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Hyperemesis gravidarum, socio-cultural factors and maternal short psychiatric status

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Abstract

Objective: This study sought to investigate the associations between Hyperemesis Gravidarum and both sociocultural factors and psychiatric status.
Material and Methods: A prospective non-randomized cohort design was employed. A total of 79 patients with Hyperemesis Gravidarum and 71 healthy pregnant women were enrolled. The study and control groups were compared according to results on the Brief Psychiatric Rating Scale and sociocultural factors specific to the region.
Results: Anxiety, somatic concern, tension, depressive mood, hostility, motor retardation, uncooperativeness, and blunted effect were found to be statistically significantly higher in patients with Hyperemesis Gravidarum ($p< 0.01$ and $p<0.05$). Furthermore, pregnant women living in extended families had statistically higher anxiety scores than those residing in nuclear families ($p < 0.05$).
Conclusion: Psychiatric status as well as sociocultural factors specific to the society in which the individuals live should be taken into account in assessments of patients with Hyperemesis Gravidarum.

Key words: Brief Psychiatric Rating Scale; Extended Families; Hyperemesis Gravidarum

Introduction

Hyperemesis gravidarum (HG) is characterized by persistent nausea and vomiting associated with advanced dehydration and metabolic and biochemical problems (1). A significant endocrine feature of HG is the presence of substantially higher levels of human chorionic gonadotropin. However, the etiology and pathophysiology of the disease have yet to be explained and can comprise psychosocial as well as biological factors (1). HG is most likely a multifactorial condition and has been associated with many risk factors (such as female infant, ethnicity, maternal psychiatric status, body mass index, socioeconomic status) (2).

Individuals in society can be affected, either directly or indirectly, by a range of social, economic, or demographic factors. For example, the negative effects of socio-economic status and several demographic factors (e.g., job loss, financial difficulties, educational or career problems) on psychological impairment in pregnant women have been reported in previous studies (3-8) and potential links between these factors and HG have also been examined. However, evaluations of the association between HG and sociocultural factors have thus far been limited.

Sociocultural practices such as polygamy and living in extended families, which are frequently seen in the Southeast region of Anatolia, could play a major role in the health and well-being of expectant mothers, as might an unwanted marriage or unplanned pregnancy. Given this context, this study was conducted on pregnant women living in Southeast Anatolia to evaluate the relationship between HG and the psychological status of pregnant women, as well as the effects of sociocultural factors specific to the study population on the development of HG

Material and Methods

This prospective study included females diagnosed with hyperemesis gravidarum who were hospitalized at Batman State Hospital department of obstetric and gynecology and Bakirkoy Dr. Sadi Konuk Teaching Hospital Department of obstetric and Gynecology. Approval for the study was granted by the Research local Ethics Committee. The study sample comprised 79 pregnant women with HG (study group) and 71 healthy pregnant women (control group) who were recruited into the study from march 2014 to august 2014. Informed consort form vas obtained from each participants. The

