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Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi



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PREFACE / ÖNSÖZ

Mehmet Çakıcı¹

Değerli Okuyucular,

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi olarak, 2026 yılının Eylül sayısının yayımlanmasından dolayı mutlu olduğumuzu bildirmek isteriz. Dünya acılarla dolu bir yerdir. Her gün yeni bir güne başladığımızda insan hayatını etkileyen felaketlerle karşılaşyoruz. Savaşlar, ekonomik bunalımlar ve doğal afetler hayatımızı her gün etkiliyor ve pek çok kişide derin yaralar açıyor. Çok kısa bir süre önce yaşanan deprem felaketlerinin ardından Kuzey Kıbrıs'ta birkaç gün önce yaşanan deniz kazası Doğu Akdeniz bölgesinde büyük üzüntüler yarattı. Özellikle Ortadoğu'da yaşayan halklar, insanlık tarihinden beri büyük olaylara tanıklık etmiştir. En başta, bu bölgede günümüze kadar uzanan savaşlar insanları nesiller boyu etkilerinin altında bıraktı. Bu bölgede yaşanan insan kayıpları, geçmişteki diğer travmatik olayları da tetikleyici bir rol oynayabiliyor. Daha yakın zamanda depremde yakınlarını kaybeden insanlar, bu kez de deniz faciasıyla karşı karşıya kalabiliyor. Travmalar tetikleniyor; ruhsal sıkıntılar da birbirini kovalarcasına insanları etkiliyor. Yaşanan travmaların ardından, yalnızca faciadan kurtulmaya çalışan insanlara fiziki yardım değil, ruhsal desteğin de önemi bir kez daha bu olaylarla ortaya çıkıyor. Bireylere psikolojik acil yardımın önemi ve değeri bu noktada daha belirgin hale geliyor. Ruh sağlığı hizmeti ve desteği, her noktada ve her an ihtiyaç duyulabileceği gerçeğiyle herkesle yüz yüze geliyor. Ruh sağlığı bilimi ve uygulamalarını insanlığa daha yararlı olabilmek için geliştirmeye devam etmeliyiz. Çünkü bu alan insan sağlığı için her zaman çok önemli ve gereklidir. Biz de bu anlamda ruh sağlığı alanındaki bilimsel gelişmelere dergi olarak katkı sağlamaya devam edeceğiz. Dergimiz Kuzey Kıbrıs'ta tüm alanlarda en yüksek etki faktörüne sahip dergi konumunda devam etmektedir. Web of Science'ın açıkladığı son değerler incelendiğinde, Journal Impact Factor'ın (JIF) 0,5 ve yüzde 15,8 percentile'de yükselerek ilerlemesi bizi de mutlu ediyor. Scimago'da ise 0,215 değeriyle Türkiye dergileri arasında Klinik Psikoloji alanında birinci, Orta Doğu Bölgesi'nde ise ikinci sırada yer almaktadır. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin Haziran 2026 sayısının yayımlanmasına katkı sağlayan herkese çok teşekkür ederiz.

Dear Readers,

As the Cyprus Turkish Journal of Psychiatry and Psychology, we are pleased to announce the publication of our September 2026 issue. The world is full of suffering. Every day, we face disasters that affect human lives. Wars, economic crises, and natural disasters impact our lives daily and leave deep wounds in many people. Following recent earthquakes, the maritime accident that occurred a few days ago in Northern Cyprus has caused deep sorrow across the Eastern Mediterranean. People in the Middle East, in particular, have witnessed major events throughout human history. Above all, the wars in this region, which continue to this day, have left people under their effects for generations. The human losses in this region can also trigger other traumatic events of the past. People who recently lost loved ones in an earthquake can now face a maritime tragedy. Traumas are triggered, and mental distress follows, affecting people. These events once again highlight the importance of not only physical aid but also psychological support for those trying to survive the disaster. The importance of psychological emergency assistance becomes even more apparent. Mental health services and support are needed at any time and in any situation, confronting everyone with this reality. We must continue to develop mental health science and practice to better serve humanity, because this field remains crucial to human health. In this sense, we, as a journal, will continue to contribute to scientific developments in mental health. Our journal continues to hold the position of the journal with the highest impact factor across all fields in Northern Cyprus. Based on the latest Web of Science data, we are pleased to see the Journal Impact Factor (JIF) increase from 0.5 to 15.8 percentile. In Scimago, with a value of 0.215, it ranks first among Turkish journals in Clinical Psychology and second in the Middle East region. We thank everyone who contributed to the publication of the June 2026 issue of the Cyprus Turkish Journal of Psychiatry and Psychology.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

Evaluation of the Relationship between Depression and the Volume of Olfactory Regions by Parcellation Method

Depresyon ve Koku Bölgeleri Hacmi Arasındaki İlişkinin Parselasyon Yöntemiyle Değerlendirilmesi

Merve Yurt¹, Merve Şahin Can², Emrah Özcan¹, Aslıhan Çetinel¹, Esmâ Gül³,
Ömür Karaca¹, İlter Kuş¹

Abstract:

Scientific studies in the literature have demonstrated olfactory loss and reduced olfactory bulb volume in individuals with major depressive disorder. This study aims to evaluate the correlation between major depressive disorder and olfactory region volume. In the study, Magnetic Resonance Imaging (MRI) images of 33 patients with major depressive disorder and 33 healthy controls from Balıkesir University Hospital's Mental Health Clinic were retrospectively analyzed. In the obtained MRI series, the volumes of the amygdala, fusiform gyrus, anterior commissure, olfactory radiation, and entorhinal area, which are involved in olfaction, were measured using a parcellation method. All data were transferred to SPSS and analyzed quantitatively. The statistical analysis of the variables examined in the study revealed that the right and left amygdalae tend to be smaller in individuals with illness. It was determined that there was a positive correlation among the parameters evaluated in the study: left amygdala, left entorhinal area, right and left fusiform gyrus volumes, and the Hamilton Depression Scale. As a result of the research, it was revealed in the direction of morphometric analysis that there is a negative relationship between major depressive disorder and olfactory regions. The data obtained in light of these findings will contribute to understanding the cause-and-effect relationship between depression and loss of smell; for clinicians, it is expected to serve as a guide in diagnosis and treatment.

Keywords: Major depression, Olfaction, Magnetic resonance imaging, Parcellation.

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Öz:

Major depresif bozukluğu bulunan bireylerde koku kaybının görüldüğü ve bulbus olfactorius hacminde küçülme meydana geldiği, literatürde yer alan bilimsel araştırmalarla ortaya konmuştur. Bu çalışmada, majör depresif bozukluk ile koku bölgelerinin hacmi arasındaki korelasyonun değerlendirilmesi amaçlanmaktadır. Çalışmada, Balıkesir Üniversitesi Eğitim ve Araştırma Hastanesi Ruh Sağlığı ve Hastalıkları Polikliniği'nde majör depresif bozukluk tanısı konulan 33 hasta ve kontrol grubunu oluşturacak 33 sağlıklı bireyin Manyetik Rezonans Görüntüleme (MRG) görüntüleri retrospektif olarak incelendi. Elde edilen MRG serilerinde koku duyusunda rol alan amygdala, gyrus fusiformis, commissura anterior, radiatio olfactoria ve entorhinal alan hacmi parselasyon yöntemi kullanılarak ölçüldü. Tüm veriler SPSS yazılımına aktararak kantitatif olarak analiz edildi. Araştırmada incelenen değişkenlerin istatistiksel analiz sonuçlarına göre, sağ-sol amigdaların hasta bireylerde daha küçük hacme sahip olma eğilimi gösterdiği tespit edildi. Çalışmada değerlendirilen parametrelerden, sol amigdala, sol entorhinal alan ve sağ-sol fusiform gyrus hacimleri ile Hamilton Depresyon Ölçeği skalası arasında pozitif bir korelasyon olduğu görüldü. Yapılan araştırmalar neticesinde, majör depresif bozukluk ile koku bölgeleri arasında negatif bir ilişki bulunduğu morfometrik analizler doğrultusunda ortaya konmuştur. Bu veriler ışığında elde edilen verilerin depresyon ve koku kaybı arasındaki neden-sonuç ilişkisinin anlaşılmasına katkıda bulunacağı, klinisyenler açısından ise tanı ve tedavide yol gösterici nitelikte olabileceği düşünülmektedir.

Anahtar Kelimeler: Major depresyon, Koku, Manyetik rezonans görüntüleme, Parselasyon.

Introduction

Major depressive disorder (MDD) is a psychological condition characterized by a combination of emotional and behavioral symptoms. (Ahmed et al., 2017). It is estimated that more than 320 million people worldwide have been diagnosed with MDD, and its prevalence continues to increase over time. (Abdelmotaleb et al., 2020; Dündar et al., 2020). According to the World Health Organization (WHO), MDD is the leading cause of suicide attempts, accounting for approximately 800,000 deaths annually. (Ahmed et al., 2017). Numerous studies have been conducted to elucidate the pathophysiology of MDD. (Sağar et al., 2024). Among the hypotheses proposed, the most widely accepted is the monoamine hypothesis, which attributes the disorder to dysregulation in the concentrations of norepinephrine, serotonin, and dopamine. (Boku et al., 2018). However, according to the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders), the diagnosis of MDD requires the presence of at least one of two core symptoms—depressed mood or anhedonia—accompanied by a constellation of additional symptoms. (Lolk, 2013).

Among symptoms not included in the diagnostic criteria for MDD but that adversely affect patients' quality of life are olfactory dysfunction (Athanassi et al., 2021; Kohli et al., 2016; Pause et al., 2001; Schablitzky & Pause, 2014). The prevalence of depression among individuals with olfactory impairment ranges from 40% to 76% (Kohli et al., 2016). These two interconnected phenomena have been the subject of a growing body of literature (Herrmann et al., 2023; Kim & Park, 2021; Negoias et al., 2010; Rochet et al., 2018). The link was first identified in rodents subjected to olfactory bulbectomy, which led to the development of depressive-like behaviors (Kelly et al., 1997). The olfactory system is a chemosensory pathway that converts chemical stimuli into neural signals via central nervous system (CNS) structures (Athanassi et al., 2021). In this pathway, the nervus olfactorius (olfactory nerve) plays a key role in conveying peripheral stimuli to the brain. The term "nervus olfactorius" refers to the delicate nerve fibers, known as fila olfactoria, which are surrounded by meninges and pass through the lamina cribrosa of the ethmoid bone to reach the olfactory bulb (Arıncı & Elhan, 2014). The presence of cholinergic, noradrenergic, and serotonergic innervation within the olfactory bulb suggests a potential link between olfactory

dysfunction and the neurotransmitter imbalances described in the monoamine hypothesis of MDD (Li et al., 2020). Changes in serotonin and dopamine levels following bilateral ablation of the olfactory bulb further support this assumption (Rochet et al., 2018).

Cortical areas that are in direct contact with the efferent neurons of the olfactory bulb are collectively defined as the olfactory cortex. These areas include the piriform cortex, amygdala, and entorhinal cortex. Additionally, the hippocampus, a component of the limbic system, is functionally connected to the olfactory cortex. The limbic system, which comprises various interconnected brain structures, regulates emotional and physical responses, including memory, motivation, reward, and sexual behavior. (Arıncı & Elhan, 2014; Erzurumlu et al., 2019; Taner, 2019). Given these associations, the sense of smell is believed to be closely related to emotional states. (Erzurumlu et al., 2019; Schablitzky & Pause, 2014; Soudry et al., 2011; Taalman et al., 2017; Taner, 2019; Yao et al., 2020). A reduction in the number of nerve fibers projecting from the olfactory bulb to the olfactory cortex may lead to atrophy in these regions, potentially resulting in functional impairment of the associated cortical areas. (Rochet et al., 2018; Rottstädt et al., 2018).

In a pivotal 2010 study, it was demonstrated that reduced olfactory bulb volume was associated with diminished olfactory function in MDD patients and correlated with the severity of depressive symptoms. (Negoias et al., 2010). One proposed mechanism is the olfactory bulb's inhibitory projections to the amygdala, which are involved in mood regulation. Accordingly, olfactory bulbectomy may lead to disinhibition of the amygdala, resulting in heightened negative emotions such as fear and anxiety. (Pause et al., 2001). The relationship between olfactory dysfunction and MDD is critical to understanding their bidirectional influence. In both cases, dysfunction may lead to a decline in overall quality of life. (Kohli et al., 2016; Sivam et al., 2016).

Despite an increasing number of neuroimaging and clinical studies exploring the relationship between psychiatric disorders and olfactory function, the causal mechanisms remain largely unclear. Based on the current literature, this study hypothesizes that patients diagnosed

with MDD may exhibit reduced volumes in the olfactory cortex. This study aims to morphometrically evaluate structural changes in olfactory cortex regions using magnetic resonance imaging (MRI) in patients with MDD, compare these results with those of healthy individuals, and analyze correlations between volumetric data and depression/anxiety scores. It is anticipated that the findings will contribute valuable insights for clinicians and enrich the existing literature on the etiology of MDD. It is considered that clarifying whether patients with depression exhibit reduced olfactory function, or whether individuals with olfactory dysfunction present depressive symptoms, may help in understanding the underlying mechanisms connecting these conditions.

Materials and Methods

Study Population

This study was conducted using brain MRI scans of individuals diagnosed with major depressive disorder (MDD) and healthy controls, obtained from the Psychiatry Outpatient Clinic at Balıkesir University Training and Research Hospital. The study population included individuals diagnosed with MDD and healthy controls without any personal or first-degree familial history of psychiatric illness. A total of 66 individuals aged between 20 and 74 years, for whom Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A) scores were available, were retrospectively evaluated. Before imaging, participants were informed that their images might be used for scientific research and provided written informed consent.

This study was approved by the Non-Interventional Clinical Research Ethics Committee of Balıkesir University (Approval No: EK-2025-272, 01 July 2025) and conducted at the Department of Anatomy, Faculty of Medicine, Balıkesir University.

The HAM-D and HAM-A are among the most widely used instruments for assessing symptom severity. The scores on these scales increase in proportion to the severity of depressive symptoms. (Hamilton, 1960; Shear et al., 2001).

Magnetic Resonance Imaging (MRI) Protocol

MRI scans were acquired using a 1.5 Tesla scanner (Philips, Ingenia, 2013). Anatomical images were obtained using T1-weighted cranial MRI sequences. Coronal T1-weighted images were acquired using a turbo spin echo sequence with the following parameters: repetition time

(TR) = 7.0 ms; echo time (TE) = 3.4 ms; field of view (FOV) = 250 × 250 mm; matrix size = 228 × 228; voxel size = 1 × 1 × 1 mm; flip angle = 90°. Slice thickness was set to 1.1 mm with no interslice gap.

Image Evaluation Method

The following olfactory cortex-related regions were bilaterally (right and left) measured using an atlas-based parcellation method: commissura anterior, radiatio olfactoria, amygdala, entorhinal area, gyrus fusiformis, hippocampus, and total brain volume.

Parcellation is a volumetric calculation method based on multiple software tools. One of the primary software packages for this purpose is MRiStudio, which comprises DTIStudio, ROIEditor, and DiffeoMap. DTIStudio is employed to open and save DICOM images obtained from patients. Images are transformed linearly and non-linearly using diffeomorphic metric mapping. Following this transformation, the brain is segmented into 160–180 regions using ROIEditor, and the volume of each region is computed. (Kocaman et al., 2019). The MRiStudio parcellation protocol has been previously described in earlier studies. (Faria et al., 2011).

Statistical Analysis

The statistical analysis of the data was conducted using SPSS software version 25. Variables with skewness and kurtosis values between −2.0 and +2.0 were considered to have a normal distribution (Suhail & Srinivasulu, 2021). Normally distributed variables were compared between the MDD and healthy groups—regardless of sex—using the Independent Samples t-test. All volumetric data are presented as mean ± standard deviation (SD). The relationship between volumetric variables and scores on the Hamilton Depression and Anxiety Scales was analyzed using Pearson's correlation. A p-value <0.05 was considered statistically significant.

Results

In this study, brain MRI series of a total of 66 individuals aged between 20 and 74 years were evaluated, including 33 patients diagnosed with Major Depressive Disorder (MDD) and 33 healthy controls. The patient group comprised 28 females and 5 males, whereas the control group comprised 17 females and 16 males. The variables analyzed in the study were found to follow normal distributions ($p > 0.05$). The age and scale score distributions of the study population are presented in Table 1.

Table 1. Age and scale score distribution of the study group

Study group	n	Age (Mean ± SD)	Hamilton Depression Rating Scale (SD)	Hamilton Anxiety Rating Scale (SD)
Healthy Individuals	33	46.27 ± 14.93	2.30±1.31	3.00±1.14
Patients with Major Depressive Disorder	33	44.30 ± 13.98	17.48±6.03	17.58±6.31

Results of the Independent Samples t-test comparing mean brain region volumes between individuals with MDD and healthy controls—regardless of sex—are provided in

Table 2. Table 2 shows that total brain volume, left amygdala volume, and right amygdala volume were reduced in individuals with MDD compared to the control group.

Table 2. Numerical values comparing the mean volume of olfactory cortex areas between healthy individuals and individuals diagnosed with Major Depressive Disorder

Brain Region	Healthy Individuals		Individuals Diagnosed with Major Depressive Disorder		p
	n	Avg./SS	n	Avg./SS	
Total Brain Volume	33	1158.92±122.43	33	1093.13±131.01	0,04*
Left Entorhinal Cortex Volume	33	1.18 ±0.45	33	1.04 ±0.26	0,12
Right Entorhinal Cortex Volume	33	1.56 ±0.41	33	1.45 ±0.36	0,25
Left Gyrus Fusiformis	33	22.01 ±4.36	33	21.07 ±3.68	0,34
Right Gyrus Fusiformis	33	20.73 ±4.55	33	19.56 ±4.58	0,29
Left Amygdala	33	2.50 ±0.47	33	2.20 ±0.44	0,01*
Right Amygdala	33	2.44 ±0.35	33	2.23 ±0.40	0,03*
Left Commissura Anterior	33	0.09 ±0.03	33	0.10 ±0.02	0,48
Right Commissura Anterior	33	0.10 ±0.03	33	0.10 ±0.02	0,89
Sol Radiatio Olfactorious	33	0.04 ±0.01	33	0.04 ±0.01	0,20
Right Radiatio Olfactorious	33	0.04 ±0.01	33	0.04 ±0.01	0,21
Left Hippocampus	33	4.32±0.71	33	4.16±0.80	0,38
Right Hippocampus	33	4.48±0.71	33	4.15±0.88	0,10

The correlation analyses between olfactory cortex region volumes and the Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A)

scores in both the control and MDD groups are presented in Tables 3 and 4, respectively. Statistically significant results are indicated.

Table 3. Correlation analysis evaluated between the Hamilton Depression and Anxiety Rating Scale and olfactory cortex region volumes of healthy individuals

		Hamilton Depression Scale	Hamilton Anxiety Scale	Age
Total Brain Volume	r	0,255	0,214	0,091
	p	0,152	0,232	0,613
Left Hippocampus	r	0,226	0,208	-0,007
	p	0,205	0,246	0,970
Right Hippocampus	r	0,271	0,211	0,178
	p	0,127	0,238	0,321
Left Entorhinal area	r	0,177	0,308	-0,249
	p	0,325	0,081	0,162
Right Entorhinal area	r	0,180	0,219	-0,203
	p	0,316	0,220	0,257
Left gyrus fusiformis	r	0,094	0,207	-0,418
	p	0,601	0,247	0,015*
Right gyrus fusiformis	r	0,086	0,172	-0,482
	p	0,636	0,340	0,005*
Sol amygdala	r	0,205	0,274	-0,291
	p	0,252	0,122	0,1
Right amygdala	r	0,052	0,187	-0,508
	p	0,772	0,299	0,003*
Left anterior commissure	r	0,123	0,045	-0,109
	p	0,494	0,802	0,546
Right anterior commissure	r	0,165	0,290	-0,109
	p	0,358	0,101	0,547
Sol radiatio olfactoria	r	-0,47	0,130	-0,241
	p	0,794	0,472	0,178
Right radiatio olfactoria	r	-0,018	0,021	-0,345
	p	0,921	0,909	0,049*

Table 4. Correlation analysis of individuals diagnosed with Major Depressive Disorder between the Hamilton Depression and Anxiety Rating Scale and the olfactory cortex region volumes

		Hamilton Depression Scale	Hamilton Anxiety Scale	Age
Total Brain Volume	r	0,139	0,09	0,059
	p	0,441	0,618	0,744
Left Hippocampus	r	0,238	0,140	-0,005
	p	0,183	0,436	0,978
Right Hippocampus	r	0,04	0,039	0,118
	p	0,825	0,829	0,515
Left Entorhinal area	r	0,377	0,293	-0,038
	p	0,031*	0,097	0,834
Right Entorhinal area	r	0,145	0,021	-0,124
	p	0,420	0,907	0,492
Left gyrus fusiformis	r	0,432	0,317	-0,104
	p	0,012*	0,072	0,563
Right gyrus fusiformis	r	0,367	0,173	-0,125
	p	0,036*	0,337	0,49
Sol amygdala	r	0,401	0,327	0
	p	0,021*	0,063	0,999
Right amygdala	r	0,334	0,276	0,044
	p	0,057	0,120	0,806
Left anterior commissure	r	0,318	0,224	0,004
	p	0,071	0,210	0,981
Right anterior commissure	r	0,073	0,124	-0,214
	p	0,687	0,491	0,232
Sol radiatio olfactoria	r	0,246	-0,068	-0,182
	p	0,168	0,705	0,312
Right radiatio olfactoria	r	-0,054	-0,227	0,166
	p	0,763	0,204	0,356

As a result of the study, a positive correlation was identified within the MDD group between HAM-D scores and the volumes of the left entorhinal area, left fusiform gyrus, right fusiform gyrus, and left amygdala—all subregions of the olfactory cortex. In individuals with MDD, the volume of these regions increased with increasing HAM-D scores. In the control group, correlation analysis with age revealed negative correlations between age and the volumes of the right and left fusiform gyri, the right amygdala, and the right radiatio olfactoria. These findings suggest that the volumes of these brain regions decrease with advancing age.

Discussion

In the present study, brain MRI images of individuals diagnosed with Major Depressive Disorder (MDD) and healthy controls were analyzed using a parcellation method to evaluate the volumes of brain regions involved in olfactory processing. These volumes were then compared with scores from the Hamilton Depression Rating Scale (HAM-D) and Hamilton Anxiety Rating Scale (HAM-A). As a result of the study, the right and left amygdalae and total brain volume were more atrophic in individuals with MDD. Correlation analyses revealed positive associations between HAM-D scores and volumes of the left entorhinal cortex, bilateral fusiform gyri, and left amygdala in the MDD group.

The amygdala is one of the most frequently associated brain regions with depression, and its morphometric evaluation is therefore of considerable importance. However, inconsistencies exist in the literature regarding the amygdala (Gray et al., 2020; Höflich et al., 2012; Schablitzky & Pause, 2014). Some studies have reported increases in volume in the early stages of MDD and decreases in the later stages (Monkul et al., 2007; Weniger

et al., 2006). While specific studies have reported increases in amygdalar volume following pharmacological treatment, others have found no significant volumetric differences between patient and control groups (Hamilton et al., 2008). Functional MRI (fMRI) studies have indicated that amygdala activity tends to decrease with age (Barresi et al., 2012). In the present study, volumes of the right and left amygdala were reduced in individuals with MDD compared with healthy controls. However, a positive correlation between HAM-D scores and left amygdala volume was observed within the patient group. Although amygdala volumes were lower in the patient group than in controls, the finding that left amygdala volume increases with depression severity within the MDD group may reflect compensatory mechanisms, such as hyperactivity or functional compensation (Van Eijndhoven et al., 2009). Additional factors such as disease stage, age, sex, and antidepressant use may also influence regional brain volumes (Hamilton et al., 2008; Vythilingam et al., 2004). Furthermore, the amygdala has been shown to exhibit age- and sex-related variability, which may influence volumetric outcomes (Fujita et al., 2023; Ritchie et al., 2018).

The fusiform gyrus, traditionally associated with facial recognition, has more recently been implicated in olfactory processing. Previous studies have reported reduced gray matter volume in the fusiform gyrus in patients with depression. (Moorhead et al., 2007) Other studies have shown that fusiform gyrus volume is reduced in patients with olfactory dysfunction, that it is activated during olfactory stimulation in fMRI studies, and that cortical thickness can increase following olfactory training. (Al Aïn et al., 2019). In the present study, a positive correlation was found between HAM-D scores and fusiform gyrus volume, suggesting that as MDD severity increases,

fusiform gyrus volume also increases. A 2021 study reported a negative correlation between fusiform gyrus volume and negative symptom severity in patients with schizophrenia. (Jung et al., 2021). However, no studies have yet reported a direct correlation between fusiform gyrus volume and HAM-D scores in patients with MDD.

The entorhinal cortex and hippocampus, which form part of the entorhinal-hippocampal circuit, play critical roles in memory and mood regulation. (Kim & Park, 2021). Although reductions in hippocampal and entorhinal cortex volumes were observed in the MDD group compared to controls, these differences were not statistically significant. However, a positive correlation was found between left entorhinal cortex volume and HAM-D scores within the MDD group. This could be influenced by factors such as sample size, antidepressant use, and age- and sex-related individual variability. (Barresi et al., 2012; Lorenzetti et al., 2009; Vythilingam et al., 2004). There is evidence in the literature indicating that the use of antidepressants in depression may lead to an increase in hippocampal volume; however, no studies have been found demonstrating a direct effect of antidepressants on the volume of the entorhinal cortex. A review of the literature reveals that patients diagnosed with major depressive disorder (MDD) often exhibit a reduction in hippocampal volume. (Croy et al., 2013; Gray et al., 2020; Lorenzetti et al., 2009), and that there is an association between the volume of this region and depressive symptoms (Besteher et al., 2019), which is consistent with the hippocampal volume reduction observed in our study. Nevertheless, studies also report no significant differences in hippocampal volume between patients and healthy controls. (Brown et al., 2019; Tannous et al., 2020).

The radiatio olfactoria, which comprises fibers extending from the olfactory bulb to the olfactory cortex, showed no statistically significant volumetric differences between MDD patients and healthy controls. Furthermore, the volumetric assessment of the olfactory bulb in patients with MDD remains largely unexplored in the literature.

MDD is a diagnostically challenging disorder, as diagnosis relies heavily on patients' self-reported symptoms and the clinician's expertise. For this reason, investigations into morphological differences in the brain are crucial for differentiating MDD patients from healthy individuals. High-resolution MRI, functional MRI, and Diffusion Tensor Imaging (DTI) are valuable tools for early identification of brain abnormalities and for detailed evaluation of disease progression. (Van der Kolk et al., 2013) However, their widespread clinical use is often limited by high cost and technical challenges. (Cattarinussi et al., 2021). In this study, a more accessible 1.5-T MRI scanner was used. Historically, MRI was employed to exclude surgically treatable causes of cognitive impairment. Today, MRI also supports the diagnosis of neuropsychiatric disorders by revealing structural cerebral changes, and its advantages include radiation-free, non-invasive, and repeatable imaging. (Johnson et al., 2012).

Conclusion

This study found that the right and left amygdala volumes, as well as total brain volume, were significantly smaller in individuals with MDD than in healthy controls. Correlation analysis within the patient group revealed positive associations between HAM-D scores and volumes

of the left entorhinal cortex, bilateral fusiform gyri, and left amygdala. In other words, as depression severity increased, the volumes of these brain regions also increased. Although these regions were found to be smaller in volume in the patient group compared to controls, the observed positive correlation should not be interpreted as contradictory, as the analysis was conducted within the MDD group, not between groups. The study also emphasizes that multiple factors influence volumetric changes in these brain regions.

Based on this study's findings, atrophy in olfactory-related brain regions may occur in individuals with MDD, and these changes may serve as potential biomarkers for the disorder. In this study, the relationship between the morphometric characteristics of the examined parameters and depression scale scores was evaluated, and the results were demonstrated through statistical analysis. In this context, the findings are considered to clarify the relationship between depression severity and olfactory function. Clinical prospective studies with larger sample sizes and more comprehensive assessments of disease severity and olfactory function will provide more substantial contributions to elucidating the etiology. To further clarify the link between MDD and olfaction, future studies combining clinical assessments with advanced neuroimaging methods are warranted.

Limitations

Because this study was retrospective, data on antidepressant use, disease stage, and olfactory dysfunction among MDD patients were not available. Sociodemographic data other than age and sex could not be obtained for the participants. Furthermore, the relatively small sample size may have influenced the findings. Additionally, because the automated brain segmentation method did not include the olfactory bulb, we were unable to measure its volume. The study results should therefore be interpreted with these limitations in mind.

Declarations

Conflict of Interest Statement

The authors declare no conflicts of interest regarding the publication of this study.

Funding

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Ethical Approval

Ethical approval for this study was obtained from the Non-Interventional Research Ethics Committee of the Health Sciences Directorate, Balıkesir University, on July 1, 2025 (Approval No: 2025/272).

Consent to Participation

This study was conducted retrospectively. Informed consent forms for Magnetic Resonance Imaging (MRI) examinations were obtained from all participants. Permission was granted to use the imaging data for scientific research. Additionally, institutional approval was obtained to access and utilize the images.

Consent to Publication

Not applicable.

Availability of Data and Materials

The data are available from the corresponding author upon

reasonable request, subject to the institution's permission.

Authors' Contributions

MY, MSC, and EO conceived and designed the study. MY, AÇ, and EG contributed substantially to the literature review and the drafting of the manuscript. MY, MSC, and

EO were responsible for data collection and conducted the statistical analyses. MY, ÖK, and İK provided critical revisions to the manuscript. All authors have read, reviewed, and approved the final version of the manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

Are Prognostic Nutrition Index Levels Associated with Prognosis in Adolescents with Anorexia Nervosa?

Anoreksiya Nervosa Hastalığı Olan Ergenlerde Prognostik Nutrisyonel Endeks Düzeyleri Prognoz ile İlişkili midir?

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Abstract:

The aim of this study was to investigate the relationship between prognostic nutritional index (PNI) levels and sociodemographic data, disease characteristics, comorbidity, and prognosis in children and adolescents diagnosed with anorexia nervosa (AN). The study included 45 patients diagnosed with AN and 42 healthy controls. The researcher administered the Sociodemographic Data Form, the Affective Disorders and Schizophrenia Interview Schedule for School-Age Children-Present and Lifetime Version (K-SADS), the General Assessment Scale for Children (CGAS) to both groups, and the Clinical Global Impression-Severity Scale (CGI-SS) to the patient group. Eating Attitude Test (EAT), Eating Disorder Examination Questionnaire (EDE-Q), Self-Reflection and Insight Scale, The Revised Child Anxiety Depression Scale-Child Version (RCADS-CV), Leyton Obsession Inventory-Child Version (LOE-CV), Parental Autonomy Support Scale (PASS), and Shortened Level of Expressed Emotion Scale (SLEES) were completed by participants. In the patient group, PNI levels were significantly lower than in the control group ($p < 0.05$). A negative correlation was found between symptom severity scores and PNI levels ($p < 0.05$). A positive correlation was found between body mass index (BMI) and PNI levels ($p = 0.05$). PNI levels were significantly lower in those with Major Depressive Disorder (MDD), non-suicidal self-injury (NSSI), and suicide attempts compared to those without ($p < 0.05$). In children and adolescents diagnosed with AN, PNI levels were not associated with exiting the diagnostic criteria but may be associated with disease severity, BMI, comorbid MDD, NSSI, and suicide attempt. Therefore, it was thought that PNI levels may be an indirect prognostic factor for AN in children and adolescents.

Keywords: Prognostic nutritional index, Anorexia nervosa, Non-suicidal self-injury, Suicide attempt.

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Öz:

Bu çalışmada, anoreksiya nervoza (AN) tanısı alan çocuk ve ergenlerde prognostik nutrisyonel endeks (PNI) düzeyleri ile sosyodemografik veriler, hastalık özellikleri, komorbidite ve prognoz arasındaki ilişkinin incelenmesi amaçlanmıştır. Çalışmada AN tanısı alan 45 hasta ve 42 sağlıklı kontrol denek dahil edilmiştir. Araştırmacı, her iki gruba Sosyodemografik Veri Formu, Okul Çağı Çocukları için Duygusal Bozukluklar ve Şizofreni Görüşme Programı - Mevcut ve Yaşam Boyu Versiyonu (K-SADS), Çocuklar için Genel Değerlendirme Ölçeği (CGAS) ve hasta grubuna Klinik Global İzlenim-Şiddet Ölçeği (CGI-SS) uygulamıştır. Yeme Tutumu Testi (EAT), Yeme Bozukluğu Muayene Anketi (EDE-Q), Öz Yansıtma ve İlgörü Ölçeği, Revize Edilmiş Çocuk Anksiyete Depresyon Ölçeği-Çocuk Versiyonu (RCADS-CV), Leyton Obsesyon Envanteri-Çocuk Versiyonu (LOE-CV), Ebeveyn Özerklik Desteği Ölçeği (PASS) ve Kısaltılmış Duygu İfade Düzeyi Ölçeği (SLEES) katılımcılar tarafından doldurulmuştur. Hasta grubunda PNI düzeylerinin kontrol grubuna göre anlamlı olarak daha düşük olduğu saptanmıştır ($p < 0,05$). Semptom şiddeti puanı ile PNI düzeyleri arasında negatif korelasyon saptanmıştır ($p < 0,05$). Vücut kitle indeksi (BMI) ile PNI düzeyleri arasında pozitif korelasyon bulundu ($p = 0,05$). Majör Depresif Bozukluk (MDB), intihar girişimi olmayan ve intihar girişimi olanlarda PNI düzeyleri, MDB, intihar girişimi olmayanlara göre anlamlı olarak daha düşüktü ($p < 0,05$). AN tanısı alan çocuk ve ergenlerde PNI düzeyleri tanı kriterlerinden çıkma ile ilişkili bulunmamakla birlikte, hastalık şiddeti, BMI, komorbid MDD, NSSI ve intihar girişimi ile ilişkili olabilir. Bu nedenle, PNI düzeylerinin çocuk ve ergenlerde AN için dolaylı bir prognostik faktör olabileceği düşünülmüştür.

Anahtar Kelimeler: Prognostik nutrisyonel endeks, Anoreksiya nervoza, İntihar dışı kendine zarar verme, İntihar girişimi.

Introduction

Anorexia nervosa (AN) is an eating disorder (ED) characterized by fear of gaining weight or becoming overweight, engaging in behaviors to prevent weight gain, and distorted body image perception (Regier et al., n.d.). It is a serious psychiatric disorder marked by a high risk of death from starvation, malnourishment, medical complications, a high prevalence of comorbid mental illnesses, treatment resistance, and suicide. (Mitchell & Peterson, 2020). This disorder peaks during adolescence and has the highest mortality rate among all psychiatric disorders (Neale & Hudson, 2020). In a prospective study of adolescents and adults requiring hospitalization, the 12-year standardized mortality rate was 8.85%. Self-induced vomiting, laxative usage, the bulimic subtype of AN, comorbid depression, lower body weight, chronic symptom patterns, and obsessive-compulsive features were all linked to a worse prognosis (Morris & Twaddle, 2007; Jagielska & Kacperska, 2017). To improve outcomes, it is crucial to evaluate poor prognostic criteria in the course of the disease and better identify the underlying factors.

The prognostic nutritional index (PNI) value is calculated using the formula: lymphocyte count per $\text{mm}^3 \times 5 + \text{albumin}$. Subsequent studies have shown that PNI has prognostic value in a variety of clinical conditions, including malignancy, infection, cardiovascular disease, and psychiatric comorbidities (Kayhan et al., 2022; Sertdemir et al., 2021; Yildirim et al., 2021).

Although serum albumin level appears to be a logical indicator of general nutritional status and disease severity, it is not associated with the severity of AN and should not be used to guide treatment decisions (Mehler & Koutsavlis, 2021). Albumin has a long half-life and is not sensitive to detecting acute changes in nutritional status. Therefore, it should not be used as a stand-alone indicator of nutritional assessment (Zhang et al., 2019). Poor nutritional condition, reduced liver function, increased renal loss, and, most importantly, the body's reaction to systemic inflammation can all contribute to hypoalbuminemia in critically ill individuals (Vincent et al., 2014). In a study evaluating leukopenia and infection

incidence to determine whether patients with anorexia have an increased risk of infection, it was found that total leukocyte count and absolute neutrophil, lymphocyte, and monocyte counts were significantly lower in AN patients than in the control group (T K Bowers, 1978). Low lymphocyte count has previously been shown to predict increased mortality in various chronic diseases. Total blood lymphocyte count is considered a nutritional status biomarker and a prognostic factor across multiple clinical settings (Walsh et al., 2020). Thus, PNI using these two parameters may be suitable for rapid assessment of immunonutritional status in AN patients.

PNI is a combined score derived from serum albumin and lymphocyte levels that reflects an individual's immunological, inflammatory, and nutritional status and serves as a simple assessment tool. To the best of current knowledge, no study in the literature has evaluated PNI levels in patients with AN. This study aimed to examine the relationship between PNI levels and sociodemographic variables, disease characteristics, comorbidities, and prognosis in children and adolescents diagnosed with AN.

Methods**Participants**

The study sample comprised 45 female volunteers diagnosed with AN according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria who were followed up between January 1, 2019, and December 30, 2023, at Uludağ University Faculty of Medicine, Child and Adolescent Mental Health and Diseases Clinic, and Outpatient Clinic. The control group comprised 42 healthy female volunteers who visited the Uludağ University Faculty of Medicine, Child Health and Diseases Well-Child Clinic during the same period. The inclusion criteria for the patient group were as follows: female gender, aged between 12 and 18 years, and having obtained written informed consent from both the patient and their legal guardian via an informed consent form. The following were the requirements for the healthy control group's inclusion: female, between the ages of 12 and 18, and not diagnosed with AN based on DSM-V

criteria, BMI between 18.5 and 24.9, no diagnosis of any acute or chronic medical illness at the time of albumin and hemogram testing, absence of any psychiatric complaints or diagnoses and having obtained informed consent from both the patient and their legal guardian via an informed consent form.

