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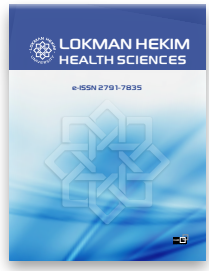

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ORIGINAL ARTICLE

An Examination of Alexithymia Levels in Pregnant Women with and without Gestational Hypertension

Gestasyonel Hipertansiyonu Olan ve Olmayan Gebe Kadınlarda Aleksitimi Düzeylerinin İncelenmesi

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Abstract

Introduction: Gestational hypertension (GHT) is a common pregnancy-related hypertensive disorder that presents not only obstetric risks but may also adversely impact maternal emotional well-being. One psychological construct relevant in this context is alexithymia, characterized by difficulties in identifying, describing, and processing emotions. Although both conditions have been studied independently, their potential relationship remains insufficiently explored in the literature.

Methods: This cross-sectional, descriptive, and correlational study was conducted at a tertiary healthcare center between August 30 and December 15, 2023. A total of 67 pregnant women at or beyond the 20th gestational week were enrolled, including 32 with a diagnosis of GHT and 35 normotensive controls. Data were collected using a sociodemographic questionnaire and the 20-item Toronto Alexithymia Scale (TAS-20). Statistical analyses included independent samples t-tests, chi-square tests, and Pearson correlation analysis.

Results: Demographic and obstetric characteristics were comparable between groups. However, the GHT group had significantly higher TAS-20 total scores (50.88±8.40) than the control group (45.46±7.92; p=0.0086). Subscale analyses showed significantly higher scores in Difficulty Identifying Feelings (DIF) and Externally Oriented Thinking (EOT) among GHT participants, while Difficulty Describing Feelings (DDF) did not differ. The prevalence of definite alexithymia (TAS-20 ≥61) was greater in the GHT group (21.8%) than in controls (8.6%).

Discussion and Conclusion: Pregnant women with GHT exhibit higher levels of alexithymia, particularly in emotional awareness and externally focused cognitive styles. These findings highlight the importance of incorporating psychological screening into routine prenatal care for women with hypertensive pregnancies.

Keywords: Gestational hypertension; Alexithymia; Pregnancy; Mental health

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Hypertensive disorders of pregnancy constitute a significant global public health challenge, contributing substantially to maternal, fetal, and perinatal morbidity and mortality, particularly in low- and middle-income countries.[1–4] Among these disorders, gestational hypertension (GHT) is a prevalent clinical entity characterized by the new onset of systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg, first detected after 20 weeks of gestation in the absence of proteinuria or end-organ dysfunction.[5] Although traditionally approached from a hemodynamic and obstetric perspective, emerging evidence highlights the importance of considering the psychological dimensions of GHT, particularly as they pertain to maternal mental health. Alexithymia, a multidimensional personality construct defined by impairments in identifying, describing, and expressing emotional experiences, has been increasingly implicated in the pathophysiology of various somatic and psychiatric disorders.[6,7] Individuals with alexithymic traits exhibit externally oriented thinking, a diminished capacity for fantasy, and difficulties in distinguishing between affective states and physiological sensations. These features collectively compromise emotional regulation and interpersonal functioning, rendering affected individuals more vulnerable to psychological distress in the context of chronic or acute medical conditions. Several studies in the general population have demonstrated a bidirectional association between hypertension and alexithymia.[8–10] Elevated blood pressure has been associated with increased alexithymic tendencies, while successful antihypertensive treatment appears to mitigate these symptoms. Conversely, alexithymia-related impairments in emotional regulation and autonomic homeostasis may contribute to the development or exacerbation of hypertensive states. Despite these findings, there is a notable paucity of research specifically examining the interplay between alexithymia and GHT, a condition uniquely characterized by both hemodynamic alterations and the psychoneuroendocrine complexities of pregnancy. Furthermore, pregnancy itself represents a physiological state accompanied by significant hormonal fluctuations, emotional lability, and psychosocial stress. Prior research suggests that alexithymia levels may be elevated even among normotensive pregnant women when compared to non-pregnant counterparts, further underscoring the vulnerability of this population to emotional dysregulation.[9,11] The additive burden of gestational hypertension in this context may potentiate these effects, amplifying the risk for adverse maternal mental health outcomes.

