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THE RELATIONSHIP BETWEEN ANXIETY AND HYPEREMESIS GRAVIDARUM IN PREGNANT WOMEN

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Abstract

Hyperemesis gravidarum is a psychiatric disorder in pregnant women marked by severe nausea and vomiting, potentially leading to physiological difficulties during pregnancy. Anxiety and other psychological factors might intensify the nausea and vomiting experienced by pregnant women. This study aimed to examine the correlation between anxiety and the incidence of hyperemesis gravidarum in pregnant women at RSIA Ananda Makassar from December 2022 to January 2023. The research methodology utilised was a quantitative study employing a cross-sectional design. The sample comprised 185 pregnant women in the first trimester, diagnosed with hyperemesis gravidarum and those without the condition, selected using purposive sampling. The tools employed included a demographic questionnaire and the Perinatal Anxiety Screening Scale (PASS), analysed via the Chi-Square test. The study's results produced a p-value of 0.000, signifying a correlation between the two variables, hence affirming the alternative hypothesis. This study concludes that a significant correlation exists between anxiety levels and the incidence of hyperemesis gravidarum in pregnant women at RSIA Ananda Makassar in 2023, highlighting the need for educational initiatives for pregnant women about the detrimental effects of anxiety on hyperemesis gravidarum.

Keywords: Hyperemesis Gravidarum, Anxiety, Pregnant Women in the First Trimester, PASS

Introduction

During pregnancy, pregnant women normally experience physiological and psychological changes. One of the psychological changes often experienced by pregnant women is anxiety.[1] In Indonesia, anxiety among pregnant women reaches 28.7%.[2]

Psychological changes during pregnancy, such as anxiety or depression, can be considered predisposing factors for pregnant women experiencing nausea and vomiting during pregnancy. Psychological imbalances in pregnant women when dealing with serious conflicts during pregnancy can exacerbate the severity of nausea and vomiting they experience, leading to a more severe condition known as hyperemesis gravidarum.[3]

Hyperemesis gravidarum is a condition characterized by excessive nausea and vomiting, weight loss, and electrolyte imbalance.[4] The incidence of hyperemesis gravidarum is increasing; according to the World Health Organization (WHO) in 2013, the incidence of hyperemesis gravidarum reached 12.5% of all pregnancies worldwide.[5]

Psychological imbalances in pregnant women when dealing with serious conflicts, dependency, or loss of control can exacerbate the nausea and vomiting experienced by pregnant women. What is more concerning about this condition is the potential development of hyperemesis gravidarum.[3]

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Data from the 2020 Indonesian Health Profile indicates that there were 5,256. 483 pregnant women were recorded across all healthcare facilities in Indonesia, including South Sulawesi Province, which, according to data from the Provincial Health Department, is the sixth province with the highest coverage of pregnant women, reaching 185,004 pregnant women, with Makassar City being the area with the highest number of pregnant women in South Sulawesi, reaching 30,990 pregnant women. Rappocini District was the district with the highest number of pregnant women in Makassar City in 2019, with 1,671 pregnant women. Meanwhile, RSIA Ananda Makassar is one of the maternal and child health care centers located in Rappocini District. According to the researcher's initial data, there were 2,271 pregnant women registered in 2021, with 240 pregnant women diagnosed with hyperemesis gravidarum in 2022.

Based on the research findings of Risa Hidayati & Evis Ritawani Hasibuan titled "The Relationship Between Maternal Anxiety Levels and Emesis Gravidarum in First-Trimester Pregnant Women at Payung Sekaki Health Center in 2019" it was found that there is a significant relationship between maternal anxiety levels and emesis gravidarum in first-trimester pregnant women at the Payung Sekaki Health Center in 2019, with a p-value of 0.000. This study is consistent with Ratih Indah Kartikasari's research titled "The Degree of Anxiety in Pregnant Women and the Occurrence of Nausea and Vomiting in the First Trimester in 2018," which found a significant relationship between the degree of anxiety in pregnant women and the occurrence of nausea and vomiting in the first trimester. The higher the degree of anxiety in pregnant women, the higher the level of nausea and vomiting.