Measure

The sociodemographic details of the participants and their parents, including age, educational attainment, occupation, and socioeconomic position, were documented using the Sociodemographic Data Form. The Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) was used for diagnostic purposes in children and adolescents and validated in Turkish (Ünal et al., 2019). The Children's Global Assessment Scale (CGAS) was used to assess psychosocial functioning (Shaffer et al., 1983). There are publications in the literature on its use in children and adolescents in Turkey (Demir et al., 2011; Karakuş et al., 2022). The Clinical Global Impressions-Severity Scale (CGI-SS) was created by Guy (William Guy, 1976) to evaluate clinical study participants and track treatment-induced changes over time. This scale was only applied to the patient group. The Eating Disorder Examination Questionnaire (EDE-Q) was adapted as a self-report measure based on the ED assessment interview (C. G. Fairburn, 1994) and was validated for Turkish (Yucel et al., 2011). The Eating Attitudes Test (EAT-40) is a self-report scale developed to measure AN symptoms (Garner & Garfinkel, 1979) and validated for Turkish (Savaşır I, 1989). The Self-Reflection and Insight Scale (SRIS) was developed (Grant et al., 2002) and validated for Turkish (Emine Lamiser Atik, 2013). The Revised Child and Adolescent Anxiety and Depression Scale-Child Version (RCADS-CV) is a screening tool for clinical symptoms of depression and anxiety disorders (Chorpita et al., 2000) and validated for Turkish (Gormez et al., 2017). The Leyton Obsessional Inventory-Child Version (LOI-CV) revised the Leyton Obsessive Compulsive Inventory, which was developed for adults, and adapted it for adolescents and younger children (BERG et al., 1988), and was validated for Turkish (Boysan et al., 2016). The Parental Autonomy Support Scale (PASS) was developed to measure the levels of autonomy support received from parents (Soenens et al., 2007) and was validated for Turkish (Ipek H. & Gozukara O.). The Shortened Level of Expressed Emotion Scale for Adolescents (S-LEES) was developed to measure perceived emotional expression (Nelis et al., 2006) and was validated in Turkish (Vural et al., 2013).

Procedure

In the first stage, the routinely performed scales, tests, and clinical findings of the patients who met the inclusion criteria and agreed to participate in the study were reviewed. Height, weight, BMI, BMI percentile, BMI standard deviation score (SDS), albumin, lymphocytes, and differential diagnosis data were also obtained to assess medical complications associated with the study. For the control group, data were obtained similarly from volunteers who presented to the Child Health and Diseases Well-Child Clinic at our hospital, met the inclusion criteria, and consented to participate in the study. In the

second stage, participants were invited, along with their legal guardians, and the study's interviews and scales were administered by the investigator, a child and adolescent psychiatrist. The relationship between sociodemographic data, the study's interviews and scales, and PNI levels was statistically analyzed in the patient and control groups. Additionally, in the patient group, the relationship between poor prognostic factors of AN and PNI levels was analyzed. Furthermore, participants were divided into three groups based on their diagnostic status at the time of assessment: those who still met the AN diagnostic criterion, those who did not, and a control group. PNI levels among these groups were statistically compared.

Statistical analysis

The normality of variable distribution was assessed with the Shapiro-Wilk test. Variables with normal distribution were presented as mean±standard deviation, and comparisons between two independent groups were made using the independent sample t-test. Variables not normally distributed were presented as median (minimum–maximum) values, and comparisons between two independent groups were performed using the Mann-Whitney U test. Categorical variables were presented as frequencies and percentages (n (%)), and comparisons were made using the Pearson chi-square, Fisher's exact chi-square, and Fisher-Freeman-Halton tests. Pearson and Spearman correlation coefficients were used to examine correlations between variables. The diagnostic performance of variables was evaluated using receiver operating characteristic (ROC) curve analysis. The optimal cut-off values in ROC analysis were determined according to the Youden J index. Statistical analyses were performed using IBM SPSS Statistics 28.0 and MedCalc 22.009 programs. A p-value of <0.05 was considered statistically significant. For comparisons among more than two independent groups, the Kruskal-Wallis test was used, and when significant differences were detected, pairwise comparisons were conducted with the Mann-Whitney U test. G-Power (version 3.1.9.7) was used to determine the minimum sample size. Accordingly, t tests, means: difference between two independent means (matched pairs), post hoc: compute achieved sample size, given a power, and effect size were selected. Accordingly, when α err prob=0.05 and effect size=0.54, it was determined that at least 87 participants should be included in each group (actual power=80%).

Ethical Approval

Approval of this study has been granted by the Bursa Uludağ University Clinical Research Ethics Committee (Ethic Acceptance No: 2023-11/14 Number:2011-KAEK-26/339).

Results

The study included 87 participants: 45 patients (51.7%) and 42 controls (48.3%), with a median age of 17 years (range, 12–18). In the patient group, compared to the control group, the ages of both parents, family income level, maternal education level, and the prevalence of bad habits were statistically significantly higher, while the number of siblings and school attendance rate were lower ($p < 0.05$ for each) (Table 1).

Table 1. Comparison of sociodemographic characteristics between the patient and control groups

Variables		Patient	Control	p-value
Age (years)*		17 (12–18)	17 (12–18)	0.468
Age of mother (years) *		45 (39–60)	42 (35–54)	0.013
Age of father (years) *		49 (40–65)	46 (40–57)	0.034
Birth order*		1 (1–4)	2 (1–6)	0.170
Number of siblings*		2 (1–5)	3 (1–7)	0.008
Monthly income (×1000 TL) *		30 (12–65)	25 (15–65)	0.040
School attendance [#]	1	33 (73.33)	42 (100.00)	<0.001
	2	10 (22.22)	0 (0.00)	
	3	2 (4.44)	0 (0.00)	
People Living Together [#]	1	38 (84.44)	35 (83.33)	0.121
	2	1 (2.22)	5 (11.90)	
	3	6 (13.33)	2 (4.76)	
	4	0 (0.00)	3 (7.14)	
Maternal education level [#]	2	2 (4.44)	2 (4.76)	0.006
	3	18 (40.00)	10 (23.81)	
	4	4 (8.89)	12 (28.57)	
	5	6 (13.33)	10 (23.81)	
	6	15 (33.33)	5 (11.90)	
	1	0 (0.00)	0 (0.00)	
Paternal education level [#]	2	0 (0.00)	1 (2.38)	0.128
	3	9 (20.93)	12 (28.57)	
	4	8 (18.60)	13 (30.95)	
	5	7 (16.28)	8 (19.05)	
	6	19 (44.19)	8 (19.05)	
	1	37 (82.22)	42 (100)	
Bad habits	2	7 (15.56)	0 (0.00)	0.016
	3	1 (2.22)	0 (0.00)	

Data are presented as *median (minimum–maximum) or #n (%). School attendance: 1 = currently attending school, 2 = graduated, 3 = dropped out. People living together: 1 = nuclear family, 2 = extended family, 3 = divorced parents, 4 = institutional care. Maternal and paternal education level: 1 = no formal education, 2 = literate, 3 = primary school graduate, 4 = middle school graduate, 5 = high school graduate, 6 = university graduate. Bad habits: 1 = regular smoking, 2 = regular alcohol use, 3 = regular substance use.

The scale scores of the EDE-Q ($p < 0.001$), LOI-CV ($p = 0.002$), EAT-40 ($p = 0.004$), and SAD (RCADS) ($p = 0.007$) were statistically higher in the patient group than in the control group. The BMI, BMI percentile, and age-adjusted BMI-SDS values at initial presentation during the illness period in the patient group were statistically

significantly lower than those of the control group. When albumin, lymphocyte, and PNI levels were compared between the patient and control groups, all three were significantly lower in the patient group ($p < 0.001$ for each). The mean PNI level was 52.32 ± 6.24 in the patient group and 60.32 ± 3.51 in the control group (Table 2).

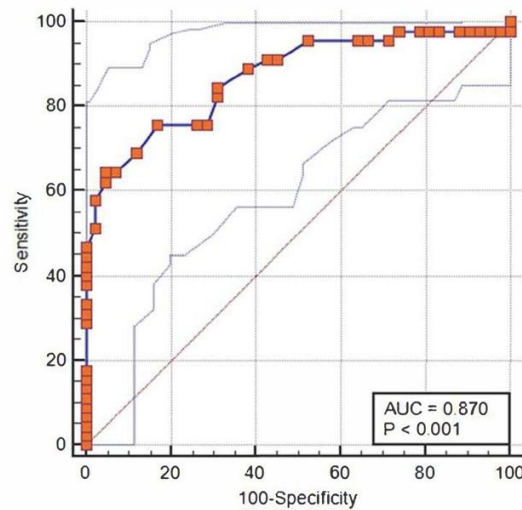
Table 2. Comparison of total scale and subscale scores, albumin, lymphocyte, and PNI levels, BMI percentile, and BMI-SDS values between the patient and control group

Scale score	Groups		p-value
	Patient	Control	
EDE-Q*	41.00 (0.00–208.00)	8.50 (0.00–114.00)	<0.001
LOI-CV*	18.00 (0.00–54.00)	10.00 (0.00–39.00)	0.002
EAT-40*	18.00 (3.00–87.00)	11.50 (3.00–50.00)	0.004
SAD [#]	13.78 ± 5.58	10.31 ± 6.02	0.007
BMI (Initial presentation during illness)	14.40 (10.20–17.80)	21.40 (17.50–24.90)	<0.001
BMI (Time of assessment)	18.95 (13.20–33.00)	21.40 (17.50–24.90)	<0.001
BMI-SDS	−3.93 ± 1.73	0.04 ± 0.93	<0.001
BMI Percentile	0.02 (0.02–11.70)	50 (1.80–98.90)	<0.001
Albumin	43.38 ± 4.84	46.62 ± 2.44	<0.001
Lymphocyte	1.79 ± 0.56	2.73 ± 0.66	<0.001
PNI	52.32 ± 6.24	60.32 ± 3.51	<0.001

Data are presented as *median (minimum–maximum) or #mean ± standard deviation values. EDE-Q: Eating Disorder Examination Questionnaire, LOI-CV: Leyton Obsessional Inventory-Child Version, EAT-40 Eating Attitudes Test, SAD: Social Anxiety Disorder (RCADS), PNI: Prognostic Nutritional Index, BMI: Body Mass Index, BMI-SDS: Body Mass Index-Standard Deviation Score

The performance of PNI levels in distinguishing between the patient and control groups was evaluated using ROC analysis. The area under the curve (AUC) was statistically significant (AUC = 0.870; $p < 0.001$).

According to the Youden-J index, the optimal cut-off value was 55 (55.25), with corresponding sensitivity and specificity values of 0.644 (95% confidence interval [CI]: 48.8–78.1) and 0.952 (95% CI: 83.8–99.4), respectively (Figure 1).



In the analysis of PNI levels in the patient group, when comparing psychiatric and medical comorbidities and complications at the time of initial presentation, PNI levels were significantly lower in those with MDD comorbidity ($p = 0.006$). When comparing PNI levels based on various

disease features, PNI levels were significantly lower in individuals with non-suicidal self-injury compared to those without ($p = 0.030$) and in those with suicide attempts compared to those without ($p = 0.047$) (Table 3).

Table 3. Comparison of PNI levels in the patient group in terms of psychiatric comorbidity and various patient characteristics at the time of diagnosis

Variable		n	Descriptive statistics	p-value
MDD*	No	31	53.74 $\pm$ 6.63	0.006
	Yes	14	49.18 $\pm$ 3.87	
NSSI*	No	33	53.53 $\pm$ 6.31	0.030
	Yes	12	49.00 $\pm$ 4.84	
Suicide attempt [#]	No	37	53.00 (38.00–68.00)	0.047
	Yes	8	48.75 (42.50–56.00)	

MDD: Major Depressive Disorder, NSSI: Non-suicidal Self-Injury. Data are presented as *mean $\pm$ standard deviation or [#]median (minimum–maximum) values.

When the correlation between PNI levels and CGI-S scores and BMI parameters was examined in the patient group, a significant negative correlation was found with disease severity at initial presentation ($r = -0.503$, $p <$

0.001), and a significant positive correlation with the disease severity difference score ($r = 0.360$, $p = 0.015$), while no other significant correlations were observed (Table 4).

Table 4. Correlation analysis results between PNI levels and the CGI-S scale scores, BMI, BMI-Percentile, and BMI-SDS of the participants in the patient group

Disease severity (at the time of evaluation)	r	0.088
	p-value	0.564
Degree of improvement (at the time of evaluation)	r	-0.050
	p-value	0.744
Severity of side effects (at the time of evaluation)	r	0.013
	p-value	0.931
Disease Severity (initial presentation)	r	-0.503
	p-value	<0.001
Degree of Improvement (initial presentation)	r	-0.032
	p-value	0.835
Severity of side effects (initial presentation)	r	-
	p-value	-
Disease severity difference score	r	0.360
	p-value	0.015
Degree of improvement: difference score	r	-0.048
	p-value	0.757
Severity of side effects difference score	r	0.013
	p-value	0.931

BMI (initial presentation)	p-value	0.931
	r	0.294
BMI (at the time of evaluation)	p-value	0.050
	r	0.150
BMI percent change	p-value	0.325
	r	-0.030
BMI-Percentile	p-value	0.847
	r	0.203
BMI-SDS	p-value	0.181
	r	0.262
	p-value	0.083

Percent change = (final value – initial value) / initial value, Difference score = (final value – initial value), CGI-S: Clinical Global Impressions-Severity, PNI: Prognostic Nutritional Index, BMI: Body Mass Index, BMI-SDS: Body Mass Index-Standard Deviation Score

When the participants were divided into three groups—those who continued to meet the diagnostic criteria, those who no longer met the criteria, and the control group—and PNI levels across these groups were compared, a statistically significant difference was observed ($p < 0.001$). Upon comparing the groups in pairs, no significant difference was found between those who continued to

meet the diagnostic criteria and those who no longer met the criteria ($p = 0.213$), while significant differences in PNI levels were found between those who continued to meet the diagnostic criteria and the controls ($p < 0.001$), and between those who no longer met the diagnostic criteria and the controls ($p < 0.001$) (Table 5).

Table 5. Comparison of PNI levels between those who continued to meet the diagnostic criteria for AN and ED, those who did not, and control groups

Diagnostic Criterion	Groups	Descriptive Statistics	p-value			
			General	Control – No longer meeting criteria	Control – Continuing to meet criteria	No longer – Continuing to meet criteria
AN Criteria	Control (n = 42)	60.00 (52.50–67.00)				
	No longer meeting AN diagnostic criteria (n = 34)	53.25 (38.00–68.00)	<0.001	<0.001	<0.001	0.213
	Continuing to meet AN diagnostic criteria (n = 11)	50.0 (42.50–58.00)				
ED Criteria	Control (n = 42)	60.00 (52.50–67.00)				
	Did not meet the diagnostic criteria (n = 31)	52.62 (38.00–68.00)	<0.001	<0.001	<0.001	0.492
	Continued to meet the diagnostic criteria for eating disorders (n = 14)	51.64 (42.50–58.00)				

AN: Anorexia Nervosa; ED: Eating Disorder. Values are presented as median (IQR). p-values are from non-parametric pairwise comparisons.

Discussion

The study's primary conclusions, which investigated the association between PNI levels and prognosis, comorbidities, clinical features, and sociodemographic factors in children and adolescents with AN, are as follows: PNI levels were significantly lower in the patient group than in the control group. A positive correlation was found between BMI and PNI levels. Negative correlation was found between the disease severity score and PNI levels. The patients with comorbid depression had PNI levels that were significantly lower than those without depression. Patients who had a history of NSSI had considerably lower PNI levels than those who did not. Patients who had a history of suicide attempts had considerably lower PNI levels than those who did not. In the study, three groups—those continuing to meet an AN

diagnostic criterion, those no longer meeting these criteria, and the control group—were compared. At the time of the evaluation, PNI levels were significantly lower in both groups, which continued to meet AN diagnostic criteria, while the group no longer met the criteria compared to the control group.

PNI was originally developed to predict mortality and perioperative complications in malnourished gastrointestinal cancer patients. In subsequent studies, PNI has been accepted as a parameter reflecting the immune-nutritional status in various diseases. It has been associated with mortality in adults with acute decompensated heart failure, acute myocardial infarction, and intensive care unit treatment for any reason, and with prognosis in children

with advanced chronic kidney disease (Candeloro et al., 2020; Kayhan et al., 2022; Zhang et al., 2019). Considering research findings showing PNI as a predictor of long-term prognosis, including all-cause mortality, across various diseases and clinical conditions (Candeloro et al., 2020), the PNI score, based on albumin and lymphocyte values, appears to be a suitable tool for rapidly assessing immunonutritional status in patients with AN.

In this study, the performance of PNI levels in distinguishing between patient and control groups was evaluated using ROC analysis, and the AUC was statistically significant (cut-off value of 55.25). In a 2020 study that staged AN in adult patients at the time of diagnosis, recovery rates were evaluated 1 year after disease onset (Ambwani et al., 2020). In this study, the time between the date PNI levels were first measured at the patient's admission to the units and the cross-sectional dates on which they were evaluated was reassessed as either under or over 1 year. When the performance of PNI levels measured within 1 year for distinguishing between patient and control groups was evaluated using ROC analysis, the AUC was 0.855, indicating significance. For PNI levels measured within the 1-year timeframe, a new cut-off value of 56.75 was established. These results suggest that re-evaluating PNI levels after 1 year could be valuable for prognosis determination and may be recommended for follow-up.

BMI values were significantly lower in the patient group than in the control group, consistent with the characteristics of AN. Statistical analysis further revealed a borderline positive correlation between PNI and BMI measured at the initial assessment during the disease period. For children and adolescents, BMI thresholds must be adjusted for growth (Hammer et al., 1991; Zipfel et al., 2000) and compared with their measured BMI levels with national reference data (Beaumont, P. He, 1988). In the present study, data for the patient and control groups were calculated using the percentile charts prepared by Neyzi et al. (Bundak et al., 2006). The BMI percentiles and SDS values of the patient and control groups at the initial evaluation of the disease phase were compared. It was discovered that the patient group's BMI percentiles and BMI-SDS values were substantially lower than those of the control group. In a study involving 404 children and adolescent patients with AN, compared to patients with significantly low BMI (BMI percentile ≥ 0.3), those with dangerously low BMI (BMI percentile < 0.3) had an average treatment duration that was 2 weeks longer, a BMI 0.46 kg/m² lower, and a BMI-SDS 0.44 lower at discharge (Engelhardt et al., 2021). In this respect, when the correlation of PNI levels, whose prognostic value was examined, with BMI percentile and BMI-SDS values was examined, no significant correlation was found between PNI levels and either metric. It was considered that this evaluation, conducted on a relatively small sample, could be reassessed with a sufficiently large sample.

In this study, which examined the correlation between PNI levels and various patient characteristics, we found a negative correlation between disease severity scores on the CGI-S scale—administered at the initial presentation during the disease period—and PNI among the 45 patients studied. Consistent with the hypothesis, PNI decreases with increasing disease severity. The hypothesis and results align with a study suggesting that symptom severity may help predict poorer treatment outcomes (Arcelus et

al., 2011). A positive correlation was found between the disease severity difference score and PNI. In other words, as the difference between disease severity scores at the time of the evaluation and initial presentation increases, PNI also increases. This can be interpreted as follows: patients who initially had high disease severity scores at the initial presentation but later showed significant improvement also had higher PNI levels at their initial evaluation. No previous studies were found in the literature examining differences in disease severity scores, but this finding may support the idea that PNI could predict AN prognosis, consistent with the hypothesis.

Among the 45 AN patients included in the present study, 14 had MDD as a comorbidity at the initial diagnostic assessment. PNI levels were significantly lower in individuals with MDD. In line with the present study, the literature identifies MDD as the most common comorbidity in AN (Crone et al., 2023; Harmancı et al., 2021). Additionally, existing research links clinical depression with poorer AN outcome (Löwe et al., 2001), higher rates of suicide attempts, and increased mortality due to suicide (Favaro et al., 2006). In a study examining albumin in the pathophysiology of depression, higher serum albumin levels were associated with increased positive emotions, while negative emotions correlated negatively with serum albumin levels. It was argued that serum albumin in depressive patients could play a significant role in depressive symptoms and suicidal ideation (Harris & Barraclough, 1998). In this study, which examined PNI levels—a parameter derived from serum albumin values—we suggested that lower PNI levels in AN may be associated with MDD comorbidity.

PNI levels were found to be significantly lower in patients with NSSI and in those with suicide attempts compared to those without these characteristics. In a review of adolescents with EDs, it was found that 40.8% of the patients reported NSSI. It was reported that the prevalence of NSSI was higher in patients with BN (26%–55.2%) or the binge-eating/purging subtype AN (27.8%–68.1%) compared to the restrictive subtype AN (13.6%–42.1%) (Chesney et al., 2014; Franko et al., 2013). Suicidal ideation in AN patients has been reported at rates of 20%–43% in different studies. Compared to women aged 15–34 years in the general population, women with AN are about 5.2 times more likely to die early and 18 times more likely to die by suicide (Steinhausen, 2002). A study examining albumin in the pathophysiology of depression found that decreased serum albumin levels were negatively associated with severe depressive symptoms only in depressive patients with suicidal ideation. A higher level of suicidal ideation was observed in cases of low albumin levels (Madge et al., 2008). In this study, which examined PNI levels—a parameter based on serum albumin values—the results that show lower PNI levels are correlated with NSSI and suicide attempts in AN appear consistent with these findings. When the literature on NSSI and suicide attempts—significant risk factors for prognosis and mortality in AN—was reviewed, the findings obtained in the present study suggest that low PNI levels in AN may be associated with NSSI and suicide attempts during the course of the disorder.

In the study, when comparing PNI levels among groups with ongoing AN or ED diagnoses, those who no longer met the diagnostic criteria, and a control group, PNI levels were lower in both those who continued to meet AN or ED

criteria and those who did not, compared to the control group. However, no significant difference existed between individuals who continued to meet the diagnostic criteria and those who did not. While studies differ in their criteria, there is a general consensus that a favorable outcome means improvement in all core clinical symptoms of AN, a moderate outcome represents an improvement with some residual symptoms (Steinhausen, 2002), and a poor outcome is synonymous with the chronic persistence of the disorder. The findings from the present study suggest that although PNI levels are somewhat higher among those not meeting the criteria for ED or AN, they may not be associated with either continuing to meet the criteria or no longer meeting them.

Conclusion

The association of PNI with significant prognostic parameters for AN, including disease severity, BMI, MDD comorbidity, NSSI, and suicide attempts, but not with continuing to meet the diagnostic criteria for AN and ED, suggests that PNI levels may be considered an indirect prognostic parameter for AN in children and adolescents and that closer follow-up of AN patients with low PNI levels may be recommended. However, there is a need for further multicenter studies with larger samples.

Limitations

Firstly, because AN predominantly involves women, only female participants were included in the study. Studies including both genders are needed to generalize the study results. The PNI levels measured at the time of the patients' initial presentation to our center during the course of AN were used. For some patients, this corresponded to the period of their initial AN diagnosis without prior treatment, while for others, it corresponded to the time

when they were referred to us after insufficient remission in external centers. Additionally, PNI levels were measured only once, and some information was collected retrospectively. To ensure standardization, prospective studies are needed in which PNI levels are measured at the time of initial AN diagnosis and during follow-up. In this study, K-SADS was administered only once to both patient and control groups, and past psychiatric symptoms were also inquired about. The retrospective nature of some of this information is one of the study's limitations.

Declarations

Ethics Committee Approval

Approval of this study has been granted by the Bursa Uludağ University Clinical Research Ethics Committee (Ethic Acceptance No: 2023-11/14 Number:2011-KAEK-26/339).

Consent for Publication

Not applicable

Availability of Data and Materials

Not applicable

Competing Interests

The author declares that no competing interests exist in this manuscript.

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Authors' Contributions

ÖAD proposed the main idea of the research, while CM, ST, and ŞEÇ were involved in reviewing and discussing the literature. ÖAD and ZGEÖ contributed to drafting the article and revising its content. All authors have reviewed and approved the final version of the article.

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RESEARCH ARTICLE/ ARASTIRMA MAKALESİ

Adaptation and Psychometric Evaluation of the Achievement Goal Questionnaire-Revised in Turkish for Middle School Students

Ortaokul Öğrencileri İçin Başarı Hedefi Anketi-Gözden Geçirilmiş Formunun Türkçe Uyarlaması ve Psikometrik Analizi

Emre Koçak¹ , Derya Girgin¹ 

Abstract:

This study aims to adapt the Achievement Goal Questionnaire-Revised Form (AGQ-R) into Turkish and to examine its validity and reliability among middle school students. The sample comprised 527 students in grades 5 through 8, aged 10 to 15, drawn from various public schools. The adaptation process employed the back-translation method, which is widely accepted in the literature, followed by a thorough review for grammatical and punctuation accuracy. To ensure cultural appropriateness, expert feedback was obtained from a multidisciplinary panel within the faculty of education, which facilitated the identification and removal of culturally specific content from the scale items. Validity and reliability analyses were conducted using SPSS 25 and AMOS 22. The internal consistency of the scale was supported by a Cronbach's alpha of $\alpha = 0.89$, and corrected item-total correlations ranged from 0.525 to 0.644 across all subscales. In addition, the convergent validity and internal consistency of the constructs were confirmed using Average Variance Extracted (AVE) and Composite Reliability (CR) values. Confirmatory factor analysis supported the hypothesized four-factor structure (mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance), demonstrating a good model fit ($\chi^2/df = 2.145$; RMSEA = 0.047; CFI = 0.978). These findings indicate that the Turkish version of the AGQ-R is a psychometrically sound tool for measuring achievement goal orientations among middle school students. It is recommended for use by researchers and educators to better understand and support student motivation in the Turkish educational context.

Keywords: Achievement Goal Orientation, AGQ-R, Scale Adaptation, Mastery Goals, Performance Goals.

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Öz:

Bu çalışma, Başarı Hedefi Anketi-Gözden Geçirilmiş Formu'nun (AGQ-R) Türkçeye uyarlanmasını ve ortaokul öğrencileri üzerinde geçerlik-güvenirlik incelemesini amaçlamaktadır. Araştırmanın örneklemini, çeşitli devlet okullarında 5-8. sınıflarda öğrenim gören ve yaşları 10-15 arasında değişen toplam 527 öğrenci oluşturmaktadır. Uyarlama sürecinde alanyazında yaygın kabul gören geri çeviri yöntemi uygulanmış; takiben dilbilgisi, noktalama ve kültürel uygunluk açısından ayrıntılı değerlendirmeler yapılmıştır. Eğitim fakültesindeki farklı disiplinlerden uzmanların oluşturduğu grubun görüşleri doğrultusunda yapılan incelemelerde kültüre özgü ifadeler ölçekten çıkarılmıştır. Geçerlik ve güvenilirlik analizleri SPSS 25 ve AMOS 22 istatistiksel paket programları kullanılarak gerçekleştirilmiştir. Ölçeğin iç tutarlılığı Cronbach alfa katsayısı ($\alpha = 0.89$) ile sağlanmış ve düzeltilmiş madde-toplam korelasyonları tüm alt boyutlarda 0.525 ile 0.644 arasında bulunmuştur. Buna ek olarak, yapıların yakınsak geçerliliği ve iç tutarlılığı, çıkarılan ortalama varyans (AVE) ve bileşik güvenilirlik (CR) verileri ile doğrulanmıştır. Doğrulayıcı faktör analizi, varsayılan dört faktörlü (ustalık-yaklaşma, ustalık-kaçınma, performans-yaklaşma ve performans-kaçınma olmak üzere) yapıyı istatistiksel olarak doğrulamış ve iyi model uyum değerleri sunmuştur ($\chi^2/df = 2.145$; RMSEA = 0.047; CFI = 0.978). Elde edilen bulgular, AGQ-R'nin Türkçe formunun ortaokul öğrencilerinin başarı hedef yönelimlerini ölçmede psikometrik açıdan geçerli ve güvenilir bir araç olduğunu göstermektedir. Bu bağlamda ölçeğin, Türk eğitim sistemi içinde öğrenci motivasyonunun kapsamlı bir şekilde incelenmesi ve desteklenmesine yönelik yürütülecek bilimsel araştırmalarda kullanılabileceği önerilmektedir.

Anahtar Kelimeler: Başarı hedef yönelimi, AGQ-R, Ölçek uyarlaması, Ustalık hedefleri, Performans hedefleri.

Introduction

Achievement goal theory provides a framework for understanding how individuals' goals influence their attitudes toward learning and performance, particularly in academic settings (Ames, 1992; Dweck & Leggett, 1988; Maehr & Midgley, 1991; Nicholls, 1984). The theory has evolved through the contributions of various theorists, who explored concepts such as cultural influence (Maehr, 1974), conceptions of ability (Nicholls, 1984), beliefs about intelligence (Dweck, 1986), and reward structures (Ames, 1992), leading to an extensive perspective on the topic (Urdan & Kaplan, 2020).

Early conceptualizations of the theory identified at least two types of achievement motivation: one focused on acquiring success and the other on avoiding failure (McClelland, 1951). These were termed task and ego involvement (Nicholls, 1984), learning and performance goals (Dweck & Leggett, 1988), and most commonly, mastery and performance goals (Ames, 1992), with the latter being the most frequently used terms in research (Huang, 2011; Senko et al., 2011).

Mastery goals are broadly focused on the development of competence, while performance goals are about its demonstration. The theory later incorporated valence, a dimension distinguishing approach and avoidance goals. Many early theorists (Dweck, 1986; Nicholls, 1984) focused solely on the approach dimension, overlooking the avoidance dimension.

The integration of valence is widely attributed to Andrew J. Elliot and his colleagues (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, 2001; Elliot & Murayama, 2008). Elliot and Harackiewicz (1996) argued that performance goals were not a single construct but comprised two distinct motivations: performance-approach goals (seeking favorable competence judgments) and performance-avoidance goals (avoiding unfavorable ones). For instance, an example of performance-approach is trying to get a better grade than others, while performance-avoidance is trying to avoid a worse grade.

This distinction clarified inconsistencies in earlier research, in which performance goals were linked to both

positive and negative outcomes. This trichotomous framework (mastery, performance-approach, and performance-avoidance goals) was a major development, but not the last.

Elliot and McGregor (2001) extended the model by also bifurcating mastery goals. Their 2x2 framework classifies goals by the definition of competence (absolute/intrapersonal vs. normative) and valence (approach vs. avoidance), yielding a quadripartite model of four goal types: mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance.

Mastery-avoidance goals are defined as the pursuit of an activity to avoid mistakes, competence deterioration, or the loss of previously acquired skills. Following this, scholars developed scales to operationalize these concepts into measurable constructs.

Despite earlier scale development studies (Ames & Archer, 1988; Dweck & Leggett, 1988), this study focuses on adapting and validating an existing instrument. The Achievement Goal Questionnaire (AGQ) and the Achievement Goal Questionnaire-Revised (AGQ-R) were chosen for their improved item wording, the separation of goals and motives, and their contemporary relevance.

Elliot and McGregor (2001) used factor analysis to determine if the four goals of the 2x2 framework were empirically distinct concepts. After initial pilot studies, they selected and devised items, using some from previous measures (Elliot, 1999; Elliot & Church, 1997) while developing new ones for the mastery-avoidance goal. Their study involved 180 students (49 males, 131 females) who responded to a 1-7 scale. An exploratory factor analysis (EFA) of 12 items, using principal components extraction with varimax rotation, revealed four factors with strong item loadings (0.70-0.97), confirming that the factors were internally consistent and separable. A subsequent confirmatory factor analysis (CFA) with 148 students (62 males, 86 females) strongly supported the hypothesized four-factor model, with fit statistics exceeding standard criteria. This led to the development of one of the most widely used achievement goal measures.

Subsequent studies continued to refine achievement goal measures. Elliot and Murayama (2008) developed the AGQ-R by addressing several concerns with the items in the original AGQ (Elliot & McGregor, 2001). First, some AGQ items contained prefixes that referred to a value rather than a goal; the AGQ-R resolved this by using the same three goal-based prefixes across all scales. Second, one AGQ performance-avoidance item confused the goal with a motive (fear of failure), so the AGQ-R removed this motive content to allow for independent evaluation and prevent item overlap. Third, an AGQ performance-approach item referencing grades, which can apply to both mastery and performance goals, was removed, and the word "just," which implicitly excluded other goals, was omitted. Furthermore, explicit normative content was added to all performance-avoidance items to ensure

consistency with performance-approach items, and the word *most* was removed to avoid undue emphasis on specific segments. Finally, all explicit affective content was removed from the items to resolve previous inconsistencies between mastery and performance subscales.

The developers of the AGQ-R did not intend to invalidate previous measures, acknowledging their valuable contributions to the literature. Instead, they believed there was room for improvement, and their refinements would lead to more effective application of achievement goal findings. This study, by adapting and validating the AGQ-R for Turkish-speaking middle school students, aligns with this perspective and seeks to apply these advancements to a younger Turkish-speaking population.

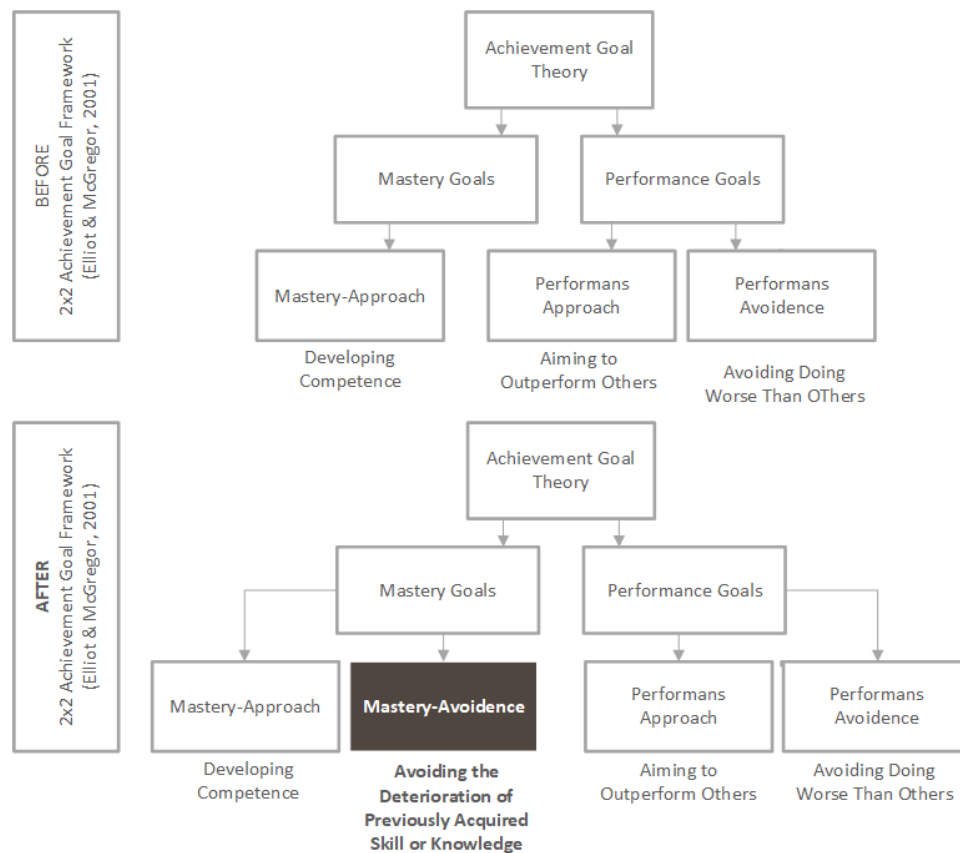


Figure 1. Before-After Comparison of 2x2 Achievement Goal Framework

Within the Turkish achievement goal literature, several studies have adapted measures based on the 2x2 framework. This review, limited to accessible studies, presents them in chronological order.

Akın (2006) conducted a validity and reliability study of the 2x2 framework with 728 university students. EFA yielded a 26-item, four-factor measure with strong item loadings (0.41 - 0.98), total item correlations (0.56 - 0.73), and high internal consistency (Cronbach's alpha 0.92 - 0.97), demonstrating its validity and reliability.

Şenler and Sungur (2007) translated and adapted Elliot and McGregor's (2001) AGQ into Turkish and used it with 616 middle school students. The Turkish version showed internal consistency coefficients (alpha values of 0.81 for mastery-approach, 0.69 for performance-approach, 0.65

for mastery-avoidance, and 0.64 for performance-avoidance) and a validated four-factor structure via CFA (GFI = 0.92, CFI = 0.92, NFI = 0.90, SRMR = 0.07).

Arslan and Akın (2015) adapted the AGQ-R (Elliot & Murayama, 2008) for 450 university students. The 12-item, four-factor measure showed acceptable internal consistency (Cronbach's alphas ranging from 0.62 to 0.72) and item correlations (0.50-0.70). CFA validated the model, with strong fit statistics ($\chi^2 = 172.08$, $df = 48$, $RMSEA = 0.076$, $NNFI = 0.97$, $NFI = 0.98$, $CFI = 0.98$, $IFI = 0.98$, $RFI = 0.96$, $GFI = 0.94$, $SRMR = 0.048$), confirming its reliability and validity.

Although several adaptations of AGQ and AGQ-R exist in Turkey, these studies focus on university students or earlier versions. No validated tool exists for middle school

students, a population undergoing critical motivational development. This study addresses this gap.

The primary aim of this study is to adapt and assess the validity and reliability of the AGQ-R in Turkish for middle school students. The scale was translated in accordance with international standards, and its construct validity, reliability, and item analyses were assessed. This work has the potential to provide a psychometrically sound tool for the Turkish educational context, enabling more rigorous research on achievement goal orientation and serving as a widely used resource in studies on instructional design, student motivation, and academic development.

Method

Participants

The study involved 527 middle school students (ages 10-15, grades 5-8) from several public schools. A semi-random sampling method was used, in which schools were selected based on administrative permissions, and then classes were randomly selected. The sample size of 527 is

considered *very good* and highly sufficient for a confirmatory factor analysis, aligning with scholarly recommendations from Comrey and Lee (1992) and Kline (2005), with the latter noting that samples over 200 are typically large and adequate for such analyses. Demographic data was also collected to create a comprehensive participant profile.

Ethical Considerations

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki and relevant national regulations. Ethical approval for the study was obtained from the [Postgraduate Education Institute Ethics Committee], [Çanakkale Onsekiz Mart University] (Approval No: [E-84026528-050.99-2400021516- 01/01], Date: [18.01.2024]). In addition, permission to conduct the research in the participating schools was granted by the [Tekirdağ Province] Provincial Directorate of National Education, which is the competent authority responsible for all public schools in the province (Official Permission No: [E-43996270-44-99719843-99506596], Date: [25.03.2024])

Table 1. Participant characteristics

Variable	Demographics	(f)	%
Grade	5. grades	99	18,8
	6. grades	128	24.3
	7. grades	199	37.8
	8. grades	101	19.2
Gender	Female	248	47.1
	Male	279	52.9
Age	10	42	8
	11	118	22.4
	12	179	34
	13	129	24.5
	14	55	10.4
	15	4	0.8

Psychometric Properties of the AGQ-R Instrument

The Achievement Goal Questionnaire-Revised (AGQ-R) (Elliot & Murayama, 2008) was adapted into Turkish for the first time for middle school students. The 12-item scale uses a 5-point Likert format to measure the four goals of the 2x2 framework. The subscales showed strong internal consistency: Cronbach's alpha values were 0.84 (mastery-approach), 0.88 (mastery-avoidance), 0.92 (performance-approach), and 0.94 (performance-avoidance). Factor loadings were also high (0.73-0.93). CFA results indicated a good model fit: χ^2 (48, N=229) = 78.32, $p < 0.01$, χ^2/df = 1.63, CFI = 0.99, IFI = 0.99, and RMSEA = 0.053.

