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THE RELATIONSHIP BETWEEN WEIGHT GAIN AND THE INCIDENCE OF PREECLAMPSIA IN PREGNANT WOMEN IN THE WORKING AREA OF THE RUNDENG PUBLIC HEALTH CENTER UPTD, RUNDENG DISTRICT, SUBULUSSALAM CITY IN 2025

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ABSTRACT

The utilization of maternal and child health services is still constrained by the low level of mothers' knowledge and attitudes regarding the danger signs of pregnancy, as well as the use of the Maternal and Child Health (MCH) handbook. According to the 2020 RISKESDAS report, analysis showed that 60% of mothers brought the MCH handbook during antenatal care visits, 10% did not bring it, and 30% did not have the handbook at all. One of the efforts to reduce the Maternal Mortality Rate (MMR) is through the implementation of the MCH handbook program. The purpose of this study was to determine the relationship between pregnant women's knowledge and attitudes regarding pregnancy danger signs and the utilization of the MCH handbook in the working area of UPTD Longkib Health Center, Subulussalam City, in 2024.

This study employed an analytic design with a cross-sectional approach, using both primary and secondary data. The population consisted of all pregnant women who owned an MCH handbook and resided in the working area of UPTD Longkib Health Center, totaling 542 individuals. The sampling technique used was random sampling, resulting in 84 respondents. The research instrument was a questionnaire.

The results of the study showed that of the 84 respondents, 35 (41.7%) had good knowledge, while 43 (48.8%) had negative attitudes. Statistical analysis using the Chi-square test with a 95% confidence level (df = 1) revealed a significant relationship between knowledge ($p = 0.004 < 0.05$) and attitudes ($p = 0.004 < 0.05$) of pregnant women regarding pregnancy danger signs and the utilization of the MCH handbook in the working area of UPTD Longkib Health Center, Subulussalam City, in 2024.

It is recommended that health workers provide counseling and health education through health promotion activities for pregnant women regarding the danger signs of pregnancy and the benefits of the MCH handbook.

Keywords: Knowledge, Attitude, Pregnancy Danger Signs, MCH Handbook

Background

Pregnancy is one of the most remarkable phases and most valuable moments in a woman's life. It marks the beginning of a new life in the womb and is accompanied by various physical, emotional, and psychological changes. Each pregnancy carries unique stories and experiences for every individual. Over the course of nine months, however, it is not uncommon for pregnancy to be accompanied by several health challenges. One of the most serious complications that has become a major concern in the medical field is preeclampsia. Preeclampsia is a condition characterized by high blood pressure and damage to other organs—often the kidneys and liver—that generally appears after 20 weeks of gestation.

According to the 2018 Basic Health Research Survey (Riskesdas), maternal mortality due to hypertensive disorders ranked the highest, accounting for 33.7%, followed by obstetric hemorrhage (27.3%), non-obstetric complications (15.7%), and other obstetric complications (4.8%) (Mayyuni, 2023).

The Indonesian Ministry of Health (Kemenkes RI) further highlights that preeclampsia is one of the most dangerous pregnancy-related conditions and remains a leading cause of maternal death in Indonesia. Direct causes of maternal mortality include hemorrhage (28%), preeclampsia/eclampsia (24%), and infection (11%). Indirect causes consist of obstetric trauma (5%) and other factors (11%) (Julianti, 2022).

According to data from the working area of UPTD Rundeng Public Health Center, Rundeng District, from January to September 2024, there were 195 pregnant women across 23 villages. Among them, 55 were in their third trimester, and 20 cases of preeclampsia were recorded.

The distribution of pregnant women by village is as follows: Kampong Badar (20), Teladan Baru (14), Harapan Baru (9), Kuala Kepeng (1), Lae Pemualen (20), Pasar Rundeng (8), Belukur Makmur (20), Lae Mate (8), Binanga (10), Oboh (6), Muara Batu-Batu (14), Panglima Sahman (2), Sibuasan (4), Sibungke (6), Dah (8), Sepadan (12), Geruguh (8), Tanah Tumbuh (5), Tualang (5), Mendilam (3), Siperkas (5), Suak Jampak (3), and Kuta Beringin (4).

From the total of 195 pregnant women, the prevalence of preeclampsia was **10.3%**, indicating that this condition remains a significant maternal health issue that requires serious attention in the working area of UPTD Rundeng Public Health Center.

According to the Aceh Health Profile Report of 2020, maternal mortality cases during childbirth were recorded at 38 cases (22.7%). The leading causes of maternal deaths were hemorrhage (47 cases), preeclampsia (38 cases), infections (6 cases), digestive disorders (10 cases), metabolic disorders (3 cases), and other causes (53 cases).

The highest prevalence of preeclampsia was reported in Simeulue District (50%), Banda Aceh (50%), Southeast Aceh (50%), South Aceh (40.5%), North Aceh (32%), and Bireuen (25%). Further analysis shows that the highest number of preeclampsia cases was recorded in Banda Raya (29 cases), followed by Jaya Baru Health Center (28 cases), Lampulo Health Center (25 cases), Lampaseh Kota Health Center (18 cases), and Kuta Alam Health Center (17 cases) (Evi et al., 2023).