Based on the above description, the large sample size obtained in the initial data supports the conduct of this study with the title "The Relationship between Anxiety and the Occurrence of Hyperemesis Gravidarum in Pregnant Women at RSIA Ananda Makassar in 2023."

Method

This study employed a quantitative research methodology utilising an analytical observational design with a cross-sectional approach. The research was carried out at RSIA Ananda Makassar in February 2023, involving a sample of 185 pregnant women in their first trimester, both diagnosed with hyperemesis gravidarum and those without the condition, use purposive sampling. The tools employed included a demographic questionnaire and the Perinatal Anxiety Screening Scale (PASS), analysed via the Chi-Square test.

This study design was to ascertain the correlation between anxiety and the incidence of hyperemesis gravidarum among pregnant women at RSIA Ananda Makassar in 2023. This research has received ethical approval, designated as E.060/KEPK/FKIK/II/2023. The study population comprised pregnant women documented in the medical records of RSIA Ananda Makassar from December 2022 to January 2023. The study sample included pregnant women at RSIA Ananda diagnosed with hyperemesis gravidarum and those without the condition.

The data sources used in this study were primary data obtained through direct interviews with pregnant women experiencing hyperemesis gravidarum and those not experiencing hyperemesis gravidarum, asking about the symptoms they felt and administering questions through interviews and demographic questionnaires and PASS to assess the level of anxiety in pregnant women. Meanwhile, secondary data were obtained from medical records.

Results

Table 1. Distribusi Responden Berdasarkan Karakteristik Ibu Hamil di RSIA Ananda Makassar

Characteristics	Frequency	
	n	%
Age		
a. <20 years old	0	0,0
b. 20-35 years old	181	97,8
c. >35 years old	4	2,2
Occupation		
a. Housewife	139	75,1
b. Entrepreneur	11	5,9
c. Employee	10	5,4
d. Civil servant	4	2,2
e. Teacher/lecturer	21	11,3
Pendidikan Terakhir		
a. No schooling	3	1,6
b. Elementary school	7	3,8
c. Junior high school/MTs	15	8,1
d. High school /vocational school/ Islamic high school	78	42,0
e. Diploma/ Bachelor's degree/ Master's degree	82	44,7
Obstetric History		
a. Primipara	83	44,9
b. Multipara	102	55,1
Level of Anxiety		
a. No anxious	101	54,6
b. Anxious	84	45,5
Hyperemesis Gravidarum		
a. Hyperemesis gravidarum	94	50,8
b. No Hyperemesis gravidarum	91	49,2
Total	**185**	**100,0**

(Source: Primary data, 2023)

The characteristics of the respondents are presented in Table 1, which shows 185 samples with 181 mothers aged 20-35 years (97.8%) and 4 mothers aged >35 years (2.2%). Regarding the type of work, most mothers were not working/housewives (139 individuals, 75.1%), followed by self-employed mothers (11 individuals, 5.9%), employees (10 individuals, 5.4%), civil servants (4 individuals, 2.2%), and non-civil servant teachers/lecturers (21 individuals, 10.8%). In terms of the mothers' highest level of education, most mothers had a higher education diploma/Bachelor's/Master's/Doctorate degree, totaling 82 people (44.3%), while 7 people (3.8%) had an elementary school education, 15 people (8.1%) had a junior high school/MTs education, and 78 people (42.2%) had a high school/vocational school/MA equivalent education. Based on obstetric history, most mothers were multiparous (102 mothers, 55.1%), while 83 mothers (44.9%) were primiparous. Based on the level of maternal anxiety, most mothers did not experience anxiety, totaling 101 (54.6%), while 84 mothers (45.4%) experienced anxiety, including 39 (21.1%) with mild anxiety, 35 (18.9%) with moderate anxiety, and 1 (0.5%) with severe anxiety. Among the sample, 94 mothers (50.8%) experienced hyperemesis gravidarum, while 91 mothers (49.2%) did not experience hyperemesis gravidarum.

