



FACTORS RELATED TO THE INCIDENCE OF HYPEREMESIS GRAVIDARUM IN THE COASTAL AREA OF KAMPUNG NELAYAN BELAWAN

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Abstract

Hyperemesis gravidarum is one of the pregnancy complications that affects the mother's health status and fetal growth and development. It is a condition where pregnant women experience severe nausea and vomiting, which can continue until 20 weeks of gestation. Hyperemesis gravidarum may lead to maternal weight loss and disrupt fetal growth in the uterus, increasing the risk of low birth weight and premature labor. The urgency of this study is to

examine the risk factors for hyperemesis gravidarum, particularly in pregnant women in coastal areas, where socioeconomic conditions may impact their health. The purpose of this research is to analyze risk factors such as age, gravida status, maternal nutritional status, and the most dominant risk factors contributing to hyperemesis gravidarum in pregnant women in coastal regions. This research uses an analytical observational approach with a cross-sectional design. The study population includes all pregnant women diagnosed with hyperemesis gravidarum who have medical records in the working area of UPT Puskesmas Belawan, Medan Belawan District. The research instrument is a data collection sheet based on medical records. It is hoped that this study will help the public, particularly pregnant women, to reduce and prevent the risks associated with hyperemesis gravidarum. Based on the study results, it was found that factors such as age, nutritional status, and gravida status do not influence the incidence of hyperemesis gravidarum at UPT Belawan.

keywords: Hyperemesis gravidarum; pregnant; nausea; vomiting; coastal beach

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Introduction

Nausea and vomiting associated with pregnancy (Nausea and Vomiting in Pregnancy, or NVP) is a very common condition, with an estimated prevalence ranging between 50% and 85%. Symptoms are often most severe during the first trimester of pregnancy (Niebyl, 2010; Carlsen et al., 2003; Lacroix et al., 2000). Hyperemesis gravidarum (HG), a severe form of NVP, can lead to weight loss, dehydration, and electrolyte imbalances. HG is one of the most common indications for hospitalization in the first half of pregnancy (Gazmararian et al., 2002).

NVP symptoms usually peak between 10 and 16 weeks of pregnancy and typically resolve on their own (Lacroix et al., 2000). NVP is often mistakenly referred to as "morning sickness" because only 1.8% of women report nausea only in the morning, while 80% report nausea throughout the day. Some researchers have observed that NVP is 40% more common in women under 20 years old, first-time mothers, women with less than 12 years of education, and women who are overweight. Other factors, such as family income, parity, and previous use of oral contraceptives, may also be associated with a higher incidence of NVP in pregnant women (Lacroix et al., 2000).

HG symptoms are characterized by severe nausea and vomiting that begin early in pregnancy (before 16 weeks), an inability to eat or drink normally, a lack of capacity to perform daily activities, and signs of dehydration (Jansen et al., 2021). Additionally, HG can lead to various complications, including Wernicke's encephalopathy (a brain injury caused by vitamin B1 deficiency), acute liver and kidney failure, esophageal rupture, pneumothorax, preeclampsia, placental abruption, and delayed fetal neurodevelopment. Pregnancies complicated by HG are at higher risk for preterm birth, low birth weight, electrolyte imbalances that may cause cardiac dysrhythmias, neuromuscular complications, renal dysfunction, thyrotoxicosis, and maternal mortality (Tian et al., 2017).

Research in Indonesia found that HG affected 14.8% of pregnancies, with risk factors including primigravida status, age, parity, occupation, education, and socioeconomic status (Hardaniyati et al., 2022). Low socioeconomic status has also been associated with HG (Gabra,



2018). Women suffering from HG tend to be younger, more often primiparous, of lower socioeconomic status, more likely to conceive through assisted reproductive techniques, and have a higher incidence of hypertension, diabetes mellitus, and mental health conditions compared to women who do not experience HG (Roseboom et al., 2011).

Many communities in coastal areas face low socioeconomic conditions and health challenges. The high number of young mothers in these areas may increase the risk of HG. However, studies on the incidence of HG among pregnant women in coastal areas are limited, highlighting the need for further research into the risk factors for HG in these populations. Based on this background, researchers are interested in studying the risk factors associated with hyperemesis gravidarum in pregnant women in coastal regions.

