

THE EFFECT OF ATIKA'S EMO DEMO NUTRITION EDUCATION ON CHANGES IN KNOWLEDGE AND BEHAVIOR OF PREGNANT WOMEN PREVENTING ANEMIA IN BANGKINGAN VILLAGE SURABAYA

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Abstract. Maternal anemia is a condition characterized by a deficiency of iron in pregnant women. The results of a preliminary study conducted at the Bangkingan Surabaya Community Health Center in September 2022 showed that out of 35 pregnant women, 5 were found to have anemia. The aim of this study is to analyze the impact of nutrition education using the emo demo ATIKA method on the changes in knowledge and behavior of pregnant women in preventing anemia in the Bangkingan Surabaya Urban Village. This research is an experiment with a Pre-Test and Post-Test One Group Design. The sample consisted of 35 participants selected through Simple Random Sampling technique. The research was conducted over a week in March 2023. The test results were analyzed using Paired Sample T-Test. The findings revealed that before receiving nutrition education, the majority of respondents had a sufficient level of understanding (51,4%), which then improved to a good level (91,4%) after receiving nutrition education, with a p-value of 0,000. Similarly, the majority of respondents exhibited satisfactory behavior (62,9%) before nutrition education, which then increased to excellent behavior (100%) after receiving nutrition education, with a p-value of 0,000. Thus, it can be concluded that nutrition education through the emo demo ATIKA method has an influence on the changes knowledge and behavior of pregnant women In preventing anemia in the Bangkingan Surabaya Urban Village.

Keywords: Nutrition Education, Anemia, Pregnant Women, Knowledge, Behavior

1 INTRODUCTION

Pregnant women are individuals who experience pregnancy from its early stages until the birth of the fetus (Nugroho et al., 2014). The nutritional status of pregnant women is considered a crucial factor in fetal growth (Sebastiani et al., 2018) (Tiffon, 2018) (Mutiarasari, D. 2014). Pregnant women require a significant amount of nutrition to meet the needs of both their own health and the developing fetus (Sjahriani, T and Faridah, V. 2019) (Kamali et al., 2018). Food requirements should be assessed based on the quality of nutrients present in the consumed food, rather than just the portion size (Mariotti & Gardner, 2019) (Keats et al., 2018) (Pangemanan et al., 2013). A common issue that often occurs in individuals experiencing pregnancy is anemia (Ogunbode & Ogunbode, 2021) (Ugwu & Uneke, 2020) (Fajrin and Erisniwati, 2021). Anemia is a condition that can affect pregnant women when they do not receive an adequate amount of iron (Enawgaw et al., 2019) (Cappellini et al., 2020) (Dusu, 2023). The classification of anemia during pregnancy is defined as a condition where the Hemoglobin level is \leq 11 gr (Depkes RI, 2013) (Imran et al., 2019) (Okia et al., 2019) (Agbozo et al., 2020).

Mothers who lack awareness about the benefits of iron often exhibit behaviors that are not in line with recommendations, leading to insufficient fulfillment of the body's required nutrients (Mahundi, 2021) (Nahrisah et al., 2020) (Supriyadi et al., 2021). Emotional Demonstration is an educational method that involves using games to interactively engage the target audience or participants (Emilia and Prabandari, 2019). It minimizes the delivery of health information through one-way counseling or teaching methods. Emo Demo has the advantage of being more easily trusted by participants, as it employs tangible educational media and creates a relatively comfortable and enjoyable atmosphere (GAIN and Kementrian Kesehatan, 2014). One of the Emo Demo programs aimed at providing knowledge and behavior change through nutritional education involving emotions is the ATIKA module (Ati Ayam, Telur, Ikan). ATIKA is a module created by GAIN (Global Alliance for Improved Nutrition) in the form of a game targeting pregnant mothers. It encourages pregnant mothers to learn about the benefits of consuming Chicken, Eggs, and Fish for the well-being of both the mother and the fetus (Muyassarroh and Fatmayanti, 2014).