Table 2 Relationship between Anxiety and Hyperemesis Gravidarum in Pregnant Women at RSIA Ananda Makassar

Kecemasan	Tidak Hiperemesis Gravidarum		Hiperemesis Gravidarum		Total		*p-value*
	n	%	*n*	%	*n*	%	
Tidak Cemas	65	35,1	36	19,5	101	54,6	
Cemas	26	14,1	58	31,4	84	45,4	0,000
Total	**91**	**49,2**	**94**	**50,8**	**185**	**100,0**	

(Source: Primary data, 2023)

The cross-tabulation of anxiety variables with the occurrence of hyperemesis gravidarum is described in Table 4.2. Pregnant women who were not anxious did not experience hyperemesis gravidarum, with a sample size of 65 (35.1%), while those who experienced hyperemesis gravidarum numbered 36 (19.5%). Meanwhile, among pregnant women who felt anxious, 26 (14.1%) did not experience hyperemesis gravidarum, while 58 (31.4%) did experience hyperemesis gravidarum. The results of the Chi-Square test showed a p-value of 0.000 (p-value < 0.05).

Discussion

The correlation between anxiety levels and the incidence of hyperemesis gravidarum indicates that pregnant women who do not experience anxiety do not encounter hyperemesis gravidarum, in contrast to those who do feel anxious and subsequently experience hyperemesis gravidarum. The results of the Chi-Square test revealed a p-value of 0.000, signifying a significant relationship between the two variables. In this study, the null hypothesis was rejected, and the alternative hypothesis was accepted, leading to the conclusion that a significant relationship exists between anxiety levels and the occurrence of hyperemesis gravidarum among pregnant women at RSIA Ananda Makassar in 2023.

This study aligns with Heny et al.'s (2022) research, which found that nearly all pregnant women experience stress in the form of anxiety and morning sickness, with the Chi-Square test yielding a p-value of 0.05. Henny et al. therefore assumed that anxiety influences the severity of morning sickness or the occurrence of hyperemesis in pregnant women. Psychological factors such as anxiety that influence morning sickness include pregnant women feeling anxious or fearful about pregnancy and childbirth, family conflicts, or fear of the responsibilities of motherhood, which can lead to mental conflicts exacerbating nausea and vomiting as an expression of reluctance to be pregnant.

Stress influences the hypothalamus and activates the vomiting centre in the brain, resulting in the contraction of abdominal and thoracic muscles, alongside a descent of the diaphragm, which elevates pressure within the stomach. This compels the mother to inhale deeply, resulting in the opening of the upper esophageal sphincter and the relaxation of the lower segment. This induces symptoms of nausea and vomiting in the mother.[6]

In addition, according to the results of a study conducted by Rorrong (2021), patients with emesis gravidarum or nausea and vomiting had higher depression and anxiety scores than patients in the control group who did not experience emesis gravidarum. The study suggests that increased anxiety and depression may be involved in the occurrence of emesis gravidarum, and additional psychological support is needed during treatment and follow-up for patients with emesis gravidarum.[3]

This study is also in line with Kartikasari's (2018) research that high levels of anxiety in pregnant women cause more severe nausea and vomiting, which can lead to hyperemesis gravidarum. Psychological problems in pregnant women can be a predisposing factor for hyperemesis gravidarum. The changes that occur are considered normal or acceptable. Stress experienced by mothers can be managed before it worsens. Stress can be managed through exercise, seeking escape or confrontation

(fight or flight), maintaining good communication with spouses and family, and seeking spousal support for all activities. Most respondents reported insufficient spousal support.[3]

Morning sickness affects the physical and psychological condition as well as the quality of life of pregnant women. Nausea and vomiting begin to occur in the fourth week of gestation and are experienced by 85% of pregnant women. The exact etiology of this condition is still unknown, but studies show a correlation between biological, physiological, psychological, and sociocultural factors. Psychological factors influencing pregnancy can stem from the mother's own psychological background and hormonal changes occurring during pregnancy.[7]