RESEARCH METHOD

The type of research used in this study is correlational analytic research, as it aims to determine the relationship between two variables, which will then be analyzed using correlation coefficients. The research employed a cross-sectional approach, meaning that each subject was observed only once, and measurements were taken at a single point in time. Thus, data related to both the independent and dependent variables were collected simultaneously (Notoatmodjo, 2019).

The independent variable in this study is weight gain, while the dependent variable is the incidence of preeclampsia.

The study population consisted of all third-trimester pregnant women in the working area of UPTD Rundeng Public Health Center, Rundeng Subdistrict, Subulussalam City, in 2025, totaling 50 respondents.

RESULTS

The research findings are presented using two types of analysis, namely univariate analysis and bivariate analysis**,** to examine the relationship between the independent and dependent variables. In line with the research objective, the analysis was conducted to determine the relationship between maternal weight gain and the incidence of preeclampsia among pregnant women in the working area of UPTD Rundeng Public Health Center, Rundeng Subdistrict, Subulussalam City, in 2025.

Table 1. Bivariate Analysis of the Relationship Between Maternal Weight Gain and the Incidence of Preeclampsia Among Pregnant Women

No	Kenaikan Berat Badan	*Preeklampsia*						*p-value*
		Preeklampsia		Tidak *Preeklampsia*		Total		
		f	%	f	%	f	%	
1.	Obesitas	11	22	16	32	27	74	
2.	Normal	0	0	23	46	23	26	0,002
						50	100	

DISCUSSION

Based on the results of the study, it was found that out of 50 respondents, pregnant women who experienced obesity with preeclampsia were 11 individuals (22%), while pregnant women who had normal weight gain but did not experience preeclampsia were 23 individuals (46%).

The statistical analysis using the Chi-square test obtained a p-value of 0.002 (<0.05), which indicates that Ha is accepted and Ho is rejected. This means there is a significant relationship between maternal weight gain and the incidence of preeclampsia among pregnant women in the working area of UPTD Rundeng Public Health Center, Rundeng Subdistrict, Subulussalam City, in 2025.

Excessive weight gain carries a three- to four-fold increased risk of developing preeclampsia, particularly in cases of obesity class II and III, compared to pregnant women with normal weight. During pregnancy, maternal blood volume increases by approximately 25% at the peak of gestation around 32 weeks. The association between the risk of preeclampsia, eclampsia, and obesity can

be explained through metabolic disorders. Metabolic abnormalities in obesity are closely related to the accumulation of adipose tissue. Excessive fat deposits can place an additional burden on the heart due to vasoconstriction, thereby increasing blood pressure as a result of thickened fat layers (Syahbandi, 2021).

Based on the results of the study, it can be seen that out of 50 respondents, pregnant women who experienced obesity with preeclampsia were 11 (22%), while pregnant women who had normal weight gain but did not experience preeclampsia were 23 (46%). Statistical analysis using the chi-square test obtained a p-value of 0.002 < 0.05, which means Ha is accepted and Ho is rejected. This indicates that there is a relationship between weight gain and the incidence of preeclampsia among pregnant women in the working area of UPTD Rundeng Health Center, Rundeng District, in 2025.

Excessive weight gain carries a three to four times higher risk of obesity class II and III, and is four times more likely to lead to preeclampsia compared to pregnant women with normal body weight. During pregnancy, maternal blood volume increases by 25% at the peak of pregnancy (32 weeks). The relationship between the risk of preeclampsia, eclampsia, and obesity is associated with metabolic disorders. Metabolic abnormalities occurring in obesity are related to the thickness of fat layers. Being overweight can overburden the heart due to vasoconstriction, which in turn increases blood pressure as a result of excessive fat (Syahbandi, 2021).

This study is in line with the findings of Rahmayanti (2025). The results of the chi-square statistical correlation test showed a significant relationship between obesity and the incidence of preeclampsia in pregnant women, with a p-value = 0.000 (p < 0.05).

According to the researcher's assumption, the abnormal weight gain in pregnant women occurs because the heart works harder to ensure adequate maternal blood circulation to the fetus. Due to the thickness of fat, vasoconstriction may occur, leading to impaired maternal blood flow to the fetus, accompanied by an increase in blood vessel pressure and cardiac output. This increase in cardiac output may cause hypertension during pregnancy, which is a sign and symptom of preeclampsia. Therefore, weight gain during pregnancy is strongly associated with the incidence of preeclampsia in pregnant women.

CONCLUSION AND SUGGESTIONS

Based on the results of the study entitled *The Relationship Between Weight Gain and the Incidence of Preeclampsia Among Pregnant Women in the Working Area of UPTD Rundeng Health Center, Rundeng Subdistrict, Subulussalam City, 2025*, it can be concluded that:

The distribution shows that 11 pregnant women (22%) who were obese experienced preeclampsia, while 23 pregnant women (46%) with normal weight gain did not experience preeclampsia. Statistical analysis using the chi-square test obtained a p-value = 0.002 < 0.05. This proves that there is a significant relationship between weight gain and the incidence of preeclampsia among pregnant women in the working area of UPTD Rundeng Health Center, Rundeng Subdistrict, Subulussalam City, 2025.

This study can serve as an important source of information to improve pregnant women's knowledge regarding the danger signs of preeclampsia and the importance of maintaining a healthy weight during

pregnancy. It also provides motivation for pregnant women to undergo regular antenatal check-ups, enabling early detection and prevention of complications.

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