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participants in the study and the control groups were matched by age, parity, body mass index (BMI), and gestational weeks at hospital admission. Women with gastrointestinal disease, thyroid disease, gestational trophoblastic disease, psychiatric illness, or any other acute or chronic disease were excluded. Those who had previously received psychiatric treatment were also excluded. In this study, HG was defined as persistent vomiting in early pregnancy, not due to other causes (e.g., gastroenteritis), requiring any of the following: in-patient admission, day stay with intravenous fluids, nasogastric feeding (at home or in hospital), or vomiting associated with the loss of 5% of the individual's weight on presentation. Women with oral intake intolerance and ketonuria (i.e., ketone values of 3+ to 4+ as assessed with a urine dipstick test) were hospitalized. A comprehensive medical history was obtained from each participant, and laboratory evaluation tests were applied for renal function, serum electrolytes, and full blood count. A fetal sonogram was also obtained to confirm gestational age. Data were collected at the time of admission, using a series of forms completed in face-to-face interviews by the same physician (MBS, YC and AO). The patient information form was used to obtain clinical and demographic data related to expectant mothers. Standard inpatient management of HG was carried out, where all patients with HG were initially rehydrated with intravenous fluids and given intravenous anti-emetics. Oral intake was resumed based on clinical judgment. Patients were discharged once they were rehydrated and capable of maintaining adequate oral intake. All of the participants were asked to complete the Brief Psychiatric Rating Scale (BPRS) (9). The BPRS evaluation was conducted by a psychologist (AO). A further 6 questions were asked to evaluate sociodemographic characteristics which were felt to be unique to the region. These questions were: "How many concurrent marriages did your father have?", "How many siblings have you got?", "Is your marriage voluntary or unwanted?", "Did you want the pregnancy you currently have?", "What kind of a family do you have? Is it a nuclear or extended family?", and "If you live in a large family, do you feel anxious?". Plural marriage was defined as having a number of equal partners at the same time. Marriages that occurred after divorce or the loss of a partner were not considered plural. A nuclear family was defined as a family unit comprising a couple and their own children, whereas a large extended family, as also consisting of a mother, father, or sibling of the pair. Statistical analysis was performed using the Number Cruncher Statistical System (NCSS) 2007 and the Power Analysis and Sample Size (PASS) 2008 Statistical Software (Utah, USA). In order to evaluate differences on the BPRS between the two groups, the Mann-Whitney U test was applied. To assess intergroup differences on sociocultural factors, Pearson's Chi-square, Fisher's Exact, and Yates Continuity Correction tests were performed where appropriate, with a statistical significance level of $p = 0.05$ and 0.01

Results

A total of 79 pregnant women with HG (study group) and 71 healthy pregnant women (control group) were enrolled in the study. All of the women were unemployed and were primary school graduates. The demographic characteristics of the participants are shown in further detail in Table 1. Approximately 13.3% of the women (n = 20) had 6 siblings or fewer, while 86.7% (n = 130) had more than 6. The father of the participant was polygamous in 16.7% of cases (n = 25) and the husband in 3.3% of cases. The living conditions were in a nuclear family for 54% of the women (n = 81), and 46% had extended families. Approximately, 20.7% (n = 31) had unwanted marriages and 75.3% stated that the pregnancy was planned (Table 2). A comparison of the control and study groups did not reveal any statistical differences between the groups in terms of unwanted marriages, unplanned pregnancies, family type, number of siblings, and having a polygamous father or husband. The rate of discontent from living in an extended family was significantly higher among patients with HG ($p < 0.01$) (Table 3). Anxiety, somatic concern, tension, depressive mood, hostility, motor retardation, uncooperativeness, and blunted effect were also found to be significantly higher in patients with HG ($p < 0.01$) (Table 4). Pregnant women living in extended families had statistically higher anxiety scores than those living in nuclear families ($p < 0.05$) (Table 5).

Table 1. Participant characteristics

Characteristics	Min–Max	M ± SD
Week	4–14	8.98 ± 2.3
Gravidity	1–10	3.72 ± 2.24
Parity	1–8	2.99 ± 1.71
Abortion	1–4	1.41 ± 0.74
Cesarean	1–3	1.42 ± 0.67
Vaginal birth	1–8	3.00 ± 1.72

Table 2. Family characteristics of participants

		n	%
Number of siblings	≤ 6 siblings	20	13.3
	> 6 siblings	130	86.7
Polygamous father		25	16.7
Polygamous husband		5	3.3
Family type	Nuclear	81	54.0
	Extended	69	46.0
Voluntary marriage		119	79.3
Voluntary pregnancy		113	75.3

Table 3. Comparison of demographic characteristics between study and control groups. [a]Yates Continuity Correction [b]Fisher's Exact Test [c]Pearson's Chi-squared **p < 0.01