Psychosocial factors influencing stress play an important role. Stress experienced by a pregnant woman is often due to changes occurring during pregnancy. Changes in the mother's body caused by hormonal changes affect her physical condition. For example, changes in body shape, increased acne, and complaints of nausea and vomiting. Stress can also arise from psychological pressure. For example, a woman who is not ready to accept her pregnancy or fears losing her job due to pregnancy. Not all changes during pregnancy are well-received by a pregnant woman. Some pregnant women can respond well. Pregnant women who can accept changes well will experience a smooth pregnancy.[8]

During pregnancy, there is an increase in human chorionic gonadotropin (HCG) and norepinephrine hormones in the pregnant woman's body. Fluctuations in these hormones cause biochemical dysregulation in the pregnant woman's body, leading to tension that makes it difficult to focus, causes nausea, irritability, and anxiety.[9]

Morning sickness affects the physical and psychological condition as well as the quality of life of pregnant women. Nausea and vomiting begin to occur from the fourth week of gestation, and this condition is experienced by 85% of pregnant women. The exact etiology of this condition is still unknown, but studies show a correlation between biological, physiological, psychological, and sociocultural factors. Psychological factors that influence pregnancy can stem from the mother's own psychological background and hormonal changes that occur during pregnancy. [10,11]

The psychological health of pregnant women is also more prone to an increased risk of depression and anxiety. Anxiety is often caused by the situation surrounding the patient, respiratory disorders, reduced social activity, feelings of rejection by society, and drastic changes in social dynamics.[12] Psychological disorders during pregnancy have been associated with various complications such as preterm birth, low birth weight, fetal growth restriction, and postpartum complications. Additionally, these psychological disorders are also associated with the onset of hypertension during pregnancy, preeclampsia, and gestational diabetes. [13]

Other factors that may influence the occurrence of hyperemesis in pregnant women include age, parity, inter-pregnancy interval, occupation, and knowledge. The age range of 20–35 years is considered the most productive period for women to undergo pregnancy. Based on univariate analysis, 181 respondents (97.8%) were aged 20–35 years, while 4 respondents (2.2%) were over 35 years old. Pregnant women are at higher risk of developing hyperemesis gravidarum at ages <20 years and >35 years. At younger ages, the physiology and function of a mother's uterus have not yet fully developed optimally, and psychologically, she may not be ready for pregnancy, leading to mental conflict that causes her to neglect her nutrition, which can irritate the stomach lining and stimulate the vomiting center. For older women aged >35 years, reproductive organ function has begun to decline, and physiologically, the mother may feel unable to continue the pregnancy, which can trigger stress.[14]

Based on univariate analysis, there were 83 respondents (44.9%) who were primiparous pregnant women and 102 respondents (55.1%) who were multiparous pregnant women. According to research conducted by Paskana (2020), primiparous women experiencing hyperemesis gravidarum have a higher incidence than multiparous women. This may be because primiparous pregnant women are not yet physically or psychologically prepared to cope with the changes during pregnancy. Hyperemesis gravidarum occurs in 60-80% of primiparous women and 40-60% of multiparous women. This is

because the mother has not yet been able to adapt and adjust to the increased levels of estrogen and Human Chorionic Gonadotropin (HCG) hormones, which can cause nausea and vomiting. Nausea and vomiting typically occur in the morning when the stomach is empty and are caused by increased stomach acid.[15]

Additionally, hyperemesis gravidarum can occur more severely due to pregnancies that are too close together. Pregnancies that are too close together leave the mother with insufficient time to recover her uterus to its previous condition. Pregnant women with pregnancies that are too close together are at risk of developing hyperemesis gravidarum. This is because the mother's condition has not yet returned to normal as it was before pregnancy, yet she must already reproduce again for the next pregnancy.[16]

