ASTEEC Conference Proceeding: Applied Science
3rd International Conference on Obstetricians Participating in Training for Innovative Measures to Advance Leadership 2025 (OPTIMAL 2025)
14 June 2025 (Online)

Provision of a Nutritious Meal Plan Effectively Improves Body Weight Among Mothers at Risk of Chronic Energy Deficiency

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Abstract. Poor nutritional status of pregnant women before and during pregnancy is a major cause of various serious health problems for both mother and baby. These include the risk of low birth weight, preterm birth, and neonatal and prenatal mortality. To determine the effectiveness of providing a healthy diet in increasing body weight among mothers at risk of chronic energy deficiency at Wara Selatan Public Health Center in 2025. This study used a quasi-experimental method with a one-group pretest-posttest design. The population consisted of all pregnant women with low body weight during pregnancy in the working area of Wara Selatan Public Health Center. A total of 60 respondents were selected using purposive sampling. Data were analyzed using the Program for Social Science with a simple logistic regression statistical test and a significance level of $\alpha = 0.05$. The P-value was 0.013, indicating that the provision of a healthy diet was effective in increasing maternal body weight. Based on these results, it can be concluded that providing a healthy diet has a significant effect on improving maternal weight during pregnancy. Based on the T-test, the P-value was found to be 0.013, indicating that the provision of a healthy diet has a significant impact on increasing body weight in pregnant women. It can be concluded that a healthy diet is effective in improving maternal nutritional status.

Keywords: Healthy Diet, Maternal Body Weight, Chronic Energy Deficiency.

INTRODUCTION

Poor nutritional status of pregnant women before and during pregnancy is a major cause of various serious health problems for both mothers and their babies. These conditions may result in low birth weight, preterm birth, and increased risk of neonatal and prenatal mortality, despite numerous nutritional improvement efforts being undertaken in many countries [1].

Undernutrition in pregnant women can lead to various maternal risks and complications, including anemia, bleeding, inadequate weight gain, and increased susceptibility to infectious diseases. Inadequate nutrition also negatively affects the labor process, potentially causing prolonged and difficult labor or even preterm delivery [2].

Nutritional intake plays a crucial role in determining the health of both the pregnant woman and the fetus. Nutritional requirements during pregnancy increase by approximately 15% compared to non-pregnant women. This nutritional increase is essential to support the growth of the uterus, breasts, blood volume, placenta, amniotic fluid, and fetal development (accounting for about 40%), while the remaining 60% supports maternal tissue growth [3].

METHODOLOGY

This study employed a quasi-experimental design with a one-group pretest-postest approach. The research involved a single experimental group, in which participants were given education on a healthy diet both before and after the intervention, and the differences were then observed. The study will be conducted in the working area of Wara Selatan Public Health Center, Palopo City,

South Sulawesi Province. The population in this study consists of all pregnant women at risk of chronic energy deficiency in the working area of Wara Selatan Public Health Center, Palopo City, South Sulawesi Province. A total of 60 respondents were selected using purposive sampling.

RESULTS

3.1.1. Pregnant women's body weight before healthy diet education

Table 1. Pregnant women's body weight before receiving Healthy diet education

Mean	Max	Min	Std Deviation
53,8900	45,0	64,0	5,92255

Based on Table 3.1, it is known that the average body weight of pregnant women before receiving healthy diet education was 53.8 kg, with a minimum weight of 45.0 kg, a maximum weight of 64.0 kg, and a standard deviation of 5.92255.

3.1.2. Maternal body weight after receiving healthy diet education

Table. 2. "Distribution of Pregnant Women's Body Weight After Healthy Diet Education in the Working Area of Wara Selatan Public Health Center in 2025"

Mean	Max	Min	Std Deviation
56,3500	70,0	46,0	7,65234

Based on Table 3.2, it is known that the average body weight of pregnant women after receiving healthy diet education was 56.3 kg, with a minimum weight of 46.0 kg, a maximum weight of 70.0 kg, and a standard deviation of 7.65234.

3.1.3. Chronic Energy Deficiency Following Healthy Diet Intervention

Tabel.3. Distribution of Chronic Energy Deficiency Cases After the Provision of a Healthy Diet in the Working Area of Wara Selatan Public Health Center in 2025

Mean	Max	Min	Std Deviation
56,3500	70,0	46,0	7,65234

Based on Table 3.3, it is known that the incidence of chronic energy deficiency (CED) among pregnant women before the provision of a healthy diet showed an average body weight of 56.3 kg, with a minimum weight of 46 kg, a maximum weight of 70 kg, and a standard deviation of 7.65234.

3.1.4. Bivariate Analysis

Table 4.

Weight	N	Mean	*P*
Pre-test	30	53,8900	*0,013*
Post-test	30	56,3500	

Based on Table 3.3, it is known that the incidence of chronic energy deficiency (CED) among pregnant women before the provision of a healthy diet showed an average body weight of 56.3 kg, with a minimum weight of 46 kg, a maximum weight of 70 kg, and a standard deviation of 7.65234.

CONCLUSIONS

The research conducted using the T-test showed that the P-value was 0.013, indicating that providing healthy diet education is effective in increasing the body weight of pregnant women. Based on these results, it can be concluded that the alternative hypothesis (Ha) is accepted and the null hypothesis (H0) is rejected. Healthy diet education is effective in helping improve the body weight of pregnant women who are at risk of chronic energy deficiency during pregnancy, as shown by a significant change in body weight with a significance value of < 0.05. Nutritional intake plays a crucial role in determining the health of both the pregnant woman and the fetus she is carrying. During pregnancy, nutritional needs increase by approximately 15% compared to non-pregnant women. This increased nutritional intake is required to support the growth of the uterus, breasts, blood volume, placenta, amniotic fluid, and fetal development (40%), while the remaining 60% supports maternal tissue development. An essential aspect that pregnant women must pay attention to is ensuring that the food they consume consists of a balanced meal plan — one that is complete and tailored to meet the needs of both the mother and the fetus. A balanced diet should include sources of energy, body-building nutrients, regulators, and protective elements.

ACKNOWLEDGEMENTS

1. Prof. Dr. Nilawati Uly, S.Si., Apt., M.Kes., CIPA, Rector of Universitas Mega Buana Palopo, for her continuous support and for providing the necessary facilities to carry out this research.
2. The Head of Wara Selatan Public Health Center and all staff members for their cooperation and assistance throughout the research process.
3. All research team members for their valuable contributions during the course of this study.
4. The pregnant women who participated in this study for their time, openness, and willingness to take part in the intervention sessions.

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