		Hyperemesis Gravidarum (HG)		p
		HG (+) (n = 79)	HG (-) (n = 71)	
		n (%)	n (%)	
Number of siblings	≤ 6 siblings	12 (15.2)	8 (11.3)	0.642 [a]
	> 6 siblings	67 (84.8)	63 (88.7)	
Polygamous father		14 (17.7)	11 (15.5)	0.884 [a]
Polygamous husband		4 (5.1)	1 (1.4)	0.370 [b]
Family type	Nuclear	37 (46.8)	44 (62.0)	0.063 [c]
	Extended	42 (53.2)	27 (38.0)	
Discontent from living in an extended family		34 (81.0)	9 (33.3)	0.001 [a,**]
Voluntary marriage		60 (75.9)	59 (83.1)	0.380 [a]
Voluntary pregnancy		54 (68.4)	59 (83.1)	0.057 [a]

Table 4. Comparison of BPRS[a] scores between study and control groups. Mann-Whitney U Test *p < 0.05 **p < 0.01

	HE (+)		HE (-)		[d]p
	Min-Max (Median)	Mean±SD	Min-Max (Median)	Mean±SD	
Somatic conern	0-6 (3)	2.48±1.68	0-4 (1)	1.10±1.21	0.001**
Anxiety	0-5 (4)	3.16±1.80	0-4 (1)	1.07±1.05	0.001**
Emotional Withdrawal	0-5 (0)	0.75±1.29	0-4 (0)	0.44±0.79	0.369
Conceptual Disorganization	0-3 (0)	0.11±0.45	0-0 (0)	0.00±0.00	0.018*
Guilt Feelings	0-4 (0)	0.47±0.97	0-4 (0)	0.55±0.98	0.490
Tension	0-5 (1)	1.39±1.29	0-3 (0)	0.49±0.84	0.001**
Mannerisms and Posturing	0-1 (0)	0.04±0.19	0-2 (0)	0.04±0.26	0.753
Grandiosity	0-2 (0)	0.10±0.34	0-2 (0)	0.07±0.35	0.278
Depressive Mood	0-6 (1)	1.38±1.37	0-5 (0)	0.38±0.96	0.001**
Hostility	0-3 (0)	0.22±0.59	0-1 (0)	0.01±0.12	0.005**
Suspiciousness	0-4 (0)	0.49±1.11	0-6 (0)	0.34±1.05	0.296
Hallucinatory Behavior	0-1 (0)	0.01±0.11	0-0 (0)	0.00±0.00	0.343
Motor Retardation	0-4 (0)	0.53±1.02	0-1 (0)	0.01±0.12	0.001**
Uncooperativeness	0-3 (0)	0.30±0.72	0-2 (0)	0.06±0.29	0.005**
Unusual Thought Content	0-3 (0)	0.09±0.43	0-4 (0)	0.06±0.47	0.224
Blunted Affect	0-4 (0)	0.33±0.78	0-3 (0)	0.06±0.37	0.002**
Excitement	0-5 (0)	0.24±0.91	0-3 (0)	0.04±0.36	0.043*
Disorientation	0-2 (0)	0.03±0.23	0-1 (0)	0.01±0.12	0.947
Total score	0-45 (10)	12.13±8.53	0-31 (3)	4.73±4.77	0.001**

Table 5. Comparison of anxiety scores between study and control groups. M = Mean, SD = Standard Deviation [a]Mann-Whitney U Test *p < 0.05

	Family type				[a]p
	Nuclear (n=81)		Extended (n=69)		
	Min-Max (Median)	Ort±SD	Min-Max (Median)	Ort±SD	
Anxiety	0-5 (1.0)	1.79±1.55	0-5 (3.0)	2.62±2.01	0.013*

Discussion

It is not apparent if psychiatric disorders induce HG symptoms or if HG symptoms have a negative effect on psychiatric status. Moreover, there is also the possibility that these two issues occur independently, but affect each other (10). In a study by Uguz et al. (11) anxiety and mood disorders were found to be statistically higher among pregnant women with HG than in healthy controls. In another study (12) involving Turkish patients with HG, the main findings were that the prevalence rates of psychiatric diagnosis among women in their study population were higher than those in the general population.