The mother's occupation is not one of the main factors causing hyperemesis gravidarum. However, there are still many other factors that contribute to pregnant women experiencing hyperemesis gravidarum. Based on the results of univariate analysis, it was found that 139 respondents (75.1%) were housewives, 21 respondents (11.3%) were teachers/lecturers, 11 respondents (5.9%) were employees, and 11 respondents (5.9%) were self-employed. Hyperemesis gravidarum is more common among women and families with low socioeconomic status because many women from such families are not yet ready to have children and lack knowledge about the importance of maintaining health.[16]

Maternal education can also be a contributing factor to the occurrence of hyperemesis gravidarum. Based on univariate analysis, maternal education levels were as follows: diploma/bachelor's degree/master's degree/doctorate degree: 82 respondents (44.7%); high school/vocational school/madrasah aliyah: 78 respondents (42%); junior high school/madrasah tsanawiyah: 15 respondents (8.1%); elementary school: 7 respondents (3.8%); no schooling: 3 respondents (1.6%). According to Yulia Anggraini's research (2020), pregnant women with higher education levels are more diligent in visiting healthcare facilities and seek more health information through media, the internet, and healthcare professionals regarding hyperemesis gravidarum. On the other hand, pregnant women with lower education levels tend to have less interest in utilizing healthcare services, resulting in hyperemesis gravidarum being detected later and treated more slowly. Therefore, one way to enhance

pregnant women's knowledge is to provide education about hyperemesis gravidarum. Good behavior is based on good knowledge rather than lacking such scientific understanding. Thus, providing

Women with severe hyperemesis gravidarum may suffer from retinal damage, pneumothorax, liver and gallbladder dysfunction, esophageal tears, organ rupture or failure, sepsis, and various complications associated with inadequate nutrition, including cardiac and neurological damage. Mortality continues to result from malnutrition, esophageal rupture, sepsis, and suicide. Women exhibiting prolonged symptoms are at an increased risk for haematemesis, fainting, depression, gastro-oesophageal reflux disease (GERD), anxiety, and excessive salivation. Individuals experiencing hyperemesis gravidarum exhibit a higher incidence of postpartum complications, including trauma, motion sickness, muscle weakness, and anxiety. Extended periods of immobility can lead to significant muscle atrophy, depression, thrombosis, and sensory processing disorders in paediatric populations. The risk of thromboembolism is elevated as a result of pregnancy-related changes and the utilisation of intravenous catheters. [4]

Pregnant women experiencing worry or stress are at a heightened risk of spontaneous abortion and preterm birth. Furthermore, if a woman endures significant stress during gestation, her offspring is at an increased risk of encountering emotional and cognitive difficulties. Consequently, the prompt diagnosis of hyperemesis gravidarum is clinically imperative.

This also aims to prevent problems, including maternal vitamin B1 and K deficiencies, foetal Wernicke's encephalopathy, preterm delivery, intrauterine growth restriction (IUGR), and adult mental illnesses. The American College of Obstetricians and Gynaecologists (ACOG) advises that early

intervention should be commenced immediately to avert more serious complications of hyperemesis gravidarum.[17]

The limitations of this study include the researcher's limited time to conduct further research to determine the extent of anxiety risk factors among pregnant women at RSIA Ananda Makassar. Another limitation is the limited number of respondents, as unstable conditions led to less objective responses during interviews, and reduced interest among respondents in participating as samples in this study.

Conclusion

It is possible to draw the conclusion, on the basis of the research that was carried out, that there is a substantial connection between anxiety and the occurrence of hyperemesis gravidarum in pregnant women who are receiving treatment at RSIA Ananda Makassar in the year 2023. When doing studies in the future, it is recommended that researchers give more attention to other factors that influence anxiety in pregnant women. These factors include knowledge about anxiety, medical conditions, living environment, and health facilities.

References

[1] Ayu, S. et al. (2022) "Kecemasan Ibu Hamil di Masa Pandemi Covid-19," Jurnal Kewarganegaraaan, 6(2), hal. 2723–2733.

[2] Dewi, A. D. C. et al. (2021) "Kecemasan Pada Ibu Hamil Di Masa Pandemi Covid 19 di RSUD Ibnu Sutowo Baturaja," Jurnal Smart Keperawatan, 8(1), hal. 64–69.