The present study aims to quantitatively assess alexithymia levels in pregnant women diagnosed with GHT in comparison to normotensive pregnant controls, utilizing the validated 20-item Toronto Alexithymia Scale (TAS-20). By elucidating the emotional and psychological profiles of women with GHT, this investigation seeks to expand the current understanding of the psychosomatic dimension of gestational hypertension. The findings may inform the integration of psychological screening protocols into routine antenatal care, ultimately contributing to more comprehensive and individualized maternal health strategies.

Materials and Methods

Study Design and Setting

Before its initiation, the study received ethical approval from the Non-Interventional Clinical Research Ethics Committee of Bilecik Şeyh Edebali University Faculty of Medicine (Approval No.: 15, Approval Date: August 22, 2023). The study protocol was developed by the principles of the Declaration of Helsinki and Good Clinical Practice (GCP) guidelines. Written informed consent was obtained from all participants after they were fully informed about the study's purpose, procedures, confidentiality measures, and their right to participate voluntarily.

Patient Population and Data Collection

The study included a total of 67 pregnant women at or beyond the 20th week of gestation. Participants were recruited consecutively over the study period. Of these, 32 women with a confirmed diagnosis of gestational hypertension comprised the study group, while 35 normotensive pregnant women constituted the control group. Data were collected through structured face-to-face interviews and standardized clinical evaluations conducted during routine obstetric visits.

Diagnostic Criteria

Gestational hypertension was diagnosed according to the criteria of the American College of Obstetricians and Gynecologists (ACOG). [12] The diagnosis required systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg, measured on two separate occasions at least four hours apart, occurring after the 20th week of gestation, and in the absence of proteinuria or signs of end-organ dysfunction.

Definitions

Alexithymia was defined as an impairment in emotional awareness and regulation, assessed using the 20-item Toronto Alexithymia Scale (TAS-20). This Likert-type self-re-

port scale includes three subdomains: Difficulty Identifying Feelings (DIF), Difficulty Describing Feelings (DDF), and Externally Oriented Thinking (EOT). Items 4, 5, 10, 18, and 19 are reverse-scored. Total scores were interpreted as follows: <50 points indicated the absence of alexithymia, 51–60 points indicated possible alexithymia, and scores ≥61 indicated definite alexithymia.[13]

Inclusion Criteria

Participants were eligible for inclusion if they were aged 18 years or older, were at or beyond the 20th gestational week (confirmed by the last menstrual period), were literate and able to complete the questionnaires, provided written informed consent, and had no history of psychiatric illness, alcohol or substance use during pregnancy.

Exclusion Criteria

Exclusion criteria included current or past use of antihypertensive medications within the last six months, known cardiovascular diseases (such as coronary artery disease, myocardial infarction, or heart failure with LVEF <50%), moderate to severe valvular heart disease, systemic or secondary hypertension, diabetes mellitus, chronic kidney disease (GFR <60 mL/min), pulmonary hypertension (sPAP >25 mmHg), chronic pulmonary conditions (e.g., asthma, COPD), anemia (Hb <11 g/dL), active infections, or any diagnosed neurological or psychiatric disorder.

Clinical and Laboratory Investigations

All participants underwent standard antenatal clinical evaluations, including blood pressure measurements, weight, height, and calculation of body mass index (BMI). Blood pressure was measured using a calibrated mercury sphygmomanometer following ACOG standards. Participants' sociodemographic and obstetric data were recorded using a 20-item structured questionnaire, which captured variables such as age, education, occupation, income level, marital status, gravidity, parity, history of miscarriage, and lifestyle factors, including smoking and medication use.

Statistical Analysis

All statistical analyses were conducted using GraphPad Prism version 8.01 (GraphPad Software, San Diego, CA, USA). Continuous variables were presented as mean±standard deviation, whereas categorical variables were summarized as frequencies and percentages. The Shapiro–Wilk test was used to assess the normality of data distribution. For group comparisons, independent samples t-tests (Welch's t-test) were employed for normally distributed continuous variables, while Chi-square or Fisher's exact tests were applied for categorical variables. Pearson correlation analysis was performed to examine the relationship between blood pressure values and TAS-20 scores. A post hoc power analysis was carried out to verify the adequacy of the sample size. A p-value of less than 0.05 was considered statistically significant.