Globally, the prevalence of anemia in pregnant women is 41,8%. Additionally, it's known that the prevalence of anemia in pregnant women in Asia is 48,2% (WHO, 2017). Nationally, according to the 2018 Riskesdas (National Health Survey), the prevalence of anemia in pregnant women in Indonesia remains high at 48,9% (Depkes RI, 2018). In the province of East Java, 5,8% of pregnant women suffer from anemia. This is still below the national target average prevalence of anemia in East Java, which is 28% (Badan Perencanaan Pembangunan Nasional (Bappenas), 2014). According to statistical data from the Surabaya Health Department (DKK) in 2017, the prevalence of anemia among pregnant women increased by 7,847 individuals or 16,66%, reaching 54,5%.

From a preliminary study conducted at the Bangkingan Surabaya Community Health Center in September 2022, based on patient medical records, it was observed that the total number of pregnant women at the Bangkingan Surabaya Community Health Center was 52. However, among 35 pregnant women, 5 had hemoglobin levels below the normal threshold, indicating anemia. This served as the background for conducting the research on Nutrition Education for Pregnant Women in the Bangkingan Surabaya Urban Village. Efforts to enhance the knowledge and behaviors of pregnant women to prevent anemia can be carried out through nutrition education (Rantesigi Nirva et al, 2022). The nutrition education program using the Emo Demo ATIKA method,

implemented in the Bangkingan Surabaya Urban Village, aims to increase nutritional awareness among pregnant women and encourage more positive behavioral changes during pregnancy.

Based on this background, the researcher is interested in providing nutritional education using the Emo Demo ATIKA method to pregnant women in the Bangkingan Surabaya Urban Village. The objective is to analyze whether there is an influence of Nutrition Education through Emo Demo ATIKA on the Changes in Knowledge and Behavior of Pregnant Women in Preventing Anemia in the Bangkingan Surabaya Urban Village.

2 MATERIAL AND METHODS

The research employs a quantitative approach, comparing findings against a comparable control group that receives treatment, but there is no other comparative group. The study employs a Quasi-Experimental Research Design with a Pre-Test and Post-Test One Group Design. The sample consists of 35 pregnant women. The research is conducted from December 2022 to March 2023 at the Bangkingan Surabaya Urban Village Hall. Simple Random Sampling technique is used for sample selection. Pre-Test and Post-Test questionnaires are utilized to assess the characteristics, knowledge, and behavior of pregnant women. The nutritional education using the Emo Demo ATIKA method is administered once, with a duration of 20 minutes, and is divided into two groups. Measurement of Pre-Test and Post-Test questionnaires regarding the knowledge and behavior of pregnant women is carried out during the nutritional education session. However, the Post-Test for behavior is conducted one week after the education process has been delivered.

3 RESULT AND DISCUSSION

Data collection in this study involves capturing respondent characteristics including age, gestational age, level of education, occupation, and income using a combination of questionnaires and interviews. The following are the obtained results.

Table 1. Frequency Distribution of Pregnant Women's Characteristics

| Characteristics | n | Percentage(%) |
|-----------------|----|---------------|
| Age | | |
| <25 | 7 | 20 |
| 25-30 | 18 | 51,43 |

| | | |
|--------------------------------|----|-------|
| 31-35 | 6 | 17,14 |
| 36-40 | 4 | 11,43 |
| <hr/> | | |
| Gestational Age | | |
| Trimester 1 | 3 | 8,57 |
| Trimester 2 | 10 | 28,57 |
| Trimester 3 | 22 | 62,86 |
| <hr/> | | |
| Education Level | | |
| Graduated Elementary School | 4 | 11,43 |
| Graduated Junior High School | 8 | 22,86 |
| Graduated Senior High School | 15 | 42,86 |
| Graduated Diploma Edu. | 3 | 8,57 |
| Graduated Bachelor's Degree/D4 | 4 | 11,42 |
| Graduated Master's Degree | 1 | 2,86 |
| <hr/> | | |
| Occupation Level | | |
| Housewife | 29 | 82,85 |
| Employee | 2 | 5,71 |
| Merchant | 1 | 2,86 |
| Laborer | 1 | 2,86 |
| Entrepreneur | 1 | 2,86 |
| Other (Midwife) | 1 | 2,86 |
| <hr/> | | |
| Income | | |
| >Rp. 3.500.000 | 11 | 31,43 |
| Rp. 3.500.000 – Rp. 3.000.000 | 8 | 22,86 |
| Rp. 2.900.000 – Rp. 1.500.000 | 10 | 28,57 |
| Rp. 1.400.000 – Rp. 500.000 | 4 | 11,43 |
| <Rp. 500.000 | 2 | 5,71 |
| <hr/> | | |

