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Anxiety Depression and Somatosensory Amplification in Patients Consulting Psychiatry from Different Clinics

Psikiyatriye Farklı Kliniklerden Konsultasyon ile Gelen Hastaların Anksiyete Depresyon ve Somatosensoryal Amplifikasyonu

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ABSTRACT

Objective: Psychiatric consultation is often requested in hospitals for patients whose complaints cannot be fully explained by physical illness and who are struggling with the psychological effects of their condition. This study aimed to assess the anxiety, depression, and somatosensory amplification (SSA) levels of patients referred to psychiatry outpatient clinics from various departments and to compare them with those of healthy controls.

Material and Methods: A total of 201 individuals participated in the study, comprising 169 consultation patients and 32 controls. Among the consultation group, 43 patients were referred from neurology, 48 from gastroenterology, 38 from cardiology, and 40 from internal medicine departments. The demographic information form, the Hospital Anxiety and Depression (HAD) scale, and the SSA scale were administered to the patient group. The control group received the demographic form and the SSA scale, but not the HAD scale. Statistical analyses were conducted using a one-way ANOVA.

Results: A significant difference was found in the HAD-anxiety scores among the consultation groups (F=5.812, p=0.001), with the Cardiology Consultation Group showing higher mean anxiety levels compared to the other groups. No significant difference was observed in the HAD-depression scores among the groups (p=0.792); however, the mean scores in all groups exceeded the clinical cut-off value (7-8). For the SSA scores, a significant difference was observed among the consultation groups, primarily due to the elevated scores in the Gastroenterology Consultation Group (F=1.278, p=0.014). When comparing all consultation groups with the control group, a statistically significant difference was found (F=82.893, p=0.000).

Conclusion: Patients referred for psychiatric consultation exhibited high levels of SSA, depression, and anxiety symptoms. Particularly, patients referred from internal medicine departments may require more detailed psychiatric evaluation.

Keywords: Psychiatric consultation, depression, anxiety, somatosensory amplification

ÖZ

Amaç: Psikiyatrik konsültasyon, hastanelerde fiziksel hastalıkla açıklanamayan, oransız yakınmaları olan ve hastalığının olumsuz etkileri ile savaşan hastalar için istenmektedir. Psikiyatri polikliniklerine konsültasyon ile en çok başvuru dahiliye, gastroenteroloji, kardiyoloji, nöroloji gibi dahili dallardan olduğu bilinmektedir. Bu çalışmada amaç psikiyatri polikliniğine çeşitli polikliniklerden gelen hastaların anksiyete, depresyon ve somatosensoriyel amplifikasyon (SSA) değerlerini ölçülmesi ve birbirleriyle ve sağlıklı bireylerle karşılaştırılmasıdır.

Gereç ve Yöntemler: Çalışmaya konsültasyonla gelen 169 hasta ve 32 kişilik kontrol grubu olmak üzere toplamda 201 kişi katılmıştır. Konsültasyonla gelen grubun 43 kişi nörolojiden konsültasyonla gelen, 48 kişi gastroenterolojiden konsültasyonla gelen, 38 kişi kardiyolojiden konsültasyonla gelen ve 40 kişi ise dahiliyeden konsültasyonla gelen grup olarak gönderilmiştir. Hasta grubuna demografik veri formu, Hastane Anksiyete Depresyon (HAD) ölçeği ve SSA ölçeği verilmiştir. Kontrol grubuna HAD ölçeği dışındaki demografik veri formu ve SSA ölçeği verilmiştir.

Bulgular: Konsültasyonla gelen gruplar arasında HAD-anksiyete değeri açısından one-way ANOVA testi ile anlamlı fark saptanmıştır (F=5,812, p=0,001). Kardiyolojiden Konsültasyonla Gelen Grubunun anksiyete ortalaması diğer gruplara oranla yüksek olarak bulunmuştur.