Results

The study included a total of 67 pregnant women at or beyond the 20th week of gestation. No statistically significant differences were observed between the GHT group and the control group in terms of anthropometric measurements or sociodemographic characteristics. The mean gestational week, follow-up numbers, smoking rate and number of miscarriages were found to be similar in the groups (Table 1). However, the mean blood pressure values were statistically significantly higher in the GHT group than in the control group (SBP: 146.5±6.39 mmHg and DBP: 91.72±5.98 mmHg vs. 119.9±8.53 mmHg and 76.60±4.96 mmHg, p<0.0001 for both). When the Toronto Alexithymia Scale (TAS) subscales and total scores were compared, TAS-DIF (15.84±3.08 vs 13.63±3.28, p=0.006), TAS EOT (19.53±4.47 vs 16.94±3.55, p=0.012) and TAS-20 (50.88±8.40 vs 45.46±7.92, p=0.009) scores were significantly higher in the GHT group, while TAS-DDF (15.50±3.88 vs 14.89±4.05, p=0.529) were similar between the groups (Table 2). The differences in TAS-DIF, TAS-EOT, and TAS-20 total scores between the groups were not only statistically significant but also demonstrated moderate effect sizes. Cohen's d was 0.70 for TAS-DIF, 0.63 for TAS-EOT, and 0.70 for the TAS-20 total score. In contrast, the comparison of TAS-DDF scores did not reach statistical significance and was associated with a small effect size (d=0.15). The number of pregnant women with a definite alexithymia diagnosis (TAS-20 ≥61) was 21.8% in the gestational hypertension group compared to 8.6% in the control group, and this difference was statistically significant (p<0.05). When the alexithymia characteristics were compared according to the sociodemographic findings of the study group, no statistically significant difference was found between the education level, employment status, income levels, and family types (Table 3). However, the TAS-DIF and TAS-DDF levels of those living in rural areas were statistically significantly higher than those living in district and provincial centers. This significant increase was present in both the control and GHT groups (p=0.045 and p=0.031, respectively). TAS-EOT was statistically significantly higher only in the control group living in rural areas (p=0.044). Additionally, Pearson correlation analysis revealed that both

Table 1. Comparison of socio-demographic and obstetric characteristics of groups (n=67)

Characteristics	Groups		p
	Control (35)	GHT (32)	
Age (years)			0.364
Mean±SD	29.37±6.17	30.72±5.90	
Min–Max	23– 36	24–37	
Body mass index (kg/m^2)			0.552
Mean±SD	27.52±3.10	27.94±2.59	
Min–Max	22– 31	23–30	
Place of residence, (%) n			0.870
Rural	8.57 (3)	12.50 (4)	
District	25.71 (9)	25.00 (8)	
Province	65.71 (23)	62.50 (20)	
Education level, (%) n			0.371
Primary/high school	62.86 (22)	50.00 (16)	
University	37.14 (13)	50.00 (16)	
Working status, (%) n			0.528
Employee	85.71 (30)	78.13 (25)	
Non-employee	14.29 (5)	21.88 (7)	
Income level, (%) n			0.658
Good	60 (21)	62.5 (20)	
Medium	40 (14)	37.5 (12)	
Family type, (%) n			0.867
Nuclear family	68.5 (24)	65.6 (22)	
Large family	31.5 (11)	34.4 (6)	
Age at first marriage			0.901
Mean±SD	23.4±3.8	23.6±4.2	
Min–Max	21–35	22–36	
Gestational week			0.765
Mean±SD	26.37±6.17	25.72±5.90	
Min–Max	20–33	20–34	
Number of follow-up			0.482
Mean±SD	5.9±3.4	6.1±3.2	
Min–Max	2–12	1–13	
Number of pregnancies			0.364
Mean±SD	2.5±0.67	2.6±0.78	
Min-Max	1–4	1–5	
Aborted pregnancy, (%) n			0.892
Yes	5.71 (2)	6.25 (2)	
No	94.29 (33)	93.75 (30)	
Smoking, (%) n			0.987
Smoker	20.0 (7)	21.8 (7)	
Non-smoker	80.0 (28)	78.2 (25)	
Systolic blood pressure (mmHg)	119.9±8.53	146.5±6.39	**<0.001**
Diastolic blood pressure (mmHg)	76.60±4.96	91.72±5.98	**<0.001**

GHT: Gestational hypertension; SD: Standard deviation; Min: Minimum; Max: Maximum.