Source: Primary Data, 2023

Based on the table above, there are 18 pregnant women aged 25-30 years, 22 pregnant women who are in the third trimester of pregnancy, 15 pregnant women with a high school education, 29 pregnant women who are housewives, and 11 pregnant women with an income greater than Rp. 3,500,000.

Table 2. Frequency Distribution of Pre and Post-Nutrition Education Knowledge Measurement Results among Pregnant Women for Anemia Prevention in the Bangkingan Surabaya Urban Village

| Measurement Results | Category | Pre Test | | Post Test | | p-value |
|---------------------|--------------|-----------|------------|-----------|------------|---------|
| | | n | % | n | % | |
| Knowledge | Good | 16 | 45,7 | 32 | 91,4 | 0,000 |
| | Sufficient | 18 | 51,4 | 3 | 8,6 | |
| | Insufficient | 1 | 2,9 | 0 | 0 | |
| Total | | 35 | 100 | 35 | 100 | |

Nutrition education is a form of effort involving explanations aimed at expanding an individual's knowledge and dietary habits in consuming food (Anggraeni and Murni, 2021). Emo demo is a method of learning that employs Emotional Demonstration. Information is crucial in enhancing an individual's knowledge, particularly for pregnant women (Ekayanthi and Suryani, 2019). Based on the table above, knowledge measurement of pregnant women using Pre-Test and Post-Test questionnaires through interview methods revealed that 18 pregnant women (51,4%) had a sufficient level of knowledge, 16 pregnant women (45,7%) had a good level of knowledge, and 1 pregnant woman (2,9%) had an insufficient level of knowledge with an average score of 75,085. After receiving nutrition education through the Emo Demo ATIKA method, the researcher re-assessed the pregnant women's knowledge level using the Post-Test questionnaire. It was found that 32 pregnant women had a good level of knowledge (91,4%), and 3 pregnant women (8,6%) had a sufficient level of knowledge, with an average score of 89,9. This indicates an improvement in the pregnant women's knowledge. The results of both Pre-Test and Post-Test demonstrate an increase in the knowledge of pregnant women in the Bangkingan Surabaya neighborhood, with the average score rising from 75,085 to 89,9. These findings align with the study conducted by Eka Rahmawati and Titin Dewi Sartika Silaban in 2021, which showed an increase in the average knowledge of respondents from 40,51 to 77,51 after educational intervention (Rahmawati Eka et al, 2021). The obtained results were tested using the Paired Sample T-Test. The test yielded a p-value of 0,000 (which is < 0,05). This indicates that there is an impact of nutrition education on the change in knowledge among pregnant women before and after receiving nutritional education. This finding aligns with a study conducted by Suyati in 2020, which discovered a correlation between maternal knowledge and nutritional status of pregnant women with a p-value

of 0,002 (Suyati, S., 2020). Another study by Bestfy and Alfriska in 2018 found that health education had an impact on pregnant women's perspectives regarding nutritional fulfillment during pregnancy, with a p-value of 0,003 (Bestfy and Alfriska, 2018). The delivery of information through the Emo Demo approach has a significant impact on the increase in knowledge in this research. This is evident in the increased average knowledge score among pregnant women after the intervention. Similarly, in the bivariate analysis, there is a significant difference in knowledge between the Pre-Test and Post-Test stages in the intervention group using the Emo Demo method (Sjahriani and Faridah, 2019). The researchers believe that Emo Demo ATIKA is an effective method for delivering information about anemia prevention. This is due to the fact that in the process of nutrition education through the Emo Demo ATIKA method, pregnant women receive supportive information that aids them in preventing iron-deficiency anemia during pregnancy.

