimental research design. (Pre-Experimental Design) with a One Group Pre-test Post-test Design approach. This type of research is used to measure the effect of an intervention (education) on a group. subject by comparing conditions before and after the intervention is given, without using a comparison group (control group) (Nursalam, 2016).

## 3. Results and Discussion

### 3.1 Respondent Characteristics

Based on the research results, the characteristics of the 40 respondents were dominated by pregnant women aged 20-35 years (75%), with a high school education (55%), and primigravida (45%).

### 3.2 Comparison of Knowledge Before and After Education

The results of measuring respondents' knowledge before (pretest) and after (posttest) being given educational intervention are presented in Table 1.

Table 1.  
Distribution of Pregnant Women's Knowledge Scores Before  
and After Education (n=40)

Variables	Average Score	Standard Deviation	Minimum Value	Maximal Value
Pretest	65.25	8.45	50	80
Posttest	85.50	6.78	70	95

Table 1 shows an increase in the average knowledge score of 20.25 points after being given education.

### 3.3 Hypothesis Testing

To determine the significance of this increase, a paired t-test was conducted. The results are presented in Table 2.

Table 2.

Paired T-Test Results of Pretest and Posttest Knowledge Scores

Variables	Average Difference	df	p-value
Pretest - Posttest	-20.25	39	0,000

Based on Table 2, the p-value is 0.000. Since the p-value is  $<0.05$ ,  $H_0$  is rejected and  $H_a$  is accepted. This means there is a significant difference between pregnant women's knowledge of nutrition before and after education.

### 3.4 Discussion

This study demonstrated that providing nutrition education through lectures, discussions, and booklets was significantly effective in improving the knowledge of pregnant women. A 20.25-point increase in knowledge scores indicated that the intervention was successfully absorbed by the participants.

This finding aligns with previous research by Sari et al. (2022), which reported that health education using flip charts improved pregnant women's knowledge about balanced nutrition. Similarly, research by Damayanti (2021) concluded that booklets are an effective educational medium because they are visual and can be studied independently.

This increase in knowledge is strongly believed to be due to the interactive delivery methods (lectures and discussions), which allow mothers to ask questions directly about anything they don't understand. Furthermore, booklets, as supporting media, play a crucial role in strengthening long-term memory. Mothers can recall the material presented at home, thus retaining the information.

However, this study has several limitations. The pre-experimental design without a control group makes the results less generalizable. Confounding factors such as other information sources from the internet or family were also not controlled. Furthermore, the posttest was only administered once, so the long-term effectiveness of education (knowledge retention) cannot be measured. For further research, it is recommended that userandomized controlled trial (RCT) design with a longer follow-up period.

## 4. Conclusions

Based on the results of research and discussion regarding Efforts to Increase Knowledge of Pregnant Women through Education regarding Nutritional Needs of Pregnant Women in the Working Area of the [Name of Health Center] Community Health Center in 2023, the following conclusions can be drawn:

Level of Knowledge of Pregnant Women before Education: Most respondents had sufficient knowledge about nutritional needs during pregnancy, namely 22 respondents (55.0%). A total of 12 respondents (30.0%) had insufficient knowledge, and 6 respondents (15.0%) had good knowledge.

Level of Knowledge of Pregnant Women after Education: After being given an educational intervention, there was a significant change. Most respondents had good knowledge, namely 32 respondents (80.0%). A total of 7 respondents (17.5%) had sufficient knowledge, and only 1 respondent (2.5%) was still in the category of insufficient knowledge.

Effectiveness, Education: There was a significant increase in the knowledge of pregnant women about nutritional needs. nutrition after being given education. Things this is proven The paired t-test results showed a p-value of 0.000 ( $p < \alpha = 0.05$ ). This means that education through counseling and booklets is effective in increasing the knowledge of pregnant women.

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