Table 2. Comparison of alexithymia levels between groups

	Control (n=35) (Mean±SD)	GHT (n=32) (Mean±SD)	p	Cohen's d
TAS-DIF	13.63±3.28	15.84±3.08	0.006	**0.70**
TAS-DDF	14.89±4.05	15.50±3.88	0.529	0.15
TAS-EOT	16.94±3.55	19.53±4.47	0.012	**0.63**
TAS-20	45.46±7.92	50.88±8.40	0.009	**0.70**

GHT: Gestational hypertension; SD: Standard deviation; TAS: Toronto Alexithymia Scale; DIF: Difficulty Identifying Feelings; DDF: Difficulty describing feelings; EOT: Externally oriented thinking. Effect sizes (Cohen's d) values interpreted as: small=0.2, moderate=0.5, large=0.8.

systolic and diastolic blood pressure levels were significantly and positively correlated with TAS-DIF and TAS-20 total scores (r=0.35–0.41, all p<0.01). These findings suggest that elevated blood pressure may be associated with greater difficulty in identifying emotions and higher overall levels of alexithymia. Detailed correlation coefficients are presented in Table 4. The TAS-20 score, which shows the total alexithymia level, was statistically significantly higher in both the control group and the GHT group living in rural areas (p=0.001 and p=0.032, respectively). No significant relationship was found between the number of pregnancies, follow-ups, regular medication use, and alexithymia scores. However, the TAS-20 scores of pregnant women with a history of miscarriage were significantly higher in the GHT group (p=0.036). In addition, the TAS-20 scores of pregnant women who smoked were significantly higher in both the control and GHT groups (p<0.001 for both) (Table 5).

A post hoc power analysis was performed based on the difference in TAS-20 total scores between the GHT and control groups. Using the observed effect size (Cohen's d=0.70), an alpha level of 0.05, and a total sample size of 67 (32 in the GHT group and 35 in the control group), the achieved statistical power was calculated to be 0.87. This result indicates that the study was well-powered to detect a moderate to significant effect in the primary outcome, thereby supporting the reliability and robustness of the observed group differences.

Discussion

The main finding of our study is that the mean alexithymia levels (TAS-20) in pregnant women diagnosed with GHT were statistically significantly higher compared to the control group. This increase was especially evident in the TAS-DIF and TAS-EOT subscales. Although TAS-DDF was also high in the GHT group, this difference was not statistically significant. There are many studies in the literature showing that high blood pressure is associated with many psychosomatic conditions. Among these are large-scale studies proving that hypertension correlates with alexithymia levels.[8–10] In a recent study conducted among 1200 participants, it was determined that hypertensive individuals were more alexithymic than normotensive individuals and that hypertensive patients receiving treatment with pharmacological treatment showed more alexithymic symptoms than normotensive and untreated hypertensive patients. Again, according to the results of the same study, when blood pressure control associated with drug treatment was taken into account, it was proven that people with uncontrolled hypertension showed more alexithymic symptoms than normotensive and untreated hypertensive individuals.[9] We found no studies examining the relationship between GHT and alexithymia levels. The relevant line of studies point to that the relationship between GHT and postpartum depression.[14,15] The common result of these studies is that pregnant women with GHT have a higher rate of depressive symptoms and anxiety compared to normal pregnancies. Therefore, it is suggested that psychosomatic problems that may arise may be reduced by providing comprehensive care and education to pregnant women with GHT.[16] In our study, it was found that individuals with GHT had high symptoms of alexithymia, a mood disorder. Similar to the studies, we think that alexithymia in GHT can be corrected or reduced with the most appropriate treatment and psychiatric education. Prospective and large-scale studies are needed on this subject