Adaptation Process

Permission was obtained from the original developers (Elliot & Murayama). The material was translated into Turkish by three English instructors (one with an academic post) and back-translated (Brislin, 1970) by two others, a technique widely employed in adaptation research (Direktör & Okray, 2023; Kadan et al., 2025; Tunç & Ümmet, 2025). Two Turkish teachers checked grammar and punctuation, and a multidisciplinary panel, comprising experts in Turkish language and literature, educational psychology, curriculum development, and educational measurement, ensured cultural neutrality and conceptual equivalence for middle school students. A pilot test confirmed item clarity and comprehension. The finalized version was subjected to confirmatory analysis of the

hypothesized model, with validity and reliability examined using SPSS 25 and AMOS 22.

Findings

The internal consistency of the scale and its subscales was evaluated using Cronbach's alpha. The overall scale had an alpha of 0.89, which is considered very good (Hair et al., 2009) and nearly excellent (Kline, 2005). Subscale reliabilities were also satisfactory, exceeding the standard of 0.70: Mastery-Approach ($\alpha = 0.79$), Mastery-Avoidance ($\alpha = 0.76$), Performance-Approach ($\alpha = 0.81$), and Performance-Avoidance ($\alpha = 0.70$). In addition to Cronbach's alpha, McDonald's omega (ω) was calculated to verify internal consistency (Dunn et al., 2013; McDonald, 1999). Since SPSS version 25 does not support this analysis, JASP software (version 0.95.4) was utilized. The results indicated good reliability for the overall scale ($\omega = 0.89$). The subscales also demonstrated satisfactory internal consistency: Mastery-Approach ($\omega = 0.79$), Mastery-Avoidance ($\omega = 0.75$), Performance-Approach ($\omega = 0.81$), and Performance-Avoidance ($\omega = 0.71$). Additionally, corrected item-total correlations across all subscales ranged from 0.525 to 0.644, confirming that each item was strongly associated with its respective total score (Clark & Watson, 1995; Streiner et al., 2015).

Table 2. Statistics related to internal consistency

Item Number	Mean	Std. Deviation	Corrected Item-Total Correlation	Cronbach's Alpha If Item Deleted
1	4.06	0.92	0.62	0.88
2	3.98	1.09	0.59	0.88
3	4.15	0.96	0.64	0.88
4	3.90	1.07	0.57	0.88
5	4.06	1.04	0.62	0.88
6	3.88	1.07	0.53	0.89
7	4.00	1.07	0.64	0.88
8	4.00	1.04	0.64	0.88
9	3.94	1.09	0.63	0.88
10	3.88	1.12	0.53	0.89
11	4.03	1.03	0.60	0.88
12	4.22	0.99	0.56	0.88

Item discrimination power was evaluated using a 27% upper-lower group comparison (Ebel & Frisbie, 1991). The discrimination indices ranged from 1.478 to 1.845 (*d*-index: 0.37-0.46). Items with statistically significant

mean differences ($p < 0.05$) between the top and bottom 27% of participants were considered to have good discrimination.

Table 3. Item discrimination indices based on 27% upper-lower group comparison

Item Number	Upper Group Mean	Lower Group Mean	Mean Difference	t-value	p-value	d-index
1	4.73	3.25	1.48	15.32	.001	0.37
2	4.77	2.98	1.80	17.22	.001	0.45
3	4.82	3.32	1.50	15.03	.001	0.38
4	4.70	3.00	1.70	16.39	.001	0.42
5	4.78	3.10	1.68	16.15	.001	0.42
6	4.71	3.00	1.71	17.16	.001	0.43
7	4.70	3.03	1.67	16.20	.001	0.42
8	4.77	2.99	1.78	17.68	.001	0.45
9	4.75	2.91	1.85	17.92	.001	0.46
10	4.65	2.96	1.70	15.04	.001	0.42
11	4.80	3.13	1.66	16.40	.001	0.42
12	4.86	3.35	1.51	14.14	.001	0.38

Construct Validity of the Adapted AGQ-R via Confirmatory Factor Analysis

Since a multidisciplinary expert panel confirmed the absence of culturally specific elements, a Confirmatory Factor Analysis (CFA) was conducted using AMOS 22 with maximum likelihood estimation to validate the hypothesized four-factor model. The model proposed four correlated latent factors: mastery-approach, mastery-avoidance, performance-approach, and performance-

avoidance goals. The Turkish names for the factors are shown in Figure 2. The hypothesized four-factor model demonstrated a good fit to the data across multiple indices: $\chi^2/df = 2.145$, $P = 0.001$, AGFI = 0.949, GFI = 0.969, NFI = 0.960, CFI = 0.978, IFI = 0.978, TLI = 0.970, RMSEA = 0.047, and SRMR = 0.030. These fit statistics are well within commonly cited threshold values (Table 4) (Hair et al., 2009; Hu & Bentler, 1999; Kline, 2005).

Table 4. References on the threshold values of model-data fit

Index (Result)	Thresholds	Reference
RMSEA (.047)	Perfect <.05; Good <.06; Acceptable <.10	(Brown, 2006; Byrne, 2016; Hu & Bentler, 1999; Schumacker & Lomax, 2016)
SRMR (.0305)	Perfect <.05; Good ≤ .08; Acceptable ≤ .10	(Brown, 2006; Byrne, 2016; Hu & Bentler, 1999; Schumacker & Lomax, 2016)
NFI (.960)	Perfect ≥.95; Good ≥ .95; Acceptable ≥ .90	(Byrne, 2016; Hu & Bentler, 1999; Schermelleh et al., 2003; Schumacker & Lomax, 2016)
CFI (.978)	Perfect ≥.97; Good ≥ .95; Acceptable ≥ .90	(Byrne, 2016; Hair et al., 2009; Hu & Bentler, 1999; Schermelleh et al., 2003)
GFI (.969)	Perfect ≥.90; Good ≥ .90; Acceptable ≥ .85	(Byrne, 2016; Hair et al., 2009; Hu & Bentler, 1999; Schermelleh et al., 2003; Schumacker & Lomax, 2016)
AGFI (.949)	Good ≥ .90; Acceptable ≥ .85	(Byrne, 2016; Schermelleh et al., 2003; Schumacker & Lomax, 2016;)
P (.000)	Good ≤ .01; Acceptable .01–.05	
TLI (.970)	Good ≥ .95	(Byrne, 2016; Schermelleh et al., 2003; Schumacker & Lomax, 2016)
χ^2/df (2.145)	Perfect ≤ 2; Good ≤ 3; Acceptable ≤ 5	(Hair et al., 2009; Kline, 2005)

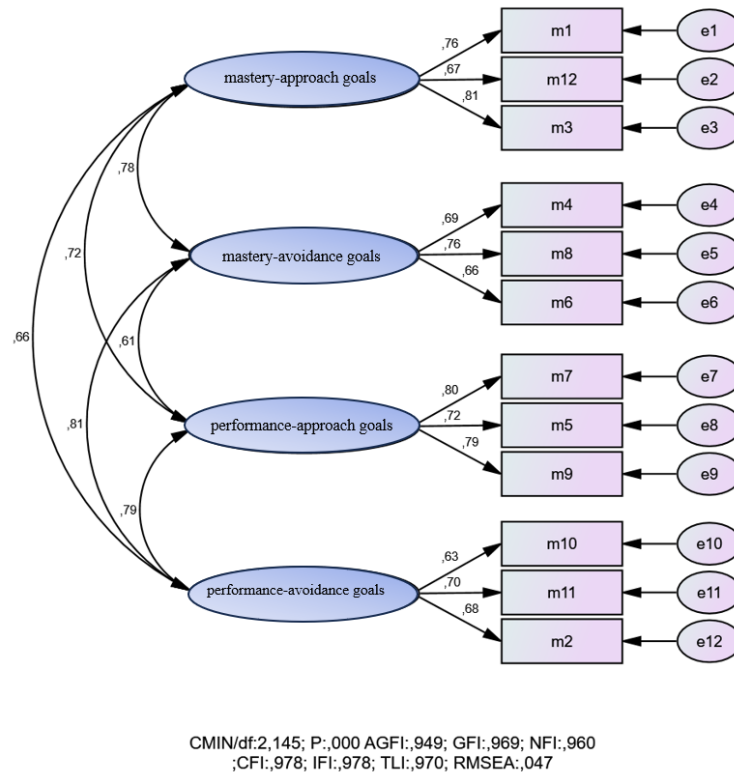


Figure 2. Confirmatory factor analysis result of the hypothesized model

To further assess construct reliability and convergent validity, Average Variance Extracted (AVE) and Composite Reliability (CR) values were calculated (Fornell & Larcker, 1981; Hair et al., 2019; Huang et al., 2013). CR values were acceptable across all subscales (0.71 – 0.81), exceeding the recommended 0.70 threshold. AVE values exceeded 0.50 for mastery-approach (0.56) and performance-approach (0.59), supporting convergent validity. Mastery-avoidance (0.49) and performance-avoidance (0.45) fell slightly below the 0.50 cutoff; however, their CR values were above 0.70. According to Fornell and Larcker (1981), and later confirmed by Huang et al. (2013), constructs can still demonstrate adequate convergent validity when AVE is below 0.50, provided that CR exceeds 0.60. These results therefore support the psychometric robustness of the Turkish AGQ-R.

Discussion

The primary purpose of this study was to adapt the Achievement Goal Questionnaire-Revised (AGQ-R) into Turkish and to test the hypothesis that its original four-factor structure comprising mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goals would be a valid and reliable construct for Turkish middle school students. This initiative is anticipated to facilitate more comprehensive investigations into achievement goal orientation among middle school students, particularly by assessing the scale's relevance within the Turkish educational system. To accomplish this, the scale's translation was completed in precise accordance with international adaptation standards.

The four-factor model of the AGQ-R was successfully validated, aligning with the original conceptualization. The instrument also demonstrated strong reliability, with a

Cronbach's alpha of $\alpha = 0.89$ for the overall scale and values ranging from 0.70 to 0.81 for its subscales. This high level of internal consistency is consistent with findings from the original scale development study (Elliot & Murayama, 2008) and other adaptations of the achievement goal framework (Arslan & Akın, 2015; Senko et al., 2011), indicating that the Turkish version preserves the construct's theoretical integrity.

Item discrimination was evaluated using a 27% upper-lower group comparison (Ebel & Frisbie, 1991). The results indicated that all items significantly differentiated the upper and lower groups ($p < .05$). Discrimination statistics ranged from 1.48 to 1.84, corresponding to d-index values between 0.37 and 0.46, suggesting acceptable to good discrimination.

CFA yielded factor loadings of 0.63 to 0.81, which meet or exceed criteria for ideal values (Brown, 2015; Hair et al., 2009). The four-factor model showed a strong fit to the data, as evidenced by multiple indices: $\chi^2/df = 2.145$, $p < 0.001$; AGFI = 0.949; GFI = 0.969; NFI = 0.960; CFI = 0.978; IFI = 0.978; TLI = 0.970; RMSEA = 0.047; and SRMR = 0.0305. No items were removed or modified, attributable to the expert-validated absence of culturally specific elements. The confirmation of the four-factor structure in the Turkish context aligns with the theoretical arguments presented by Urdan and Kaplan (2020), who emphasize the distinctiveness of approach and avoidance dimensions in different cultural settings. Furthermore, these fit indices are comparable to those reported in meta-analytic reviews of achievement goal measures (Huang, 2011), supporting the cross-cultural validity of the 2x2 framework.

This study addresses two key gaps in the Turkish literature. First, while Akın (2006) and Arslan and Akın (2015)

validated 2x2 frameworks with university students, and Şenler and Sungur (2007) with middle school students, all studies used either outdated scales or samples that didn't match the AGQ-R's target demographic. Second, the AGQ-R itself was developed to address issues with the earlier AGQ, as noted by Elliot and Murayama (2008). Our study also found that previous translations, unlike ours, included negative phrasing that hindered comprehension in younger students, further highlighting the need for this current adaptation.

This study makes several key contributions. Most notably, it is the first adaptation and validation of the AGQ-R for Turkish-speaking middle school students, filling a significant gap in the literature. A core strength is its successful resolution of comprehension issues from earlier translations (e.g., negative phrasing), making the instrument culturally and developmentally appropriate. The empirical findings strongly support the four-factor structure with high construct validity and reliability. This provides a rigorously validated tool that educators and researchers can use to inform interventions for this critical age group.

The validation of this psychometric tool also provides academicians and educators with a valuable resource for identifying students' motivational profiles, particularly achievement goals among Turkish-speaking middle school students. This, in turn, can facilitate the development and implementation of differentiated instructional strategies tailored to meet diverse learning needs. According to Ames (1992) and Dweck (1986), fostering such mastery-oriented environments is crucial for sustaining long-term student engagement and deep learning strategies. By using this scale, educators can identify students prone to performance-avoidant goals, which are often associated with maladaptive outcomes (Elliot & Church, 1997), and intervene accordingly. Also, integrating goal-setting and metacognitive strategies into instruction can be beneficial for curriculum designers aiming to develop curricula that reduce fear of failure. Furthermore, understanding students' dominant goal orientations can help educators create supportive settings that promote perseverance-driven learning. Regarding participants' age range, middle school students are typically in a critical period for motivational development (Anderman & Midgley, 1997), and early identification of goal orientations may help reverse undesirable motivational motives and foster effort-based intentions.

Limitations

Despite its valuable contributions, the study has certain limitations that should be noted. First, its cross-sectional design precludes drawing conclusions about the longitudinal stability of achievement goal orientations or the scale's predictive power for academic outcomes and classroom management over time. Second, because the sample is limited to Turkish-speaking middle school students, the findings may not generalize to other age groups, educational settings, or cultural contexts without further validation. Finally, the exclusive use of self-report data may introduce response biases, particularly given the absence of methods to control for social desirability or similar effects.

Conclusion

The results of this study confirm that the Turkish adaptation of the Achievement Goal Questionnaire-Revised (AGQ-R) is a valid and reliable instrument for assessing the achievement goal orientations of middle school students. The confirmatory factor analysis successfully replicated the original four-factor structure: mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance within the Turkish cultural context. This finding is significant as it demonstrates the cross-cultural applicability of the 2x2 achievement goal framework developed by Elliot and Murayama (2008). Furthermore, the rigorous translation and adaptation process has ensured that the scale is linguistically and developmentally appropriate for students aged 10-15. By filling a critical gap in the literature, this adapted scale provides a psychometrically sound foundation for future motivational research in Turkey, enabling scholars to measure the distinct dimensions of achievement goals with greater precision than previous instruments allowed.

Recommendations

Based on the findings of this study, several recommendations are offered for educators, practitioners, and researchers to enhance student motivation within the Turkish educational context.

For educators and practitioners, the primary recommendation is to identify motivational profiles. Teachers and school counselors can utilize the Turkish version of the AGQ-R to systematically identify students' dominant goal orientations. Recognizing students who prioritize performance-avoidance goals, such as those driven by a fear of failure, is crucial for providing early intervention and targeted support. Furthermore, regarding instructional design, educators are encouraged to cultivate classroom environments that foster mastery-approach goals. Instead of solely emphasizing normative comparisons and grades, instructional strategies should focus on the intrinsic value of learning, individual effort, and self-improvement to promote adaptive motivational patterns.

For researchers, future studies should consider employing longitudinal designs to examine how achievement goal orientations evolve as students transition from middle school to high school, providing insights into developmental trajectories. Additionally, correlational research is recommended to investigate the relationships among the four goal orientations and other critical educational variables, such as academic achievement, test anxiety, self-efficacy, and metacognitive strategies, within Turkish culture. Finally, methodological extensions, such as incorporating mixed-methods approaches and including indicators of social desirability, would help reduce potential self-report bias and strengthen the interpretation of findings in future investigations.

Declarations

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Ethics Approval

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki and relevant national regulations. Ethical approval for the study was obtained from the [Postgraduate Education Institute Ethics Committee], [Çanakkale Onsekiz Mart University] (Approval No: [E-84026528-050.99-2400021516- 01/01], Date: [18.01.2024]). In addition, permission to conduct the research at the participating schools was granted by the [Tekirdağ Province] Provincial Directorate of National Education, the competent authority responsible for all public schools in the province (Official Permission No: [E-43996270-44-99719843-99506596], Date: [25.03.2024]).

Conflict of Interest

The authors declare that they have no competing interests.

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Informed Consent

The participants' informed consent has been obtained. This manuscript does not contain any individual person's data in any form (including images, videos, or other identifying personal details).

Data availability

The datasets available from the corresponding author upon reasonable request.

Authors' contributions

All authors contributed to the conception and design of the study. Material preparation, data collection, and statistical analyses were performed by [EK] and [DG]. [EK], as a PhD student, conducted the research and drafted the initial version of the manuscript. [DG] supervised the study, contributed to data interpretation, and critically revised the manuscript for important intellectual content. Both authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

The Pleasure of Social Interactions: Turkish Adaptation and Validation of the Adult Social Reward Questionnaire

Sosyal Etkileşimlerin Hazzı: Sosyal Ödül Ölçeği Yetişkin Formunun Türkçe Uyarlama ve Geçerlik Çalışması

Aliye Canan Taşlıoğlu Sayiner¹, Ezgi Cenk², Özenç Polat³

Abstract:

Social interactions play a fundamental role in shaping human behavior and directly affect both physical and mental health. Individuals may experience varying levels of pleasure from social interactions depending on their personality patterns; however, in depression and related psychopathologies, this pleasure may diminish. Therefore, examining the extent to which individuals perceive social interactions as rewarding is critically important in both general and clinical contexts. Yet the literature lacks a psychometrically validated Turkish instrument to assess this construct. This study examined the psychometric properties of the Turkish version of the Social Reward Questionnaire (SRQ) in a sample of 382 adults. Structural validity was assessed using Confirmatory Factor Analysis (CFA), and reliability was evaluated using internal consistency and test-retest methods. Construct validity was assessed via correlations among SRQ subscales, the Big Five Inventory, the Dark Triad Dirty Dozen, and the Interpersonal Communication Style Scale. CFA confirmed that the Turkish SRQ preserved the original six-factor structure and demonstrated good model fit. Subscales showed internal consistency ranging from acceptable to excellent, and test-retest results indicated strong temporal stability over one month. Significant correlations between SRQ subscales, personality traits, dark triad characteristics, and interpersonal communication styles supported construct validity and reinforced the scale's utility in assessing individual differences in social reward sensitivity. As the first Turkish instrument designed to evaluate the perceived value of social interactions, the SRQ provides valuable opportunities for future research, enabling comprehensive exploration of psychopathology, personality patterns, and cultural influences in social reward processing across diverse populations.

Keywords: Personality, Neuroticism, Narcissism, Machiavellianism, Social behavior, Reward.

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Öz:

Sosyal etkileşimler, insan davranışının şekillenmesinde temel bir rol oynamakta ve hem fiziksel hem de zihinsel sağlığı doğrudan etkilemektedir. Bireyler, kişilik örüntülerine bağlı olarak farklı sosyal etkileşimlerden çeşitli düzeylerde haz alabilmekte; ancak depresyon ve benzeri psikopatolojilerde haz kaybı ortaya çıkabilmektedir. Bu nedenle, bireylerin hangi sosyal etkileşimleri ne ölçüde ödüllendirici algıladıklarının incelenmesi hem genel popülasyon hem de klinik bağlam açısından kritik öneme sahiptir. Ancak literatürde bu yapıyı değerlendiren, psikometrik olarak doğrulanmış bir Türkçe ölçeği bulunmamaktadır. Bu çalışmada Sosyal Ödül Ölçeği'nin (SÖÖ) Türkçe formunun psikometrik özellikleri 382 yetişkin katılımcı üzerinde incelenmiştir. Ölçeğin yapısal geçerliği Doğrulamalı Faktör Analizi (DFA) ile test edilmiş; güvenirliği ise iç tutarlılık ve test-tekrar test yöntemleriyle değerlendirilmiştir. Yapı geçerliği, SÖÖ alt boyutları ile Beş Faktör Kişilik Envanteri, Karanlık Üçlü Ölçeği ve Kişilerarası İletişim Tarzı Ölçeği arasındaki korelasyonlar üzerinden araştırılmıştır. DFA sonuçları, Türkçe SÖÖ'nün orijinal altı faktörlü yapısını koruduğunu ve iyi uyum değerleri sağladığını göstermiştir. Alt boyutlar kabul edilebilir ile mükemmel düzeyde iç tutarlılık katsayıları sergilemiş; test-tekrar test bulguları da güçlü bir zamansal kararlılığa işaret etmiştir. SÖÖ alt boyutları ile kişilik özellikleri, karanlık üçlü kişilik özellikleri ve kişilerarası iletişim tarzları arasındaki anlamlı ilişkiler, ölçeğin yapı geçerliğini desteklemiş ve sosyal ödül duyarlılığındaki bireysel farklılıkları değerlendirmedeki etkinliğini pekiştirmiştir. Türkçe SÖÖ, sosyal etkileşimlerin algılanan değerini değerlendirmek amacıyla Türkçeye uyarlanan ilk ölçek olmasıyla, gelecekte yapılacak araştırmalara önemli katkılar sağlayacaktır. Bu sayede psikopatolojiler, kişilik örüntüleri ve kültürel etkilerin sosyal ödül işlenişindeki rolü farklı örneklemeler üzerinden daha kapsamlı biçimde incelenebilecektir.

Anahtar Kelimeler: Kişilik, Nevrotizm, Narsisizm, Makyavelizm, Sosyal davranış, Ödül.

Introduction

Primary rewards, such as food and money, are fundamental drivers of human motivation and profoundly influence decision-making (Liu et al., 2011). However, humans do not merely seek material rewards; rather, their behaviors are deeply embedded in social dynamics, in which the pursuit and experience of rewards are linked to social interactions and relationships (Bhanji & Delgado, 2014). The literature demonstrates that engaging in prosocial behaviors, such as volunteering, elicits a strong sense of social fulfillment (Gray & Stevenson, 2020). Beyond altruistic acts, a range of social experiences can be inherently rewarding, including receiving a warm smile (Thomsen, 2015), gaining social recognition or an enhanced reputation (Izuma, 2012).

The ability to derive pleasure from social interactions is not merely a byproduct of human sociability but a crucial determinant of psychological well-being. Positive social functioning has been strongly associated with enhanced self-esteem (Ritsner et al., 2018), greater social connectedness, and overall improvements in well-being (Sun et al., 2019). However, the extent to which individuals seek and experience social rewards is not uniform; it is shaped by an interplay of personality traits, cultural frameworks, and psychopathological conditions (Barkus & Badcock, 2019; Foulkes et al., 2014a). Understanding these individual differences is essential for unraveling the mechanisms governing social motivation and its implications for mental health and adaptive behavior.

Understanding individual differences in social reward processing is important because alterations in social behavior may serve as key indicators of underlying mental health conditions (Barkus & Badcock, 2019). One such phenomenon, social anhedonia, means having less enjoyment from social interactions, and is observed in several mental health disorders, such as schizophrenia, schizoaffective disorder (Ritsner et al., 2018), and major depression (Pizzagalli, 2014). In contrast, individuals experiencing manic episodes may exhibit hypersensitivity to socially rewarding stimuli, resulting in increased social

engagement (Schwarz et al., 2020). Moreover, traumatic experiences can reshape social reward processing, as seen in post-traumatic stress disorder (PTSD), where individuals often exhibit reduced sensitivity to positive social interactions (Clausen et al., 2016). These distinct patterns highlight the role of social reward sensitivity in psychopathology and emphasize the need for a nuanced understanding of its mechanisms (Aldridge-Waddon et al., 2020).

Beyond psychopathology, personality traits influence how individuals experience social rewards (Foulkes et al., 2014a, 2014b). While most people derive pleasure from prosocial interactions, some find satisfaction in socially unacceptable behaviors. Kyranides et al. (2024) demonstrated that negative social potency, the gratification derived from exerting cruelty over others, is related to primary and secondary psychopathy across genders. Similarly, individuals high in narcissism, Machiavellianism, and psychopathy often thrive in relationships that allow manipulation for personal gain, whether through social approval, reputation enhancement, or financial success (Glenn et al., 2017).

Despite the availability of Turkish-language scales measuring general social motivation and pleasure (e.g., Cihan et al., 2015), no instrument has been specifically designed to capture the distinct types of pleasure associated with various social rewards. Research in Türkiye demonstrates that social behavior is shaped by cultural orientations emphasizing interpersonal connectedness, group cohesion, and sensitivity to relational contexts. Göregenli (1995) showed that Turkish samples display stronger collectivistic than individualistic tendencies, reflecting the importance of maintaining close in-group ties and navigating both horizontal (intimacy-oriented) and vertical (hierarchy-oriented) forms of collectivism. Complementing this, Kağıtçıbaşı (2005) argues that individuals in Türkiye often develop an "autonomous-related self" in which personal agency and relational closeness coexist rather than conflict. Consistently, the Balanced Integration-Differentiation

model provides empirical evidence that individuation and relatedness operate as distinct yet complementary orientations in Turkish cultural contexts; both contribute uniquely to psychological functioning, with relatedness linked to affective variables and individuation linked to intrinsic motivation (Imamoglu & Imamoglu, 2007). These culturally grounded patterns suggest that the types of social experiences considered rewarding, such as admiration or prosocial engagement, carry meanings shaped by local relational norms.

To address this gap and identify potential cultural differences in how individuals value social rewards, we aim to validate the Turkish adaptation of the Social Reward Questionnaire (Foulkes et al., 2014b), a comprehensive instrument capturing six distinct dimensions of social reward sensitivity. The SRQ assesses admiration, which refers to the enjoyment derived from receiving praise, recognition, or social approval; negative social potency, which reflects pleasure in exerting power over others, including manipulation or harm; and passivity, which describes satisfaction from allowing others to lead in social interactions. Additionally, it evaluates prosocial interactions, reflecting gratification from cooperative, altruistic, and supportive social behaviors; sexual reward, measuring pleasure from flirtation, romantic attention, and sexual interactions; and sociability, representing enjoyment of general social engagement, group interactions, and the formation of new connections. By enabling a more precise exploration of social reward preferences in Turkish-speaking populations, this adaptation will provide a valuable tool for future research on interpersonal dynamics and individual differences in social motivation.

In addition to confirming the structural validity of the Turkish SRQ, this study aims to establish construct validity by testing theoretically driven hypotheses. We anticipate positive correlations between the Negative Social Potency dimension and dark triad personality traits, as well as manipulative and demeaning communication styles. Conversely, the Prosocial Interactions subscale is expected to correlate negatively with dark triad traits. Moreover, the Admiration subscale is predicted to show positive associations with narcissism, extraversion, and openness to experience. Finally, by comparing the findings

with those of Foulkes et al. (2014a, 2014b), we aim to interpret potential cultural similarities and differences in perceptions and pursuit of social rewards.

Method

Translation Process

Permissions have been obtained from the corresponding author of the original scale (Foulkes et al., 2014a). Five bilingual psychologists independently translated the items. Following translation, all items were cross-checked and revised in a meeting. An independent professional translator back-translated the items into English, after which all translators controlled and revised them. Final adjustments were made to improve sentence structure in Turkish (Appendix A). All translation and cultural adaptation procedures followed the international guidelines for adapting psychological instruments (Hambleton, 2004).

Participants

The Ethics Committee of MEF University, Türkiye, has approved all study procedures (Approval ID: E-47749665-050.01.04-1635, Date: 16/04/2021), and the study was conducted online between December 2022 and June 2023. A total of 382 participants ($M_{age} = 29.9$, $SD = 25.00$) completed the online study via SoSci Survey (www.sosicisurvey.de) and were recruited using convenience sampling via social media, e-mail lists, and university channels. Participation was voluntary, all participants were 18 years of age or older, and written informed consent was obtained. To minimize confounds, participants reporting a personal or family history of psychotic disorders, head trauma, or neurological disorders were excluded.

Participants created a unique anonymous code and provided their e-mail address, which was stored in a separate database to prevent linking identifying information to survey responses. Twenty days later, an email containing the second survey link was sent. In this retest session, participants reentered their anonymous code, allowing secure, confidential matching of Time 1 and Time 2 data. An overview of the sample's demographic details is provided in Table 1.

Table 1. Participant Characteristics

	<i>n</i>	%
Gender		
Woman	220	57.6
Man	161	42.2
Non-Binary	1	0.3
Last Obtained Degree		
No formal education	9	2.4
Primary/ Secondary school	25	6.5
High school	228	59.7
Bachelor's degree	119	31.2
Master's/ Doctoral degree	1	.3
Monthly Income (TL / Month)		
No regular income	28	7.3
0-11,402 TL	98	25.7
11.403 – 18.243 TL	47	12.3
18.244- 29.646 TL	108	28.2
29.647TL and above	101	26.4

Note. *N* = 382

Measures

The demographic questionnaire collects the participants' sociodemographic information, including age, gender, marital status, and socioeconomic status.

The Social Reward Questionnaire (SRQ; Foulkes et al., 2014b) comprises 23 items that assess the reward value of six types of social interactions: Admiration, Negative Social Potency, Passivity, Prosocial Interactions, Sexual Reward, and Sociability. It has a 7-point Likert scale, and mean subscale scores are calculated to represent reward value. Cronbach's alpha values for the subscales ranged from .635 to .879.

The Interpersonal Communication Style Scale (ICSS; Şahin et al., 2007, as cited in Şahin et al., 2011) comprises 60 items and categorizes communication styles into dominant, avoidant, angry, insensitive, manipulative, or belittling. Items are rated on a 5-point Likert scale, allowing assessment of the prevalence of these styles across individuals. The Cronbach's alpha for the total scale is .958.

The Dark Triad Dirty Dozen (DTDD-T; Jonason & Webster, 2010) has been adapted into Turkish by Özsoy et al. (2017). This 12-item scale aims to measure the personality traits of Machiavellianism, psychopathy, and narcissism, on a 9-point Likert scale. The Cronbach's alpha value for the total scale is .871.

Ten-Item Personality Inventory (TIPI; Gosling et al., 2003) assesses the Big Five Model Personality dimensions: emotional stability, extraversion, openness to new experiences, agreeableness, and conscientiousness, through 10 items. Responses are rated on a 7-point Likert scale. The Turkish adaptation was conducted by Atak (2013). The Cronbach's alpha for the total scale was .547, aligning with Thørrisen & Sadeghi's (2023) findings, which reported a similarly low average alpha of .53 across 23 TIPI versions.

Table 2. Standardized Factor Loadings

Subscale	Item Number	Factor Load
Admiration	1	.680
Admiration	7	.618
Admiration	11	.787
Admiration	18	.588
Negative Social Potency	3	.453
Negative Social Potency	5	.634
Negative Social Potency	8	.772
Negative Social Potency	14	.803
Negative Social Potency	17	.833
Passivity	12	.715
Passivity	21	.784
Passivity	23	.475
Prosocial Interaction	2	.586
Prosocial Interaction	6	.348
Prosocial Interaction	16	.602
Prosocial Interaction	19	.675
Prosocial Interaction	22	.692
Sexual Relationships	9	.866
Sexual Relationships	13	.873
Sexual Relationships	20	.789
Sociability	4	.524
Sociability	10	.565
Sociability	15	.774

Analyses

The structural validity of the Turkish SRQ was tested using a confirmatory factor analysis (CFA) in R. Following the original SRQ framework, a six-factor model was evaluated using diagonally weighted least squares (DWLS) estimation. Following the recommendations of Hu and Bentler (1999), model fit was assessed using multiple criteria: a χ^2/df ratio below 3, Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values exceeding .90, a Root Mean Square Error of Approximation (RMSEA) below .06, and a Standardized Root Mean Square Residual (SRMSR) below .08.

According to established CFA sample size guidelines, a participant-to-item ratio of 5:1-10:1 is recommended, with a minimum of 100–200 participants depending on model complexity and communalities (Wolf et al., 2013). Following this recommendation, our study required approximately 230 participants to achieve robust, reliable results.

When assessing factor loadings in factor analysis, Williams et al. (2010) suggest a threshold of .30 for significance. Furthermore, Cronbach's alpha values will be interpreted as follows: values below .60 indicate poor reliability, values between .70 and .90 indicate good reliability, and values above .90 indicate excellent reliability (Tavakol & Dennick, 2011). To evaluate the construct validity of the Turkish SRQ, Pearson correlations were used to assess convergent and discriminant validity.

Results

Using CFA, the original six-factor structure of the SRQ was tested. Model fit was evaluated using χ^2 (454.267, $df = 215$, $p < .001$; $\chi^2/df = 2.11$), CFI = .934, TLI = .922, SRMR = .072, and RMSEA = .054 (90% CI [.047, .061]) indicated an adequate fit to the data. The factor loadings ($M = .671$, $SD = .140$) are presented in Table 2.

Reliability

indicating acceptable to excellent internal consistency.

Internal Reliability

The Turkish subscales show Cronbach's alpha values ranging from .635 to .879,

Table 3. Descriptive Information and Pearson Correlation Coefficients of SRQ Subscales

Variable	M	SD	α	1	2	3	4	5	6
1. Admiration	5.82	.979	.762	—					
2. Negative Social Potency	1.91	.979	.794	-.029	—				
3. Passivity	2.11	1.05	.674	-.009	.356***	—			
4. Prosocial Interaction	5.95	.760	.635	.540***	-.244***	-.051	—		
5. Sexual Reward	4.54	1.76	.879	.284***	.202***	.199***	.226***	—	
6. Sociability	5.17	1.16	.639	.506***	.020	.027	.383***	.427***	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Correlation tests among SRQ subscales were conducted to examine relationships among the different dimensions of social reward.

Retest Reliability

Test-retest reliability was evaluated by inviting participants to complete the SRQ in two online sessions. A total of 118 individuals completed both administrations within a 20-32-day interval ($M_{days} = 27.44$ days, $SD = 3.72$). High correlations between the two time points for each subscale (.953–.997) showed strong temporal stability. Furthermore, test–retest reliability was examined using two-way random-effects intraclass correlation coefficients with absolute agreement for single measurements (ICC [2,1]). All subscales demonstrated excellent stability, with ICC (2,1) values of .994 for Admiration, .997 for Negative Social Potency, .953 for Passivity, .977 for Prosocial Interaction, .956 for Sexual Reward, and .987 for Sociability.

Construct Validity

Correlations were tested to examine the hypothesized relationships between the SRQ subscales and a range of psychological traits (Table 4).

Admiration was significantly positively correlated with Extraversion ($r = .10$, $p = .049$), Agreeableness ($r = .16$, $p = .001$), Machiavellianism ($r = .22$, $p < .001$), Narcissism ($r = .64$, $p < .001$), Dominant ($r = .13$, $p = .010$), Manipulative ($r = .19$, $p < .001$), Belittling ($r = .15$, $p = .003$), and Avoidant Communication Styles ($r = .13$, $p = .012$).

Negative Social Potency was negatively correlated with Machiavellianism ($r = .52$, $p < .001$), Psychopathy ($r = .51$, $p < .001$), Narcissism ($r = .19$, $p < .001$); Dominant ($r = .60$, $p < .001$), Insensitive ($r = .42$, $p < .001$), Manipulative ($r = .43$, $p < .001$), Angry ($r = .43$, $p < .001$), Belittling ($r = .46$, $p < .001$), and Avoidant Communication Styles ($r = .45$, $p < .001$).

Prosocial Interaction was positively correlated with Extraversion ($r = .12$, $p = .019$), and Agreeableness ($r = .15$, $p = .004$). However, it was negatively correlated with Psychopathy ($r = -.12$, $p = .018$); Dominant ($r = -.15$, $p = .004$), Insensitive ($r = -.25$, $p < .001$), Manipulative ($r = -.11$, $p = .040$), and Avoidant Communication Styles ($r = -.12$, $p = .017$).

On the other hand, Sexual Reward was positively correlated with Agreeableness ($r = .27$, $p < .001$), Machiavellianism ($r = .29$, $p < .001$), Psychopathy ($r = .19$, $p < .001$), Narcissism ($r = .34$, $p < .001$), as well as Dominant ($r = .25$, $p < .001$), Manipulative ($r = .22$, $p < .001$), Angry ($r = .20$, $p < .001$), Belittling ($r = .18$, $p < .001$), and Avoidant Communication Styles ($r = .22$, $p < .001$).

Lastly, Sociability has been found to be positively correlated with Extraversion ($r = .15$, $p = .003$), Agreeableness ($r = .20$, $p < .001$), Machiavellianism ($r = .19$, $p < .001$), and Narcissism ($r = .39$, $p < .001$). It was also negatively correlated with Avoidant Communication Style ($r = -.11$, $p = .041$).

Table 4. Pearson correlations between SRQ subscales and external measures

	SRQ Subscales					
	Admiration	Negative Social Potency	Passivity	Prosocial Interactions	Sexual Reward	Sociability
<i>Dark Triad</i>						
Machiavellianism	.219***	.523***	.249***	-.101	.288***	.186***
Psychopathy	.096	.509***	.145**	-.122*	.188***	.040
Narcissism	.638***	.191***	.061	.213***	.337***	.385***
<i>Interpersonal Communication Style</i>						
Dominant	.132*	.599***	.299***	-.149**	.249***	.095
Avoidant	.051	.453***	.159**	-.123*	.215***	.048
Manipulative	.191***	.426***	.259***	-.106*	.216***	.095
Insensitive	-.113*	.423***	.251***	-.252***	.021	-.105*
Belittling	.153**	.455***	.116*	.010	.176***	.100
Angry	.087	.427***	.104*	-.067	.202***	.041
<i>Ten Item Personality Inventory</i>						
Emotional Stability	.045	-.205***	.094	.152**	-.051	.035
Extraversion	.101*	-.057	.075	.120*	.007	.151**
Openness	.021	.056	.144**	.036	.089	.083
Agreeableness	.164**	.203***	.054	.146**	.273***	.199***
Conscientiousness	.065	-.069	.049	.148**	-.013	.071

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

The primary objective of this study was to adapt the SRQ (Foulkes et al., 2014b) into Turkish and to evaluate its factorial structure, validity, and reliability. In a sample of Turkish speakers, CFA supported the hypothesized six-factor structure of the SRQ. Model adequacy was evaluated using multiple fit indices, with the chi-square-to-degrees-of-freedom ratio indicating excellent fit. The RMSEA, TLI, and CFI fell within acceptable limits, confirming the model's adequacy.

The CFA revealed substantial standardized factor loadings across subscales, demonstrating strong item-to-factor associations, particularly for the Sexual Relationships and Negative Social Potency subscales. Loadings across all subscales met recommended thresholds for interpretative and practical significance (Williams et al., 2010), supporting the questionnaire's validity. Although the overall factor structure was supported, a few items showed lower loadings, and the content of these items provides plausible explanations for these deviations. For example, the item "I enjoy feeling emotionally connected to someone" showed a modest loading. This may reflect

collectivistic dynamics of Türkiye, where emotional closeness is expressed in context-dependent ways: warmth and intimacy are typically reserved for specific in-group relationships, whereas norm-guided behavior is expected in out-group contexts (Fischer & Smith, 2003; Göregenli, 1995). Broadly phrased items that do not specify the relational target may therefore evoke different frames across respondents, reducing shared variance with the latent construct. Similarly, the item “*I enjoy following someone else’s rules*” showed a loading consistent with cultural patterns of high-power distance (Hofstede, 1980). In such contexts, rule-following may be a form of social adaptation rather than dispositional passivity, reflecting respect, maturity, or strategic alignment with higher-status individuals. Because this item can be interpreted as submission, respect, strategic deference, or cooperative politeness, respondents are unlikely to view it as a stable trait, weakening its coherence with the underlying factor. Similar mechanisms may explain lower loadings in other items. Explicitly antagonistic statements, such as “*I enjoy making others angry*,” are socially undesirable and may elicit defensive responding, thereby reducing their correlation with the Negative Social Potency factor.