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ÖZ

Gruplar arasında HAD-depresyon testi için fark bulunamamıştır (p=0,792). Ancak tüm grupların ortalaması bu test için kesim noktası üzerinde olup kesim noktası (7-8) yüksek olarak bulunmuştur. SSA ölçeği açısından tüm konsültasyon grupları karşılaştırıldığında istatistiksel olarak fark bulunmuştur. Fark Gastroenterolojiden Konsültasyonla Gelen Grubunun yüksek değerlerinden kaynaklandığı düşünülmüştür (F=1,278, p=0,014). Tüm konsültasyon grupları ile kontrol grubu arasındaki fark istatistiksel olarak anlamlıdır (F=82,893, p=0,000).

Sonuç: Sonuç olarak psikiyatri polikliniklerine konsültasyonla gelen hastalarda depresyon ve anksiyete belirtilerinin yüksek oranda bulunduğu SSA yüksek değerlerde olduğu anlaşılmıştır. Özellikle dahili polikliniklerden gelen hastaların daha ayrıntılı değerlendirilmesine gerek olduğu düşünülmektedir.

Anahtar Kelimeler: Psikiyatrik konsültasyon, depresyon, anksiyete, somatosensoriyel amplifikasyon

INTRODUCTION

In general hospitals, there are patients with complaints that are unexplained or disproportionate to their physical condition, therefore struggling with the negative effects of their illness. Psychiatric consultation is requested for these patients. The aim of consultations is not only to make a psychiatric diagnosis but also to reveal the connection and interaction between the physical and mental domains. It is known that the most common consultations to psychiatry outpatient clinics are from internal medicine, gastroenterology, cardiology, neurology, and physiotherapy, and rehabilitation. It has been reported that anxiety disorders and depression are more common in patients referred to psychiatry outpatient clinics for consultation (1).

In addition, the presence of physical illness causes the person to focus more attention on their body. These different sensations and scant evidence can lead to panic symptoms. In 1992, Barsky described somatosensory amplification (SSA) amplification who believe they have a physical illness tend to focus on their somatic sensations and experience them as harmful and disturbing (2). The anterior cingulate cortex, insula, amygdala, hippocampal formation, and striatum are some of the areas identified for SSA. Clinical symptoms are attributed to neurobehavioral disturbances in one or more areas. SSA can be caused in part by stress, but also by abnormal neuroplasticity of the brain and the neuromodulatory effects of inflammation (3).

This study aimed to measure anxiety, depression, and SSA values of patients coming from various psychiatry outpatient clinics and to compare them with healthy individuals.

MATERIALS and METHODS

The study group consisted of 169 patients referred for psychiatric consultation. Among these, 43 patients were included in the Neurology Consultation Group (NCG), 48 in the Gastroenterology Consultation Group (GCG), 38 in the Cardiology Consultation Group (CCG), and 40 in the Internal Medicine Consultation Group (IMCG). Thirty-two healthy volunteers were included as the control group.

Patients in the NCG presented with complaints such as non-epileptic fainting, headaches, muscle pain, and nonspecific numbness in the arms and legs. Patients in the GCG were referred for abdominal pain, indigestion, diarrhea, constipation, and bloating. Patients in the CCG presented with palpitations, chest pain, and shortness of breath. Patients in the IMCG reported symptoms of weakness, fatigue, anorexia, nausea, and abdominal pain; however, no physical illness was diagnosed following comprehensive clinical evaluations.

This cross-sectional study was conducted at the psychiatry outpatient clinics of Adana City Hospital and Kozan State Hospital. Written informed consent was obtained from all participants, including those in the control group. The control group was selected to be comparable to the patient groups in terms of age, gender, and marital status.

The patient group completed a demographic data form, the Hospital Anxiety and Depression (HAD) scale, and the SSA scale. The control group completed the demographic form and the SSA scale, but did not complete the HAD scale.

Hospital Anxiety and Depression Scale

The HAD is a four-point Likert-type scale developed by Zigmond and Snaith (4) to assess the risk and severity of anxiety and depression in patients. It consists of 14 items, with odd-numbered questions assessing anxiety and even-numbered questions assessing depression. The Turkish validity and reliability study of the scale was conducted by Aydemir (1), demonstrating its reliability for screening depression and anxiety symptoms in patients with physical illness (5).