Many studies underpin that mood disorders are also present in pregnancies that usually progress, in addition to hypertensive disorders of pregnancy. These include depression, anxiety, suicidal tendencies, sleep disorders, and eating disorders that can progress to anorexia.[17] The fact that hypertension accompanies a condition such as pregnancy, which can disrupt normal metabolic processes and indirectly psychosomatic hemodynamics suggests that psychiatric disorders may multiply. In this context, our finding that alexithymia levels were higher in GHT patients is a new result not included in the literature. Although the underlying pathophysiological mechanism has not yet been fully explained, some possible mechanisms have been suggested. The most widely accepted of these pathophysiological mechanisms is that increased serum levels of catecholamines, stress hormones, and high blood pressure in patients with GHT indirectly affect the neuropsychiatric process.[18] Another possible pathophysiological mechanism is the role of immune mediators that show abnormal increases in GHT.[19] A recent study has shown that

Table 3. Distribution of findings regarding the comparison of alexithymia mean scores according to the sociodemographic characteristics of the study group

Variable group	Group	TAS-DIF		TAS-DDF		TAS-EOT		TAS-20	
		Control †Mean±SD	GHT †Mean±SD	Control †Mean±SD	GHT †Mean±SD	Control †Mean±SD	GHT †Mean±SD	Control †Mean±SD	GHT †Mean±SD
Level of education	Primary/high school	13.97±3.25	15.96±2.95	15.21±4.12	15.85±3.68	17.34±3.59	19.79±4.24	46.52±8.54	51.60±7.40
	University	13.35±3.39	15.69±3.21	14.54±3.87	15.46±3.98	16.56±3.35	19.13±4.87	44.45±7.37	50.28±6.70
	Test/p	0.076/0.764	0.564/0.842	1.057/0.865	0.856/0.935	2.038/0.670	1.582/0.912	0.637/0.641	1.045/0.838
Working status	Working	14.28±4.32	16.16±3.54	14.87±5.26	14.91±3.43	16.24±3.87	20.28±4.62	44.50±6.53	51.35±6.53
	Not working	13.28±3.41	14.92±3.65	16.22±4.30	16.32±2.78	17.76±4.42	19.14±5.54	46.06±7.27	50.38±7.30
	Test/p	0.676/0.842	0.750/0.450	-1.542/0.243	-1.262/0671	-1.280/0.203	0.928/0.422	-1.723/0.641	0.682/0.524
Income level	Good	12.75±3.45	14.84±3.61	13.98±3.45	15.34±4.18	16.15±6.50	21.16±4.62	42.88±5.54	51.34±5.16
	Medium	13.78±7.39	16.08±4.25	15.65±4.63	14.85±3.68	17.14±5.67	20. 54±5.54	46.57±6.12	51.47±5.76
	Test/p	-0.143/0.614	-0.031/ 0.358	-0.961/0.390	0.876/0.658	-1.227/0.542	0.654/0.467	-0.568/0.064	-1.098/0.942
Place of residence	Rural	16.57±4.22	16.85±3.54	16.12±5.32	16.83±5.48	17.34±6.22	18.84±7.34	50.03±9.22	52.52±8.32
	District	14.34±3.57	15.12±3.78	14.11±3.57	15.54±3.73	15.21±3.32	19.02±4.87	43.66±7.65	49.68±6.93
	Province	13.01±4.22	12.21±4.11	14.84±4.63	14.24±3.54	13.64±5.71	17.79±3.24	41.49±8.84	44.24±5.86
	Test/p	**4.976/0.045**	**5.436/0.031**	2.8783/0.473	0.453/0.311	**4.673/0.044**	0.463/0.762	**6.127/ 0.001**	**5.438/0.032**
Family type	Nuclear family	14.12±5.46	16.43±4.42	14.29±4.20	15.89±4.78	17.15±4.78	20.23±4.92	45.64±7.76	52.65±8.14
	Large family	13.14±4.16	14.84±5.13	14.95±3.71	15.25±5.11	16.79±5.82	18.67±6.22	44.88±6.54	48.76±7.54
	Test/p	0.565/0.462	1.247/0.238	-0.663/0.896	0.865/0.950	1.288/ 0487	0.948/0245	0.692/0.582	**3.587/0.045**

GHT: Gestational hypertension; SD: Standard deviation; Min: Minimum; Max: Maximum; TAS: Toronto Alexithymia Scale; DIF: Difficulty Identifying Feelings; DDF: Difficulty describing feelings; EOT: Externally oriented thinking; †: Arithmetic mean.