[3] Rorrong, J. F., M., J. J. E. W. A. dan Lumentut (2021) "Hubungan Psikologis Ibu Hamil dengan Kejadian Hiperemesis Gravidarum," e-Clinic Journal, 9(1), hal. 218–2223.

[4] DA, R. (2021) "*Hyperemesis Gravidarum Nutrition Care*," Journal of Nutrition and Health, 9(1), hal. 2622–2635.

[5] WHO (2019) "WHO Maternal Mortality Paper," WHO.

[6] Susanti, N. M. D., Lainsamputty, F. dan Ilestari, V. (2021) "Stres dengan Hiperemesis Gravidarum Pada Ibu Hamil," Jurnal Ilmiah Kesehatan Sandi Husada, 10(2), hal. 635–642. doi: 10.35816/jiskh.v10i2.670.

[7] Harianto, M. H. dan Putri, E. A. (2020) "Hubungan Antara Tingkat Kecemasan dengan Kualitas Tidur pada Ibu Hamil Primigravida Trimester III di Rumah Sakit Bersalin Jeumpa Kota Pontianak," Jurnal Kedokteran dan Kesehatan: Publikasi Ilmiah Fakultas Kedokteran Universitas Sriwijaya, 7(3), hal. 183–188.

[8] Yazia, V. dan Suryani, U. (2022) "Faktor yang Berhubungan dengan Tingkat Stres pada Ibu Hamil dalam Menghadapi Persalinan," Jurnal Keperawatan Jiwa, 10(4), hal. 837–856.

[9] Retnoningtyas, R. D. S. dan Dewi, R. K. (2021) "Pengaruh Hormon Human Chorionic Gonadotropin dan Usia Ibu Hamil terhadap Emesis Gravidarum pada Kehamilan Trimester Pertama," Jurnal Tadris IPA Indonesia, 1(3), hal. 394–402. doi: 10.21154/jtii.v1i3.306.

[10] Wulandari, N. (2021). Penanganan Emesis Gravidarum Dengan Menggunakan Aromaterapi Lemon: Study Literature Review.

[11] Simanjuntak, T.P. et al. (2019) "*Hyperemesis gravidarum: A holistic review and approach to etiopathogenesis, clinical diagnostic and management therapy*," Journal of SAFOG, 11(4), hal. 266–272. Tersedia pada: https://doi.org/10.5005/jp-journals-10006-1700.

[12] Videbeck, S. L. (2020) *Psychiatric-Mental Health Nursing : Eighth Edition*, *Wolters Kluwer*.

[13] Amiri, P. *et al.* (2022) "Validation Of The Persian Version Of The Perinatal Anxiety Screening Scale (Pass) Among Antenatal And Postnatal Women," *BMC Pregnancy and Childbirth*, 22(1), hal. 1–10

[14] Husna. *et al*. (2022) “Hubungan Umur Ibu Hamil Dengan Kejadian Hiperemesis Gravidarum Pada Ibu Hamil Di Rumah Sakit Umum Daerah Sungai Dareh Kabupaten Dhamasraya”*Preopotif Jurnal Kesehatan Masyarakat*, 6(3).

[15] Paskana, K. dan Gusnidarsih, V. (2020) “Hubungan Paritas Dengan Kejadian Hiperemesis Gravidarum Pada Ibu Hamil”*Jurnal Asuhan Ibu dan Anak*, 5(2).

[16] Nurhasanah. *et al*. (2022) “Hubungan jarak Kehamilan, Pekerjaan dan Paritas Dengan Kejadian Hiperemesis Gravidarum Pada Ibu Hamil”*Jurnal Ilmiah Universitas Batanghari Jambi*, 22(2), hal. 736-741. doi : 10.33087/jiubj.v22i2.1800

[17] Bottomley C, B. T. (2018) “Management strategies for hyperemesis,” *Best Pract Res Clin Obstet Gynaecol*, 34(2).