Somatosensory Amplification Scale

The SSA is a 10-item Likert-type scale developed by Barsky et al. (2) to measure sensitivity to uncomfortable bodily sensations. Higher scores indicate an exaggerated perception of bodily sensations. The Turkish version of the scale has been validated (6).

Statistical Analysis

The Kolmogorov-Smirnov test was used to assess the normality of data distribution. Since the data were normally distributed and there were more than two groups, one-way ANOVA was used for comparisons of continuous variables. The chi-square test was used for comparisons of categorical variables. Statistical analyses were performed using SPSS version 22.0. A p value of less than 0.05 was considered statistically significant.

RESULTS

A total of 201 people, consisting of 169 patients and 32 controls, participated in the study. The mean and standard deviations of study group age were as follows: NCG group, 35.88+9.38; GCG group, 35.68+8.48; IMCG group, 38.65+10.83; the control group, 34.90+8.43. No statistical difference was found between the groups. Significant statistical differences gender, education, and occupation as sociodemographic data was found by Pearson's chi-square test. The difference was caused by the fact that the majority of our groups were female, with a low education level and professionally unemployed, as housewives (gender: chi-square= 22.25, p=0.000, education: chi-square= 25.82, p=0.011, occupation: chi-square= 36.01, p=0.000). There was no difference between the groups in terms of marital status (chi-square=8. 38, p=0.387). All sociodemographic data and the numbers and percentages of the groups are presented in Table 1. A significant difference was found between the consultation groups in terms of HAD-A value by a one-way ANOVA test (F=5.812, p=0.001). The mean anxiety level of the CCG group was found to be higher than any of the other groups. There was no difference between the groups in the HAD depression test (p=0.792). However, the mean of all groups was above the cut-off point for this test (cut-off point=7-8) and was found to be high. When all consultation groups were compared in terms of the SSA scale, a statistical difference was found. The difference was thought to be due to the high values of the GCG group (F=1.278, p=0.014). These values are shown in Table 2. The difference between all consultation groups and the control group was determined using a one-way ANOVA test. The difference was statistically significant (F=82.893, p=0.000). The results are in Table 3.

Table 1. Demographic data for the five groups

Groups	NCG (n=43)	GCG (n=48)	CCG (n=38)	IMCG (n=40)	Control (n=32)	Statistics
Age (Mean ± SD)	35.88±9.38	35.68±8.48	36.31±10.83	38.65±10.83	34.90±8.43	F=1.765 p=0.138
Women	38 (88.38%)	39 (81.25%)	20 (52.64%)	31 (88.89%)	27 (81.49%)	χ^2=22.25 p=0.000
Men	5 (11.62%)	9 (18.75%)	18 (47.36%)	4 (11.11%)	5 (18.51%)	
Primary	17 (39.53%)	11 (22.91%)	18 (47.36%)	22 (55.00%)	13 (40.62%)	
Secondary	4 (9.30%)	16 (33.33%)	7 (18.42%)	4 (10.00%)	4 (12.50%)	χ^2=25.82 p=0.011
Highschool	13 (30.23%)	17 (35.41%)	5 (13.15%)	11 (27.50%)	9 (28.12%)	
University	9 (20.93%)	4 (8.33%)	8 (21.05%)	3 (7.50%)	6 (18.75%)	
Unemployed-housewife	35 (81.39%)	30 (62.50%)	25 (65.78%)	37 (92.50%)	23 (71.87%)	
Worker	6 (13.95%)	6 (12.50%)	13 (34.21%)	2 (5.00%)	7 (21.87%)	χ^2=36.01 p=0.000
Officer	2 (4.65%)	12 (25.00%)	0 (0.00%)	1 (2.50%)	2 (6.25%)	
Married	27 (62.79%)	31 (64.58%)	32 (84.21%)	29 (72.05%)	25 (71.87%)	
Single	12 (27.90%)	10 (20.08%)	5 (13.15%)	9 (22.50%)	7 (21.87%)	χ^2=8.380 p=0.387
Widowed-divorced	4 (9.30%)	7 (14.58%)	1 (2.63%)	2 (5.00%)	2 (6.25%)	