Table 4. Pearson correlation coefficients (r) between blood pressure values and TAS-20 subscale and total scores

	TAS-DIF	TAS-DDF	TAS-EOT	TAS-20
Systolic BP (mmHg)	r=0.38, p=0.002	r=0.21, p=0.081	r=0.33, p=0.007	r=0.41, p=0.001
Diastolic BP (mmHg)	r=0.35, p=0.004	r=0.18, p=0.102	r=0.30, p=0.012	r=0.37, p=0.003

TAS: Toronto Alexithymia Scale; DIF: Difficulty identifying feelings; DDF: Difficulty describing feelings; EOT: Externally oriented thinking.

immunological intervention in pregnant women with GHT and preeclampsia has therapeutic potential against these diseases.[20] In addition to the conclusion that this immunological treatment option can treat the disease organically, it can also provide improvement in psychosomatic patients.

Studies have shown that the socioeconomic, cultural, and educational levels of pregnant women are associated with psychiatric mood states such as depression and anxiety. As a result of recent large-scale studies, it has been found that pregnant women with low levels of education have a higher rate of experiencing problems such as depression and generalized anxiety disorder.[21,22] Similarly, in our study, it was observed that pregnant women with higher levels of education had lower alexithymia levels than pregnant women who graduated from primary school. However, this difference was not statistically significant in our study. We think that the possible reasons for this may be that our study was single-centered and our sample group was small compared to other studies. In our findings, the GHT rate was higher in pregnant women living in rural areas than in those living in the city center. This was observed as a result consistent with the literature. Low socioeconomic level and rural residence are risk factors for preeclampsia and GHT.[23]

Another important risk factor is smoking. However, in our study results, no statistically significant difference was observed between smoking in healthy pregnant women and the GHT group. We think this situation is related to the fact that the study was designed as a single-center study, and the study group was small. There are studies in the literature showing a positive relationship between alexithymia and smoking. It has been shown that pregnant women who quit smoking better manage their attempts to cope with the undifferentiated and unpleasant sensations created by alexithymia.[24] In our study, it was observed that TAS-20 levels were higher in healthy pregnant women and GHT who smoked compared to non-smokers. In light of these findings, which support the literature, we think that smoking cessation during pregnancy should be encouraged, and other methods should be applied. In this way, we can prevent psychiatric problems that may occur during pregnancy, such as mood disorders and alexithymia, and support a healthy pregnancy process.

In a recent study showing that alexithymia may be an essential cause of postpartum depression, it was concluded that neuroticism and alexithymia should be detected early, and precautions should be taken.[14] The presence of alexithymia and hypertension is not only a problem that concerns the health status of expectant mothers but can also pave the way for the development of adverse events in terms of the fetus. In a recent study by Mol et al.,[25] it was shown that cardiovascular diseases, growth and developmental delay, polycythemia, and endocrine disorders were observed more frequently in newborns with GHT and preeclampsia compared to healthy pregnant women. The most valid pathogenesis underlying this is uteroplacental dysfunction, increased oxidative stress, and endothelial dysfunction due to arteriolar vasospasm. All these pathophysiological mechanisms negatively affect placental blood flow and lead to fetal complications.[26,27]

A meta-analysis of independent prospective studies has shown that if the mother is exposed to stressful situations during pregnancy, such as intense anxiety, depression, mood disorders, and difficulty expressing emotions, the child is significantly more likely to have emotional or cognitive problems, including increased risk of attention-deficit/hyperactivity, anxiety, and language delay.[28] These findings are independent of the effects of postpartum maternal depression and anxiety. Results from animal models suggest that the activity of the stress-sensitive hypothalamic-pituitary-adrenal (HPA) axis and its hormonal end product, cortisol, play a role in these effects in both the mother and the offspring.[27] The fetal environment may be altered if maternal stress alters the hormonal profile. There is a strong correlation between maternal and fetal cortisol levels in humans. Many problems remain in understanding the mechanisms involved in this interaction. For example, maternal cortisol responses to stress are reduced throughout pregnancy, and the link between maternal and fetal cortisol is weakened in early pregnancy. The effects of maternal anxiety and stress on the developing fetus and child may be moderated by other factors, such as maternal diet (e.g., protein load). Some of the mechanisms proposed to cause neurodevelopmental disorders are increased alertness or anxiety, distracted attention, or an oversensitive HPA axis.[29]