Internal consistency ranged from acceptable to excellent, and test-retest reliability over one month showed strong concordance, supporting the measures’ reliability. Cronbach’s alpha values for some subscales in these adaptations fell below the standard .70 threshold, a trend commonly observed in cross-cultural psychometric studies. For example, the Dutch adaptation found alpha values below .70 for Negative Social Potency and Sociability, reflecting variability in internal consistency across cultural contexts (Smeijers et al., 2022). These findings underscore the need to contextualize reliability metrics and to apply additional psychometric measures to ensure thorough reliability assessments (Schmitt, 1996).

Moreover, correlations among subscale scores in our Turkish-speaking sample largely aligned with those reported by Foulkes et al. (2014b), though some discrepancies emerged. For instance, Sexual Reward was positively correlated with all SRQ subscales. This differs from Foulkes et al. (2014b), who found no significant relationship between Sexual Reward and Negative Social Potency or Passivity. Cultural context may help explain these differences (Fischer & Smith, 2003). Power distance and collectivism shape perceptions of social rewards, and the original study by Foulkes et al. (2014b) was conducted in the US and UK, cultures characterized by low power distance and high individualism, where equity-based, performance-focused reward systems are common (Hofstede, 1980). In contrast, Türkiye’s higher power distance and collectivist orientation promote a context-sensitive approach to reward allocation, emphasizing social status and group harmony (Fischer & Smith, 2003; Hofstede, 1980).

To assess construct validity, interrelations between SRQ subscales and other measures, the Big Five Personality Inventory, Dark Triad Inventory, and Interpersonal Communication Scale, were examined. Consistent with the literature and our hypotheses, Negative Social Potency was positively associated with all dark triad traits and maladaptive interpersonal communication styles, highlighting links between antisocial tendencies and these characteristics (Foulkes et al., 2014a; Moore et al., 2024). However, unlike Foulkes et al. (2014b), Negative Social

Potency in our sample was positively correlated with agreeableness and negatively with emotional stability. These unexpected relationships may reflect culturally embedded norms of social influence. As Göregenli (1995) notes, Turkish collectivism includes both horizontal orientations that emphasize intimacy and harmony and vertical orientations that involve hierarchy and status regulation. Within this structure, agreeable individuals may display warmth in horizontal in-group contexts while engaging in socially potent or provocative behaviors during vertical status negotiation. Additionally, the Balanced Integration–Differentiation model (Imamoglu & Imamoglu, 2007) highlights that, in Turkish contexts, relatedness is accompanied by affective sensitivity, thereby increasing reactivity to relational cues. Such reactivity can manifest as status-protective or boundary-setting behaviors, which may help explain the negative association with emotional stability. Beyond Negative Social Potency, Sexual Reward also showed positive correlations with dark triad traits and maladaptive interpersonal communication subscales, except insensitivity. Literature shows that individuals high in Machiavellianism engage in sexual behaviors for diverse motives, including stress reduction, status enhancement, and revenge (Brewer & Abell, 2015), consistent with the strategic use of sexuality for personal gains within social interactions (Brewer & Abell, 2015).

Expectedly, Prosocial Interaction negatively correlated with psychopathy but positively with narcissism, aligning with existing research (Ding et al., 2016). Although narcissism is associated with superiority, entitlement, and self-capability (Carroll, 1987), which appear contrary to prosocial behavior (Brief & Weiss, 2002), the positive correlation suggests that narcissists might engage in prosocial acts for self-esteem enhancement, social acceptance, and improved social standing (Liu et al., 2022). Such activities may also help them derive a sense of purpose and meaning (Ding et al., 2016).

The Sociability subscale showed positive correlations with Machiavellianism and narcissism, in contrast to Foulkes et al. (2014a, 2014b), who found no such correlations. Within the framework of schema theory (Keulen-de Vos et al., 2017), Sociability in individuals with Machiavellian or narcissistic tendencies may represent an overcompensation strategy rooted in cognitive schemas, such as grandiosity or entitlement. For these individuals, grandiosity schemas likely stem from an inflated need to feel special, important, or superior to others. Sociability, in this context, may act as a self-enhancement mechanism, maintaining the illusion of status or power within social groups. Rather than reflecting authentic prosocial engagement, it might be aimed at securing social approval and reinforcing a sense of perceived superiority.

Limitations

Our findings indicate that the Turkish adaptation of the SRQ demonstrates reliable psychometric properties and aligns well with previous research. However, the sample, composed mainly of young adults from metropolitan areas, may limit generalizability to broader populations. Furthermore, using a non-clinical sample provides a solid baseline for general applications but does not capture clinical utility, in which social reward dynamics might differ.

Conclusion and Recommendations

The study translated and validated the SRQ for Turkish-speaking populations, demonstrating strong psychometric performance and consistent, stable results. The SRQ assesses rewarding values of various social interactions, providing insights into how individuals experience and prioritize these rewards.

Future research with clinical samples could reveal distinct patterns of social reward valuation in conditions such as social anxiety, depression, and personality disorders (e.g., Cook & Black, 2012; Taylor et al., 2024), offering critical insights into how these populations experience and prioritize social rewards. This knowledge could be invaluable for tailoring therapeutic interventions to address social motivation deficits or maladaptive behaviors. Additionally, understanding variations in social reward processing can refine therapeutic strategies by aligning them with clients.

Declarations

Ethics Approval and Consent to Participate

Ethical approval was obtained from the Ethics Committee of MEF University (Approval ID: E-47749665-050.01.04-1635; Date: 16 April 2021).

Consent for Publication

Not applicable.

Availability of Data and Materials

Not applicable.

Conflicts of Interest

The author declares that no competing interests exist in this manuscript.

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Authors' Contributions

ACTS conceptualized the study, obtained the necessary permissions, and coordinated the translation and back-translation of the research instruments. ACTS and EC jointly designed the study methodology. Data collection was carried out by ACTS, EC, and ÖP. All authors contributed to data analysis and interpretation. The literature review and manuscript preparation were conducted collaboratively by ACTS, EC, and ÖP. All authors read and approved the final manuscript.

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Appendix A- Turkish Version of the Social Reward Questionnaire (SRQ)- Adult Version**Sosyal Ödül Ölçeği (SÖÖ)- Yetişkin Versiyonu (in Turkish)**

Yönerge (TR): Aşağıda, başka insanlarla olan etkileşimlerinizde keyif alabileceğiniz konular hakkında ifadeler yer almaktadır. Bu ifadeler yaşamınızdaki tüm insanlara (örn., arkadaşlar, partnerler, aile, meslektaşlar ya da yeni tanıştığınız insanlar) olan etkileşimlerinize yöneliktir. Lütfen her bir ifadenin sizin için uygunluğunu değerlendirerek sizin için en uygun yanıtı seçiniz.

Not: İfadelerde daha önce hiç yaşamadığınız bir deneyim varsa, o durumu yaşıyorsanız ne kadar keyif alacağınızı zihninizde canlandırarak yanıtlayınız.

Instructions (in ENG): Below, you will find statements regarding potential sources of enjoyment in your interactions with others. These apply to interactions with all individuals in your life, including friends, partners, family members, colleagues, or newly acquainted persons. Please assess the appropriateness of each statement in relation to your experiences and choose the most suitable response.

Note: If a statement refers to an experience you have not encountered, please estimate how enjoyable you might find it by imagining that scenario, and answer accordingly.

İtem	Statement
1	Önemli ve heyecan verici bir insan olduğumu düşünen kişilerin yanında olmaktan zevk alırım.
2	Başkalarına adil davranmaktan zevk alırım.
3	Başkalarını kızdırmaktan zevk alırım.
4	Partilere katılmaktan zevk alırım.
5	Yalnızca bir çıkarım olduğu zamanlarda başkalarına iyi davranmaktan zevk alırım.
6	Başkalarına duygusal bağlılık hissetmekten zevk alırım.
7	Başkalarının bana hayranlık duymasından zevk alırım.
8	Başkalarına ait şeyleri hile ile ele geçirmekten zevk alırım.
9	Erotik ilişkiler yaşamaktan zevk alırım.
10	Bir grubun/kulübün üyesi olmaktan zevk alırım.
11	Kimliğimden ve yaptıklarımın etkilenen insanların yanında olmaktan zevk alırım.
12	Başkalarının bana ne yapacağımı söylemesine izin vermekten zevk alırım.
13	Cinsel açıdan birçok deneyim yaşamaktan zevk alırım.
14	Başkalarını utanç verici durumlara düşürmekten zevk alırım.
15	Birçok kişinin beni sosyal etkinliklerine davet etmek istemesinden zevk alırım.
16	Başkalarına verdiğim sözleri tutmaktan zevk alırım.
17	Başkalarının incindiğini görmekten zevk alırım.
18	Başkalarının takdirini kazanmaktan zevk alırım.
19	Biri beni her koşulda olduğum gibi kabul ederse bundan zevk alırım.
20	Aktif bir cinsel yaşamım olmasından zevk alırım.

21	Başka birinin benim adıma kararlar almasından zevk alırım.
22	Bir başkasını mutlu etmekten zevk alırım.
23	Bir başkasının kurallarına uymaktan zevk alırım.

Likert-Type Rating: (Strongly Disagree = 1 to Strongly Agree = 7)

The total score of the scale is not calculated; all analyses are conducted using subscale scores. There are no reverse-scored items on the scale.

Calculate each subscale score by taking the average of the items specified below:

- **Liking:** 1, 7, 11, 18
- **Negative Social Power:** 3, 5, 8, 14, 17
- **Passivity:** 12, 21, 23
- **Positive Social Interactions:** 2, 6, 16, 19, 22
- **Sexual Relationships:** 9, 13, 20
- **Sociability-Assertiveness:** 4, 10, 15

You do not need to seek permission from the authors of the adaptation study for non-commercial use of the scale.



RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

The Moderating Role of Expressing Anger in the Relationship between Narcissistic Injury and Somatization among Individuals with High Levels of Vulnerable Narcissistic Traits

Kırılğan Narsisistik Özellikleri Yüksek Olan Bireylerde Narsisistik Yara ile Somatizasyon Arasındaki İlişkide Öfkeyi İfade Etmenin Düzenleyici Rolü

Özgün Özgönül¹

Abstract:

The vulnerable narcissistic self involves heightened sensitivity to others' emotions, shame linked to grandiose fantasies, and reactivity to rejection. When self-worth dependent on external validation is threatened, narcissistic injury triggers intense anger, which, if not verbally expressed, may manifest through bodily channels and reinforce somatization. This study aimed to examine the moderating role of outward anger expression in the relationship between narcissistic injury and somatization among individuals with high levels of vulnerable narcissistic traits. The sample consisted of 473 individuals living in Istanbul (303 women, 64.10%; 170 men, 35.90%). Participants completed a sociodemographic form, the Vulnerable Narcissism Scale (VNS), the Childhood Trauma Questionnaire (CTQ), the Trait Anger and Anger Expression Styles Scale (TAAESS), and the Somatization Scale (SS). Data were analyzed using SPSS 25. Findings indicated that outward anger expression did not moderate the relationship between narcissistic injury and somatization symptoms, but did play a moderating role in the association between vulnerable narcissistic traits and somatization symptoms. These results suggest that vulnerable narcissism is closely associated with suppressed anger. The inability to express anger verbally may manifest as bodily symptoms reflecting narcissistic injury. The findings emphasize the significance of anger expression styles in understanding the link between vulnerable narcissism and psychosomatic processes and highlight the potential protective role of strengthening anger regulation skills in clinical practice.

Keywords: Vulnerable narcissism, Narcissistic injury, Anger expression, Somatization.

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Öz:

Kırılğan narsisistik kendilik, ötekilerin duygu ve düşüncelerine karşı aşırı hassasiyet, büyülenmeci fantezilere eşlik eden utanç, alınganlık, öfke ve reddedilme ile eleştiriye karşı duyarlılıkla karakterizedir. Bu yapı, dışsal onaya bağımlı benlik değerinin tehdit edildiği durumlarda narsisistik yaralanmalara yol açmakta, bu yaralanmalar da yoğun öfke duygusunu tetiklemektedir. Sözel olarak ifade edilemeyen öfkenin bedensel yolla dışa vurulması somatizasyon süreçlerini güçlendirebilmektedir. Bu doğrultuda araştırmanın amacı, kırılğan narsisistik özellikleri yüksek bireylerde narsisistik yaralanma ile somatizasyon arasındaki ilişkide öfkeyi dışa ifade etmenin düzenleyici rolünün incelenmesidir. Araştırmanın örneklemi, İstanbul ilinde yaşayan 303 kadın (%64,10) ve 170 erkek (%35,90) olmak üzere toplam 473 bireyden oluşmaktadır. Katılımcılara araştırmacı tarafından hazırlanan sosyodemografik veri formu ile Kırılğan Narsisizm Ölçeği (KNÖ), Çocukluk Çağı Travmaları Ölçeği (ÇÇTÖ), Sürekli Öfke ve Öfke Tazıları Ölçeği (SÖÖTÖ) ve Somatizasyon Ölçeği (SÖ) uygulanmış, elde edilen veriler SPSS 25 programı ile analiz edilmiştir. Elde edilen bulgular sonucunda, kırılğan narsisistik özellikleri yüksek bireylerde narsisistik yaralanma ve somatizasyon belirtileri arasındaki ilişkide öfkeyi dışa ifade etmenin düzenleyici rolü olmadığı; ancak bireylerin kırılğan narsisistik özellikleri ile somatizasyon belirtileri arasındaki ilişkide öfkeyi dışa ifade etmelerinin düzenleyici rolü olduğu belirlenmiştir. Bu bulgular, kırılğan narsisizmin bastırılmış öfke deneyimleriyle yakından ilişkili olduğunu göstermektedir. Sözel olarak ifade edilemeyen öfkenin bedensel belirtiler aracılığıyla dışa vurulması, narsisistik yaralanmaların somatik yansımalarına işaret etmektedir. Bulgular, kırılğan narsisistik yapının psikosomatik süreçlerle etkileşimini anlamada öfke dışavurumu biçimlerinin önemini vurgulamakta ve klinik uygulamalarda öfke düzenleme becerilerine odaklanmanın koruyucu bir rol oynayabileceğini göstermektedir.

Anahtar Kelimeler: Kırılğan narsisizm, Narsisistik yaralanma, Öfkeyi ifade etme, Somatizasyon.

Introduction

Kohut (2020b) states that the first stage of the pattern that leads to the development of pathological narcissism is the trauma coming from the mother, while the second stage involves attempting to repeat the desired perfect self-object through the father, and then experiencing a traumatic loss of the idealized object or having the idealized object traumatize the self. In this process, optimal injuries shape the foundation of realism, whereas traumatic narcissistic injuries lead to the formation of the narcissistic self. Since childhood traumas cause narcissistic injuries in individuals, this study focuses on traumatic experiences encountered during childhood—such as emotional, physical, and sexual abuse, neglect, and patterns of family dysfunction—that can influence the development of narcissistic structure (Zamostny, Slyter, and Rios, 1993). It is accepted that narcissistic injury occurs particularly during early periods when the individual's self-worth perception is developing, especially as a result of inconsistent, neglectful, abusive, or demeaning attitudes from caregivers (Yakeley, 2018).

Individuals exhibiting fragile narcissistic traits are seen as modest, sensitive, stressed, experiencing intense feelings of inadequacy and a sense of worthlessness when not accepted, having low self-confidence and self-esteem, difficulty regulating emotions, lacking empathy in relationships, and being overly demanding. They strive to receive positive feedback from others and withdraw when they do not. Despite appearing shy and introverted, they harbor grandiose fantasies that are neither accepted nor rejected, leading to a fear of rejection. This fear manifests as shyness, stemming from their grandiosity. Such shy attitudes can prevent fragile narcissistic individuals from expressing feelings of anger. Therefore, it is thought that fragile narcissism is related to the suppression of anger.

Özmen (2006) defines individuals' expectations of being appreciated, accepted, liked, and loved by others as narcissistic needs. People whose main desire and need is to be recognized and accepted by others, believing they are entitled to such value, engage in actions to fulfill this need.

Those who cannot satisfy the needs they wish to meet through these actions experience narcissistic injury (Karaaziz and Atak, 2013). Due to their hypersensitivity to rejection and criticism, vulnerable narcissistic individuals may suppress their negative emotions, such as anger, and express them through somatic symptoms (somatization) instead of directly expressing them (Pincus et al., 2014; Kealy, Rice, Ogrodniczuk, and Cox, 2018). Based on this information, it is thought that expressing anger in vulnerable narcissistic individuals is effective on the somatic symptoms they experience.

Köknel (1982) defines anger as an emotion that distresses an individual when faced with an undesirable situation or a perceived threat. The primary underlying reason for fragile narcissistic individuals responding with anger in interpersonal relationships is to restore their diminished self-esteem when encountering situations they perceive as threats to their self-esteem. This also indicates that anger serves as a mechanism for adaptation in fragile narcissism (Velotti, Rogier, and Sarlo, 2020). Additionally, the fulfillment of narcissistic needs believed to be deserved can also provoke anger and lead to aggressive behaviors (Okada, 2010). In light of this information, it is thought that there is a relationship between narcissistic injury and anger.

Individuals who use the defense mechanism of somatization, which involves expressing tensions arising from psychological and emotional processes in the body without any medical explanation, are those who cannot define, symbolize, or express these feelings (Öztürk and Uluşahin, 2015). In this context, somatization is considered one of the main psychodynamic processes, as unexpressed internal conflicts are indirectly expressed through physical symptoms (Busch, 2014). DuPen and colleagues (2016) stated that negative parental attitudes reinforce somatization. The negative parental attitudes underlying the development of narcissistic self are thought to be related to these two concepts. Problems in perceiving and understanding the inner worlds of the self and others,

caused by the limited mentalization skills of vulnerable narcissistic individuals, lead to somatic symptoms (Sever, 2018). The inability to mentalize, symbolize, and express the anger that accompanies narcissistic injury and low self-esteem experienced by vulnerable narcissistic individuals manifests again as physical symptoms directed at the person themselves. Therefore, the expression of anger in vulnerable narcissistic individuals may play a critical role in the emergence of somatic symptoms.

Anger has been conceptualized as a moderating variable reflecting individual differences rather than a direct mediating variable in the relationship between narcissistic injury and somatization. This is because the way anger is expressed can vary depending on the individual's coping style developed in response to narcissistic injury. In some individuals, anger is expressed openly. While reducing emotional tension can weaken the emergence of somatic symptoms, in some individuals, suppressing anger or redirecting it inward can strengthen physical complaints. Therefore, it has been hypothesized that anger may play a regulatory role, altering the direction and intensity of the relationship between fragile narcissism and somatization (Kovačić Petrović, Peraica, and Kozarić-Košćić, 2019).

Purpose of the Research

This study aims to examine the moderating role of anger expression in the relationship between narcissistic injury and somatization in individuals with high vulnerable narcissistic traits. This research aims to reveal that somatic complaints observed in individuals with fragile narcissism may be related not only to physiological factors but also to

the unexpression of anger. It is expected that this study will contribute to individuals' understanding of their physical complaints from both economic and psychological perspectives. The economic dimension encompasses financial losses from frequent healthcare visits; the psychological dimension involves emotional exhaustion stemming from the inability to interpret these symptoms. Additionally, identifying psychological factors that may lead to unnecessary visits to healthcare facilities could improve the functioning of the healthcare system. Indirectly, explaining these relationships can lead to a better understanding of the psychological processes that may cause individuals to be absent from the workforce for extended periods, thereby laying the groundwork for contributing to the national economy. In this regard, the study is considered to have significant societal benefits, and its unique contribution aims to fill a gap in the existing literature.

Method

This study was approved by the Ethics Committee of Istanbul Aydın University for Social and Human Sciences (08/03/2023-2023/07). Informed consent forms and scales were collected online.

Research Model

This research is a cross-sectional study conducted in a correlational screening model to test the predictive effect of vulnerable narcissism and narcissistic injury on somatization, as well as the moderating role of expressing anger in this effect. The relational diagram of the study variables is shown in Figures 1 and 2.

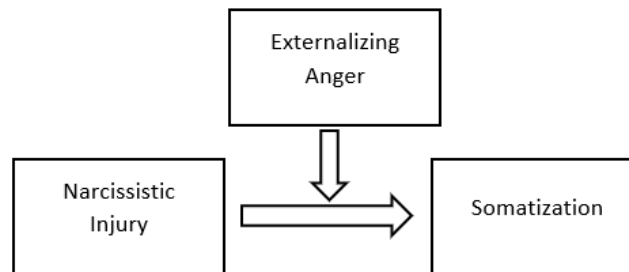


Figure 1. Research model

As shown in Figure 1, individuals with low vulnerable narcissistic traits were not included in the analyses conducted to determine the regulatory role of outwardly

expressing anger in the relationship between narcissistic injury and somatization.

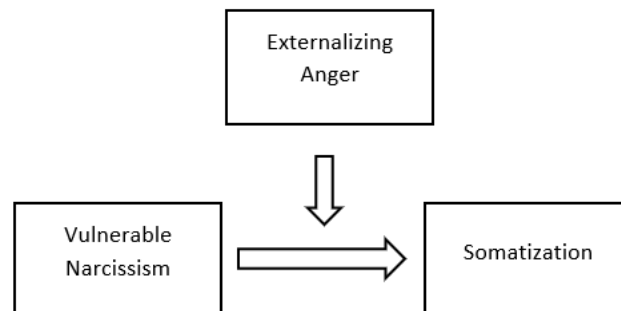


Figure 2. Regulatory variable model

The procedures used to determine the regulatory role of outward anger expression in the relationship between fragile narcissism and somatization, as shown in Figure 2, were conducted with all study participants.

Population and Sample

The study population consists of individuals aged 18-69 in Turkey. The sample is a non-probability convenience sample. The sample comprises 473 individuals living in Turkey, including 303 women and 170 men. Of the sample, 64.1% are women (n=303) and 35.9% are men (n=170); 31.5% have a high school diploma, an associate degree, or a vocational school education (n=149); 51.4% (n=243) are college graduates; and 17.1% (n=81) have postgraduate degrees.

Data Collection Tools

Sociodemographic Data Form

The sociodemographic data form prepared by the researcher includes questions on gender, age, education level, and psychiatric and physical illnesses.

Vulnerable Narcissism Scale (VNS)

The 5-point Likert-type fragile narcissism scale developed by Hendin and Cheek (1997) consists of 8 items (short form) and 10 items (long form). In its original form, the scale's Cronbach's alpha coefficient ranged from .62 to .75 (Hendin and Cheek, 1997). The Turkish studies of the scale were conducted by Şengül and colleagues (2015). In the Turkish adaptation studies, the Cronbach's alpha coefficient was found to be .66. As part of the validity and reliability studies in Turkish, two items from the original scale were removed because they did not fit the factor structure of the scale. As a result, the 8-item scale comprises a single dimension, hypersensitivity. In this study, Cronbach's alpha was .61.

Childhood Trauma Scale (CTS)

The Childhood Trauma Scale, initially developed with 70 items and later reduced to 53, was further shortened by the authors to 28 items and is a 5-point Likert-type scale used to identify experiences of abuse and neglect during childhood (Bernstein, Fink, Handelsman, & Foote, 1994). In its original form, the scale's Cronbach's Alpha ranged from .79 to .94, and test-retest reliability was .88. The scale consists of five dimensions: emotional, physical, and sexual abuse, as well as emotional and physical neglect. Turkish studies of the scale were conducted by Şar, Öztürk, and İkikardeş (2012). In the Turkish adaptation studies, the Cronbach's Alpha coefficient was .93, and the

Gutmann reliability coefficient was .97. In this study, the Cronbach's Alpha coefficient was .88.

Somatization Scale (SC)

The scale developed by Hathaway and McKinley (1943) screens for somatic symptoms in individuals (Akt. Dülgerler, 2000). Validity and reliability studies in Turkish were conducted by Dülgerler (2000). The scale consists of 33 items. The reliability study of the scale yielded a Kuder-Richardson-20 internal consistency coefficient of .83. In this study, Cronbach's alpha was .88.

Constant Anger and Anger Expression Style Scale (CAAES)

The Continuous Anger and Anger Styles Scale, developed by Spielberger and colleagues (1983), consists of 34 items on a 4-point Likert-type scale. The scale's subdimensions are divided into four: persistent anger, suppressing anger, outward expression of anger, and anger control (Akt. Özer, 1994). Turkish adaptation studies were conducted by Özer (1994). The Cronbach's alpha coefficients for the scales are reported to range between .67 and .92 for the persistent anger scale, between .58 and .76 for the anger suppression scale, between .69 and .91 for the outward expression of anger scale, and between .80 and .90 for the anger control scale (Özer, 1994). In this study, Cronbach's alpha coefficients were .86 for persistent anger, .74 for inward anger, .84 for outward anger, and .89 for anger control.

Data Analysis

The online data were analyzed using SPSS 25. Skewness and kurtosis values within the range of -3 to +3 indicate that the distributions are normal (Kalaycı, 2010). Normality analysis determined that the data follow a normal distribution. Pearson correlation coefficient analysis and moderator variable analysis were used. Through Pearson correlation coefficient analysis, the linear relationships between vulnerable narcissism, narcissistic injury, outward expression of anger, and somatization were examined. The moderator variable analysis tested two separate models: one to assess the moderating role of outward expression of anger in the relationship between narcissistic injury and somatization in individuals with high vulnerable narcissistic traits, and another to examine the moderating role of outward expression of anger in the relationship between vulnerable narcissism and somatization. In these analyses, Hayes' PROCESS macro (Model 1) was used. The reference p-value in the study is .05, and the confidence interval is 95%.

Findings

Table 1. Descriptive statistical values of the variables

Variables	n	Min.	Max.	Mean	SD	Skewness	Kurtosis
Age	473	18.00	69.00	35.71	11.88	.36	-.84
Vulnerable Narcissism	473	8.00	36.00	21.50	4.73	.09	.09
Somatizasyon	473	.00	32.00	10.84	6.65	.61	-.38
Externalizing Anger	473	9.00	32.00	16.29	4.54	.96	1.00
Narcissistic Injury	473	35.00	88.00	48.61	10.06	1.46	2.30

Table 1 presents the descriptive statistical values of age, vulnerable narcissism, somatization, outward anger, and narcissistic injury variables.

Table 2. Pearson correlation coefficient analysis of relationships between variables

Variables	n	Mean	SD	1	2	3	4
1. VNS	473	21.50	4.73	-			
2.SS	473	10.84	6.65	.22***	-		
3. EA	473	16.29	4.54	.31***	.20***	-	
4.NA	473	48.61	10.06	.25***	.40***	.21***	-

“VNS = Vulnerable Narcissism Scale, SS = Somatization Scale, EA = Externalizing Anger, and NI = Narcissistic Injury.”***p<0.00.

There is a significant positive relationship between participants' vulnerable narcissism traits and somatization ($r=.22$, $p<.001$), outward expression of anger ($r=.31$, $p<.001$), and narcissistic wounds ($r=.25$, $p<.001$). Accordingly, it can be concluded that as participants' vulnerable narcissistic traits increase, their somatizations, outward expression of anger, and narcissistic wounds also increase.

There is a significant positive relationship between participants' somatizations and outward expression of anger ($r=.20$, $p<.001$) and narcissistic wounds ($r=.40$, $p<.001$). Therefore, it can be concluded that as participants' somatizations increase, their outward expression of anger and narcissistic wounds also increase. There is a significant positive relationship between participants' outward expression of anger and narcissistic

wounds ($r=.21$, $p<.001$). It can be concluded that as participants' narcissistic wounds increase, their outward expression of anger also increases.

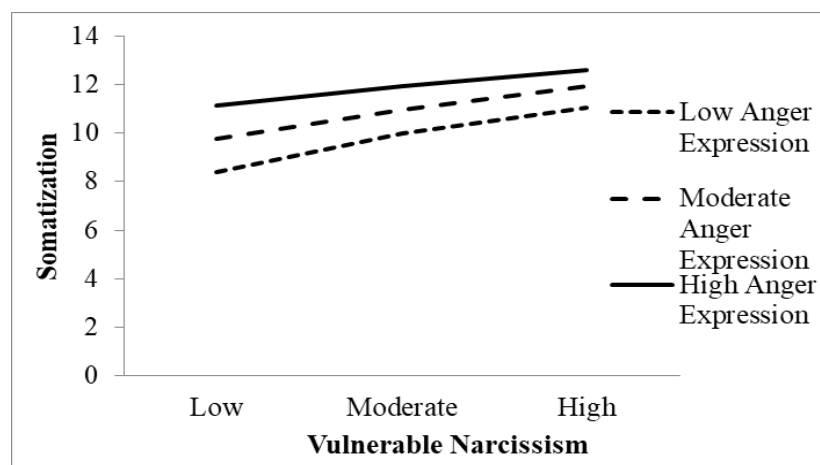
In individuals with high vulnerable narcissism traits, a moderation analysis was conducted to examine the regulatory role of outward expression of anger in the relationship between narcissistic wounds and somatization. When examining the results, it is observed that there is no significant combined effect of narcissistic wounds and outward expression of anger on somatization in individuals with high vulnerable narcissism traits ($B=-.00$, $t=-.21$, $p>.05$, 95% CI [-.020-.016]). In other words, outward expression of anger does not have a moderating role in the effect of narcissistic wounds on somatization in individuals with high vulnerable narcissism traits.

Table 3. Moderation analysis regarding the moderating role of Externalizing Anger in the relationship between Vulnerable Narcissism and Somatization

Variable	B	SE	t	p	%95 CI		R ²	F ₍₃₋₄₆₉₎
					Low	High		
(Constant)	-6.76	4.43	-1.53	.128	-15.465	1.945		
V.N.	.65	.20	3.22	.001**	.252	1.044		
E.A.	.76	.26	2.86	.004**	.238	1.280		
V.N.*E.A.	-.02	.01	-2.12	.035*	-.047	-.002		
Model				.000***			.077	13.05

N.I. = Narcissistic Injury, E.A. = Externalizing Anger.

***p<0.001.

**Figure 3.** The moderating effect of Expressing Anger in the relationship between Vulnerable Narcissism and Somatization

A regulatory variable analysis based on regression analysis was conducted to examine the moderating role of outward expression of anger in the relationship between vulnerable narcissism and somatization. When Table 4 is examined, it is evident that the combined effect of vulnerable narcissism and the outward expression of anger on somatization is significant ($B = -.02$, $t = -2.12$, $p < .05$, $95\% \text{ CI} = [-.047, -.002]$). In other words, outward expression of anger has a moderating role in the effect of vulnerable narcissism on somatization. Participants with low, medium, and high vulnerable narcissism scores who expressed anger at a high level had significantly higher somatization scores than those who expressed anger at a medium or low level. Additionally, in conditions where participants had low, medium, and high vulnerable narcissism scores, those who expressed anger at a medium level had somatization scores significantly higher than those who expressed anger at a low level. The somatization scores of participants vary according to their levels of outward expression of anger and differ based on their vulnerable narcissism levels. Participants with low vulnerable narcissism scores who expressed anger at low, medium, and high levels had somatization scores that were significantly lower than those of the group with high vulnerable narcissism scores who expressed anger at low, medium, and high levels.

Discussion

The findings indicate a positive and significant relationship between vulnerable narcissism and somatic symptoms. Vulnerable narcissism reflects low self-esteem (Miller and Maples, 2011). The narcissistic injury and low self-esteem experienced by vulnerable narcissistic individuals, along with the lack of proper symbolization and expression of their anger, lead to the anger being directed back at the individual and manifesting as physical symptoms (Ronningstam, 2005; Sever, 2018). In narcissistic personality disorder, issues with self-regulation caused by weak development of the self also bring about somatization, psychosocial problems, and health issues (Kealy et al., 2017; Wright et al., 2017). Krystal (1998) also stated that these self-regulation difficulties, stemming from emotional and traumatic life events, could lead to somatization. It has been suggested that somatization also protects the individual by preventing awareness of narcissistic injuries and deficiencies. Kealy and colleagues (2018...) It has been stated that narcissistic personality disorder's distorted self-images increase physical sensitivity, manifesting as physical symptoms, and that individuals are excessively preoccupied with these physical issues. When reviewing the literature, it is observed that studies aligned with research findings report a positive relationship between pathological narcissism and somatic symptoms (Miller et al., 2013; Kealy, Tsai, and Ogrodniczuk, 2016).

A significant positive relationship has been identified between vulnerable narcissism and outwardly expressing anger. The reason for this result is thought to be that individuals with vulnerable narcissism, who are highly sensitive to criticism, acceptance, and approval from others, may express anger to seek this approval, which increases the likelihood of not receiving it, and suppressing this anger along with narcissistic fantasies, leading to feelings of shame associated with narcissistic wounds and grandiose fantasies (Cain, Pincus, and Ansell, 2008). When reviewing the literature, different findings

are seen regarding the relationship between vulnerable narcissism and expressing anger. For vulnerable narcissistic individuals, anger used as a way to cope with internalized criticism and decreasing self-esteem may manifest as suppressed, hesitant, and avoidant behaviors to avoid experiencing this emotional difficulty in relationships (Salmivalli, 2001). This also causes vulnerable narcissistic individuals to adopt a position of hiding themselves and not expressing their feelings (Th  berge and Garmache, 2023). Supporting this,   enyuva and Yavuz (2024) reported a significant and positive relationship between narcissistic traits and the tendency to hide oneself. The failure of vulnerable narcissistic individuals to express their feelings leads to internal unrest and emotional problems. The reflection of grandiose fantasies they harbor, along with their tendency not to express their feelings, creates emotional entrapment, resulting in guilt, shame, and outbursts of anger (Miller and Maples, 2011). When vulnerable narcissistic individuals, who are overly sensitive to failure and criticism, encounter negative feedback from others, they may react with anger (Masterson, 1990). Okada (2010) conducted a study indicating that vulnerable narcissism predicts anger and aggression. An important positive relationship has been identified between outward expression of anger and somatic symptoms. However, contrary to this finding, some studies report that suppressing anger is related to somatization (Kellner, Hernandez, and Pathak, 1992; Liu, Cohen, Schulz, and Waldinger, 2011). Individuals who have difficulty appropriately expressing and regulating anger tend to do so through physical symptoms (Koh et al., 2008). Koh and Park (2008) supported these findings in their study. These findings indicate that as individuals express anger more frequently, their somatic symptoms also increase. In vulnerable narcissistic individuals, the element that triggers anger is narcissistic injuries. In this context, it is thought that the positive relationship between the expression of anger and somatization is not only due to expressing or suppressing anger but also because of the presence of anger itself, meaning that even if anger is expressed, it still originates from being angry (Koh, Kim, Kim, and Park, 2005). It has been determined that in individuals with highly vulnerable narcissistic traits, the relationship between narcissistic injury and somatization does not involve the regulating role of outwardly expressing anger. Feelings of shame related to their grandiose fantasies lead vulnerable narcissists to hide these fantasies. While they feel shame on one hand and have grandiose fantasies on the other, they experience intense anger when they suffer narcissistic injuries (Freis, Brown, Carroll, and Ar  skin, 2015). This anger, which emerges as a result of narcissistic injuries, can manifest as outbursts of anger or be experienced as somatic symptoms through repression (Koh et al., 2005). The reason why expressing anger does not have a regulating role in the relationship between narcissistic injury and somatic symptoms within the scope of the research is thought to be the shame experienced regarding their grandiose fantasies (Kohut, 2020a). Since shame related to grandiose fantasies causes vulnerable narcissistic individuals to remain in a state of emotional isolation (Loeffler, Huebben, Radke, Habel, and Derntl, 2020). It is thought that the shame felt by vulnerable narcissists, caught between anger and shame, explains this finding, regardless of whether they express anger or not, as it stems from the shame they feel about their grandiose fantasies (van Schie, Jarman, Reis,

and Grenyer, 2021). Although shame prevents the expression of anger, its presence remains evident. In cases where shame does not outweigh anger and anger outbursts occur, criticisms from others, rejection, lack of appreciation, and disapproval—factors very important to vulnerable narcissists—are experienced (Pincus and Luškowsky, 2010). In such cases, shame increases even further. Additionally, as Green and Charles (2019) noted, the tendency of narcissistic injury to lead to decreased self-esteem and the resulting fear of not regulating this decrease may cause individuals to express anger in passive-aggressive, sulky ways. Considering these points, the research results suggest that in the relationship between narcissistic injury and Somatization... The reason for the findings is that there is no regulatory role of anger in expression; it is thought to be due to the exclusion of feelings of shame from the analysis, the concern of not repeatedly increasing self-esteem, and the somatization of fragile narcissistic individuals and narcissistic wounds, which are perceived as a flaw in their 'perfect selves,' along with grandiose fantasies. These individuals often try to cope with this uncomfortable situation using defense mechanisms such as repression and denial (Given-Wilson et al., 2011; Loeffler et al., 2020).

The findings suggest that there is a regulatory role of outwardly expressing anger in the relationship between fragile narcissism and somatic symptoms. This research finding is consistent with studies in the literature regarding the relationship between fragile narcissism and somatization. It is known that fragile narcissism can predispose individuals to bodily complaints (Kealy et al., 2016). It has been suggested that pathological narcissism affects somatic symptoms indirectly, not directly, but through hypersensitivity to bodily sensations (Kealy et al., 2018). This also indicates that narcissism may be related to somatization. Similarly, in a clinical sample, women with high levels of narcissistic fragility were observed to report more somatic symptoms (Kealy et al., 2016). However, there are also contrary results in the literature. Ha (2014), in a study with adolescents, found that outward expression of anger had no significant effect on the relationship between depression and somatization; instead, inward-directed anger played a decisive role in this relationship. In an adult clinical sample, outward expression of anger was positively associated with the severity of certain physical symptoms. In contrast, in somatoform disorder patients, neither anger expression nor suppression showed a significant relationship with somatic symptoms (Koh & Park, 2008). These findings suggest that the protective effect of anger expression may not be consistent in all conditions and could vary depending on attachment and sampling. As a result of the research, it is concluded that the regulatory role of expressing anger in the relationship between fragile narcissism and somatization is because anger directed at the body, stemming from the limited mentalization skills of individuals with fragile narcissism, causes somatization (Ronningstam, 2005; Sever, 2018). Theoretically, fragile narcissism is based on a sensitive and unstable self-perception and hypersensitivity to criticism, which is why intense feelings of anger and shame emerge when narcissistic injury occurs (Zajenkowski, Rogoza, Maciantowicz, Witowska, & Jonason, 2021). Psychoanalytic theory suggests that repressed anger and aggressive impulses can manifest as somatic symptoms. It is noteworthy that fragile narcissistic Individuals... are described as having difficulty openly expressing their anger and instead directing this feeling toward their own bodies; it is suggested that they may try to compensate for the guilt caused by aggressive desires through physical complaints (Ince and Kökre, 2024). From this

perspective, it can be argued that outwardly expressing anger provides a form of emotional catharsis, reducing internal tension and thereby weakening the connection between narcissistic vulnerability and somatization. Indeed, it has also been emphasized that a healthier expression of anger can reduce unexplained physical complaints (Liu et al., 2011). Consequently, in individuals with fragile narcissism, constructive outward expression of anger is thought to play a regulatory role by alleviating stress reflected in somatic symptoms. These findings reveal that expressing anger is a regulatory variable in the somatization processes of fragile narcissism, offering a unique contribution to the psychosomatic explanations of narcissistic dynamics.