NCG: Neurology Consultation Group, GCG: Gastroenterology Consultation Group, CCG: Cardiology Consultation Group, IMCG: Internal Medicine Consultation Group

Table 2. HAD-A HAD-D data of the groups

Groups	NCG (n=43)	GCG (n=48)	CCG (n=38)	IMCG (n=40)	Statistics
HAD-A (Mean ± SD)	11.44±4.63	12.14±3.16	14.63±2.40	12.32±3.58	F=5.812 p=0.001
HAD-D (Mean ± SD)	9.60±4.55	9.22±3.78	9.07±3.15	9.87±3.91	F=0.392 p=0.792

NCG: Neurology Consultation Group, GCG: Gastroenterology Consultation Group, CCG: Cardiology Consultation Group, IMCG: Internal Medicine Consultation Group, HAD: Hospital Anxiety and Depression scale

Table 3. Comparison of all groups in terms of somatosensory amplification						
Groups	**NCG (n=43)**	**GCG (n=48)**	**CCG (n=38)**	**IMCG (n=40)**	**Control (n=32)**	**Statistics**
SSAS (Mean ± SD)	27.74±6.30	32.31±6.94	28.42±6.76	28.90±6.17	8.59±2.21	F=82.893 p=0.000
NCG: Neurology Consultation Group, GCG: Gastroenterology Consultation Group, CCG: Cardiology Consultation Group, IMCG: Internal Medicine Consultation Group, HAD: Hospital Anxiety and Depression scale						

DISCUSSION

In our study, we found that the mean depression score of patients consulting from NCG, GCG, CCG, and IMCG was above the cut-off point of the test. In some patients, depression may present with pain, gastrointestinal disorders, and cardiac symptoms instead of vegetative symptoms. This condition is called masked depression in the literature (1). High rates of depression have been found in various patient groups in previous studies (1,7). In the study conducted by Korkmaz et al. (7), statistically higher rates of depression were found in cardiology patients with normal angiography compared to the control group. In our study, no difference was found between the consultation groups in terms of depression values. However, a difference was found between anxiety values. The difference was that the mean anxiety of the CCG was found to be higher than other groups. The literature indicates that anxiety is high in cardiologic patients. These results are compatible with our study (7,8). Symptoms such as palpitations, chest pain, and shortness of breath, which are the leading symptoms of panic disorder, overlap with cardiologic symptoms. In this case, psychological examination is important in diagnosing the disease (9).

In our study, all consultation groups had statistically significantly higher SSA values than the control group. This result is consistent with studies conducted with various patient groups (8,10). In our study, consultation groups were found to differ in SSA values. The difference was thought to be due to the high values of the GCG group. This factor is more prominent especially in patients presenting for a gastroenterology consultation. Studies have shown that patients who have IBS have higher levels of somatic amplification (11,12). In this study, although the patients with GCG did not have a gastroenterological diagnosis yet, their symptoms were similar, including abdominal pain, indigestion, diarrhea or constipation, and bloating.

Study Limitation

This study has several limitations. First, the sample size was relatively small, and the participants were recruited from only two centers, which may limit the generalizability of the findings. Second, the cross-sectional design prevents the establishment of causal relationships between physical symptoms and psychiatric outcomes. Third, although validated scales were used, reliance on self-reported questionnaires may have introduced response biases. Lastly, certain confounding variables such as socioeconomic status, chronic medical conditions, and medication use were not controlled, which might have influenced the results. Future studies with larger, multi-center samples and longitudinal designs are recommended to confirm and expand upon these findings.