Table 5. Distribution of findings regarding the comparison of alexithymia mean scores according to the obstetric characteristics of the study group

Variable	Group	TAS-DIF		TAS-DDF		TAS-EOT		TAS-20	
		Control †Mean±SD	GHT †Mean±SD	Control †Mean±SD	GHT †Mean±SD	Control †Mean±SD	GHT †Mean±SD	Control †Mean±SD	GHT †Mean±SD
Level of education	Primary/high school	13.97±3.25	15.96±2.95	15.21±4.12	15.85±3.68	17.34±3.59	19.79±4.24	46.52±8.54	51.60±7.40
	University	13.35±3.39	15.69±3.21	14.54±3.87	15.46±3.98	16.56±3.35	19.13±4.87	44.45±7.37	50.28±6.70
	Test/p	0.076/0.764	0.564/0.842	1.057/0.865	0.856/0.935	2.038/0.670	1.582/0.912	0.637/0.641	1.045/0.838
Working status	Working	14.28±4.32	16.16±3.54	14.87±5.26	14.91±3.43	16.24±3.87	20.28±4.62	44.50±6.53	51.35±6.53
	Not working	13.28±3.41	14.92±3.65	16.22±4.30	16.32±2.78	17.76±4.42	19.14±5.54	46.06±7.27	50.38±7.30
	Test/p	0.676/0.842	0.750/0.450	-1.542/0.243	-1.262/0671	-1.280/0.203	0.928/0.422	-1.723/0.641	0.682/0.524
Income level	Good	12.75±3.45	14.84±3.61	13.98±3.45	15.34±4.18	16.15±6.50	21.16±4.62	42.88±5.54	51.34±5.16
	Medium	13.78±7.39	16.08±4.25	15.65±4.63	14.85±3.68	17.14±5.67	20. 54±5.54	46.57±6.12	51.47±5.76
	Test/p	-0.143/0.614	-0.031/0.358	-0.961/0.390	0.876/0.658	-1.227/0.542	0.654/0.467	-0.568/0.064	-1.098/0.942
Place of residence	Rural	16.57±4.22	16.85±3.54	16.12±5.32	16.83±5.48	17.34±6.22	18.84±7.34	50.03±9.22	52.52±8.32
	District	14.34±3.57	15.12±3.78	14.11±3.57	15.54±3.73	15.21±3.32	19.02±4.87	43.66±7.65	49.68±6.93
	Province	13.01±4.22	12.21±4.11	14.84±4.63	14.24±3.54	13.64±5.71	17.79±3.24	41.49±8.84	44.24±5.86
	Test/p	**4.976/0.045**	**5.436/0.031**	2.8783/0.473	0.453/0.311	**4.673/0.044**	0.463/0.762	**6.127/0.001**	**5.438/0.032**
Family type	Nuclear family	14.12±5.46	16.43±4.42	14.29±4.20	15.89±4.78	17.15±4.78	20.23±4.92	45.64±7.76	52.65±8.14
	Large family	13.14±4.16	14.84±5.13	14.95±3.71	15.25±5.11	16.79±5.82	18.67±6.22	44.88±6.54	48.76±7.54
	Test/p	0.565/0.462	1.247/0.238	-0.663/0.896	0.865/0.950	1.288/0487	0.948/0245	0.692/0.582	**3.587/0.045**

GHT: Gestational hypertension; SD: Standard deviation; Min: Minimum; Max: Maximum; TAS: Toronto Alexithymia Scale; DIF: Difficulty Identifying Feelings; DDF: Difficulty describing feelings; EOT: Externally oriented thinking; †: Arithmetic mean.

In our study, the TAS-DDF scale, one of the subscales of alexithymia, namely difficulty expressing feelings, was similar in healthy pregnant women and those with GHT, unlike the other TAS subgroup scales. We could not find a study in the literature to compare this. The alexithymia scales other than the TAS-DDF were significantly higher in the GHT group. At the same time, the TAS-DDF was similar between the groups, maybe due to the relatively small number of patients and the fact that the study population was formed in a single center.