Limitations

The research has some methodological and conceptual limitations. The absence of a comparative examination between individuals with and without fragile narcissism and somatization diagnoses limits the generalizability of the findings to different clinical groups. Measuring narcissistic injury solely through childhood traumas has led to neglecting narcissistic injury experiences that may occur in adulthood. Additionally, not evaluating the expression of anger in individuals experiencing narcissistic injury and those with highly fragile narcissistic traits through an experimental pattern prevents causal testing of the relationships between variables. The use of self-report-based data collection tools introduces the possibility of subjective bias and social desirability effects in participant responses. The cross-sectional and correlational survey design also limits causal inference about relationships among variables. The exclusion of the shame variable from the model narrows its scope by omitting one of the emotional components of fragile narcissism. The use of convenience sampling reduces the generalizability of the findings, and the low Cronbach's alpha (.61) for the Fragile Narcissism Scale (FNS) further limits the scale's internal consistency.

Recommendations

In future research, employing experimental or longitudinal study designs could contribute to a better understanding of the causal direction of relationships between variables. Additionally, models that include variables such as shame and mentalization could provide a more comprehensive examination of the emotional regulation processes in fragile narcissism. Supporting self-report measures with clinical diagnosis or observation-based methods may also enhance the validity of the findings. It is thought to strengthen generalizability.

Declarations

Ethical Approval and Consent to Participate

The study was approved by the Ethics Committee of Istanbul Aydın University for Social and Human Sciences (03.08.2023- 2023/07).

Publication Permission

Not applicable.

Availability of Data and Materials

Not applicable.

Conflict of Interest

The authors declare no conflict of interest.

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Author Contributions

ÖÖ prepared the entire article.

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Hostile Masculinity among Sex Offenders: Exploring the Role of Antisocial Behaviour, Substance Abuse, and Pornography Consumption

Cinsel Suçlular Arasında Düşmanca Erkeklik: Antisosyal Davranışların, Madde Bağımlılığının ve Pornografi Tüketiminin Rolünün İncelenmesi

Abhishek Sharma¹, Sheetal Arora²

Abstract:

Sexual offenses against children arise from a multifaceted interplay of psychological, social, and environmental factors. This study investigated the causal roles of antisocial traits, drug abuse, and pornography consumption in fostering hostile masculinity (HM) among child sex offenders. Data were collected from 88 life-convicted offenders incarcerated across multiple prisons for cases resolved between 2019 and 2022. A quota sampling method ensured proportional geographical representation. Ethical clearance was obtained, and data collection tools (structured schedules and psychometric tests) were validated through a pilot study. Findings revealed that antisocial behaviour significantly predicted HM by reinforcing adversarial gender attitudes and dominance-oriented beliefs. Drug abuse further exacerbated HM, reducing empathy and normalizing hegemonic masculine norms, while pornography consumption amplified adversarial gender scripts and legitimized coercive behaviours. Demographic analysis showed that most offenders were young adults with low educational attainment, suggesting compounded vulnerabilities that increase susceptibility to hostile masculine orientations. The study underscores the interconnected influence of personality traits, substance abuse, media exposure, and sociocultural conditions in sustaining HM and sexual aggression. Policy implications emphasize integrated prevention and intervention strategies targeting antisocial conduct, substance misuse, and pornography consumption, with a focus on young, less-educated populations. These findings offer practical insights into reducing gender-based violence.

Keywords: Hostile masculinity, Child sex offenders, Antisocial behaviour, Drug abuse, Pornography consumption.

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Öz:

Çocuklara yönelik cinsel suçlar, psikolojik, sosyal ve çevresel faktörlerin çok yönlü etkileşiminden kaynaklanmaktadır. Bu çalışma, çocuk cinsel suçluları arasında düşmanca erkekliğin (DK) gelişmesinde antisosyal özelliklerin, uyuşturucu kullanımının ve pornografi tüketiminin nedensel rollerini incelemiştir. Veriler, 2019 ve 2022 yılları arasında çözülen davalar için birden fazla cezaevinde tutuklu bulunan ve müebbet hapis cezası almış 88 suçludan toplanmıştır. Kota örnekleme yöntemi orantılı coğrafi temsili sağlamıştır. Etik izin alınmış ve veri toplama araçları (yapılandırılmış çizelgeler ve psikometrik testler) bir pilot çalışma kapsamında doğrulanmıştır. Bulgular, antisosyal davranışların, düşmanca cinsiyet tutumlarının ve baskınlık odaklı inançların DK'yi önemli ölçüde güçlendirdiğini ortaya koymuştur. Uyuşturucu kullanımı DK'yi daha da kötüleştirerek empatiyi azaltmış ve hegemonik erkek normlarını normalleştirmiştir. Pornografi tüketimi ise düşmanca cinsiyet senaryolarını güçlendirmiş ve zorlayıcı davranışları meşrulaştırmıştır. Demografik analiz, suçluların çoğunun düşük eğitim düzeyine sahip genç yetişkinler olduğunu ve bu durumun düşmanca erkeksi yönelimlere yatkınlığı artıran bileşik zayıflıklar oluşturduğunu göstermiştir. Çalışma, kişilik özellikleri, madde bağımlılığı, medya maruziyeti ve sosyokültürel koşulların cinsel istismar ve cinsel saldırganlığın sürdürülmesinde birbiriyle bağlantılı etkisini vurgulamaktadır. Politika çıkarımları, genç ve daha az eğitilmiş nüfusa odaklanarak, antisosyal davranış, madde kötüye kullanımı ve pornografi tüketimini hedefleyen bütünsel önleme ve müdahale stratejilerini vurgulamaktadır. Bu bulgular, cinsiyete dayalı şiddeti azaltmada pratik içgörüler sunmaktadır.

Anahtar Kelimeler: Düşmanca erkeklik, Çocuk cinsel suçluları, Antisosyal davranış, Madde bağımlılığı, Pornografi tüketimi.

Introduction

Child sexual offenses (CSO) constitute a grave and persistent public health crisis, carrying profound consequences for individuals and imposing significant economic and social burdens on society (Scoglio, Kraus, Saczynski, Jooma, & Molnar, 2019). These offenses transcend socioeconomic, cultural, and geographical boundaries, with prevalence documented at alarming rates worldwide. A comprehensive meta-analysis by Barth, Bermetz, Heim, Trelle, and Tonia (2013) estimated that between 8–31% of girls and 3–17% of boys are victims of sexual abuse globally, equating to approximately 9 girls and 3 boys out of every 100 children. In the Indian subcontinent, the crisis is particularly stark, with 1.40 lakh cases formally registered in 2021 alone. The violation of children's fundamental rights through such offenses extends far beyond immediate trauma. Survivors often grapple with long-term psychological, emotional, and developmental consequences that affect personal growth, relationships, and social participation. Addressing the severity of CSO thus requires a multidimensional lens that examines the interplay among individual characteristics, familial contexts, societal structures, and systemic responses.

Child sexual offenses are among the most disturbing forms of crime, with the traits of perpetrators playing a central role in both the initiation and continuation of abuse. Although no universal profile captures all child sex offenders, research has consistently identified key demographic, psychological, and personality-related characteristics that elevate the likelihood of offending (Katz, 2013). Psychological dimensions are particularly relevant, as they inform offenders' motivations, cognitive justifications, and behavioural strategies (Abdülhamid, 2024). Hall and Hirschman's Quadripartite Theory highlights that enduring personality problems often outweigh transient physiological sexual arousal, distorted cognitions that justify aggression, and emotional dyscontrol as drivers of offending behaviour (Hall & Hirschman, 1991).

The phenomenon of hostile masculinity (HM) among sex offenders has drawn extensive scholarly attention within

criminological and psychological research, as it encapsulates the convergence of individual personality traits, behavioural patterns, and sociocultural influences that underpin sexual aggression. Hostile masculinity (HM) is one of the most consistent predictors of sexual aggression. Defined by adversarial sexual beliefs, distrust of women, and a desire for dominance, HM normalizes coercive practices and diminishes empathy (Malamuth, Addison, & Koss, 2012). The Confluence Model of Sexual Aggression (Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Radcliffe et al., 2021) provides one of the most comprehensive frameworks for understanding how diverse risk factors—such as antisociality, substance use, and pornography consumption—interact to promote coercive sexual behaviour. Within this framework, HM is conceptualized as a constellation of beliefs characterized by mistrust of women, adversarial sexual attitudes, and a drive for dominance and control (Malamuth, Addison, & Koss, 2012).

Men high in HM often justify sexual violence, endorse rape myths, and sustain misogynistic norms (Seabrook, Ward, & Giaccardi, 2018). Importantly, HM interacts with other risk factors—such as impersonal sexual orientations or peer aggression—to increase the likelihood of sexual offending (De Heer, Prior, & Hoegh, 2021). These cognitive and emotional orientations normalize aggression, diminish empathy, and provide psychological justification for coercive sexual conduct, thereby serving as a bridge between personality traits and behavioural manifestations of sexual offending. Recognizing HM is therefore crucial for interventions promoting healthy masculinity and gender equality.

Antisocial traits provide a dispositional foundation for HM, characterized by impulsivity, low empathy, and disregard for norms. Early antisocial behaviours, such as delinquency or risky sexual activity, often predict later hostile attitudes toward women (Knight & Sims-Knight, 2003). Empirical research consistently demonstrates that antisocial traits, including impulsivity, callousness, and lack of empathy, are among the most reliable predictors of both HM and sexual aggression (Hanson & Morton-

Bourgon, 2005). The developmental antecedents model (Knight & Sims-Knight, 2003) posits that those early antisocial behaviors—such as delinquency, impulsivity, and risky sexual activity—form a dispositional foundation for HM. These traits not only correlate with HM but also causally precede it, fostering entitlement, aggression, and adversarial perceptions of women (Harris, Rice, Hilton, Lalumière, & Quinsey, 2007). Antisociality further intensifies hostile beliefs in contexts such as alcohol use, amplifying the risk of sexual aggression. The convergence of antisociality and HM represents a particularly high-risk profile, with greater predictive power for sexual violence than either factor alone (Malamuth et al., 2012).

Longitudinal evidence supports this proposition, showing that antisocial personality features often precede and amplify hostile masculine beliefs, reinforcing dominance-oriented cognitive scripts (Ramrakha et al., 2007). Harris et al. (2007) further noted that individuals exhibiting pronounced antisocial tendencies frequently display coercive sexual behaviours and empathy deficits—key markers of HM. The interaction between antisociality and HM creates a particularly dangerous profile, with a greater predictive capacity for sexual violence than either construct alone (Malamuth et al., 2012).

Substance abuse, particularly the consumption of alcohol and illicit drugs, serves as a significant situational amplifier of HM and related aggressive behaviours. Alcohol intoxication reduces inhibitory control, impairs empathy, negatively influences social cohesion, and heightens existing hostility, thereby facilitating sexually coercive behaviour (Hakan & Çelikay Söyler, 2025; Abbey & Wegner, 2015). Substance use often mediates hostility and violence, with men high in HM particularly vulnerable to aggression when intoxicated (Stover & Kiselica, 2015). Empirical evidence indicates that men with high HM scores exhibit significantly greater aggression when intoxicated, suggesting that substance use weakens self-regulation mechanisms and enables the enactment of underlying misogynistic beliefs (Stover & Kiselica, 2015; Brem et al., 2018). From a sociocultural perspective, substance use is also intertwined with hegemonic masculine norms that valorize toughness, risk-taking, anti-femininity, and emotional suppression (Sileo & Kershaw, 2020). Within such contexts, alcohol and drug consumption are not only normalized but also used as performative acts of masculinity, reinforcing aggression and entitlement. Consequently, substance abuse contributes both directly and indirectly to the maintenance of HM and associated sexual aggression.

Similarly, pornography consumption—especially violent or degrading material—is strongly associated with aggression-supportive attitudes (Yang & Youn, 2012). Pornography use correlates with sexual aggression, with heightened risks among men high in HM. Consumption of violent pornography normalizes coercive scripts and primes aggressive behaviour toward women (Rostad et al., 2019). Within the Confluence Model, pornography acts as a secondary risk factor that interacts synergistically with antisocial traits and HM to increase the likelihood of coercive sexual behaviour (Malamuth et al., 1995). Meta-analytic evidence strongly supports this link: exposure to violent pornography correlates with attitudes supportive of sexual violence and with actual aggressive behaviour (Wright, Tokunaga, & Kraus, 2016). Experimental research further demonstrates that repeated exposure to

coercive or degrading sexual imagery normalizes dominance-oriented scripts, primes aggressive responses, and desensitizes viewers to women's suffering (Yang & Youn, 2012; Rostad et al., 2019). Brem et al. (2018) similarly found that pornography use, especially when combined with substance abuse, reinforces misogynistic cognitions and legitimizes coercive sexual behaviours. These findings collectively underscore the interdependence between media exposure, personality dispositions, and situational risk factors in shaping HM.

The aim of this study is to examine the causal relationship between antisocial behavior, substance abuse, and pornography consumption in fostering hostile masculinity among individuals convicted of child sexual offenses, with a focus on understanding how these factors interact to reinforce dominance-oriented attitudes and sexually aggressive tendencies. This study is significant as it deepens understanding of the psychological and behavioural factors fostering hostile masculinity among child sex offenders. By identifying the combined influence of antisocial behaviour, substance abuse, and pornography consumption, it provides evidence-based insights essential for developing targeted prevention, rehabilitation, and policy interventions to reduce sexual violence.

Research Need

The convergence of antisocial personality traits, hostile masculinity, substance abuse, and pornography consumption creates a particularly high-risk environment for sexual violence. Evidence underscores that these factors are not isolated but interact dynamically, amplifying one another in pathways that sustain coercion and aggression (Seabrook, Ward, & Giaccardi, 2018). While hostile masculinity predicts later increases in substance use, the reverse causal direction remains less established (Sileo & Kershaw, 2020). Despite substantial research, critical gaps remain in understanding the complex mechanisms by which these factors contribute to CSO. Specifically, a deeper investigation is needed into how antisociality, pornography consumption, and drug abuse interact to foster hostile masculinity in offenders. Such inquiry is crucial for developing evidence-based prevention and intervention strategies, shaping policy responses, and ultimately reducing risks of sexual violence and exploitation.

Research Question and Hypotheses

This study seeks to examine how antisocial behavior, drug abuse, and pornography consumption contribute to the development and intensification of hostile masculinity among individuals convicted of child sexual offenses. It aims to understand the independent and combined influences of these behavioural and psychological factors, while also exploring whether demographic characteristics, such as age and educational attainment, further shape hostile masculine attitudes. The research ultimately investigates how these interconnected variables increase susceptibility to sexually aggressive behaviour.

Hypotheses

- H1: Antisocial behaviour will significantly and positively predict hostile masculinity among child sex offenders.
- H2: Drug abuse and pornography consumption will each exert a positive influence on hostile masculine attitudes.
- H3: The combined effects of antisocial behaviour, substance abuse, and pornography consumption will explain significant variance in hostile masculinity.

Method

The study focuses on the complex issue of the prevalence of hostile masculinity and the contribution of drug abuse in its development among convicts of sexual offenses against minors under 16 years, through an exploratory research design. It uses a quantitative approach.

The study was conducted with participants drawn from various correctional facilities across Rajasthan. The research began after obtaining the necessary permissions from government officials. A large number of research participants were engaged to ensure a comprehensive analysis. These included 88 prison inmates convicted under the POCSO law (from a total of 371 eligible cases), selected using non-probability quota sampling across various Prisons. After cleaning the data, 82 responses were found suitable and complete for use in the study. Convicts in cases where the victims were less than 16 years old at the time of the crime were selected as participants for the study.

Approval of Study and Ethical Clearance

Given the sensitive nature of the research topic, all ethical guidelines and protocols were strictly adhered to throughout the research process. The research plan was thoroughly presented and discussed with relevant stakeholders, including administrators and executive authorities, to ensure transparency and compliance. The approval was granted by the Sardar Patel University of Police, Security, and Criminal Justice on 04 November 2022 (Letter No. VCO/2022-23/974). Subsequent approvals were obtained from the Department of Child Rights, Government of Rajasthan (Letter No. 64981–65013, dated 21 March 2023), and from the Directorate General of Prisons (Letter No. 65295–306, dated 22 March 2023).

Furthermore, the research proposal, along with documentation detailing compliance with ethical standards—including the justification for involving a vulnerable population, voluntary participation of respondents, permission from the concerned authority, procedures for obtaining informed consent, assurance of participant anonymity and data confidentiality, declaration of no physical, social, or psychological risk to participants, and the avoidance of any form of deception—was submitted to the Institutional Ethics Committee (IEC) of the Sardar Patel University of Police, Security and Criminal Justice (SPUP). Following the due evaluation and review (IEC Meeting No. SPUP/IEC/2025/02, dated 25.11.2025), the IEC granted ethical clearance for the study (Certificate No. IEC/2025/Project/No/01, dated 25.11.2025).

Data Collecting Tools

Tools were finalized based on reviews, the study's specific needs, expert input, and a pilot study. Based on the experience and learning from the pilot study, linguistic corrections, the deletion of unnecessary questions, and the addition of some questions were made. The research instruments were tailored for the stakeholders and refined through pilot testing. These tools collected empirical data and were used for quantitative analyses. Efforts were

maximized to build rapport and receive informed consent from participants. Data collection was carried out through a combination of in-depth interviews and structured psychometric assessments administered directly by trained researchers. In-depth interviews were conducted to obtain detailed socio-demographic profiles and rich qualitative insights into offenders' personal histories, behavioural patterns, and attitudes. For the psychometric tools, the interviewer read each item aloud to participants to ensure clarity and comprehension, given the respondents' varied educational backgrounds. Participants' responses were recorded verbatim by the interviewer to maintain accuracy and consistency across the sample. This interviewer-administered approach minimized misunderstandings of questionnaire items, enhanced response reliability, and ensured ethical sensitivity while engaging with a vulnerable and legally restricted population. Researchers used the structured interview schedule to collect information about demographic and behavioural/habitual aspects related to drug abuse and consumption of pornography, and the following tools were used to collect data about psychological aspects of the convicts.

Antisocial Behaviour: The Psychological Scale developed by Brouillette-Alarie and Proulx (2017). Was used. The 8-item scale assesses the Noncriminal Antisocial Behaviour. Reliability was measured using Cronbach's alpha (.82), indicating excellent internal consistency.

Hostile Masculinity: Ten items from the Man Box Scale (Hill et al., 2020) were selected. The Man Box Scale measures harmful masculinities, which are beliefs about what men should be like. The 17-item scale contained items related to theoretically- and empirically-derived aspects of masculine norms, including self-sufficiency, acting tough, physical attractiveness, rigid masculine gender roles, heterosexuality and homophobia, hypersexuality, and aggression and control. Reliability was measured using Cronbach's alpha (.79), indicating excellent internal consistency.

SPSS was employed to process the quantitative data. Data were analyzed using descriptive and inferential statistical techniques. Descriptive statistics summarized demographic characteristics, while Pearson's correlation assessed relationships among variables. Stepwise multiple regression analyses were employed to examine the predictive effects of antisocial behaviour, substance abuse, and pornography consumption on hostile masculinity, determining their individual and combined contributions. Overall, the methodology is interdisciplinary and policy-oriented, aiming to bridge knowledge gaps and offer practical insights into child protection and criminal justice reform from contextual and psychological perspectives.

Results

This section presents the key findings of the study regarding the demographic characteristics of the convicts, as well as the causal contributions of drug abuse, pornography consumption, and antisocial behaviour to hostile masculinity (HM) among individuals convicted of child sexual offenses.

Table 1. Showing the age of the convicts

Statistics	Age
Mean	30.43
Median	27.00
Mode	25

The demographic analysis revealed that the average age of the offenders was 30.43 years, with a median age of 27 and a mode of 25, indicating that the majority of convicts were relatively young adults at the time of conviction. This age pattern suggests that child sexual offending in the sample

predominantly occurs during early adulthood—a developmental stage often associated with heightened impulsivity, sexual curiosity, and identity instability, which may contribute to maladaptive sexual and behavioural tendencies.

Table 2. Educational and behavioural characteristics of convicted offenders

Variables	Percentage (%)
Educational Level	
Uneducated	14.6
Primary education	22
Middle school	25.6
Secondary (10th)	12.2
Higher secondary (12th)	11
Graduation or above	13
Substance Abuse	
Initiated substance use during adolescence	47
Consumed alcohol/drugs immediately before the offense	50
Pornography Consumption	
Consumed pornographic material	52.4
Regular pornography consumption	48.8
Sexual Behaviour	
Maintained simultaneous intimate or sexual relationships	62

An analysis of educational background further illustrated significant vulnerabilities. Approximately 14.6% of the convicts were uneducated, while 22% had attained only primary education. About 25.6% had studied up to middle school, 12.2% had completed secondary education (10th standard), and 11% had reached higher secondary education (12th standard). Only 13% of the offenders were educated beyond high school.

Substance use emerged as a pervasive behavioural pattern among the offenders. Nearly 47% of the convicts reported initiating substance abuse during adolescence, and 50% admitted to consuming alcohol or drugs immediately prior

to committing the sexual offense. This finding highlights the role of intoxication as a situational facilitator of sexual violence.

Pornography consumption was similarly prevalent. A total of 52.4% of the offenders reported having consumed pornographic material, and 48.8% indicated that they were regular consumers. Moreover, 62% of the convicts admitted to maintaining simultaneous intimate or sexual relationships, reflecting an impersonal and exploitative orientation toward sexual behaviour—a characteristic often associated with the Confluence Model of Sexual Aggression.

Table 3. Descriptive statistics and correlations for study variables

Variable	n	M	SD	1	2	3	4
1. Substance abuse	82	13.44	5.48	—	—	—	—
2. Consumption of Porn	82	4.30	1.18	.19	—	—	—
3. Antisocial behaviour	82	17.91	3.77	.47**	.25*	—	—
3. Hostile masculinity	82	15.85	2.26	.52**	.32**	.35**	—

(N=82), * $p < .05$. ** $p < .01$.

Correlation analyses (Table 3) revealed statistically significant and positive relationships between substance abuse, pornography consumption, antisocial behaviour, and hostile masculinity among the convicts (N = 82). This indicates that higher levels of substance use and pornography exposure are associated with stronger endorsement of adversarial gender beliefs, dominance motives, and low empathy—all core components of HM.

In this study, hierarchical regression analysis was used to capture the theoretically appropriate prediction of hostile masculinity by entering predictors in conceptually ordered blocks. Anti-social behaviour was entered first, reflecting its role as a core externalizing tendency that often precedes other risk behaviours. In the second step, substance abuse (alcohol and drugs) and exposure to pornographic material were entered together to evaluate their combined and unique contributions beyond the influence of anti-social

behaviour. This order aligns with theoretical perspectives suggesting that while anti-social tendencies form a foundational behavioural risk, substance use and sexualised media exposure represent additional, co-occurring factors that may further shape hostile masculine attitudes. By structuring the model in this way, hierarchical regression enabled a clear assessment of the incremental explanatory power of each set of theoretically relevant predictors.

All major assumptions of hierarchical linear regression were examined prior to analysis. Visual inspection of residual histograms, Q-Q plots, and scatterplots indicated

that the assumptions of normality and linearity were reasonably satisfied. Homoscedasticity was supported by the absence of systematic patterns in the residuals across predicted values. Multicollinearity was not a concern, as all predictor tolerance values ranged from .749 to .939 and all VIF values ranged from 1.000 to 1.334, which fall well below commonly accepted thresholds. The collinearity diagnostics further showed no problematic condition indices. Together, these results indicate that the data met the key assumptions necessary for valid hierarchical regression analysis, consistent with standard linear regression guidelines.

Table 4. Hierarchical regression analysis of anti-social behaviour, drug abuse, and consumption of pornographic material with hostile masculinity among convicts

	B	95% CI		SE B	β	p	R ²	ΔR^2
		LL	UL					
Step 1						.00	.13	.12
Antisocial behaviour	.21	.09	.39	.06	.35			
Step 2						.00	.32	.30
Drug abuse	.19	.09	.28	.04	.45			
Consumption of porn	.40	.04	.77	.18	.21			

Note. Total $N = 82$, R^2 change for antisocial behaviour is .126; for drug abuse is .16, and for consumption of porn is .042, CI = confidence interval; LL = lower limit; UL = upper limit.

As shown in Table 4, in step 1 of the hierarchical regression analysis, antisocial behaviour emerged as a significant predictor of hostile masculinity, explaining 12.6% of the variance. In step 2, the addition of substance abuse significantly improved the model, accounting for an additional 16.0% of the variance, and pornography consumption contributed a further 4.2% to the explained variance. Overall, the final model accounted for 32.7% of the variance in hostile masculinity, indicating that antisocial behaviour, substance abuse, and pornography exposure each make significant and unique contributions to hostile masculine attitudes among the offenders.

Discussion

This study investigated convicts of sexual offenses against children under 16 years, examining demographic profiles and the contributions of drug abuse, pornography consumption, and antisocial traits to the development of hostile masculinity (HM). By analyzing these factors, the research elucidates pathways to sexual offending, highlighting opportunities for targeted interventions.

Demographic analysis revealed that the peak age among convicts was 25 years, underscoring early adulthood as a critical period for the commission of offenses. Education levels were notably low: 14.6% of convicts lacked formal education, and 22% had only primary schooling. The interplay between early age and criminality is multifaceted, influenced by individual traits, socioeconomic disparities, and familial dynamics. Limited education exacerbates risks by fostering economic instability and unemployment, which may propel individuals toward criminal acts, including sexual offenses. While education deficits do not justify such behaviour, they amplify vulnerability, aligning with

broader criminological frameworks that link socioeconomic marginalization to deviance.

A core finding was the significant positive relationship between antisocial traits and HM, where higher antisocial tendencies strongly predicted elevated HM attitudes. Regression analyses confirmed that antisocial behaviour explained substantial variance in HM scores, indicating a directional pathway. Practically, this suggests that antisocial individuals are more susceptible to adopting hostile gender views, such as adversarial sexual beliefs and dominance over women. The effect size underscores antisociality as a primary driver rather than a mere correlate, predisposing men to internalize toxic masculinity scripts that legitimize coercion.

These results resonate with hegemonic masculinity theory (Connell, 2005), which frames dominance and control as pivotal to masculine identity, reinforced by antisocial aggression and empathy deficits. The gender role strain paradigm (Pleck, 1995) further illuminates how failures to meet societal masculinity standards may manifest as hostility and antisocial compensation. Consistent with Malamuth et al.'s (1995) confluence model, antisocial behaviour emerges as a key predictor of sexual aggression when intertwined with HM. Psychologically, traits like impulsivity and low empathy in antisocial individuals erode barriers to hostile gender ideologies (Harris et al., 2007). Emerging evidence positions antisociality as a precursor to HM, especially in environments valorizing aggression and detachment as masculine virtues (Malamuth & Thornhill, 1994). Socially, it disrupts relationships, fostering an adversarial outlook that sustains HM. O'Brien et al. (2017) corroborate this, linking antisociality—often amplified by alcohol—to aggressive masculine norms and entitlement.

The study also uncovered a substantial portion of convicts reporting substance abuse and Consumption of pornographic material starting from their teenage years. These early experiences heighten HM risks, as explored through causal analyses.

Regarding drug abuse, results showed a statistically significant positive association with HM, where elevated substance use correlated with stronger adversarial beliefs, women's distrust, and sexual dominance. Regression models affirmed drug abuse as a predictor of HM, implying a causal role beyond mere co-occurrence. In practical terms, this linkage means substance abuse may intensify gendered hostility, framing women as opponents and relationships as power struggles. The relevant and significant effect size indicates that drug abuse is a psychosocial amplifier of aggression and violence.

This aligns with hegemonic masculinity (Connell, 2005), where substance use embodies norms of toughness and risk-taking, reinforcing dominance (Camacho-Ruiz, Galvez-Sánchez, Galli, & Limiñana-Gras, 2024). Drug abuse impairs impulse control and empathy (Harris et al., 2007), nurturing adversarial attitudes and hindering egalitarian bonds. From the gender role strain lens (Pleck, 1995), it serves as a maladaptive coping mechanism, alleviating conformity pressures while externalizing hostility toward women. Prior research supports these ties: Abbey and Wegner (2015) noted alcohol's role in amplifying HM in sexual scenarios, while Camacho-Ruiz et al. (2024) intertwined substance abuse with hegemonic masculinity, often affirmed in peer contexts.

Similarly, pornography consumption exhibited a significant positive correlation with HM, encompassing adversarial attitudes, dominance, and distrust. Regression analyses established it as a predictor, suggesting causal influence on HM development. Practically, frequent consumption predisposes men to hostile views, potentially escalating coercive risks. This effect stems from content reinforcing schemas of male dominance and female submissiveness (de Heer et al., 2021).

Hegemonic masculinity theory (Connell, 2005) explains how pornography normalizes aggressive scripts, portraying dominance as inherent. The gender role strain paradigm (Pleck, 1995) posits it as a tool for affirming masculinity amid role pressures. Psychologically, it desensitizes to aggression and erodes empathy (Hald, Malamuth, & Yuen, 2010) while socially embedding adversarial scripts. These align with Malamuth et al.'s (1995) confluence model, where pornography exacerbates HM and impersonal orientations. De Heer et al. (2021) linked it to sexual aggression in high-HM men, and Ferguson and Hartley (2009) noted weak associations with hostility. The present study advances this by demonstrating causality rather than correlation.

Collectively, the findings illustrate that antisocial traits, drug abuse, and pornography consumption each significantly foster HM, synergistically promoting adversarial norms, dominance, and aggression.

This extends prior models like Malamuth et al. (1995), emphasizing integrated risks in child sexual offending. Implications call for multifaceted interventions: addressing antisociality through early behavioural programs, curbing substance abuse via treatment, and mitigating pornography's impact with media literacy education (Yıldız, İncekara, & Ulaş, 2024). Policy should

integrate these into prevention, targeting at-risk youth to disrupt HM pathways.

Strengths, Limitations, and Suggestions for Future Research

This study possesses several methodological strengths, including its use of validated psychometric tools, a mixed-method design, and data drawn directly from a highly specific and hard-to-access population of offenders convicted of life imprisonment or capital punishment for sexual crimes against minor girls. Although the sample size (N = 88) may appear relatively small, it represents a rare and critical population, making it sufficiently large to identify statistically meaningful and theoretically important relationships. Nevertheless, the specialized nature of the sample limits the generalizability of the findings to broader offender groups or community populations. The reliance on self-reported data may introduce response bias, especially regarding sensitive behaviours like drug use and pornography consumption.

Future research should aim to replicate these findings using larger, more diverse samples, including offenders with varied sentencing backgrounds and across different geographical settings. Longitudinal studies would further clarify temporal pathways linking antisocial traits, substance use, pornography consumption, and hostile masculinity. Additionally, integrating perspectives from victims, families, and community stakeholders could enhance understanding of structural and preventive factors. Despite its limitations, the study provides important insights into the psychological and behavioural profiles of high-risk offenders and highlights critical areas for targeted intervention and policy reform.

Conclusion

This study concludes that sexual offenses against children stem from the complex interplay of psychological dispositions, behavioral risk factors, and sociocultural influences. The results demonstrated that antisocial behaviour is a central causal factor in the development of hostile masculinity (HM), fostering adversarial gender attitudes and dominance-oriented beliefs that normalize aggression and control. Drug abuse further intensified these dynamics by diminishing empathy and reinforcing hegemonic masculine ideals, while pornography consumption perpetuated adversarial sexual scripts and legitimized coercive behaviours. Together, these factors created a reinforcing cycle of psychological desensitization, impulsivity, and gendered hostility that sustains sexual aggression. The demographic findings—showing that most offenders were young and less educated—suggest that developmental and educational vulnerabilities magnify the impact of these risk factors. The study, therefore, emphasizes that addressing hostile masculinity requires not only individual-level interventions but also structural efforts to reduce the social and cultural conditions that reinforce it. By integrating psychological, behavioural, and environmental perspectives, this research advances understanding of the multifaceted roots of sexual offending and provides an evidence-based framework for targeted prevention and rehabilitation strategies.

Recommendations

Based on the findings, it is recommended that prevention and intervention programs adopt an integrated approach

addressing antisocial traits, substance abuse, and pornography consumption simultaneously. Correctional rehabilitation programs should incorporate cognitive-behavioural strategies aimed at reshaping distorted gender beliefs, promoting empathy, and enhancing impulse control. Drug treatment initiatives must be coupled with psycho-education on healthy masculinity and emotional regulation. Furthermore, specialized programs targeting young and less-educated populations—those most vulnerable to developing hostile masculine orientations—should be developed within educational and community settings.

At a policy level, public awareness campaigns should challenge hegemonic masculine norms, promote nonviolent expressions of masculinity, and highlight the psychological harms of pornography and substance misuse. Interdisciplinary collaboration between psychologists, educators, and criminal justice professionals is essential for implementing early intervention initiatives. By addressing both the individual and societal determinants of hostile masculinity, these efforts can contribute to the reduction of child sexual offending and broader gender-based violence.

Declarations

Ethical Approval

After the due evaluation and review, the Institutional Ethics Committee (IEC) of the Sardar Patel University of

Police, Security and Criminal Justice (SPUP) granted ethical clearance for the study (Certificate No. IEC/2025/Project/No/01, dated 25.11.2025).

Availability of Data and Materials

The datasets generated and analyzed during the current study are not publicly available due to funding agency restrictions, but are available from the corresponding author upon reasonable request.

Competing Interests

The authors declare that no competing interests in this manuscript. To the best of the author's knowledge, the manuscript does not infringe upon any copyright or property right of any third party.

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Authors' Contributions

AS and SA both carried out the proposal for the research's main idea and contributed to data collection. AS performed the analysis, interpreted the analysis results, and wrote the article. SA contributed to the article's proofreading. Both authors have read and approved the final article.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

Investigation of Alexithymia Levels and Childhood Trauma in Mothers of Sexually Abused Children

Cinsel İstismar Mağduru Çocukların Annelerinin Aleksitimi Düzeyleri ve Çocukluk Çağı Travmalarının İncelenmesi

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Abstract:

The aim of this study is to compare the levels of alexithymia and childhood trauma experiences of mothers of sexually abused children with those of mothers in the control group, and to examine the relationships between alexithymia and trauma experiences. The research was conducted with a case-control design. The case group consisted of 41 mothers of sexually abused children. The control group consisted of 41 mothers whose children had no history of sexual abuse. Data were collected using a personal information form, the Childhood Trauma Questionnaire (CTQ-28), and the Toronto Alexithymia Scale (TAS-20). In the case group, sexual abuse and emotional neglect scores were significantly higher compared to the control group ($p=0.041$; $p=0.004$, respectively), while minimization scores were significantly lower. No significant differences were observed between the groups on the TAS subscales and total scores. In the case group, negative correlations were observed between age and Difficulty Identifying Feelings (DIF), Difficulty Describing Feelings (DDF), and the TAS total score; positive correlations were observed between emotional neglect and DIF, DDF, EOT (Externally Oriented Thinking), and the TAS total score. The findings indicated that past traumatic experiences had marked effects on the mothers of sexually abused children and that these experiences were associated with alexithymia. The results highlight the importance of supporting the mental health of mothers for both parental well-being and the psychosocial development of the child.

Keywords: Alexithymia, Mother, Child sexual abuse, Child abuse.

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Öz:

Bu çalışmanın amacı, cinsel istismar mağduru çocukların annelerinin aleksitimi düzeylerini ve çocukluk çağı travma deneyimlerini kontrol grubundaki annelerle karşılaştırmak ve aleksitimi ile travma yaşantıları arasındaki ilişkileri incelemektir. Araştırma olgu-kontrol deseniyle yürütülmüştür. Olgu grubunu cinsel istismar mağduru çocuğun annesi olan 41 anne oluşturmuştur. Kontrol grubunu ise çocuklarında cinsel istismar öyküsü olmayan 41 anne oluşturmuştur. Araştırma verilerini toplamak için kişisel bilgi formu, Çocukluk Çağı Travmaları Ölçeği (CTQ-28) ve Toronto Aleksitimi Ölçeği (TAÖ-20) kullanılmıştır. Olgu grubunda cinsel istismar ve duygusal ihmal puanları, kontrol grubuna göre anlamlı olarak yüksektir (sırasıyla $p=0,041$; $p=0,004$); minimizasyon puanları ise anlamlı şekilde düşüktür. TAÖ alt boyutları ve toplam puan açısından gruplar arasında anlamlı bir fark gözlenmemiştir. Olgu grubunda yaş ile duyguları söze dökmede güçlük (DSDG), duyguları dışavurma/ ifade etme güçlüğü (DDV) ve TAÖ toplam puanı arasında negatif korelasyonlar; duygusal ihmal ile DSDG, DDV, DTG ve TAÖ toplam puanları arasında pozitif korelasyonlar belirlenmiştir. Cinsel istismar mağduru çocukların annelerinde geçmişte yaşanan travmaların belirgin etkileri gözlenmiş ve bu yaşantıların aleksitimi ile ilişkili olduğu ortaya konmuştur. Bulgular, annelerin ruhsal sağlığının desteklenmesinin hem ebeveynlerin hem de çocukların psikososyal gelişimi açısından önemli olduğunu ortaya koymuştur.

Anahtar Kelimeler: Aleksitimi, Anne, Cinsel istismar, Çocuk istismarı.

Introduction

Child sexual abuse (CSA) is recognized worldwide as a major public health problem that negatively affects children's physical, mental, and social development. Global meta-analyses report the prevalence of CSA to be between 8–31% in girls and 3–17% in boys (Barth et al., 2013; Stoltenborgh et al., 2011). It has been shown that victims of CSA experience higher rates of depression, sleep disorders, suicide attempts, substance use, and behaviors such as running away from home or school (Marriott et al., 2014; Vachon et al., 2015).