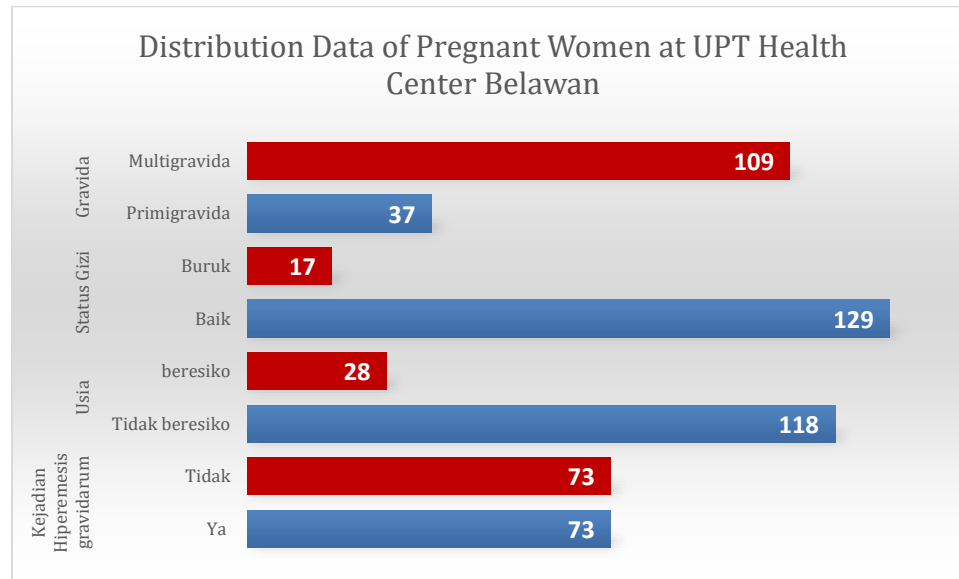
Methods

This study uses a quantitative method with a cross-sectional design. The research is being conducted at UPT Puskesmas Belawan from May to November 2024. The population in this study includes all pregnant women who attend check-ups at the UPT Health Center Belawan, totaling 146 individuals. This study uses secondary data by recording medical record results and conducting documentation. The analysis is performed using univariate tests and chi-square tests.

Results And Discussion

Univariate Analysis Results

Data on the characteristics of pregnant women who experienced hyperemesis gravidarum at the Belawan Health Center UPT from May to November 2024 are shown in the image below.



Based on the image above, out of 146 respondents, the number of pregnant women who experienced hyperemesis gravidarum and those without it was equal, with 73 respondents in each group. Among them, 28 respondents were categorized as at-risk, while 118 were not. Additionally, 17 respondents had poor nutritional status, while 129 had good nutrition. Regarding pregnancy status, 37 respondents were primigravida, and 109 were multigravida.

The age, gravida status, and nutritional status of pregnant women play an important role in the incidence of hyperemesis gravidarum (HG). Pregnant women with ages outside the optimal reproductive range (either too young or too old) have a higher risk of HG, likely due to differences in the body's ability to adapt to hormonal changes within these age groups. Moreover, gravida status also influences the risk of HG, with primigravida women (first-time pregnancies) more frequently experiencing HG compared to multigravida women, as their bodies may not yet be accustomed to the hormonal and physical changes of pregnancy. Nutritional status is also significant; women with poor nutritional status are more susceptible to HG due to limited energy and nutrient reserves needed to support the increased metabolic demands of pregnancy (AlAzri et al., 2017; Djurkovic et al., 2018).



Bivariate Analysis Results

Factors influencing the incidence of hyperemesis gravidarum in pregnant women at UPT Puskesmas Belawan can be seen in the table below.

Table 1. Influence of Age on the Incidence of Hyperemesis Gravidarum in Pregnant Women at UPT Puskesmas Belawan

Age	Hyperemesis Gravidarum		Total	Pvalue	OR
	Yes	No			
No Risk	60	58	118	0.67	1.2
At risk	13	15	28		
Total	73	73	146		

Based on the table above, it can be seen that hyperemesis gravidarum was most common among respondents within the non-risk age category (68 respondents), while most respondents in the risk age category (15 respondents) did not experience hyperemesis gravidarum. However, statistical analysis indicated that age did not have a significant effect on the incidence of hyperemesis gravidarum among pregnant women at the Belawan Health Center UPT, with a p-value of 0.67 (> 0.05). The OR value of 1.2 suggests that age has only a 1.2 times effect on the incidence of hyperemesis gravidarum.