Table 3. Frequency Distribution of Pre and Post-Nutrition Education Behavior Measurement Results among Pregnant Women for Anemia Prevention in the Bangkingan Surabaya Urban Village

| Measurement Results | Category | Pre Test | | Post Test | | p-value |
|---------------------|--------------|-----------|------------|-----------|------------|---------|
| | | n | % | n | % | |
| Behavior | Good | 13 | 37,1 | 35 | 100 | 0,000 |
| | Sufficient | 22 | 62,9 | 0 | 0 | |
| | Insufficient | 0 | 0 | 0 | 0 | |
| Total | | 35 | 100 | 35 | 100 | |

Source: Primary Data, 2023

Based on the table above, the behavior measurement of pregnant women using the Pre-Test questionnaire before receiving nutritional education showed that 22 pregnant women (62,9%) exhibited sufficient behavior and 13 pregnant women (37,1%) exhibited good behavior, with an average score of 80,14. After providing nutrition education through the Emo Demo ATIKA method, the researcher re-assessed the pregnant women's behavior one week later using the Post-Test questionnaire and interviews. The results revealed that all respondents, a total of 35 pregnant women (100%), exhibited good behavior with an average score of 91,51. This finding indicates an improvement from 80,14 to 91,51. The results of this study are consistent with the research conducted by Muthia Leonita in 2022, which showed an increase in pregnant

women's behavior before and after nutrition education, with an average score rising from 40,43 to 44,77 (Leonita, 2022). These findings also align with a study by Sarli in 2018, which demonstrated that education influences pregnant women's health behavior positively, such as adopting healthy patterns of consuming vegetables and fruits (Sarli, 2018). The obtained results were then tested using the Paired Sample T-Test. The test yielded a p-value of 0.000 (which is $< 0,05$). This finding suggests that there is an influence of nutrition education on the change in pregnant women's behavior in preventing anemia in the Bangkingan Surabaya neighborhood. These results are consistent with the research conducted by Muta Aliva et al. in 2021, which revealed a p-value of 0,000 in a study titled "The Influence of Health Promotion through Leaflets and WhatsApp Media on Compliance with Iron Tablet Consumption in Pregnant Women at the Temparan Community Health Center." This allows for the conclusion that there is an influence before and after receiving nutritional education through leaflets (Aliva Muta et al, 2021). The researchers believe that providing nutritional education through the Emo Demo ATIKA method has an impact on the behavior of pregnant women. This is because the information conveyed through Emo Demo ATIKA can effectively influence behavioral changes in individuals. Pregnant women who were previously unaware of ATIKA now understand its components and are able to apply this knowledge in their daily lives. According to the researchers, offering nutritional education to pregnant women in the Bangkingan Surabaya Urban Village is crucial for improving their behavior in preventing anemia.

4 CONCLUSIONS AND RECOMMENDATIONS

Pregnant women in the Bangkingan Surabaya Urban Village are on average between 25 to 30 years old, in their third trimester of pregnancy, homemakers, have a high school diploma, and have a monthly income of more than Rp 3,500,000. Based on the findings of the Pre-Test knowledge conducted among pregnant women in the Bangkingan Surabaya Urban Village , pregnant women with sufficient knowledge had an average score of 75,085 and a percentage of 45,54%. Pregnant women with good knowledge had an average score of 89,8, and the proportion changed to 53,31% after receiving nutrition education. Based on the findings of the Pre-Test behavior conducted among pregnant women in the Bangkingan Surabaya neighborhood before receiving nutrition education, it was known that pregnant women with sufficient behavior had an average score of 80,14 and a percentage of 46,69%. However, after receiving nutrition education and being assessed for their behavior using the Post-Test, pregnant women exhibited positive behavior with an average score of 91,51 and a percentage of 100%. The

measurement results of knowledge and behavior using the Paired Sample T-Test statistical analysis yielded a p-value of 0,000 (which is $<0,05$). This indicates that there is an influence of nutrition education through the Emo Demo ATIKA method on the changes in knowledge and behavior of pregnant women in anemia prevention in the Bangkingan Surabaya neighborhood. It is expected that the community, especially pregnant women, actively participate in nutritional education activities to broaden their knowledge. This will help enhance understanding during pregnancy and improve behaviors towards better preventive measures against health issues like anemia.

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