The disclosure of CSA affects not only children but also their parents deeply. It has been reported that, especially in mothers, symptoms of major depressive disorder, psychological distress, and post-traumatic stress disorder (PTSD) are more common (Dubé et al., 2024). Studies have shown that mothers experience higher levels of functional impairment, psychological problems, and PTSD symptoms compared to fathers (Cyr et al., 2016; Cyr et al., 2018). Cyr and colleagues (2016) reported PTSD rates of 13.1% in mothers and 7.3% in fathers. PTSD is characterized by intrusive thoughts, nightmares, avoidance behaviors, and cognitive-emotional changes (APA, 2013). Therefore, the disclosure of CSA may result in more severe psychological consequences, especially for mothers with a history of interpersonal trauma.

Alexithymia is a noteworthy variable in terms of maternal mental health. Alexithymia is associated with difficulties in identifying and expressing one's emotions. Individuals with alexithymia have trouble distinguishing between emotional experiences and bodily sensations. They also tend to adopt a more practical and externally-oriented style of thinking (Luminet & Nielson, 2024; Preece & Gross, 2024). These characteristics lead to reduced emotional awareness and a limited capacity for emotional expression (Watters et al., 2016). Research has shown that alexithymia is associated with a range of psychopathologies, including depression, PTSD, suicidal ideation, dissociation, eating disorders, addictions, and sleep problems (Preece et al., 2024; De Berardis et al., 2017; Zorzella et al., 2019). Moreover, alexithymia is linked to both internalizing (e.g., anxiety, depression) and externalizing (e.g., aggression, behavioral problems) issues (Hamel et al., 2024; Muzi & Pace, 2023).

Traumas experienced by mothers during childhood or adulthood can increase the risk of their children

developing emotional and behavioral problems (Fung et al., 2024; Lünemann et al., 2019). This relationship is further strengthened by the development of trauma-related psychopathologies in mothers, such as depression, PTSD, and dissociative symptoms (Plant et al., 2018). Mothers who have experienced trauma may have difficulty recognizing their children's emotional needs and demonstrating sensitive parenting behaviors (Van Ee & Meuleman, 2024). This situation can weaken bonds in the mother-child relationship and impair the child's psychosocial adjustment (Almqvist & Broberg, 2003; Scharpf et al., 2024).

The relationship between childhood trauma and alexithymia is highly significant for both maternal mental health and child development. Research shows that, in particular, emotional neglect and abuse are strongly associated with alexithymia in adulthood (Kick et al., 2024). Meta-analytic findings indicate that all types of trauma are linked to alexithymia, but the effect of emotional neglect and abuse is especially pronounced (Khan & Jaffee, 2022). Alexithymia can act as a mediating factor in the transformation of trauma into psychopathology (Dinç et al., 2021). Furthermore, mothers' past traumas can intensify PTSD symptoms that emerge in their children following abuse, and alexithymia may serve as an important mediating variable in this relationship (Dubé et al., 2023; Kahya & Uluç, 2023).

Although the effects of childhood sexual abuse on victimized children have been widely addressed in the existing literature, its impact on parents—especially mothers—has been relatively less studied. In Turkey, research on this subject appears to be limited. This situation creates a significant gap in understanding the psychological processes mothers experience and in developing support mechanisms for them.

The aim of this study is to examine the levels of alexithymia and childhood trauma experiences among mothers of children who are victims of sexual abuse, and to compare these variables with those of mothers in a control group. Additionally, the study seeks to reveal the relationships between alexithymia and childhood traumas. In this way, the research will both address a gap in the literature and provide a unique contribution to the topic within the context of Turkey.

Method

Participants

This research was conducted using a case-control design. The case group consisted of 41 mothers aged 18 and over, who are literate and whose children were referred to a Child Advocacy Center in a province with allegations of sexual abuse. The control group comprised 41 mothers in the same age range whose children had no history of sexual abuse. Participation was voluntary, and 82 mothers were included in the study. The research was carried out in accordance with the Declaration of Helsinki, and informed consent was obtained from all participants.

Data Collection Tools

Personal Information Form

Prepared by the researchers to determine the participants' age, marital status, number of children, and educational background.

Childhood Trauma Questionnaire (CTQ-28)

The Childhood Trauma Questionnaire (CTQ-28) is a self-report scale designed to retrospectively assess experiences of abuse and neglect during childhood and adolescence (Bernstein & Fink, 1998). The Turkish adaptation of the scale was conducted by Şar and colleagues (2021). The CTQ has two different versions, consisting of 28 and 53 items. In this study, the 28-item version was used. The scale is a five-point Likert-type (1 = never, 5 = very often). It consists of five subscales: emotional neglect, physical neglect, emotional abuse, physical abuse, and sexual abuse. In addition, the scale includes a three-item minimization-denial subscale that assesses participants' tendencies to minimize or deny negative experiences.

Toronto Alexithymia Scale (TAS-20)

The Toronto Alexithymia Scale was developed by Bagby, Parker, and Taylor (1994a, 1994b). It is a 20-item self-report scale that assesses difficulties individuals experience in identifying and expressing emotions. The Turkish adaptation of the scale was conducted by Güleç and colleagues (2009). The TAS is a five-point Likert-type scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree). The scale consists of three subscales: Difficulty Describing Feelings (DDF), EOT: Externally Oriented Thinking, and Difficulty Identifying Feelings (DIF).

Difficulties in identifying and distinguishing emotions, difficulties in describing emotions, and externally oriented thinking subscales constitute the core components of alexithymia. For example, difficulty identifying feelings is measured by items such as "I often get confused about what I am feeling," while difficulty describing feelings is

assessed with statements like "I have trouble finding the right words for my feelings." Externally oriented thinking is measured by items such as "I prefer to talk about daily activities rather than feelings with others." Higher scores on the scale indicate greater alexithymia among participants.

Procedure

The study commenced after obtaining approval from the Sakarya University Non-Interventional Clinical Research Ethics Committee on 07.03.2025, with decision number 224. Informed consent was obtained from all participants. As part of this consent, participants were informed about the aim and duration of the research, principles of confidentiality, that data would be used solely for scientific purposes, and that they could withdraw from the study at any time. The consent form also stated that participants' identities would be kept confidential, responses would be evaluated anonymously, and the research posed no physical or psychological risk. Participants were administered a personal information form, the Childhood Trauma Questionnaire (CTQ-28), and the Toronto Alexithymia Scale (TAS-20).

Data Analysis

SPSS 26.0 software package was used for data analysis. For descriptive variables, mean, standard deviation, count, and percentage were presented; for non-parametric data, median and interquartile range values were reported. The Kolmogorov-Smirnov test was used to assess whether numerical variables were normally distributed. For comparisons between two groups with normally distributed data, the independent-samples t-test was used; for comparisons of numerical variables between two groups when data were not normally distributed, the Mann-Whitney U test was used. Correlations between normally distributed numerical variables were evaluated using Pearson's correlation coefficient, while correlations between non-normally distributed numerical variables were assessed using Spearman's correlation coefficient. Statistical significance was accepted at $p < 0.05$.

Findings

Table 1 compares the demographic characteristics of mothers in the case and control groups. No significant differences were found between the groups in terms of mean age or marital status distribution ($p > 0.05$). However, the number of children was significantly higher in the case group ($p < 0.01$). Regarding educational level, the proportion of university graduates was higher in the control group, while the number of mothers with only primary school education was markedly greater in the case group ($p < 0.01$).

Table 1. Comparison of demographic characteristics of mothers in the case and control groups

Variable	Control (n=41)	Case (n=41)	p
Age	40.15 ± 7.16	40.24 ± 5.75	0.996
Marital Status (married)	37	31	0.140
Number of Children (median) (Min-Max)	2(1-3)	3(1-6)	<0.01
Educational Level	1	28	<0.01
Primary School			
High School	9	12	
Associate Degree	6	1	
Bachelor's Degree	25	0	

Table 2 compares the Toronto Alexithymia Scale (TAS) and Childhood Trauma Questionnaire (CTQ) subscale and total scores between mothers of sexually abused children (case group) and mothers in the control group. There were no significant differences between the groups in terms of TAS subscales or total scores ($p > 0.05$). However, in the

CTQ subscales, scores for sexual abuse ($p = 0.041$) and emotional neglect ($p = 0.004$) were significantly higher in the case group. In addition, minimization scores were significantly lower in the case group ($p < 0.001$). The total CTQ score was also higher in the case group compared to the control group ($p = 0.01$).

Table 2. Comparison of Alexithymia and Childhood Trauma scores between mothers of Sexually Abused Children and mothers in the Control Group

Variable	Control (n=41)	Case (n=41)	p
(DDF) Difficulty Describing Feelings	10.37 ± 3.14	9.59 ± 2.93	0.23
(EOT) Externally Oriented Thinking	21.44 ± 2.67	22.34 ± 3.77	0.28
(DIF) Difficulty Identifying Feelings	12.41 ± 3.49	12.73 ± 4.81	0.81
TAS Total Score	44.22 ± 7.39	44.66 ± 7.22	0.72
Physical Abuse	5.41 ± 1.12	5.85 ± 2.17	0.254
Sexual Abuse	5.22 ± 0.65	6.12 ± 2.70	0.041
Emotional Abuse	6.51 ± 1.79	6.83 ± 3.26	0.587
Physical Neglect	9.63 ± 1.22	9.63 ± 1.41	0.776
Emotional Neglect	9.10 ± 3.40	11.80 ± 4.67	0.004
Minimization	11.02 ± 2.06	8.98 ± 2.81	<0.001
CTQ Total Score	35.88 ± 5.51	40.24 ± 8.92	0.01

CTQ: Childhood Trauma Questionnaire Total Score, EOT: Externally Oriented Thinking, DDF: Difficulty Describing Feelings, DIF: Difficulty Identifying Feelings, TAS: Toronto Alexithymia Scale,

Table 3 examines the relationships between age, Toronto Alexithymia Scale (TAS) subscales, and Childhood Trauma Questionnaire (CTQ) subscales in the case group. The findings show that age is significantly negatively correlated with Difficulty Describing Feelings (DDF), EOT: Externally Oriented Thinking, and TAS total score ($p < 0.05$). Additionally, there was a significant positive

correlation between emotional abuse and Difficulty Identifying Feelings (DIF), as well as between emotional neglect and EOT, DIF, and TAS total score. Minimization scores were negatively correlated with EOT and TAS total scores. Furthermore, the total CTQ score was positively correlated with EOT, DIF, and TAS total scores.

Table 3. Correlations between Age, Alexithymia Subscales, and Childhood Trauma scores in the case group

Variable	Age	DDF	EOT	DIF	TAS Total
Age	1.000	-.255*	-.232*	-0.084	-.258*
Physical Abuse	0.164	-0.199	0.078	0.127	0.031
Sexual Abuse	0.017	-0.032	0.115	0.153	0.130
Emotional Abuse	0.161	0.008	0.084	.270*	0.158
Physical Neglect	-.232*	0.084	0.134	0.189	.223*
Emotional Neglect	-0.021	0.179	.291**	.241*	.338**
Minimization	0.018	-0.064	-.267*	-0.173	-.218*
CTQ Total	0.009	0.098	.262*	.229*	.276*

* $p < 0.05$, ** $p < 0.001$, CTQ: Childhood Trauma Questionnaire Total Score, EOT: Externally Oriented Thinking, DDF: Difficulty Describing Feelings, DIF: Difficulty Identifying Feelings, TAS: Toronto Alexithymia Scale

Discussion

In this study, childhood trauma levels and alexithymia characteristics of mothers whose children are victims of sexual abuse were examined, and the findings were compared between the case and control groups. The study showed that childhood trauma levels—particularly in the domains of sexual abuse and emotional neglect—were significantly higher in the case group compared to the control group. Previous studies have demonstrated that mothers' experiences of childhood sexual abuse or domestic violence are associated with higher levels of psychological distress, PTSD, and dissociation when they witness or learn about their own children's abuse (Daignault et al., 2018; Dubé et al., 2018). These psychological challenges can negatively impact mothers' capacity to provide emotional support to their children,

thereby adversely affecting the recovery process (Langevin et al., 2021). The findings of this study are consistent with prior research indicating that mothers' own traumatic histories play a significant role both in the protection of children and in the process of disclosing abuse. The increase in total Childhood Trauma Questionnaire (CTQ) scores points to the cumulative effect of multiple trauma experiences endured by mothers throughout their lives. This result highlights the necessity for systematic assessment of not only the victimized children but also the trauma histories of parents in Child Advocacy Centers and similar institutions.

In this study, no significant differences were found between the case and control groups in total alexithymia

scores or subscale scores. This result may be due to the close association of alexithymia with personality traits and its relatively stable nature (Taylor et al., 1999; Bagby et al., 1994a), limitations in sample size, or the sensitivity of self-report scales to cultural factors (Tolmunen et al., 2010). Previous research using different samples has shown significant positive correlations between total CTQ and total TAS scores (Takım et al., 2024; Emir et al., 2023). Similarly, this study found a positive relationship between CTQ total scores and TAS total scores. This finding suggests that, even though group-level differences may not be significant, higher trauma burden at the individual level may be associated with higher levels of alexithymia. Therefore, in clinical practice, assessments of alexithymia should be considered at the individual level, independently of group comparisons.

One of the most striking findings of the study is the strong relationship between emotional neglect and alexithymia. The research shows that individuals who have experienced emotional neglect demonstrate weakened abilities in recognizing, expressing, and cognitively processing emotions. Meta-analyses have revealed that the correlation between emotional neglect and alexithymia is higher than that of other types of abuse (Ditzer et al., 2023; Khan & Jaffee, 2022).

Emotional neglect is strongly associated with deficiencies in emotional vocabulary and mentalization capacity in children and adolescents (Berardelli et al., 2021; Van Schie et al., 2017). These effects can result in persistent difficulties in social cognition, empathy, emotion regulation, and emotional expression. Therefore, psychosocial interventions targeting mothers with a history of severe emotional neglect are important. Such interventions should especially focus on improving emotion recognition and labeling skills. Additionally, strengthening emotion regulation and mentalization abilities is also crucial.

The finding that alexithymia scores decrease with increasing maternal age points to the protective effect of emotional awareness and life experience that develops over time. Some studies suggest that alexithymia scores may be higher in younger individuals, and that emotional awareness and expression skills improve with age (Huang et al., 2022; Thorberg et al., 2011). This suggests that emotional awareness skills acquired through experience and aging may play a protective role against alexithymia.

Research indicates a positive relationship between alexithymia and emotional intensity (Lyvers et al., 2022; Mehta et al., 2024). Findings show that as alexithymia increases, individuals experience negative emotions more intensely and, as a result, tend to resort to minimization more frequently. In the present study, however, the lower minimization scores in the case group compared to the control group suggest that these mothers may be less inclined to deny their traumatic experiences.

Conclusion and Recommendations

This study revealed that mothers of children who are victims of sexual abuse have significantly higher levels of childhood trauma—particularly in the areas of sexual abuse and emotional neglect—compared to the control group. The findings indicate that parents' traumatic histories play a decisive role in the processes of protecting children. Additionally, the positive relationship observed at the individual level between total CTQ scores and

alexithymia levels suggests that trauma burden may have a direct impact on emotional awareness. This result underscores the importance of systematically considering parents' trauma histories in psychosocial support programs.

The findings particularly highlight the strong relationship between emotional neglect and alexithymia. Emotional neglect appears to impair parents' ability to recognize and express their emotions. In this context, it is important that psychosocial interventions targeting mothers in child abuse centers focus on improving emotional awareness, emotion regulation, and parenting skills.

The study also found a negative association between age and alexithymia, suggesting that life experiences may strengthen emotional awareness. On the other hand, the finding that mothers with lower educational levels are more likely to be parents of children at risk of abuse indicates the necessity of directing protective and preventive interventions, especially toward lower education groups.

In light of these findings, the following recommendations can be made:

In institutions such as Child Advocacy Centers, the childhood trauma histories and alexithymia levels of parents of victimized children should be assessed using standardized screening scales.

Structured psychosocial programs focusing on the development of emotion recognition and regulation skills should be implemented for mothers with a history of emotional neglect.

Future multicentre, longitudinal studies that also include fathers will help clarify the relationships between parenting experiences, trauma histories, and the processes of child protection in a more comprehensive manner.

In conclusion, this study demonstrates the importance of understanding parents' traumatic histories in the prevention and intervention processes of child abuse. The findings highlight the necessity of a holistic approach that focuses not only on the victim, but also on the parents.

Limitations

This study has several limitations. The cross-sectional design limits causal inference, and the single-center, relatively small sample restricts the generalizability of the findings. Additionally, because the data were collected via self-report scales, it is necessary to corroborate these findings with observational measures of parenting or clinical interview data. Future multicenter, large-sample, and longitudinal studies will help clarify the relationships between trauma, alexithymia, and parenting behaviors. Furthermore, including fathers and other caregivers in research will help identify gender differences.

Declarations

Ethical Approval

Ethics Approval and Participation Consent
Ethical approval for the study was obtained from the Sakarya University Faculty of Medicine Non-Interventional Clinical Research Ethics Committee (Decision No: 224, Date: 07.03.2025).

Publication Permission

Not applicable.

Availability of Data and Materials

Not applicable.

Conflicts of Interest

The authors declare no conflicts of interest.

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Author Contributions

HO and ÖB made substantial contributions to writing the Methods and Discussion sections, as well as the Abstract. They also contributed to the overall writing and review of the manuscript. ES analyzed and interpreted the research data and also contributed to the overall writing and review of the manuscript. MTT made significant contributions to writing the Introduction and Discussion sections. HO and ÖB contributed substantially to data collection. All authors have read and approved the final version of the manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

The Moderating Role of Sports Participation in the Relationship between Adolescent Strengths Use Levels and Psychological Resilience

Ergenlerin Güçlü Yönlerini Kullanım Düzeyleri ile Psikolojik Sağlamlık Arasındaki İlişkide Spora Katılımın Düzenleyici Rolü

İsa Kavalcı¹, Gökhan Çakır¹, Taner Erol²

Abstract:

This study is grounded in the assumption that adolescents' use of their strengths supports their mental health. Within this framework, the relationship between the use of strengths and psychological resilience is examined, with participation in sports considered as a potential moderating variable. The primary aim of the study is to investigate the moderating role of sports participation in the relationship between adolescents' use of strengths and psychological resilience. The study group consisted of 389 adolescents from six provinces located in the Black Sea region of Turkey. Data were collected using a personal information form, the Strengths Use Scale for Adolescents, and the Psychological Resilience Scale for Children and Adolescents. Following these analyses, the arithmetic means and standard deviations of the participants' responses were determined. Pearson correlation analysis was used to report the correlation coefficients between the scales. Finally, Model 1 of the PROCESS Macro 4.2 was used in SPSS 27 to test the moderating role of sports participation. The findings revealed that adolescents reported moderate levels of psychological resilience and of strengths use. A significant moderate positive correlation was found between strengths use and psychological resilience ($r = 0.54$; $p < .01$). In line with this finding, strengths use was found to significantly predict resilience ($R^2 = 0.31$; $p < .01$). Moreover, sports participation was found to have a moderating effect on the relationship between strengths use and resilience. In other words, the relationship between strength use and psychological resilience was stronger among adolescents who participated in sports compared to those who did not.

Keywords: Sport, Mental health, Adolescent strengths, Psychological resilience.

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Öz:

Bu çalışma, ergenlerin güçlü yönlerini kullanmalarının ruh sağlıklarını desteklediği varsayımına dayanmaktadır. Bu bağlamda, güçlü yönlerin kullanımı ile psikolojik sağlamlık arasındaki ilişki incelenmekte; spora katılım ise bu ilişki üzerinde potansiyel bir düzenleyici değişken olarak ele alınmaktadır. Çalışmanın amacı, ergenlerin güçlü yönleri kullanma düzeyleri ile psikolojik sağlamlıkları arasındaki ilişkide spora katılımın düzenleyici rolünü ortaya koymaktır. Çalışma grubunu Karadeniz Bölgesi'nde yer alan 6 ilden 389 ergen birey oluşturmaktadır. Veri toplama araçları olarak kişisel bilgi formu, Ergenlere Yönelik Güçlü Yönleri Kullanma Ölçeği ve Çocuk ve Genç Psikolojik Sağlamlık Ölçeği kullanılmıştır. Ön analizlerden sonra katılımcıların vermiş oldukları yanıtlara ait aritmetik ortalamalar ve standart sapma değerleri belirlenmiştir. Ölçekler arasındaki korelasyon değerleri Pearson korelasyon analizi ile rapor edilmiştir. Son aşamada ise SPSS 27 programı ile PROCESS 4.2 Macro analizi kullanılarak (Model 1) spora katılımın düzenleyici rolü analiz edilmiştir. Ergenlerin psikolojik sağlamlık ve güçlü yönleri kullanma düzeylerinin orta düzeyde olduğu görülmüştür. Güçlü yönler ile sağlamlık arasında pozitif yönde orta düzeyde anlamlı bir ilişki bulunmaktadır ($r=0.54$; $p<0.01$). Bu bulguya paralel olarak, güçlü yönler sağlamlığı anlamlı bir şekilde etkilemektedir ($R^2 = 0.31$; $p < 0.01$). Spora katılım, güçlü yönler ile sağlamlık arasındaki ilişkide düzenleyici bir etkiye sahiptir. Bir diğer ifadeyle, spor yapan ergenlerin güçlü yönleri ile sağlamlıkları arasında, spor yapmayan ergenlere göre daha güçlü bir ilişki söz konusudur.

Anahtar Kelimeler: Spor, Mental sağlık, Ergenlerin güçlü yönleri, Psikolojik sağlamlık.

Introduction

It is essential to provide support for adolescents through both family involvement and school-based educational initiatives. By providing these supports, adolescents can experience improved mental health. Adolescence is also viewed as a critical period for developing skills related to psychological resilience (Niu, Jiang, Jiang, 2021). One of the most effective ways to cope with the challenges that adolescents may face is to develop psychological resilience.

Psychological resilience refers to an individual's ability to adapt to life changes in the face of adversity (Ağırkaya & Erdem, 2023). The detrimental effects of life experiences on mental health can be significantly mitigated by resilience (Erbekir, 2025; Petzold et al., 2020), indicating a favorable psychological attribute for advancing both physical and mental well-being (Ma et al., 2022). Teenagers who don't have enough resilience may have symptoms like excessive anxiety, gaming addiction, academic pressure, delayed mental and social development, or even a lack of independence and responsibility (Vatan & Battaloğlu, 2024; Zhai and Ji, 2022). Teenage sadness, anxiety, and stress levels are gradually and significantly rising, according to research (Tang et al., 2021). With resilience, adolescents can adapt and recover more quickly from such negative emotional states.

Strengths (also referred to as character strengths in the literature), which are considered an effective factor in the development of resilience and serve as the independent variable in this study, constitute a key area of study in positive psychology. A comprehensive term that encompasses the positive aspects of character is virtue. In this sense, virtue is the idea that results from combining many character traits. Being amiable, connected to others, and having strong interpersonal skills are all examples of human virtues. Strengths of character that might be seen as components of virtue include lovingness, kindness, and social intelligence (Peterson & Seligman, 2004). Character strengths are evident in people's attitudes (such as looking forward to the future), emotions (such as appreciating assistance), and actions (such as cooperating effectively

with others in a group) (Harzer, 2016). Adolescent pupils' character strengths are now identified and developed as part of the educational process. Strengths, in particular, start to show during adolescence (Park & Peterson, 2009; Vijaykumar et al., 2018). When adolescents' strengths are supported in their development, both their academic performance and happiness will increase. Additionally, this will help adolescents recognize themselves and safeguard their mental health (Demir, Murat, & Arslan, 2024).

Moreover, it can be argued that a character strengths-based curriculum has an empirical impact on students' psychological robustness and well-being by enhancing behavioral traits like inventiveness, curiosity, courage, honesty, integrity, taste, kindness, social intelligence, teamwork, justice, self-control, appreciation of beauty, thankfulness, hope, and religiosity, as well as cognitive traits like wisdom, courage, humanity, justice, and temperance (Ebrahimi & Esmaeili, 2023). That is, young people's well-being is enhanced when they utilize their abilities. A common theme across theories and opinions in the literature is that individuals' mental health can improve through the development of their strengths. Based on this, the following hypothesis was developed:

H₁: Adolescents' level of using their strengths has an impact on their resilience.

It is considered valuable to identify an individual's strengths and use them effectively in their life. To help students find and use their strengths, sports practices are recommended throughout the school and in extracurricular sports clubs. The development of sporting performance and excellence can be achieved through strength-based approaches (Bradley & Worth, 2017). The idea is that by combining sporting skills and abilities with strengths, teams can achieve higher levels of individual success and happiness (Barnes & Larcus, 2015). Therefore, there may be a bidirectional relationship between strengths and participation in sports.

It can be said that individuals who participate in sports, particularly children and young people, tend to be more psychologically resilient (Long et al., 2019; Zhang et al., 2021). In other words, participation in sports is one factor that contributes to psychological resilience. On the contrary, physically inactive students may be more likely to experience mental problems and have low levels of resilience (San Román-Mata et al., 2020). Therefore, participation in sports is seen as an effective factor in students' mental development.

The relationship between adolescents' use of their strengths and their psychological resilience may vary depending on their participation in sports. The relationship between strengths and resilience among adolescents who participate in sports may be much stronger than among those who do not. Based on this situation, the following hypothesis was developed:

H₂: Sports participation moderates the effect of adolescents' strengths on resilience.

Present Study

Developing young people's strengths and competencies, and creating environments that foster their healthy development and pro-social participation, should be a key

endeavor among academics, practitioners, and policymakers (Drescher et al., 2018). In this way, it can contribute to raising a generation with high mental health and self-efficacy. When the literature was examined, it was seen that studies are addressing the relationship between strengths and resilience (Demirci, Ekşi, & Kaya, 2021; Ebrahimi & Esmaeili, 2023; Harzer, 2016; Zimmermann, 2013), but studies addressing the relationship between sport and the use of strengths (Barnes & Larcus, 2015; Bradley & Worth, 2017) are limited. Again, no studies simultaneously addressed the relationship among strengths, resilience, and sport, or examined the moderating role of sport participation. In light of existing theoretical knowledge and literature, this study is expected to help fill this gap in the field. In light of these views, the current study aims to examine the moderating role of sports participation in the relationship between adolescents' strengths, use levels, and resilience.

Methods

Research Model

In this research model, the conceptual model in Figure 1 was developed to determine the moderating role of sports participation in the relationship between adolescents' levels of using strengths and resilience. Age and gender were controlled for in the model.

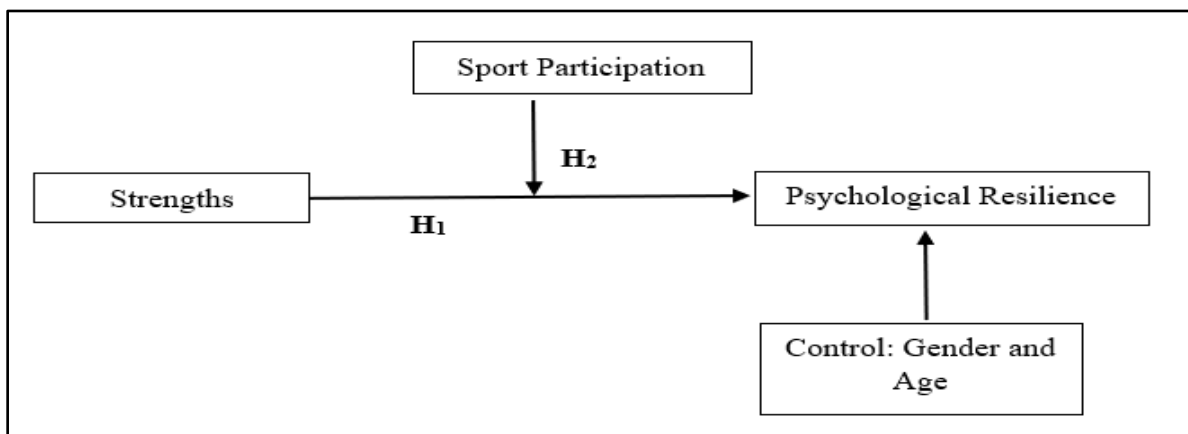


Figure 1. Research Model

Participants and Procedure

For the study, data were collected from 450 adolescent participants. Responses from 9 participants (2.0%) under the age of 13 and from 12 participants (2.4%) who had filled out the questionnaire incorrectly were excluded from the analysis. Additionally, the 5% trimmed values in the descriptive table were checked to identify outliers, and 40 data points (9.4%) were excluded from the analysis. Thus, data from 389 participants were evaluated in the scope of the study. In the profile of 389 adolescents, 205 were female (53.7%), and 184 were male (47.3%), aged 13-18, with a mean age of 15.66 and an SD of 1.61. Of the 214 participants (55.0%) were licensed athletes, and 174 (45.0%) were not.

Data were collected from six different provinces in the Black Sea region by an online method. In the study, the demographic information of the adolescent participants, as well as the questions using the scales, were entered into the web-based Google Form. The links were sent and

distributed to the participants via social media. Participation was ensured to be voluntary. We acquired informed permission from each individual. Before the research commenced, participants were given a brief explanation of the study's purpose, and the survey results were kept anonymous and confidential. The form was designed to prevent questionnaires from being sent with missing data.

In this study, convenience sampling was used, and the research was cross-sectional. To determine an adequate sample size, the views on the moderating role in the literature were utilized. Kline (2016) states that in mediation and moderation analyses, at least 200 samples should be used to minimize computational errors. In light of Kline's anticipated N:q ratio of 20:1, the study's sample size (n = 389) was deemed sufficient.

Inclusion criteria for the study were: having no health problems, being between 13 and 18 years of age, and voluntary participation.

Data Collection Tools

Personal Information Form

This form consists of questions about adolescents' gender, age, and participation in licensed sports. In the study, involvement in sports was assessed by categorizing participants as licensed or non-licensed.

Adolescent Strengths Use Scale

Demir, Murat, and Arslan conducted an adaptation study of the scale into Turkish (2024). There is only one factor structure and seven elements on the scale. High scores obtained from the scale indicate that character strengths are used at a higher level in schools. The scale's internal consistency coefficient and Cronbach's alpha were computed in line with reliability research standards. 82. The internal consistency coefficient in this investigation came out to be. 78.

Child and Youth Resilience Scale (CYRS-12)

Arslan (2015) researched the adaptation of the scale into Turkish. The scale has a single-factor structure with twelve elements. The scale's internal consistency coefficient was computed in line with reliability research, yielding a Cronbach's alpha of 91. The internal consistency coefficient in this investigation was 83.

Data Analysis

The data obtained from the adolescent participants were analyzed with the statistical software programs SPSS 27 and AMOS 25. First, the validity and reliability of the scales were examined. The reference value for the Cronbach's Alpha coefficient of the scales was 0.7 (Meydan & Şeşen, 2001). Goodness-of-fit indices and Cronbach's Alpha coefficients are briefly summarized in Table 1. After the preliminary analysis, the arithmetic means and standard deviations of the participants' responses were calculated. To assess the normality of the data, skewness and kurtosis were examined using George and Mallery's (2020) thresholds of -2 and +2. At this stage, the correlation values between the scales were also reported by Pearson Correlation Analysis. In the final stage, the moderating role of sports participation was analyzed using PROCESS 4.2 Macro Analysis (Model 1, developed by Hayes, 2017) in SPSS 27 to test H1 and H2. Jeremy Dawson's (2014) slopes were used to better understand the interaction findings.

Results

Descriptive Statistics

Descriptive statistics (normality assessments, reliability analyses, and correlation results) for the adolescent participants are shown in Table 1.

Table 1. Descriptive statistics of the participants

Variables	Mean	SD	Skewness	Kurtosis	Correlations	
					1	2
1. PR	45.33	6.86	-0.19	-0.42	-	
2. ASU	25.44	4.13	-0.29	-0.32	0.54**	-

**P<0.01; PS= Psychological Resilience, ASU= Adolescent Strengths Use

When the values in Table 1 are examined, it is seen that the mean PR score of the students was ($\bar{x} = 45.33 \pm 6.86$) and the mean ASU score was ($\bar{x} = 25.44 \pm 4.13$). The skewness and kurtosis values indicate that the data are typically distributed. When the correlation coefficients between the variables are analyzed, it is observed that there is a moderately positive correlation between PR and ASU

($r = 0.54, p < 0.01$). Based on the skewness and kurtosis values, the data appear to follow a normal distribution.

Scales Used in the Study and Preliminary Analysis Results

The goodness-of-fit value ranges for the scales are shown in Table 2.

Table 2. Goodness-of-fit values for the scales

Scale	χ^2/df	GFI	AGFI	NFI	CFI	RMSEA	Cronbach Alfa
Minimum Threshold Values	≤ 5	.80	.80	.85	.90	$\leq .10$	$\geq .70$
Adolescent Strengths Use Scale	3.686	0.963	0.934	0.938	0.953	0.077	0.783
Child and Youth Resilience Scale	3.892	0.922	0.892	0.847	0.881	0.080	0.836

Not: χ^2/df = Chi-Square /Degrees of Freedom, RMSEA= Root Mean Square Error of Approximation, NFI= Normed Fit Index, GFI= Goodness of Fit Index, AGFI= Adjusted Goodness of Fit Index, CFI = Comparative Fit Index., Reference: Mishra ve Datta, 2011; Schreiber, et al., 2006

The goodness-of-fit values indicate that all scales fit well. The results confirm that the factor structures of the original measurement tool were replicated in this study, indicating sufficient validity.

Moderating Effect of Sport Participation

In the moderation analysis, the gender and age variables were controlled for. Table 3 shows the moderating effect.

Table 3. Moderation analysis results

Predictors	β	SE	T	P	Dependent variable-Resilience	
					BC 95 % CI	
					LLCI	ULCI
Gender	0.08	0.08	0.98	0.32	-0.08	0.25
Age	0.01	0.02	-0.50	0.61	-0.06	0.03
Strengths (X)	0.96**	0.13	7.28	0.01	0.70	1.22
Sport Participation (Y)	0.11	0.09	-1.31	0.18	-0.29	0.05
X*Y	0.29**	0.08	-3.43	0.01	-0.46	-0.12
R ²	0.31**					
R ² -change	0.02**					

Not: Resilience; n=389; **p<0.01

When Table 3 is analyzed, the model explains 31% of the total variance (R²). Overall, this model makes a significant contribution to predicting psychological resilience (p < 0.01). The findings show that adolescents' use of their strengths significantly contributes to the prediction of their psychological resilience ($\beta = 0.96$, $p < 0.01$). It is also observed that the interaction between strengths and sports participation makes a significant contribution to the model ($\beta = 0.29$, p

<0.01). Despite these findings, gender ($\beta=0.08$, $p>0.01$), age ($\beta=0.01$, $p>0.01$), and sports participation ($\beta=0.11$, $p>0.01$) did not have a significant effect in this model ($p>0.01$). Finally, when the interaction term between strengths and sports participation was included in the model, the model's total explanatory power (R² Change) increased by 0.02, a significant increase ($p < 0.01$). According to this finding, sports participation moderates the relationship between strengths and resilience.

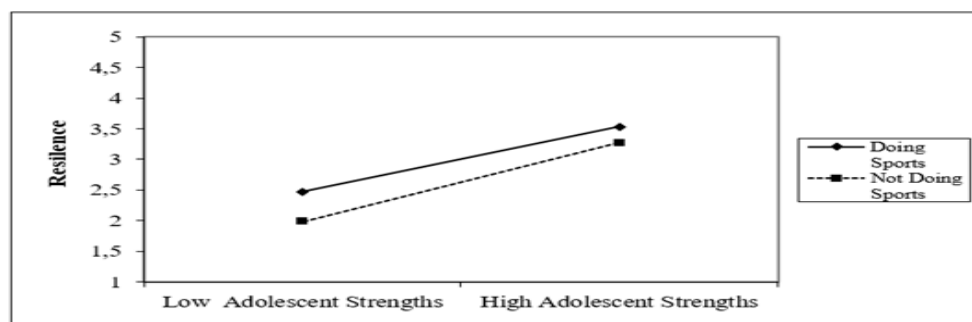
Table 4. The moderating effect of sport participation

Dependent variable-Resilience	Effect	SE	BC 95 % CI	
			LLCI	ULCI
Sport Participation	+1 SD (11.52)	0.66	0.55	0.78
	- 1 SD (5.80)	0.37	0.24	0.49

+1 SD = Adolescents playing sports; -1 SD = Adolescents who don't play sports

To reveal the moderating role of sports participation, the basic slope test was used to determine how the effect differed between adolescents who participated in sports and those who did not. According to the findings, while the impact of strengths on the resilience of adolescents who play licensed sports was (effect = 0.66), this effect was

calculated as (effect = 0.37) in adolescents who do not play licensed sports. In other words, when strengths increase by 1 unit in adolescents who play sports, resilience increases by 0.66 units, whereas when strengths increase by 1 unit in adolescents who do not play sports, resilience increases by 0.37 units.

**Figure 2.** The relationship between strengths and psychological resilience depends on sports participation

As shown in Figure 2, the interaction pattern was consistent with expectations. The findings indicate that adolescents who participate in sports exhibit higher levels of strengths use and psychological resilience than their non-participating peers.

Discussion

In this study, a positive psychology (strengths and resilience) approach was emphasized, with psychological resilience as the dependent variable.

Strengths, which are believed to contribute to the development of psychological resilience, were evaluated as independent variables in the study. Considering the effect of sports on the mental health of young people, participation in sports was identified as the moderating variable in this study. In this context, the main problem addressed in our research is whether the relationship between adolescents' use of their strengths and their resilience varies according to their participation in sports.

According to the results, adolescents' levels of psychological resilience and use of strengths were found to be medium. There is a moderately significant positive relationship between strengths and resilience. In parallel with this finding, strengths significantly impact resilience. Sports participation moderates the relationship between strengths and resilience. The impact of strengths on resilience varies depending on the level of sports participation. In other words, adolescents who participate in sports have stronger strengths and resilience than those who do not.

The results obtained from the research are discussed in line with the hypotheses of the study and within the framework of the literature:

Regarding our first hypothesis, the findings indicate that adolescents' strengths are a significant factor in their psychological resilience. In other words, adolescents' ability to utilize their character strengths in their relationships with others, in achieving their goals, and in solving their problems may make them feel more psychologically resilient. These findings indicate that hypothesis H₁ is supported. These results are consistent with the view that young people who utilize their strengths exhibit higher well-being (Ebrahimi & Esmaeili, 2023); similarly, strengths positively impact the mental health of young people (Demir, Murat, & Arslan, 2024).

Regarding our second hypothesis, the findings suggest that when predicting resilience using strengths, controlling for sport participation makes this effect more apparent. In other words, it appears relatively straightforward to improve resilience by encouraging the development of strengths among adolescents who participate in sports, compared with those who do not. Moreover, higher levels of strength use in adolescents make them more psychologically resilient, and it is likely that adolescents who play sports experience this relationship at higher levels. Based on these findings, hypothesis H₂ is supported. Adolescents can become successful individuals in many areas by discovering their strengths and using them functionally in their lives. Individuals have the opportunity to use their strengths in a sports environment. In addition, the view that children and young people who participate in sports are psychologically stronger (Long et al., 2019; Zhang et al., 2021) provides evidence that sports can play an effective (moderating) role in the relationship between strengths and resilience. This study once again highlights the positive effects of participating in sports, particularly on adolescents.