Recent studies indicate that maternal age does not always have a significant influence on the incidence of hyperemesis gravidarum (HG). This may be because HG is more closely related to hormonal factors, such as elevated levels of human chorionic gonadotropin (HCG) during early pregnancy, as well as an individual's genetic sensitivity to this hormone, rather than maternal age itself. Family history of HG and genetic predisposition play a larger role in triggering HG, allowing it to occur across a range of reproductive ages without significant differences. Recent research also shows that other factors, such as nutritional status and a medical history of nausea or vomiting in



previous pregnancies, are more influential in determining HG risk than maternal age (McCarthy et al., 2021; Grooten et al., 2021).

Table 2. Effect of Nutritional Status on Incident of Hyperemesis Gravidarum in Pregnant Women at UPT Puskesmas Belawan

Nutritional status	Hyperemesis Gravidarum		Total	Pvalue	OR
	Yes	No			
Good	61	68	129	0.07	0.37
Bad	12	5	17		
Total	73	73	146		

Based on the table above, it can be seen that most respondents who did not experience hyperemesis gravidarum had good nutritional status (68 respondents), while most respondents who experienced hyperemesis gravidarum had poor nutritional status (12 respondents). However, statistical analysis indicated that nutritional status did not have a significant effect on the incidence of hyperemesis gravidarum in pregnant women at the Belawan Health Center UPT, with a p-value of 0.07 (> 0.05). The OR value of 0.37 suggests that nutritional status has only a 0.37 times effect on the incidence of hyperemesis gravidarum.

Nutritional status does not always have a significant influence on the incidence of hyperemesis gravidarum (HG) because HG is often triggered by hormonal and genetic factors that are not directly related to maternal nutritional status. Studies show that women with good, poor, or even excessive nutritional status can still be at risk for HG, indicating that nutritional status is not a primary trigger. Instead, genetics and individual predispositions to hormonal reactions are more dominant in explaining HG occurrences, suggesting that HG is more of a bodily response to hormonal changes than a result of a specific nutritional condition (Bozzo et al., 2020; McCarthy et al., 2021).



Table 3. The Effect of Gravida Status on Incident of Hyperemesis Gravidarum in Pregnant Women at UPT Puskesmas Belawan

Status of Gravidity	Hyperemesis Gravidarum		Total	Pvalue	OR
	Yes	No			
Primigravida	18	19	37	0.85	0.93
Multigravida	55	54	109		
Total	73	73	146		

Based on the table above, it can be seen that most respondents who experienced hyperemesis gravidarum had a multigravida pregnancy status (55 respondents), and similarly, most respondents who did not experience hyperemesis gravidarum also had a multigravida status (54 respondents). However, statistical analysis indicated that gravida status did not have a significant effect on the incidence of hyperemesis gravidarum among pregnant women at the Belawan Health Center UPT, with a p-value of 0.85 (> 0.05). The OR value of 0.93 suggests that gravida status has only a 0.93 times effect on the incidence of hyperemesis gravidarum.

Previous studies have shown that gravida status does not have a significant influence on the incidence of hyperemesis gravidarum (HG). Some studies find no meaningful difference in HG risk between first-time pregnancies (primigravida) and subsequent pregnancies (multigravida). This suggests that the number of prior pregnancies is not a major determining factor for HG occurrence. Instead, HG is more influenced by hormonal factors, such as elevated levels of human chorionic gonadotropin (HCG) in early pregnancy, and genetic predisposition. Individual sensitivity to HCG and a family history of HG are more closely related to the incidence of HG than gravida status, indicating that HG can occur in women with various pregnancy histories (Fejzo et al., 2021; Grooten et al., 2021).



Conclusion

This study shows that there is no significant influence between age and the incidence of hyperemesis gravidarum at UPT Puskesmas Belawan, no significant influence between nutritional status and the incidence of hyperemesis gravidarum at UPT Puskesmas Belawan, and no significant influence between gravida status and the incidence of hyperemesis gravidarum at UPT Puskesmas Belawan.

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