Individuals with high alexithymia are more likely to misjudge and interpret symptoms. Because they have difficulty expressing their feelings to others, they may fail to report symptoms when they first see a doctor. This behavioral pattern (alexithymia) may put pregnant women with gestational hypertension at higher risk for delayed medical care. There is no study in the literature on whether alexithymic personality traits negatively affect illness behavior when hypertension and other adverse pregnancy-related events occur. In a recent study, Montisci R. et al.[30] provided evidence that alexithymic individuals may negatively affect illness behavior when experiencing acute coronary syndrome. Therefore, it can be said that health professionals should conduct detailed screening by focusing on the clinical recognition of alexithymia and its potential impact on pregnant health.

As is known, GHT does not cause permanent high blood pressure after birth, but it can rarely cause chronic hypertension. There is no study on how alexithymia levels may occur when such a situation occurs. For example, it is not known how a patient with GHT and alexithymia may change their existing alexithymia characteristics if their blood pressure remains high after birth and even if they are diagnosed with chronic hypertension. Previous studies have shown that patients with chronic hypertension, regardless of etiology, have higher alexithymia levels than normal individuals.[9] From this result, it can be concluded that alexithymic characteristics may continue in patients who develop permanent hypertension after GHT.

In previous studies, studies have shown that alexithymia, anxiety, social phobia, and some other psychiatric findings can regress by treating hypertension and reaching target blood pressure values.[8,10] In this case, we think that starting treatment for hypertension in GHT patients can prevent both maternal and fetal complications that may be caused by high blood pressure and reduce some psychiatric problems during pregnancy. The use of many antihypertensive drugs is contraindicated in pregnancy because they cause fetal malformations, and the use of antihypertensive treatment during pregnancy is quite limited. Non-pharmacological treatment is considered in cases of mild and moderate hypertension. In advanced stages and even in cases that may cause hypertensive urgency, drug treatment should be considered. Methyldopa, labetalol, and nifedipine are the safest group of antihypertensive agents in pregnancy.

Our study can contribute to the literature in terms of determining psychiatric disorders and mood disorders seen in GHT patients. In addition, our study results are essential in terms of shedding light on similar studies to be conducted in the future. Despite this, our study has several fundamental limitations. One of these is that the study was designed as a single-center study. Another area for improvement was that the patient and control groups constituting the study group were not followed up for an extended period. Multicenter studies conducted on large patient groups are needed to clearly explain the mechanism of possible psychiatric and organic pathologies between alexithymia and GHT and to determine the factors that play a role in its etiology.

Conclusion

This study demonstrated a significant association between gestational hypertension (GHT) and elevated levels of alexithymia in pregnant women. The findings revealed that total alexithymia scores, as measured by the TAS-20, were markedly higher in women with GHT compared to normotensive pregnant controls. Specifically, the TAS-DIF and TAS-EOT subscales were significantly elevated in the GHT group, whereas the TAS-DDF subscale showed a nonsignificant increase. Notably, the prevalence of clinically defined alexithymia (TAS-20 ≥61) was nearly threefold higher among GHT patients, suggesting a clinically relevant psychological burden in this population.

Moreover, smoking was found to be associated with increased alexithymia scores in both hypertensive and normotensive pregnant women, reinforcing the multifactorial contributors to emotional dysregulation during pregnancy. The observed positive correlation between GHT and alexithymia implies that emotional regulation difficulties may be both a consequence and a potential risk factor in the pathophysiology of hypertensive disorders of pregnancy. These findings underscore the importance of early identification of emotional processing deficits in pregnant women, particularly those diagnosed with GHT. Integrating psychological screening into routine prenatal care may offer an opportunity for timely intervention. Comprehensive care strategies—including psychoeducation, supportive counseling, and behavioral interventions—may mitigate the impact of alexithymia and improve maternal-fetal outcomes. Future research should aim to validate these findings in larger, multicenter cohorts and investigate underlying biological mechanisms that link emotional dysregulation with hypertensive pathology in pregnancy.

Ethics Committee Approval: The Bilecik Şeyh Edebali University Non-interventional Clinical Research Ethics Committee granted approval for this study (date: 22.08.2023, number: 15).

Informed Consent: Written informed consent was obtained from participants.

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