Conclusion

This study demonstrates that leveraging strengths and participating in sports enhances adolescents' psychological resilience. Findings suggest that employing character strengths contributes to adolescents feeling psychologically stronger, an effect further bolstered by participation in sports. Overall, existing research indicates that adolescents who capitalize on their strengths tend to exhibit higher levels of well-being and better mental health. Moreover, the positive effects of sports on adolescents underscore their significant role in fostering psychological resilience by encouraging the development of strengths. The results presented in this study highlight the importance of adolescents discovering and using their strengths in

functional ways in their lives, which, in turn, supports their development into successful individuals. Additionally, the positive impact of sports on adolescents' psychological well-being and their role in fostering strengths and resilience are emphasized.

Recommendations and Limitations

In line with the study's results, school-wide practices are recommended to help adolescents discover and utilize their strengths. It is recommended to create classroom environments where adolescents can identify their strengths throughout the educational process (Demir & Murat, 2021). Adolescents who can identify their character strengths are likely to lead mentally healthier lives. Another recommendation based on the research results is that adolescents should participate in both in-school and out-of-school sports activities. In this way, they can discover and apply their strengths. Moreover, through sports activities, adolescents can develop character strengths such as being loving, kind-hearted, and socially intelligent. Encouraging students to participate in team sports, alongside individual sports, is essential because team sports foster social intelligence, empathy, collaboration, and problem-solving skills.

In this study, the role of sports participation was examined within the scope of positive psychology. In future studies, research can be organized by reviewing the current issues of traditional psychology. Again, future research can examine whether physical activity or exercise mediates the relationship between strengths and resilience.

This study has some strengths and limitations. The findings support the study's hypotheses and indicate that the model is consistent with the literature. Despite this, the cross-sectional design limits the generalizability of the data. It is also worth noting that the convenience sampling method preferred in this study has some drawbacks.

Declarations

Ethical Approval and Consent to Participate

Finally, the Recep Tayyip Erdoğan University Social and Humanitarian Ethics Committee granted permission for the study (letter 2024/001, dated 10 January 2024). The study was organized voluntarily, and informed consent was obtained from the participants.

Publication Permission

Not applicable.

Availability of Data Materials

Not applicable.

Conflict of Interest

The authors declare no conflict of interest.

Financing

Not applicable.

Author Contributions

GÇ, İK, and TE conceptualized the paper. GÇ analyzed the data. GÇ, İK, and TE contributed to the writing of the first draft. GÇ and İK revised the manuscript. All authors reviewed and approved the final version of the manuscript for submission.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

A Public Relations-Oriented Policy Approach in Combating Substance Addiction

Madde Bağımlılığıyla Mücadelede Halkla İlişkiler Odaklı Politika Yaklaşım

Simge Ünlü¹, Lütfiye Yaşar Bilici²

Abstract:

This study analyzes the public relations policies countries employ to combat substance addiction. The research population consists of the countries listed in the World Drug Report. The sample includes Türkiye, the United States, Bangladesh, Australia, Spain, and South Africa, selected to represent diverse socioeconomic groups across continents. The scope of the study is limited to the national strategies and status reports on drug control from the last three periods for the selected countries. The study was conducted within this framework, using a concurrent mixed-methods design. The countries' status reports on substance addiction were used as quantitative data and analyzed using document analysis in SPSS 26. Content analysis was applied to the qualitative data, and the strategies countries employed to combat substance addiction were analyzed using MaxQDA. The findings from both studies were compared, and a model for combating substance addiction was developed. The proposed model integrates key elements such as social interaction and dialogue, solidarity, and the establishment of social peace into policy, education, healthcare services, legal regulations, and social support mechanisms. This diversity of approaches is expected to provide a multidimensional strategy for substance use prevention.

Keywords: Health communication, Substance addiction, Social policy, Public relations.

*This study was derived from Lütfiye Yaşar Bilici's doctoral dissertation entitled 'A Model Proposal on the Public Relations-Oriented Social Policy of Addiction Programs,' supervised by Assoc. Prof. Dr. Simge Ünlü.

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Öz:

Bu çalışma, ülkelerin madde bağımlılığıyla mücadelede kullandıkları halkla ilişkiler politikalarını analiz etmektedir. Araştırmanın evrenini Dünya Uyuşturucu Raporu'ndaki ülkeler oluşturmaktadır. Çalışmanın örneklemini ise farklı kıtalardan çeşitli sosyoekonomik grupları temsil etmesi için Türkiye, Amerika Birleşik Devletleri, Bangladeş, Avustralya, İspanya ve Güney Afrika oluşturmaktadır. Araştırmanın kapsamı, seçilen ülkelerin son üç döneme ait uyuşturucuyla mücadele ulusal stratejileri ve durum raporlarıdır. Araştırmanın kapsamı, bu ülkelerin son üç döneme ait ulusal strateji ve durum raporlarıyla sınırlandırılmıştır. Çalışma, eşzamanlı karma yöntem deseniyle yürütülmüş; nicel veriler, söz konusu raporların doküman analiziyle elde edilerek SPSS 26 programında değerlendirilmiştir. Nitel veriler ise strateji belgelerine uygulanan içerik analizi yoluyla Maxqda programında incelenmiştir. Her iki analiz sürecinden elde edilen bulgular karşılaştırmalı biçimde yorumlanarak madde bağımlılığıyla mücadelede bütüncül bir model önerisine ulaşılmıştır. Önerilen model, ülkelerin bağımlılıkla mücadelede benimsediği iletişim temelli yaklaşımları, sosyal etkileşim ve diyalog mekanizmalarını, dayanışma kültürünü ve sosyal barışın güçlendirilmesini temel ilkeler olarak ele almaktadır. Bunun yanında, eğitim politikaları, sağlık hizmetleri, yasal düzenlemeler ve sosyal destek sistemleri modele entegre edilmiştir. Böylece bağımlılık sorununu yalnızca tıbbi bir kategori olarak değil, toplumsal, iletişimsel ve yönetsel boyutlarıyla da değerlendiren çok yönlü bir önleme çerçevesi oluşturulmuştur. Bu kapsamlı yaklaşım, ülkelerin benimsediği stratejiler arasındaki farkların daha sistematik bir biçimde anlaşılmasını sağladığı gibi, halkla ilişkiler odaklı politikaların bağımlılıkla mücadelede nasıl işlevsel hale getirilebileceğine dair uygulanabilir bir yol haritası da sunmaktadır.

Anahtar Kelimeler: Sağlık İletişimi, Madde bağımlılığı, Sosyal politika, Halkla ilişkiler.

Introduction

In health communication, preventive strategies for substance addiction are often disconnected from broader well-being policies. This fragmentation, as Shonkoff (2000) argues, neglects important aspects of early intervention, including family dynamics, stigma, and socio-economic factors. Therefore, collaboration between health communicators and addiction specialists is essential to incorporate evidence-based early intervention into program design (McKeganey et al., 2002). Using innovative planning tools can further support this collaboration by linking research and practice and improving policy development.

Various strategies are used to address substance addiction, including parent-focused educational programs and home visitation services that promote positive developmental outcomes. These services support children with limited developmental resources by improving school readiness (Love et al., 2003). Many countries also expand early intervention to strengthen parenting, with the United States, the United Kingdom, and Australia emphasizing approaches that enhance parental skills (Duncan, 2003).

This study investigates public relations-based substance addiction policies in Türkiye, the United States, Spain, Australia, Bangladesh, and South Africa, as outlined in the 2023 World Drug Report. The countries were selected to capture diverse socio-economic contexts and provide a global perspective. National strategy and status reports from the last three reporting periods were analyzed using a concurrent mixed methods design. Quantitative analysis was conducted through document review and evaluated in SPSS 26, while qualitative content analysis in Maxqda explored the strategic approaches of the selected countries. The findings from both data sets were compared and synthesized, contributing to the development of a robust and effective model to combat substance abuse.

Substance Abuse Prevention and Early Intervention Strategies as a Health Communication Policy

Research evaluating social policies for substance abuse prevention shows that continuous, lifespan-based interventions are more effective than those targeting a

single stage (Loxley et al., 2004). Such developmentally informed approaches are especially valuable in crime prevention and mental health, highlighting the importance of early and ongoing support. This principle strengthens the effectiveness and inclusiveness of social policies and intervention programs.

Socio-economic risks in education, health, and welfare highlight the need for comprehensive programs and inform policies that support universal child and family services. Core strategies include home visitation focused on education and care (Gordon, 2003). Universal school programs further aim to reduce bullying, develop social skills, and strengthen emotional well-being. When combined with parent training, these approaches help prevent adolescent problem behaviors (Peterson & Rigby, 1999).

Prevention-based interventions play a key role in addressing youth challenges, and school-based drug education must align with the specific problems young people face. Given the economic implications of addiction, investment in early childhood strategies should be supported, as these efforts lay a strong foundation for human capital development (Thadani, 2002).

Social marketing is central to preventing substance abuse, yet mass media alone cannot sufficiently change adult

behavior. More effective outcomes emerge when media strategies are integrated with community and school initiatives (Midford et al., 2001). Education programs must present accurate, research-based information to strengthen resistance to addiction and support informed decision-making (Kumpfer & DeMarsh, 1986). Effective prevention also requires early attention to social and individual risks, monitoring interpersonal dynamics, and understanding patterns of harmful use. Programs should offer comprehensive harm-reduction frameworks, use interactive learning approaches, and ensure that educators are well trained (Vimpani, 2005).

Social Policy and Health Communication Pathways in Combating Substance Addiction

Substance addiction is a growing threat among youth, negatively affecting behavior, physical health, and developing brain functions (Aktan Mutlu, 2019). It also harms academic performance and leads to withdrawal from social activities at a time when young people are expected to be most socially active.

In many countries, substance use is linked to fatal or injurious traffic accidents, suicides, homicides, poisonings, and other forms of harm. It also contributes to domestic violence and family breakdown (Hanson et al., 2005). Furthermore, intoxication increases the likelihood of criminal behavior, creating risks for both individuals and society.

Substance use can harm various organs depending on dosage, side effects, and duration, and injection use is strongly associated with rising rates of AIDS and Hepatitis C (Toumbourou et al., 2007). Efforts to combat addiction are typically structured around four pillars—prevention, harm reduction, treatment, and rehabilitation—which together form a holistic strategy.

Prevention

Prevention of substance use disorders operates on three levels: primary, secondary, and tertiary. Primary prevention aims to stop substance use before it starts by reducing risk factors and promoting healthy habits (Afuseh et al., 2020). Educating youth and developing community programs exemplify this stage.

Secondary prevention focuses on early detection and timely treatment to prevent the escalation of substance use (Nelson et al., 2022). Early diagnosis and rapid intervention are therefore essential. Tertiary prevention addresses individuals already diagnosed with substance use disorders, aiming to reduce harm, prevent worsening, and improve long-term health. This stage includes harm-reduction approaches, treatment programs, and support networks.

Low-cost preventive strategies provide viable alternatives to costly treatment, beginning with identifying at-risk groups and implementing targeted interventions. Education and awareness programs play a key role, while early school-based measures reduce substance use and social marginalization. Home visitation programs for high-risk families also contribute to lowering substance use rates (Toumbourou et al., 2007; Jiloha, 2017).

Harm Reduction

Preventive work is central to addressing substance use, yet many countries now also employ harm reduction strategies, acknowledging that youth use may not always be preventable. Techniques such as altering the scents of inhalants help reduce interest in and potential harm from inhalants (Drucker et al., 2016).

Treatment and Rehabilitation

Dozens of people seek or are referred to treatment centers daily, and the number is steadily increasing. Successful treatment depends mainly on the individual's motivation and on early diagnosis followed by timely intervention. Voluntary participation enhances success, while forced treatment is typically ineffective. Early detection also prevents long-term damage.

Mignon (2014) states that addiction treatment consists of detoxification and rehabilitation. Detoxification includes

cleansing the body, managing withdrawal, and treating organ damage under medical supervision due to life-threatening risks. Rehabilitation begins after withdrawal symptoms decrease.

Rehabilitation focuses on addressing psychological issues, promoting workforce reintegration, encouraging healthy hobbies, and distancing individuals from harmful environments (Malhotra et al., 2005). It also underscores that prevention is less costly than treatment.

Medication-Assisted Treatment, widely used in outpatient settings, includes Antagonism, Substitution, and Antabuse therapy. Antagonism blocks drug effects, substitution replaces the substance with a less harmful one, and Antabuse causes adverse reactions when alcohol is consumed (Maqbool et al., 2019; Dar et al., 2023).

Psychosocial treatment includes non-medication interventions that strengthen adherence to medication-assisted therapy and support long-term abstinence. It reduces substance use, improves social integration, and is most effective when treatment duration is sufficient (Malhotra et al., 2005).

Methodology

This study used a mixed-methods approach to analyze global substance addiction policies and outline the foundation of a practical implementation model.

Mixed-method research integrates qualitative and quantitative data to provide a more comprehensive understanding of the research problem (Creswell, 2003).

This study employed Creswell's (2003) Concurrent Triangulation Design, in which qualitative and quantitative data are collected and analyzed simultaneously with equal priority. The separate findings are later merged through triangulation to strengthen credibility, accuracy, and validity.

The concurrent design assumes that qualitative and quantitative data offer complementary insights. Both are collected and analyzed simultaneously, then compared for consistency, with equal methodological weight and integration occurring at the interpretation stage (Toraman, 2021).

This study used a concurrent mixed-method design. Quantitative data were gathered from 55 national reports through a structured Google Forms survey, coded in Excel, and analyzed in SPSS 26. Qualitative content analysis of national strategies was conducted using MaxQDA. The combined findings informed the development of a functional model for addressing substance addiction. As only public documents were analyzed, ethics approval was not required.

Population and Sample

The study population comprises countries that implement social policies on substance addiction, health communication, and public relations. Using purposive sampling, the 2023 World Drug Report was used to select the sample: Türkiye, the United States, Australia, Bangladesh, Spain, and South Africa, representing varied continents and socio-economic settings.

Testing the Validity and Reliability of the Data

This study follows Creswell's (2017) steps for qualitative content analysis: defining the problem, determining the

sample, selecting categories, developing a reliable coding scheme, coding the data, and conducting the analysis.

A coding scheme was created to ensure validity and reliability, and two independent researchers conducted the coding. Codes and subcodes were derived from the data using the literature and analyzed in Maxqda. Inter-coder reliability measured with Cohen's Kappa reached 87%, exceeding the 75% threshold for reliability (Şencan, 2005).

Findings

The findings from the concurrent mixed-methods analysis are presented in this section. First, the thematic analysis of

strategic action plans is detailed, followed by the comparative statistical analysis of prevention policies and budget distributions.

Analysis of Strategic Action Plans

Using Maxqda, eight themes were identified in the countries' strategic action plans. The themes were color-coded as follows: Social Dialogue and Interaction (blue), Social Solidarity and Goodwill (orange), Social Peace (green), Social Reconciliation (purple), Social Justice (yellow), Social Welfare and Inclusiveness (pink), Social Security and Sustainability (red), and Social Sacrifice and Community Integration (grey).

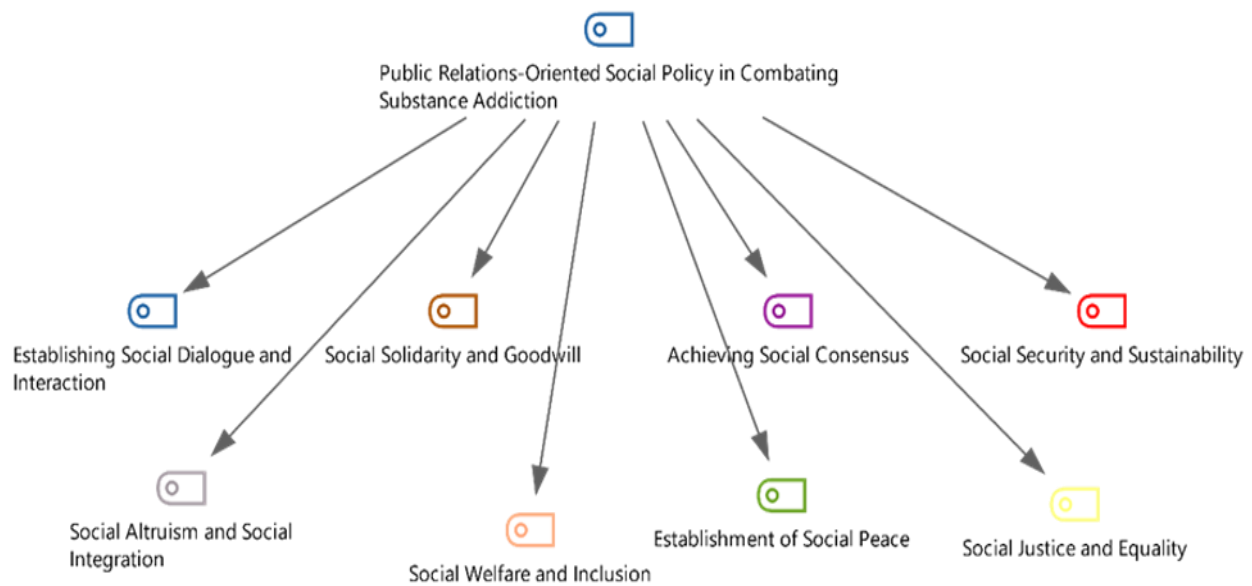


Figure 1. Public Relations-Oriented Social Policy in Combating Substance Addiction

Maxqda analysis revealed eight themes, each assigned a distinct color: Social Dialogue and Interaction (blue), Social Solidarity and Goodwill (orange), Social Peace (green), Social Reconciliation (purple), Social Justice (yellow), Social Welfare and Inclusiveness (pink), Social Security and Sustainability (red), and Social Sacrifice and Community Integration (grey).

Primary prevention promotes social dialogue and interaction through school-based education, awareness campaigns, family training, and activity programs. Campaigns may use digital or traditional media, while activities include artistic, sports, and social events.

In this theme, social reconciliation is supported through primary prevention measures, including community programs, public health campaigns, and workplace training.

In fostering social cohesion, primary prevention involves school-based education and programs encouraging sports and training.

Under the principles of social solidarity and goodwill, primary prevention includes policy and legal reforms,

early intervention and counseling, healthy lifestyle campaigns, and social support programs.

In this theme, primary prevention relies on restrictive legal frameworks, whereas secondary prevention includes healthcare, counseling, and monitoring mechanisms.

In this theme, secondary prevention focuses on early diagnosis and treatment, whereas tertiary prevention involves rehabilitation, support systems, and equitable access to health and social services.

Under social justice and equality, primary prevention targets early detection, whereas tertiary prevention focuses on rehabilitation and community services.

In this theme, tertiary prevention emphasizes social services, cooperation, and workforce participation to support long-term integration.

Comparative Analysis of Prevention Policies and Indicators

Quantitative data were analyzed using SPSS 26, and Table 1 presents a comparison of prevention policies across countries.

Table 1. Comparison of Countries in Terms of Prevention Policies

Countries	Prevention Policies				df	Asymptotic Significance (2-sided)
	Primary Prevention	Secondary Prevention	All, Including Tertiary Prevention	Pearson Chi-Square Value		
Türkiye	9	9	0	47,969 ^a	5	,000
America	1	1	9			
Australia	9	3	0			
Spain	1	1	6			
South Africa	7	7	0			
Bangladesh	0	0	13			

Prevention policy distribution varies across countries. Türkiye and Australia prioritize primary prevention; Bangladesh implements measures at all levels, while the United States and Spain focus more heavily on tertiary measures.

Table 2. Comparison of Countries in Terms of Expenses for Prevention and Treatment

Countries	Expenses for Prevention and Treatment					df	Asymptotic Significance (2-sided)
	Education Programs	Awareness Campaigns ¹	Legal Regulations	All	Pearson Chi-Square Value		
Türkiye	6	2	0	1	50,107 ^a	10	,000
America	6	4	0	0			
Australia	8	1	1	0			
Spain	2	1	1	4			
South Africa	7	0	0	0			
Bangladesh	0	0	0	13			

Budget allocations differ widely. Australia, South Africa, Türkiye, and the United States prioritize education programs, while Bangladesh and Spain fund all prevention areas.

Table 3. Comparison of Countries Based on Performance Indicators of Preventive Practices

Countries	Performance Indicators of Preventive Practices				df	Asymptotic Significance (2-sided)
	Treatment and Research Services	Rehabilitation Services	Psychotherapy	All		
Türkiye	9	9	0	0	26,057 ^a	,004
America	4	1	1	5		
Australia	7	2	0	0		
Spain	2	0	0	5		
South Africa	2	0	2	5		
Bangladesh	5	0	0	8		

Performance indicator allocation differs across countries. Türkiye, Australia, and Bangladesh prioritize treatment, research, and rehabilitation, with limited funding for

psychotherapy, while the United States, Spain, and South Africa distribute resources more evenly across all areas.

Table 4. Comparison of Countries and Collaborations

Countries	Collaborations				df	Asymptotic Significance (2-sided)
	With Government Agencies/Ministries İşbirliği	Collaboration with NGOs	International Collaborations	All		
Türkiye	9	5	4	4		
America	9	4	2	0		

Australia	8	8	0	0	41,313 ^a	10	,000
Spain	7	7	4	4			
South Africa	7	7	7	7			
Bangladesh	12	13	13	12			

Collaborative approaches differ across countries. Türkiye, the United States, and Australia rely mainly on governmental cooperation, while Spain, South Africa, and Bangladesh balance collaboration among government, NGOs, and international partners, with Bangladesh showing the highest NGO and global involvement.

Proposal of the Socio-Integrated Prevention Model (SIPM)

A comprehensive anti-addiction model was developed from the integrated findings.

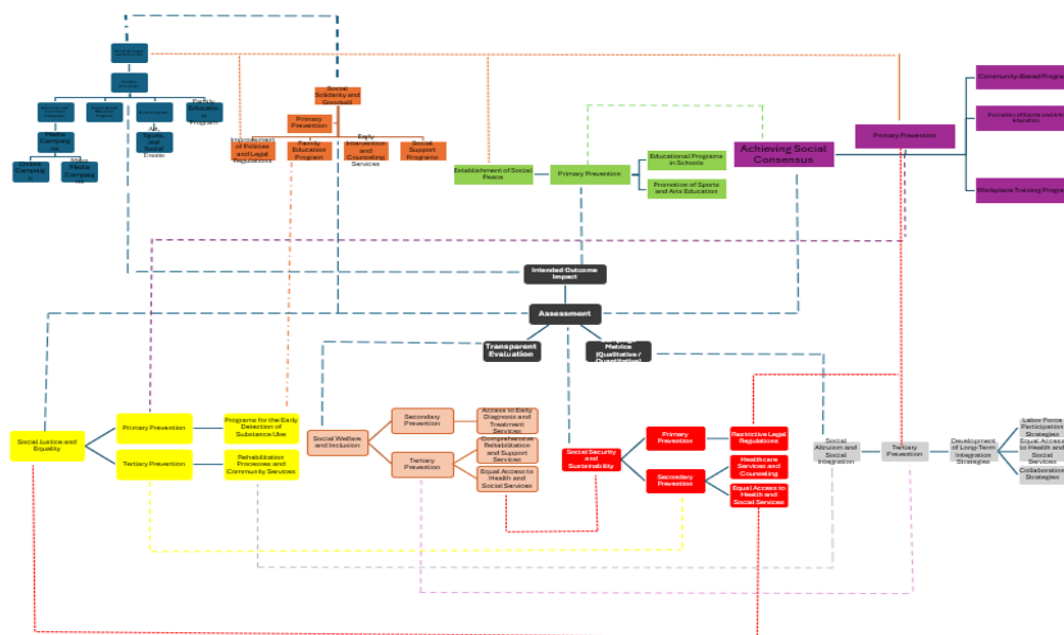


Figure 2. Dimensions of the 'Socio-Integrated Prevention Model' (SIPM)

The "Social Dialogue and Interaction" dimension is a key pillar of the SIPM model, focusing on awareness and education to enhance public understanding, especially among youth, of the risks of substance addiction.

Awareness and educational campaigns within the Social Dialogue and Interaction dimension raise public understanding of the risks of substance use and promote healthy lifestyles. This dimension is closely linked to Social Solidarity and Goodwill, as awareness strengthens social support, enabling a more effective fight against addiction.

"Social Solidarity and Goodwill" represents the second SIPM dimension, emphasizing collective social support through policy, legal regulation, early intervention, and healthy lifestyle campaigns. It closely aligns with Social Peace and Social Justice, since legal and policy structures help establish fairness and equality.

The "Establishment of Social Peace" dimension promotes social skills and cohesion among youth. Through education and sports programs that encourage cooperation across diverse groups, it supports social reconciliation and welfare. Integrated with other SIPM dimensions, it strengthens social peace and public well-being.

The "Social Reconciliation" dimension promotes social justice and equality through community programs and workplace training, ensuring fair access to education and healthcare. Fostering integration based on equity supports social harmony and, together with other SIPM dimensions, enhances equal opportunity and social cohesion.

The "Social Welfare and Inclusiveness" dimension ensures fair access to health and social services and supports integration into society. Its connection to "Social Sacrifice and Community Integration" underscores how equal access to services enables active participation and healthier reintegration.

The “Social Sacrifice and Community Integration” dimension emphasizes ongoing inclusion and equal opportunity. Closely tied to Social Justice and Equality, it promotes active community participation and reinforces resilience by ensuring fair involvement of all individuals.

This approach provides a holistic framework that promotes integration and welfare across the SIPM dimensions. The model combines education, health services, legal regulation, social support, and integration strategies that operate collectively to combat addiction. Through this cohesion, legal and educational prevention measures build a sustainable foundation for social solidarity and peace.

Discussion and Evaluation

Addiction is not only an individual condition but a social problem requiring multidisciplinary solutions involving health, education, law, media, and social policy. SIPM reflects this need for coordination. As McKeganey et al. (2022) state, individual rehabilitation is inadequate without considering the wider social context, which supports the model's foundational argument.

The *Social Dialogue and Interaction* dimension—the core of SIPM—aims to elevate awareness and strengthen educational engagement, especially among youth. Rather than functioning only as information channels, communication processes are designed to be participatory. Research confirms that community-based interventions and youth campaigns succeed when interaction is emphasized (Vimpani, 2002; Işık & Erdal, 2015). Thus, SIPM can foster lasting behavioral change through social interaction.

The *Social Solidarity and Goodwill* dimension integrates legal regulation, early intervention, and community support, arguing that prevention is most effective when linked with social solidarity. Research shows that early diagnosis and strengthened social bonds enhance justice and peace, supporting this SIPM dimension (Vimpani, 2002; Toumbourou, 2007).

The Establishment of Social Peace dimension of SIPM promotes youth cohesion through education, sports, and cultural programs, which strengthen interpersonal understanding and reduce conflict. Research confirms that cultural integration and youth programs enhance cooperation and reduce the risk of substance use (Cilga, 2009; Peterson & Rigby, 1999). Thus, this dimension functions both preventively and restoratively.

The Social Reconciliation and Social Welfare dimensions ensure justice and equal access to health and social services through community-based action. This reflects Gordon's (2003) equity perspective, while Dar et al. (2023) show that inclusive healthcare effectively supports addiction reduction.

The final SIPM component, Social Self-Sacrifice and Community Integration, prioritizes long-term inclusion and equal opportunity. Research confirms that community-based, integrated strategies are crucial and especially effective for vulnerable groups (Loxley et al., 2004; Afuseh et al., 2020).

In sum, SIPM extends beyond individual-focused rehabilitation and offers a holistic strategy integrating education, health, law, and social solidarity. By prioritizing participation, early intervention, and collective support, it reinforces social cohesion and justice while activating the strategic power of public relations to improve social welfare.

Conclusion

Evaluating national strategies provides insight into the diversity and effectiveness of global approaches. Türkiye, Bangladesh, South Africa, Australia, Spain, and the United States demonstrate both shared and distinct strategies shaped by their respective social contexts and priorities.

As substance addiction poses a major social threat, this study adopts a multidisciplinary perspective to examine how health communication and public relations shape national policy. By analyzing strategic action plans and status reports, the concepts of addiction, social policy, and health

communication were evaluated, leading to the development of the SIPM as a model suited to Türkiye.

The SIPM integrates education, health services, legal regulation, social support, and integration strategies into a unified framework. Through this coordination, a sustainable structure is established that strengthens social solidarity and peace through legal and educational prevention efforts.

The Social Dialogue and Interaction dimension forms a core pillar of SIPM by raising awareness and promoting education on substance addiction, especially among youth. Linked to Social Solidarity and Goodwill, it enhances support networks and collective cohesion, enabling a more effective response to addiction.

As the second SIPM dimension, *Social Solidarity and Goodwill* reinforces societal approaches through policies, legal regulations, early intervention, and healthy living campaigns. Linked to social peace and justice, it supports equality and fairness.

The Establishment of Social Peace dimension enhances youth cohesion through educational and sports programs that promote cooperation and reduce social conflict.

The Social Reconciliation dimension advances justice and equality through community programs and workplace training, ensuring fair access to education and healthcare for all.

The *Social Welfare and Inclusiveness* dimension ensures fair access to services, and the *Social Sacrifice and Community Integration* dimension promotes long-term inclusion and equal opportunity. Combined, they support healthy social integration across diverse groups.

The SIPM unifies interaction, solidarity, dialogue, and social peace with education, healthcare, legal regulation, and social support. This multifaceted structure raises awareness among diverse social groups and promotes justice by ensuring equal access to health services.

The SIPM supports both prevention and treatment, improving social welfare through sustainable strategies and offering guidance for policymakers and practitioners.

Limitations

This study is limited to official reports from six countries, making generalization to other socio-economic contexts difficult. It also covers only the last three reporting periods and excludes fieldwork or interviews. Future research could expand the scope by examining more countries and using field-based methods.

Declarations

Ethical Approval

Since this study is based on the analysis of public documents and does not involve human or animal subjects, ethics committee approval is not required.

Conflict of Interests

The authors declare no conflict of interest.

Financial Support:

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Author Contributions

All authors contributed equally to the study design, data analysis, and writing of the manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

An Analysis of University Students' Narratives in the Context of Creativity and Analytical Psychology: Fantastic Literature

Üniversite Öğrencilerinin Anlatılarının Yaratıcılık ve Analitik Psikoloji Bağlamında Analizi: Fantastik Yazın

Yasemin Uzun¹ 

Abstract:

Fantasy literature is a genre that blurs the boundaries between reality and imagination, offering readers aesthetic and psychological experiences. Such texts engage the imagination, develop symbolic thinking, and foster the creation of original, creative narratives through language. Therefore, fantasy literature can be seen as an ideal context for identifying elements of creative writing, particularly in analyzing students' narratives. In this context, the present study comprehensively analyzes twenty fantasy stories written by participants in terms of creative writing elements. During the analysis, the use of setting, originality, symbolic elements, and archetypal structures was the main criterion. The participants' written narratives were evaluated using content analysis, and the data were systematically examined using MAXQDA 2024. A multidimensional approach was adopted, considering creative writing components alongside archetypes from analytical psychology. The findings reveal that the participants utilized settings in both everyday and fantastical dimensions to reflect the atmosphere and the characters' inner journeys. Traditional fairy-tale and mythological elements were reinterpreted in modern, original ways; through the use of symbols, psychological themes such as personal transformation, courage, fear, and wisdom were concretized. While the hero and wise old figure archetypes were central to the narratives, the shadow, anima/animus, persona, and helper figures functioned as secondary elements that supported the journey and psychological integration. The study demonstrates that fantasy stories can be an effective tool in educational contexts for fostering participants' creative thinking, symbolic literacy, and emotional and psychological awareness.

Keywords: Fantasy story, Creative writing, Jung, Symbols, Archetype, Content analysis.

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Öz:

Fantastik yazın, gerçeklik ile hayal dünyası arasındaki sınırları esneterek okuyucuda hem estetik hem de psikolojik deneyimler yaratma imkânı sunan bir edebî tür olarak öne çıkmaktadır. Bu tür metinler, bireylerin hayal gücünü kullanarak sembolik düşünme yetilerini geliştirmelerine ve dil aracılığıyla özgün, yaratıcı anlatılar inşa etmelerine imkân tanır. Bu nedenle yaratıcı yazma öğelerinin tespitinde fantastik yazın, özellikle öğrencilerin yazılı anlatılarının incelenmesinde ideal bir alan olarak değerlendirilebilir. Bu bağlamda, gerçekleştirilen çalışmada katılımcılar tarafından kaleme alınan yirmi fantastik hikâye, yaratıcı yazma öğeleri açısından kapsamlı bir biçimde analiz edilmiştir. Analiz sürecinde, hikâyelerde mekân kullanımı, özgünlük, sembolik öğeler ve arketipsel yapılar temel kriterler olarak ele alınmıştır. Katılımcıların yazılı anlatıları içerik analizi yöntemiyle değerlendirilmiş ve veriler MAXQDA 2024 yazılımı kullanılarak sistematik biçimde çözümlenmiştir. Analiz sürecinde yaratıcı yazma öğeleri ile analitik psikoloji temelinde arketipler dikkate alınarak çok boyutlu bir yaklaşım benimsenilmiştir. Bulgular, katılımcıların hikâyelerinde mekânları hem gündelik hem de fantastik boyutlarda kullanarak atmosfer ve karakterlerin içsel yolculuklarını yansıttıklarını göstermektedir. Hikâyelerde geleneksel masal ve mitolojik öğeler modern ve özgün bir biçimde yeniden yorumlanmış; semboller aracılığıyla bireysel dönüşüm, cesaret, korku ve bilgelik gibi psikolojik temalar somutlaştırılmıştır. Kahraman ve bilge arketipleri hikâyelerin merkezinde yer alırken, gölge, anima/animus, persona ve yardımcı figürler yolculuğu ve psikolojik bütünlüğü destekleyen ikincil öğeler olarak işlev görmüştür. Araştırma, fantastik hikâyelerin eğitimsel bağlamda katılımcıların yaratıcı düşünme, sembolik okuma ve duygusal-psikolojik farkındalık geliştirme süreçlerinde etkili bir araç olduğunu ortaya koymaktadır.

Anahtar Kelimeler: Fantastik hikâye, Yaratıcı yazma, Jung, Semboller, Arketip, İçerik analizi.

Introduction

Fantastic literature, as one of the most original genres of literature, draws attention with its structure that blurs the boundaries between the ordinary and the extraordinary. As defined by Todorov, this genre is a space where the perception of reality is suspended, leaving the reader not only in uncertainty between the supernatural and the natural but also, as emphasized by Jackson, breaking the individual's rational perception and offering an opportunity to connect with the unconscious (Todorov, 2004; Jackson, 1981).

Fantastic stories also create a space for individuals to question their fears, desires, and thoughts about social norms. Thus, through works in this genre, readers can ask and reconstruct their own identities. Therefore, fantasy literature is considered not only an aesthetic experience but also a multi-layered literary form in which the individual interacts with identity construction and unconscious processes (Çetindaş, 2021).

The function of fantasy writing not only remains limited to personal imagination but also emerges as a carrier of social values, cultural images, and collective memory. In this context, Musuloğlu and Sezgin state that fantasy literature reconstructs archetypes in children's and young adult literature, facilitating individuals' connection with societal values (Musuloğlu and Sezgin, 2023). Additionally, Akçeşme and Özdemir Ağlar approach fantasy literature not only as a fictional narrative genre but also as an ecopsychological and symbolic field of analysis that reveals the relationship individuals establish with their environment (Akçeşme and Özdemir Ağlar, 2023). In this regard, the fantasy texts produced by university students offer a valuable area for examination, as they express both individual creativity and social and cultural contexts on a symbolic level (Onur and Zorlu, 2017; Demir, 2019).

Creativity is closely intertwined with fantasy literature, a fundamental component of the genre. Guilford conceptualized creativity in terms of fluency, flexibility, originality, and elaboration, and evaluated it as a multidimensional phenomenon that extends beyond

cognitive processes (Guilford, 1967). Current studies show that imagination and creativity enhance individuals' imaginative expression forms and enable the production of alternative narratives (Ünveren, 2020). In this context, fantasy literature is seen as a genre that enhances students' originality, nurtures imaginative modes of expression, and broadens creative possibilities (Ertekin, 2007). Therefore, creative writing and imaginative expression play a central role in understanding both the individual and pedagogical functions of fantasy literature.

At this point, Jung's analytical psychology makes significant contributions to the theoretical framework. Jung defined the collective unconscious as a repository of universal human symbols and argued that fairy tales, myths, and fantastical narratives reveal this unconscious (Jung, 1964). Franz also stated that fantastical narratives make archetypes visible and reflect the individual's spiritual development symbolically (Franz, 1996). Gürses emphasized the intercultural continuity of the hero archetype and demonstrated the applicability of archetype theory to literary texts (Gürses, 2007). In this context, the frequent appearance of figures such as the hero, shadow, anima/animus, and wise old man in the fantastical writings of university students is not coincidental (Gülcan, 2020; Kavut, 2020).

Fantasy literature appears as a multidimensional field that can be examined within the frameworks of both creativity theories and analytical psychology, with a focus on the individual and society. Therefore, in this study, the narratives of university students were evaluated in light of the creative elements and archetypal analyses offered by analytical psychology, yielding meaningful data on individual imagination, unconscious processes, and the construction of social identity.

In the study, the creative writing elements in the participants' writings—namely, space, originality, and symbols—were examined in detail. Spaces not only strengthen the narratives' contexts but also reflect the characters' inner journeys and deepen their conflicts

(Bachelard, 1994). The spaces in participants' stories reflect their inner worlds and creative processes. Originality, at the core of creative writing, allows writers to showcase their individual voices and experiences (Csikszentmihalyi, 1994).

The main aim of the research is to examine university students' produced fantasy narratives in the context of creativity and analytical psychology. In this regard, the study seeks to answer the following question: To what extent, and in what ways, are creative writing elements (such as space, originality, symbols, etc.) included in students' written narratives? To what extent are archetypes, which are fundamental concepts of analytical psychology, observed in these narratives, and how are these elements expressed?

Method

Research Design

In this study, document analysis, a qualitative research design, was used. Document analysis enables the systematic examination of data related to research problems using written materials (Yıldırım & Şimşek, 2018).

Working Group

The study's sample consisted of 20 undergraduate students studying at a state university located in western Turkey. Participants were selected voluntarily and engaged in a fantasy story-based writing activity aligned with the research's purpose. The participants' prior knowledge of fantasy literature and analytical psychology was not assessed, and no information on either was provided before the writing activity. The written texts collected from participants served as the primary documents of the study.

Data Collection Process

The study's data were collected through a fantasy story-based writing activity. Participants were asked to write their own fantasy stories in accordance with the guidelines specified for the research. These written products were evaluated to assess students' creative writing skills and the extent to which they reflected concepts in analytical psychology.

Data Analysis

In the study, participants' written narratives served as the primary data source, which were analyzed using content analysis. Content analysis was adopted as an approach that systematically identifies recurring patterns, themes, and categories in texts (Miles, Huberman, & Saldaña, 2014). In this context, the collected data were analyzed using MAXQDA 2024, a qualitative data analysis software.

