

## Abstract

Nausea and vomiting in pregnancy (NVP) are common in early pregnancy and may affect maternal nutrition and gestational weight gain (GWG). However, the relationships between NVP severity to treatment approaches, as well as protein intake and gestational weight outcomes remain underexplored in Indonesia. This cross-sectional study aimed to investigate the association of treatment approaches in alleviating NVP, and exploring how protein intake and diversity affect gestational weight gain of pregnant women in Indonesia. The data for 106 pregnant women was obtained through telephone interviews, utilizing questionnaires, a modified Pregnancy-Unique Quantification of Emesis and Nausea (PUQE) score, and an SQ-FFQ. All of the respondents experienced NVP with a majority of them experiencing moderate levels of NVP. The median for protein intake and consumption was found to be adequate. Statistical analyses found no significant associations of NVP severity categories to treatment strategies ( $p = 0.774$ ) and overall well-being (Spearman's  $\rho = 0.138$ ,  $p = 0.157$ ). No significant association was found between protein intake ( $p = 0.454$ ) and protein consumption ( $p = 0.960$ ) to GWG. However, a statistically significant negative correlation was found between PUQE scores and GWG (Spearman's  $\rho = -0.229$ ,  $p = 0.018$ ), indicating that weight loss tends to happen with greater NVP severity. Future research is recommended to conduct longitudinal studies, incorporate medical records or biomarkers, and expand the sample size and diversity to improve reliability.

**Keywords:** *early pregnancy, nausea, protein, treatments, weight gain*