Several difficulties arise in ascertaining the effects of sociodemographic variables or in assessing the relationship between psychological problems and HG (10). For example, economic and sociological problems, such as that of unemployment, have been clearly linked to negative psychological outcomes in countries with a low level of economic development, unequal income distributions, or weak unemployment protection systems (12, 13). In a study conducted in Oslo (14), being an immigrant was found to be an independent factor, strongly correlated with HG. In that study population, adaptation and other social problems related to migration may have had a negative effect on physical health. In another study in Berlin (15), researchers reported that immigrant women were 4 to 5 times more likely than native-born women to have HG. At the same time, immigrant pregnant women had longer hospitalization periods for treatment. In a previous study in Turkey (16), patients with HG were evaluated in terms of educational attainment, economic status, and whether or not the pregnancy was planned. In that study, educational attainment was found to be higher in the HG group. No differences existed between the study and control groups in terms of other features, including economic status and whether pregnancies were planned, although anxiety and depression scores were higher in the HG group. However, it is difficult to determine the effects of social traditions and customs on psychological health and wellbeing, due to the difficulty of reaching a reliable source and the lack of clear definitions and classifications concerning these parameters.

Different studies have been conducted with regard to the effects of demographic factors on HG. In the current study, assessment was made of the sociodemographic factors and sociocultural characteristics specific to the region where the study population lived. The study and control groups were both compared in terms of sociodemographic features. The anxiety disorder rate was statistically higher among participants living in extended families than in those residing with nuclear families. Living in an extended family had a negative effect on the women's psychological health and seemed to aggravate HG symptoms. While the extended family type is frequently seen in the region where the study was performed (i.e., Southeast Anatolia), these results suggested that living in an extended family significantly affected the development of HG among the women in this study population. Hence, long-term hospitalization may present a viable option or reasonable approach to treating HG among these patients, as the negative effects of living with the extended family may be alleviated.

Although the planned pregnancy rate was higher in the control group, this difference was not statistically significant. These results suggested that unplanned pregnancies may have a negative effect on maternal perceptions rather than the actual status of health. With further research on an extensive number of patients, the association between unplanned pregnancy and maternal perceptions on psychological status may be more clearly defined. One of the most prominent sociodemographic features of this study population was polygamy. Although the prevalence of this practice has decreased in recent years, it is still relatively frequent and is more common in the urban districts of Southeast Anatolia. Polygamy is a sociological feature that could have negative effects on the psychological status of women in this area (17). In the current study, there were 4 HG patients and 1 in the control group whose husbands practiced plural marriage. Unfortunately, the effect of polygamy on maternal psychological status and HG could not be statistically evaluated in our study because of the inadequate number of patients in this sample. Another sociological feature of Southeast Anatolia is that of unwanted marriages, which include arranged and/or early marriages.

This sociological factor was examined in greater depth in this study, and no statistical differences were observed between HG patients and healthy pregnant women

This study had several limitations, including the relatively small sample of HG patients and the limited duration of observation. These limitations may have restricted the assessments of relationships between several traditional parameters specific to the study population (e.g., the practice of polygamy) and those of HG. However, to the best of our knowledge, this is the first study to examine sociodemographic factors specific to the region of Southeast Anatolia in pregnant women with HG, and it can be considered to contribute to existing literature on the effects of these significant factors on the development of the condition.

Conclusion

In conclusion, patients with HG should be evaluated in terms of sociodemographic factors, economic status, and family type. Detailed assessments of regional-specific sociodemographic factors are needed, as these factors could have a significant influence on the management of HG symptoms.

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Conflict of Interest: The authors declare that they have no conflicts of interest.

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