CONCLUSION

In conclusion, this study demonstrated that patients referred to psychiatry outpatient clinics for consultation exhibited high levels of SSA, accompanied by elevated rates of depression and anxiety symptoms. These findings emphasize the importance of comprehensive psychiatric evaluation in patients presenting with unexplained physical complaints. Although the underlying mechanism of SSA, whether functional or structural in origin, remains unclear, further research is necessary to better understand its neurobiological basis and clinical implications.

Ethics

Ethics Committee Approval: The approval of the University of Health Sciences Türkiye, Adana City Training and Research Hospital Clinical Research Ethics Committee and was obtained (decision number: 191, date: 10.10.2024).

Informed Consent: Written informed consent was obtained from all participants, including those in the control group.

Footnotes

Authorship Contributions

Concept: E.Ç., Design: Y.Ö., B.K., Data Collection or Processing: Y.Ö., C.C., B.K., Analysis or Interpretation: E.Ç., B.K., Literature Search: Y.Ö., E.Ç., Writing: Y.Ö., E.Ç.

Conflict of Interest: No conflict of interest was declared by the authors.

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REFERENCES

1. Aydemir Ö. Konsültasyonda psikiyatrik tanı. Psikiyatri Konsültasyonu El Kitabı. Matsan.1999
2. Barsky AJ, Wyshak G, Klerman GL. The somatosensory amplification scale and its relationship to hypochondriasis. J Psychiatr Res. 1990;24:323-34. doi: 1016/0022-3956(90)90004-a.
3. Perez DL, Barsky AJ, Vago DR, Baslet G, Silbersweig DA. A neural circuit framework for somatosensory amplification in somatoform disorders. J Neuropsychiatry Clin Neurosci. 2015 Winter;27(1):e40-50. doi: 10.1176/appi.neuropsych.13070170. Epub 2014 Nov 10.

4. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand. 1983;67(6):361-70. doi: 10.1111/j.1600-0447.1983.tb09716.x.
5. Aydemir Ö, Güvenir T, Küey L, Kültür S. Reliability and validity of the Turkish version of hospital anxiety and depression scale. Türk Psikiyatri Dergisi. 1997;8(4):280-7.
6. Güleç H, Sayar K. Reliability and validity of the Turkish form of the somatosensory amplification scale. Psychiatry Clin Neurosci. 2007;61:25-30. doi: 10.1111/j.1440-1819.2007.01606.x.
7. Korkmaz H, Korkmaz S, Yıldız S, Gündoğan B, Atmaca M. Determination of health anxiety, anxiety, and somatosensory amplification levels in individuals with normal coronary angiography. Biomed Res Int. 2017;2017:114-7. doi: 10.1016/j.psychres.2017.02.057.
8. Zincir SB, Sümbül M, Sümbül EA, Dalkılıç B, Cengiz F, Kıvrak T, et al. Evaluation of alexithymia, somatosensory sensitivity, and health anxiety levels in patients with noncardiac chest pain. Biomed Res Int. 2014;2014:1-6. doi: 10.1155/2014/896183.
9. Neill JR. Panic disorder and psychiatric consultation. Practical manual of psychiatric consultation. Baltimore: Williams & Wilkins. 1980.
10. Spano VE, Imbriglio TV, Ho KCJ, Chow JCF, Cioffi I. Increased somatosensory amplification is associated with decreased pressure pain thresholds at both trigeminal and extra-trigeminal locations in healthy individuals. J Oral Rehabil. 2021;48(1):10-17. doi: 10.1111/joor.13101. Epub 2020 Oct 7.
11. Tuğal Ö, Özenli Y, Cengisiz C, Topal K, Taşdoğan B, Karaköse S, et al. Is there any somatosensory amplification in patients with irritable bowel syndrome? Journal of Clinical and Analytical Medicine. 2017;8(suppl 4): 251-5. doi: 10.4328/JCAM.4937.
12. Özenli Y, Yoldaşcan E, Topal K. Özcürümez G. Prevalence and associated risk factors of somatization disorder among Turkish university students at an education faculty. Anatolian J Psychiatry. 2009; 10(2):131-6.