First, the texts were read in detail by researchers, broken down into meaningful units, and coded. Based on these codes, categories were created and then transformed into higher-level themes. During the coding process, both creative writing elements (such as setting, originality, symbols, etc.) and archetypes, a fundamental concept in analytical psychology, were considered to conduct a multidimensional analysis.

Validity and Reliability

The validity and reliability of the research were attempted to be ensured by considering the credibility, transferability, consistency, and confirmability criteria, which are trustworthiness measures in qualitative research (Arslan, 2022). To enhance credibility, the coding process was conducted by two independent researchers, themes were reviewed by experts, and quotations from student narratives were included. For transferability, the context, study group, and analysis processes were described in detail. To ensure consistency, inter-coder agreement was maintained, and the process was reported transparently in MAXQDA. For confirmability, all analysis steps were documented, and an audit trail was created. Thus, the scientific validity of the findings was secured.

Ethics Approval

This study was conducted with the approval of the Ethics Committee of the Social and Human Sciences at Çanakkale Onsekiz Mart University, under decision number 71/72 dated August 29, 2025.

Findings

1. Creative writing elements

Places

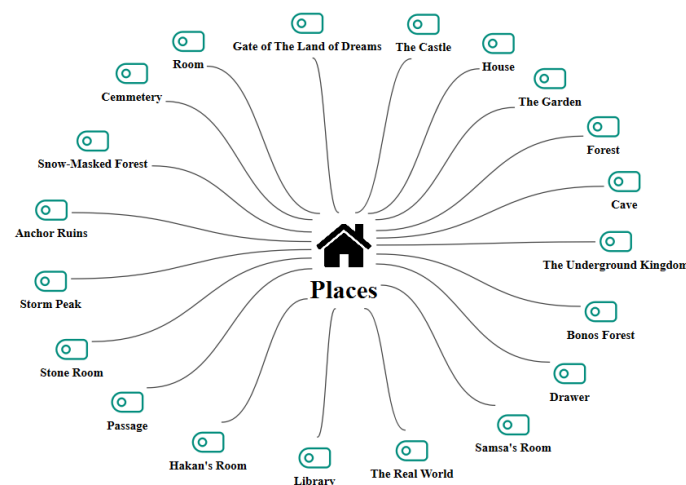


Figure 1: The spaces in the narratives.

When examining the locations mentioned in participants' stories, it is evident that the range is wide. Both everyday living spaces and extraordinary places born from imagination are used in the stories. The diversity of these locations demonstrates that, on the one hand, participants draw on their experiences. On the other hand, they activate their imagination and showcase their creative writing skills. The functional use of spaces is also noteworthy. In some stories, places like forests or peaks stand out as areas of adventure and struggle. At the same time, locations such as cemeteries or underground kingdoms are more associated with themes of fear, uncertainty, and death. Everyday spaces like homes, rooms, or gardens often reflect feelings of safety, peace, and familiarity. This variety indicates that participants actively utilize the concept of space both concretely and abstractly, strengthening the narrative structure and atmosphere of their texts.

Originality

Originality has emerged as a notable concept in the examined fantasy stories. In these stories, it is generally observed that the content of classic fairy tales and mythological elements is reimagined through a modern

narrative style. Each story uses well-known symbols (such as mirrors, snakes, light, stones, the sea, necklaces, dreams, etc.) but assigns them new functions and layers of meaning.

In Participant 3's two-part story, the combination of everyday life and fantastical elements is striking. In the first story, an ordinary summer vacation becomes fairy-tale-like when combined with talking animals; in the second story, traditional fairy-tale symbols such as a necklace, mirror, fairy, and giant are preserved, but the participant personalizes them through their own storytelling style. In Participant 4's story, the transition between everyday life and the mythological/fantastical dimension is skillfully crafted. The lighthouse functions more as a 'gateway between worlds' rather than just an ordinary place. The two-part story structure is also present in Participant 17's story.

In the stories, traditional fantastical motifs are reshaped with themes of individual and psychological transformation.

Symbols

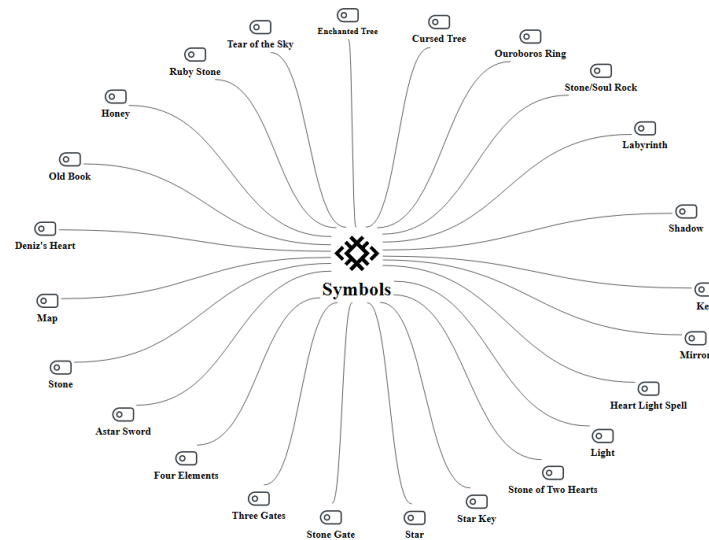


Figure 2: Symbols in the stories

Symbols are the way archetypes express themselves as the language of our unconscious world. The structures of archetypes that cannot be directly seen become visible through symbols. In this regard, symbols carry the deepest powers and knowledge of the psyche, helping the individual achieve psychological wholeness, or individuation. According to Jung (1964), symbols are alive; just as everything in the myth is alive and filled with energy, so too are symbols nourished by psychic energy. Jung defines this energy as the life force of all beings.

In the participants' stories, symbols stand out not only as objects or natural elements but also as metaphors for the characters' inner journeys. The most prominent symbols in the narratives have been identified as follows:

The cursed tree (Participant 2): The tree, which is also seen as a symbol of the self, represents the process of individuation in stories (Franz, 1997: 163). It is also seen as a mother and a healing entity. Its cursed nature in this story stems from its role as the shadow. The hero's

confrontation with internal fears is structured through this symbol.

Ouroboros Ring (Participant 5): This symbol, also known as Uroboros, is a serpent that devours itself. Uroboros is a serpent that forms a circle with itself and bites its tail. It symbolizes continuity and immortality, as well as the alchemical principle of 'one is all'. The snake is considered a guardian of life, immortality, and spiritual riches. Its winding form represents profound wisdom and mystery. Because it can renew its skin, it symbolizes rebirth. According to Jung (2009), the snake is related to the spinal cord and symbolizes the sudden, destructive emergence of the unconscious. It also expresses the externalization of suppressed energy in the subconscious, manifesting as psychological disturbances or inner turmoil. The infinite cycle, wholeness, and the hero's transformation are also symbolized. Time, tradition, and collective consciousness are directly related to it. The ring itself has a unifying, creative, and destructive function (Le Guin, 2006).

Stone / Soul Rock and Labyrinth (Participant 13): While the soul rock offers the hero strength and guidance, the labyrinth represents the individual's inner tests. The light-and-shadow dichotomy is also symbolically processed in this process. Stones touch people because they evoke a sense of immortality. Almost every culture has attributed magical powers such as intense energy, luck, abundance, and healing to pebbles, stones, rocks, and large rocks.

The Three Doors (Participant 18): The door represents a new beginning or gaining a different perspective. The number three signifies need, desire, impulse, and decision-making with willpower from a psychological perspective (Jung, 2015: 221). In the narrative, the three doors symbolize choice, a crossroads, and inner liberation. It is the threshold point where the hero determines the direction with their own will.

The stories examined are quite rich in symbols. Other symbols that participants generally prefer are as follows:

Animal figures (cow, rooster, bird, deer, Samrik bird, peacock, fish): represent fertility, guidance, transformation, and harmony with nature.

Natural elements (forest, sea, storm, sky, lightning, fog): They serve as gateways to the subconscious—especially fog, which symbolizes uncertainty and internal trials.

Objects (chest, staff, container, sphere, sword, enchanted stones, notebook, kopuz): They symbolize the tools and tests in the hero's inner journey. They appear as helpers for the heroes in the examined fantasy stories.

Colors (gold, blue, black, red, green): Seen as reflections of emotions, the subconscious, and symbolic conflicts.

The symbolic expression in the stories is highly vivid, both visually and metaphorically.

2. Archetypes

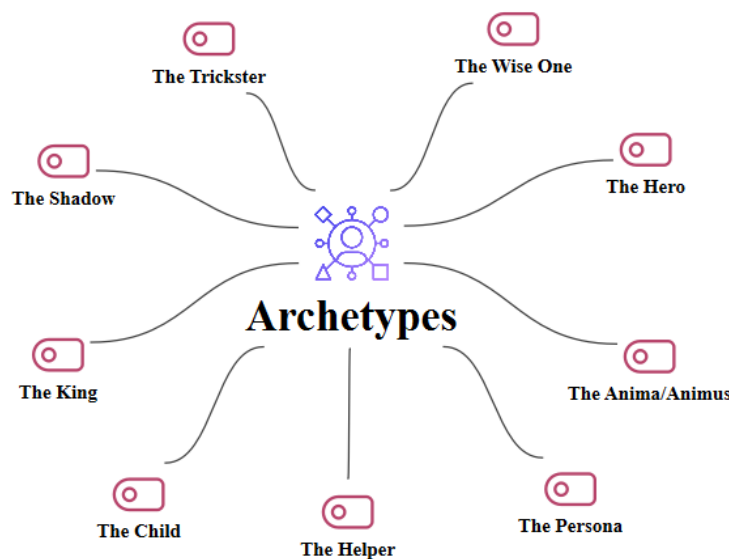


Figure 3: Archetypes in Fantasy Stories

In Jung's (2009) analytical psychology, archetypes are important concepts: symbolic structures that exist in the collective unconscious and are universally repeated in human behavior and narratives. The most commonly seen archetypes in mythology include the hero, the wise one,

the shadow, the anima/animus, the child, the persona, the mother, and the trickster. These archetypes are observed across different cultures and texts; they reflect individuals' internal conflicts, developmental processes, and social roles.

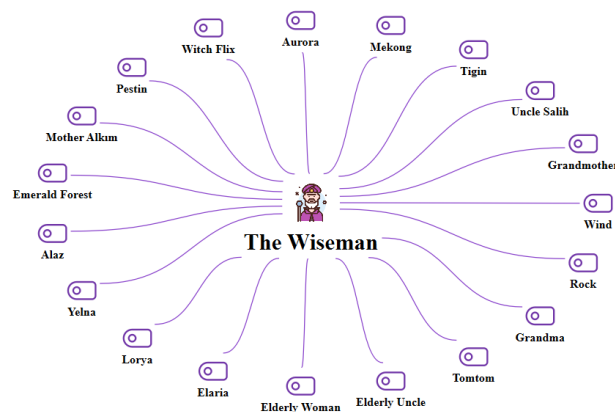


Figure 4: The wise archetype in fantasy stories

The Wise Old Man/Woman archetype is a figure who guides, mentors, and embodies wisdom in an individual's development. This archetype typically appears at critical turning points in the hero's life, providing direction, showing the right path, or imparting the necessary wisdom for solutions (Jung, 2009). The Wise also embodies the individual's inner intuition and the cultural wisdom expressed in the collective unconscious.

Within the scope of the research, the Wise archetype is represented in various ways in the participants' fantastic stories. As seen in Figure 4, this archetype appears through figures directly associated with old age and experience ("Uncle Salih," "Grandmother," "Grandma," "Elderly Woman," "Elderly Uncle"). These characters symbolize traditional authority, life experience, and cultural transmission within family and social contexts.

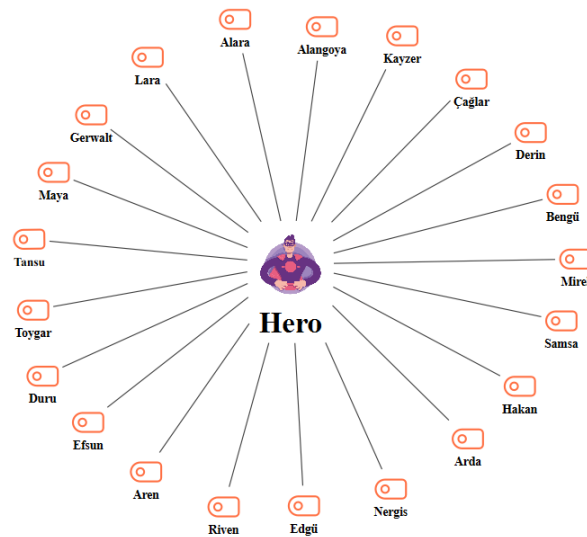


Figure 5: Hero archetype in fantasy stories

The hero archetype is a figure who transforms by fighting against the shadow, the dark side of the unconscious, successfully overcoming tests, and ultimately transforming both themselves and their environment. In this context, the hero is not only a traveler on an individual journey but also a bearer of societal values and cultural ideals. In Figure 4, the twenty stories written by the participants reveal that the hero archetype emerges as a central element, aligning with the cycle identified in

Campbell's (2010) *The Hero's Journey*. The chart brings together hero characters from different stories and demonstrates how widely the archetype is represented. Hero figures are conveyed through both female (Lara, Derin, Bengü, Alara, Alangoya, Duru, Efsun, Nergis) and male (Kayzer, Çağlar, Gerwalt, Maya, Tansu, Toygar, Aren, Riven, Edgü, Hakan, Arda, Mirel, Samsa) characters. This diversity includes heroes of both genders.

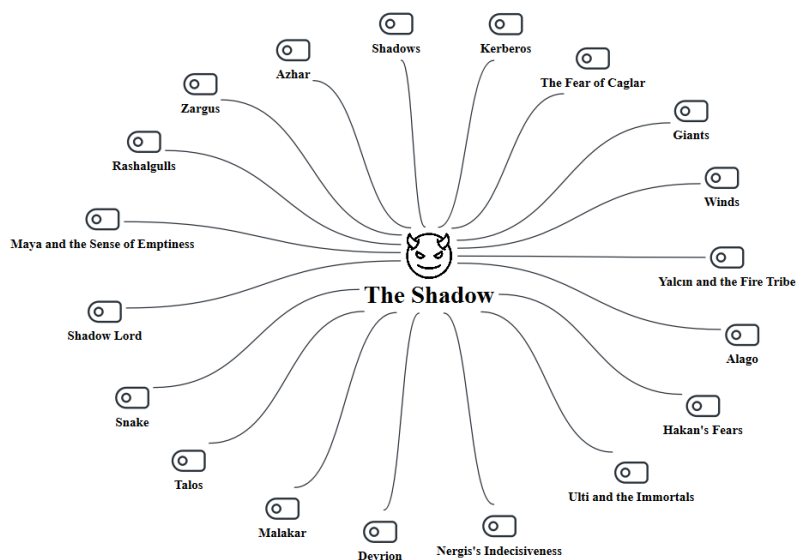


Figure 6: The shadow archetype in fantasy stories

The shadow archetype represents aspects of an individual that are repressed in the unconscious, not accepted by society, or avoided by the person. Although the shadow is often characterized by dark, frightening, or destructive qualities, it also contains the energy that enables the individual's potential growth and transformation. In this study, the shadow archetype appears prominently in the participants' fantastic stories.

As seen in the chart, mythological or fantastical elements such as “Kerberos, Giants, Rashalgulls, Zargus, Malakar, Talos, Snake” indicate that the shadow is represented as an external threat. This diversity shows that the shadow appears in the participants' narratives both as an external enemy and as an internal conflict.

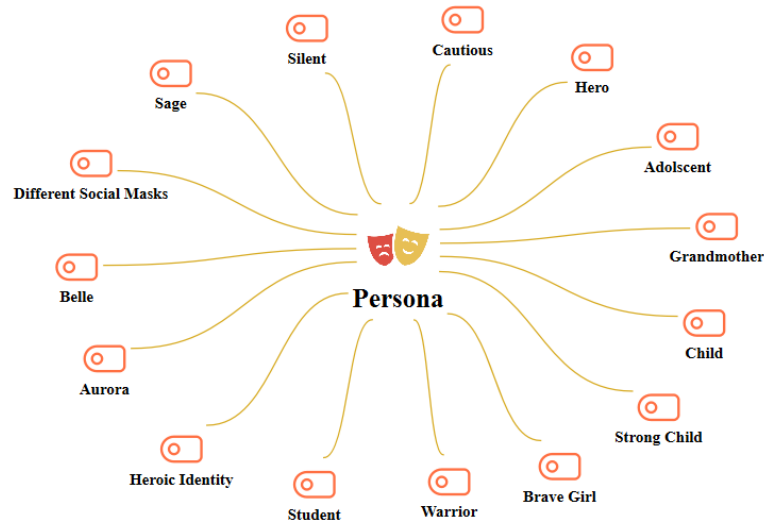


Figure 7: Persona archetype in fantasy stories

Persona refers to the social mask an individual displays within society. It is the interface between a person's true self and the image they present to the outside world. The persona codes that appear in participants' fantasy stories include silent, cautious, hero, warrior, brave girl, strong child, adolescent, student, child, and grandmother.

In participants' fantasy stories, basic archetypes such as the hero, shadow, and wise are commonly depicted. However, some archetypes are represented more briefly. These include the trickster ($f=1$), king ($f=1$), and child ($f=2$) archetypes.

Discussion

The first finding regarding the creative writing elements of the research is that the participants use space not only as a physical backdrop but also as an atmosphere-creating and symbolic element. The use of both everyday and extraordinary places, such as 'The World of Dreams Gate' and 'Storm Peak,' serves a metaphorical function reflecting the characters' inner journeys. This finding aligns with fundamental theories of the fantasy genre. Indeed, Jackson (1981) states that fantasy breaks rational perception and offers an opportunity to connect with the unconscious; similarly, Akçeşme and Özdemir Ağlar (2023) emphasize that the genre provides an ecopsychological and symbolic analytical field. The students' metaphorical use of space in this way indicates that they are engaged in a conscious, creative process that reflects both their relationship to their environment and their inner states.

In terms of originality, another aspect of creativity, participants have been observed to reinterpret traditional fairy tales and mythological elements to create modern narratives. This situation is directly related to Guilford's

(1967) dimensions of flexibility and originality in defining creativity. Participants assigned new functions to well-known symbols such as the “Ouroboros Ring” or the “Soul Stone,” blending collective memory with personal experiences. This finding supports Ünveren's (2020) view that imagination enhances an individual's imaginative expressions and enables the production of alternative narratives.

The most important findings of the study on the psychological axis are the intensive use of symbols and archetypes in the stories. The richness of symbols in the stories (such as trees, mirrors, keys, stones, etc.) aligns with Jung's (1964) description of symbols as the language of the collective unconscious. These symbols mark pivotal moments in the characters' individuation processes. In particular, the central role of the “hero” archetype across all 20 stories further confirms the universality of Campbell's (2010) “The Hero's Journey” model.

The guiding role of the ‘wise’ archetype (such as a grandmother, an elderly woman, or Uncle Salih) in the journeys described by the participants supports Franz's (1996) thesis that fairy-tale archetypes reveal the individual's spiritual development. The participants' association of wisdom primarily with family elders or experienced figures also highlights the role of archetypes in linking wisdom to social values, as noted by Musuloğlu and Sezgin (2023).

Another finding of the research is the way the ‘shadow’ archetype is represented. According to Jung (2009), the shadow is the first and most significant obstacle to individuation. In this study, the representation of the shadow as both an ‘external’ threat (Kerberos, Zargus, giants) and an ‘internal’ conflict (fear, indecisiveness,

feelings of emptiness) shows that participants confronted their repressed sides and fears through this writing process. The fantasy narrative, as noted by Çetindaş (2021), follows a structure similar to that of dream narratives, allowing individuals to express their unconscious in symbolic terms. Students had the opportunity to reflect their internal fears onto external monsters and fight them within a safe literary space.

As a result, this research demonstrates that fantasy writing not only fosters critical thinking, as emphasized by Demir (2019), but also develops a deep emotional and psychological awareness. The texts produced by university students demonstrate their sensitivity to the universal themes of the collective unconscious (the hero's journey, battling the shadow, and individuation). This situation indicates that fantasy writing can be an effective pedagogical tool to support creative expression, symbolic literacy, and psychological wholeness in Turkish language education and across other disciplines.

Conclusion

The findings indicate that participants effectively use creative thinking skills not only at the narrative level but also at deeper psychological and symbolic levels during their writing processes.

The fantasy stories written by the participants offered rich and diverse examples of creative writing, imaginative narration, and symbolic depth.

The stories' originality lies in the reimagining of classical fairy tales and mythological elements through modern, personal interpretations.

Overall, the participants' fantastical stories provide a rich resource for developing creative writing skills. In the stories, the psychological, cultural, and aesthetic dimensions are effectively integrated through space,

imagery, symbols, and archetypes; participants draw on both their personal experiences and imagination to create original meanings. This demonstrates that fantastical storytelling is an effective tool in educational contexts for fostering creative thinking, symbolic reading, and emotional and psychological awareness.

Limitations

Among the limitations of the study is that the sample group consisted of only 20 students who volunteered from a single university. This restricts the generalizability of the findings. Additionally, the participants' prior knowledge of fantasy literature and analytical psychology was not measured; this variable may have influenced the diversity of symbols and archetypes in the written narratives.

Declarations

Ethics Approval and Participation Permit

Approval has been obtained from the Ethics Committee of the Social and Human Sciences at Çanakkale Onsekiz Mart University for this study (Decision No: 71/72, Date: 08/29/2025).

Publication License

Not applicable.

Availability of Data and Materials

Not applicable.

Conflict of Interest

The author(s) declare that there are no conflicts of interest.

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Author Contributions

YU has prepared the entire article.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

Prevalence of Depression and Associated Factors in Pregnant Women Attending the Emergency Obstetrics Clinic

Acil Kadın Doğum Polikliniğine Başvuran Gebelerde Depresyon Sıklığı ve Etkileyen Faktörler

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Abstract:

The goal of this descriptive study was to assess the prevalence of depression among pregnant women attending the emergency obstetrics clinic and to evaluate the relationship between sociodemographic, obstetric, and social-life characteristics and depression levels. The study was conducted at the University of Health Sciences Sarıyer Hamidiye Etfal Training and Research Hospital between June 6, 2025, and August 1, 2025. The study population comprised 720 pregnant women, and the sample consisted of 251 volunteer pregnant women selected at random. Data were collected using a researcher-developed questionnaire and the Beck Depression Inventory (BDI). The mean BDI score was 10.65 ± 7.02 . The vast majority of pregnant women exhibited mild depressive symptoms. While no significant differences were found between depression and educational level, attendance at childbirth preparation courses, or number of pregnancies, significant associations were identified between depression and economic status, type of marriage, whether the pregnancy was planned, the belief that social life would be restricted, a perceived negative impact on sexual life, deterioration in relationships with the spouse, and exposure to verbal violence ($p < 0.05$). Depression during pregnancy is a major public health problem and is shaped by multifactorial influences. It is recommended that psychosocial assessments be integrated into antenatal follow-up, that at-risk groups be identified early, and that appropriate counseling services be provided. Depression screening should be conducted during routine obstetric follow-ups, and pregnant women in high-risk groups should receive psychosocial support and social service support.

Keywords: Pregnancy, Depression, Beck Depression Inventory, Risk factors, Emergency obstetrics.

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Öz:

Bu araştırmanın amacı, acil kadın doğum polikliniğine başvuran gebelerde depresyon sıklığını belirlemek ve sosyodemografik, obstetrik ve sosyal yaşam özelliklerinin depresyon düzeyine etkisini değerlendirmektir. Tanımlayıcı tipteki çalışma, 06.06.2025–01.08.2025 tarihleri arasında SBÜ Saryer Hamidiye Etfal Eğitim ve Araştırma Hastanesi’nde yürütülmüştür. Evreni 720 gebe oluşturmuştur, örneklem ise rastgele seçilen 251 gönüllü gebeden oluşmuştur. Veriler, araştırmacı tarafından hazırlanan anket formu ve Beck Depresyon Ölçeği (BDÖ) kullanılarak toplanmıştır. Gebelerin BDÖ puanı ortalaması $10,65 \pm 7,02$ olarak bulunmuştur. Gebelerin büyük çoğunluğu hafif düzeyde depresyon semptomları göstermiştir. Eğitim düzeyi, doğuma hazırlık kursuna katılma ve gebelik sayısı ile depresyon arasında anlamlı fark bulunmazken, ekonomik durum, evlenme şekli, gebeliğin planlı olup olmaması, sosyal hayatın kısıtlanacağı düşüncesi, cinsel yaşamın olumsuz etkilenmesi, eş ile ilişkilerin bozulması ve sözel şiddete maruz kalma gibi değişkenler ile depresyon arasında anlamlı farklılık saptanmıştır ($p < 0,05$). Gebelikte depresyon, önemli bir halk sağlığı sorunu olup çok boyutlu faktörlerden etkilenmektedir. Antenatal izlemlerde psikososyal değerlendirmelerin yapılması, riskli grupların erken tanınması ve uygun danışmanlık hizmetlerinin sağlanması önerilmektedir. Gebelere rutin obstetrik takiplerde depresyon taraması yapılmalı, riskli gruptaki gebelere psikososyal destek ve sosyal hizmet desteği sağlanmalıdır.

Anahtar Kelimeler: Gebelik, Depresyon, Beck Depresyon Ölçeği, Risk faktörleri, Acil kadın doğum.

Introduction

Pregnancy is a period many women experience at some point in their lives, often described as a time of happiness for the mother. In recent years, however, developments in the field of mental health have made it increasingly clear that a range of psychological problems may occur frequently during pregnancy. Among these, depression and anxiety disorders are foremost (Kaya Zaman et al., 2018). Studies indicate that depression and anxiety are observed more commonly in pregnant populations than in the general population (Tekgöz et al., 2009; Arslan et al., 2011; Çakır & Can, 2012; Dağlar & Nur, 2014; Tadesse et al., 2016).

During pregnancy, expectant mothers may undergo both physical and psychological changes. The majority of pregnant women experience increased stress during the period of preparing for childbirth and may experience symptoms of anxiety or depression; if these stressors are not effectively managed, they may lead to crises during pregnancy, childbirth, and the transition to parenthood. A decline in the mother’s mental well-being may increase the risk of postpartum depression and contribute to childbirth-related complications (Arslan et al., 2011; Dağlar & Nur, 2014). During this period, negative feelings toward one’s family and baby may become prominent. In the community, a substantial proportion of women who have given birth may interpret emotional changes as a natural process or may blame themselves for these changes. To prevent such misconceptions, regular check-ups before and during pregnancy and careful evaluation of risks that may lead to depression are of great importance (Tekgöz et al., 2009; Payne & Maguire, 2019).

Many studies have shown that depression and anxiety during pregnancy may be associated with sociodemographic characteristics such as maternal age, marital status, number of children, educational level, tobacco, alcohol, and substance use, trimester of pregnancy, and whether the pregnancy was desired (Çalışkan et al., 2007; Orr et al., 2007; Cornelius et al., 2007).

Numerous factors may compromise maternal mental health during pregnancy. These include a prior history of depression, a family history of depression, an unwanted pregnancy, a history of miscarriage and curettage, a history of stillbirth, low socioeconomic status, anxiety related to the fetus, high parenting stress, and adverse life

experiences (Çalışkan et al., 2007). Low self-esteem, a persistent tendency toward negative thinking, and insufficient social and emotional support during pregnancy have been noted as potentially influential factors (Orr et al., 2007; Cornelius et al., 2007; Çalışkan et al., 2007). Pregnant women presenting to emergency obstetric clinics were the subjects of this study. Women who attend emergency obstetric units may be more psychologically vulnerable because of heightened stress related to medical urgency and/or pregnancy complications. Depression during pregnancy is associated with several adverse maternal and fetal outcomes, including low birth weight, preterm birth, inadequate prenatal care, postpartum depression, and weakened mother–infant bonding. However, mental status assessment is often overlooked in emergency settings, which may delay the diagnosis of depression. This study is expected to contribute to health services by supporting depression screening and identifying risk factors among pregnant women presenting to emergency units.

The research questions were as follows: “What are the depression levels of pregnant women?” and “Is there a significant difference between pregnant women’s descriptive/obstetric characteristics and their depression levels?”

Method**Type of Study**

The present descriptive study was conducted to determine the prevalence of depression and the factors associated with it among pregnant women presenting to the emergency obstetrics clinic of SBÜ Saryer Hamidiye Etfal Training and Research Hospital (TRH).

Setting and Time

Between June 6, 2025, and August 1, 2025, the study was conducted at the Emergency Obstetrics Clinic of SBÜ Saryer Hamidiye Etfal Training and Research Hospital (TRH).

Population and Sample

The population comprised 720 pregnant women who presented to the SBÜ Saryer Hamidiye Etfal EAH Emergency Obstetrics Clinic in the last six months. The sample size was calculated as 251 using the Raosoft sample size calculator, with a 95% confidence interval, 5% margin of error, and an additional 10% to account for

potential data loss (19). The study included pregnant women aged 18–45 who were able to communicate in Turkish, who participated voluntarily by signing an informed consent form, and who reported experiencing depressive symptoms at least once during pregnancy.

Data Collection Tools and Materials

Data were collected using a Questionnaire Form that obtained sociodemographic and obstetric information (23 items) and the Beck Depression Inventory.

Questionnaire Form: Prepared in line with the literature, this form included 23 questions assessing participants' descriptive and pregnancy-related characteristics.

Beck Depression Inventory (BDI): a 21-item instrument developed by Beck and colleagues. Items are scored on a 4-point Likert format from 0 to 3. The scale comprises five dimensions: Hopelessness, Negative Feelings Toward the Self, Somatic Concerns, Feelings of Guilt, and Uninterpreted Dimensions. Total scores range from 0 to 63, with higher scores indicating higher levels of depression. Scores are classified as follows: 0–9, minimal; 10–16, mild; 17–29, moderate; and 30–63, severe depression. When the Turkish version was developed, a threshold (cut-off) point was established. The cut-off score is 17, and scores above this level were reported to require treatment for depression at a rate of 90%. Interpretation is based on the total score; subscale scores are not reported. Hisli (1989) conducted the Turkish validity and reliability study of the BDI and reported an internal consistency coefficient of 0.80 (Hisli, 1989). In the present study, the Cronbach's alpha value was 0.83.

Data Collection Procedure

All pregnant women participating in the study were given a detailed explanation of the study content. After obtaining written informed consent from each participant, data were collected in appropriate rooms within the emergency obstetrics clinic, in a manner that did not interrupt patient care, through face-to-face question-and-answer interviews. The questionnaires took approximately 10 minutes to complete.

Data Analysis

All statistical analyses were performed using SPSS version 28 (IBM Corp., Armonk, NY, USA). Categorical variables

are presented as numbers (n) and percentages (%), and continuous variables as means (M) and standard deviations (SD). Normality was assessed using the Kolmogorov–Smirnov test, the coefficient of variation, Q–Q plots, and histograms.

Categorical variables were evaluated using the Pearson chi-square test when expected counts were sufficient, and the Fisher's exact test when they were not. Because the normality assumption was not met, group comparisons used the Mann–Whitney U test for two independent groups and the Kruskal–Wallis test for three independent groups. When Kruskal–Wallis results were significant, groups were compared pairwise using the Dunn–Bonferroni correction. When both variables were continuous and not normally distributed, associations were examined using the Spearman correlation test. Statistical significance was set at $p < 0.05$.

Ethical Considerations

This study was conducted after obtaining ethics approval from the Istanbul Okan University Ethics Committee for Research in Science, Social Sciences, and Non-Interventional Health Sciences (Decision No. 185, dated 05.02.2025) and institutional permission from the Istanbul Provincial Directorate of Health, Health Services Presidency, Research–Printed Publication–Announcement Content Evaluation Commission (Decision No. 2025/07, dated 23.05.2025). Written consent was obtained from all pregnant women who participated.

Results

The mean age of the pregnant women was 30.02 ± 5.20 . The mean BDI score for the sample was 10.65 ± 7.02 . No statistically significant difference was found between age, educational status, and employment status and BDI score ($p > 0.05$) (Table 1). A statistically significant difference was found between economic status and BDI score ($p = 0.003$) (Table 1). When evaluated with a post hoc Dunn–Bonferroni correction, the BDI scores of the low-economic-status patient group were significantly higher than those of the medium ($p = 0.010$) and high ($p = 0.002$) groups. There was no difference between the medium- and high-status groups ($p = 0.100$).

Table 1. Comparison of BDI depression categories by obstetric characteristics

Socio-demographic	Sample		BDI score	Test statistic	Result
	M	SD	M ± SD	rho	p
Age (years)	30.02	±5.20	10.65±7.02	-0.085	0.178
Educational level					
Primary school	67	26.70	9.76±7.82	H:4.155	0.125
High school	77	30.70	11.55±7.22		
University	107	42.60	10.56±6.30		
Employment status					
Employed	68	27.10	10.69±7.62	Z: -0.464	0.642
Unemployed	183	72.90	10.63±6.80		
Economic status					
Low	63	25.10	13.06±7.85	H: 11.364	0.003
Medium	154	61.40	10.16±6.62		
High	34	13.50	8.41±6.03		

*rho: Spearman correlation test, *H: Kruskal–Wallis test (post-hoc: Dunn–Bonferroni), n: Number, *Z: Mann–Whitney U test, BDI: Beck Depression Inventory, M: Mean, SD: Standard deviation

Table 2. Comparison of BDI depression categories by social life characteristics

Obstetric characteristics		Sample (n=251)		BDI depressive symptom categories				Test statistic	Result
		n	%	Minimal	Mild	Moderate	Severe	Chi-square	p
Age at marriage	18–24 years	132	52.58	73 %55.3	37 %28.0	17 %12.9	5 %3.8	8.626	0.196
	25–30 years	98	39.04	40 %40.8	39 %39.8	16 %16.3	3 %3.1		
	31 years and up	21	8.38	14 %66.7	6 %28.6	1 %4.8	0 %0.0		
History of abortion	Yes	70	27.89	35 %50.0	26 %37.1	7 %10.0	2 %2.9	1.536	0.674
	No	181	72.10	92 %50.8	56 %30.9	27 %14.9	6 %3.3		
Consanguineous marriage	Yes	27	10.80	14 %51.9	10 %37.0	3 %11.1	0 %0.0	1.283	0.733
	No	224	89.20	113 %50.4	72 %32.1	31 %13.8	8 %3.6		
Number of pregnancies	1	100	39.84	50 %50.0	30 %30.0	18 %18.0	2 %2.0	4.503	0.609
	2	78	31.08	38 %48.7	28 %35.9	8 %10.3	4 %5.1		
	3+	73	29.09	39 %53.4	24 %32.9	8 %11.0	2 %2.7		
Gestational week	1-13	30	11.95	11 %36.7	14 %46.7	5 %16.7	0 %0.0	6.033	0.420
	14-26	76	30.28	40 %52.6	26 %34.2	8 %10.5	2 %2.6		
	27-41	145	57.77	76 %52.4	42 %29.0	21 %14.5	6 %4.1		
Pregnancy planning status	Planned	163	64.90	90 %55.2	50 %30.7	19 %11.7	4 %2.5	4.534	0.209
	Unplanned	88	35.10	37 %42.0	32 %36.4	15 %17.0	4 %4.5		
IVF or insemination procedure status	Yes	7	2.80	1 %14.3	6 %85.7	0 %0.0	0 %0.0	9.283	0.026
	No	244	97.20	126 %51.6	76 %31.1	34 %13.9	8 %3.3		
Regular obstetrician follow-up status	Yes	178	70.90	91 %51.1	59 %33.1	25 %14.0	3 %1.7	4.520	0.211
	No	73	29.10	36 %49.3	23 %31.5	9 %12.3	5 %6.8		
Number of follow-up visits	1	9	3.60	4 %44.4	5 %55.6	0 %0.0	0 %0.0	5.392	0.495
	2-4	47	18.70	22 %46.8	19 %40.4	5 %10.6	1 %2.1		
	5+	195	77.70	101 %51.8	58 %29.7	29 %14.9	7 %3.6		
Childbirth course Attendance status	Yes	31	12.40	15 %48.4	14 %45.2	2 %6.5	0 %0.0	4.165	0.244
	No	220	87.60	112 %50.9	68 %30.9	32 %14.5	8 %3.6		

*Chi-square test , BDI: Beck Depression Inventory , n: Number

Conceiving via IVF or insemination was associated with a statistically significant difference across BDI depression categories ($p < 0.05$) (Table 2).

Table 3. Comparison of BDI depression categories by social life characteristics

Social life characteristics		Sample (n=251)		BDI depressive symptom categories				Test statistic	Result
		n	%	Minimal	Mild	Moderate	Severe	Chi-square	p
Research/reading about pregnancy	Yes	209	83.30	101 48.3	71 %34.0	32 %15.3	5 %2.4	7.272	0.064
	No	42	16.70	26 61.9	11 %26.2	2 %4.8	3 %7.1		
Social life will be restricted	Yes	105	41.80	33 31.4	37 %35.2	29 %27.6	6 %5.7	43.484	<0.001
	No	146	58.20	94 64.4	45 %30.8	5 %3.4	2 %1.4		
Sexual life	Positive	18	7.20	11 61.1	5 %27.8	1 %5.6	1 %5.6	26.612	<0.001
	Not affected	164	65.30	97 59.1	49 %29.9	14 %8.5	4 %2.4		
	Negative	69	27.50	19 27.5	28 %40.6	19 %27.5	3 %4.3		
Relationship with spouse was affected	Positive	154	61.40	85 55.2	51 %33.1	15 %9.7	3 %1.9	14.943	0.021
	Not affected	75	29.90	37 49.3	23 %30.7	12 %16.0	3 %4.0		
	Negative	22	8.80	5 22.7	8 %36.4	7 %31.8	2 %9.1		
Verbal violence exposure	Yes	29	11.60	2 %6.9	11 %37.9	13 %44.8	3 10.3	41.610	<0.001
	No	222	88.40	125 56.3	71 %32.0	21 %9.5	5 %2.3		

Statistically significant associations were identified between BDI depression categories and agreement with the idea that social life would be restricted, changes in sexual life, changes in the relationship with the spouse, and exposure to verbal violence ($p < 0.05$) (Table 3).

Discussion

In this study, depression levels among pregnant women presenting to an emergency obstetrics clinic were examined using the Beck Depression Inventory (BDI), and the findings were evaluated both in terms of mean BDI

scores and BDI depression categories (minimal, mild, moderate, severe). The mean BDI score was 10.65 ± 7.02 , and most pregnant women fell into the mild depression group. Meta-analyses conducted worldwide have reported prevalence estimates for depression during pregnancy ranging from 10% to 30% (Smith et al., 2019). In our study, approximately one-third of pregnant women were in the mild group, while a smaller proportion fell into the moderate-to-severe range. This pattern is lower than that reported in some studies conducted in our country, yet comparable to that reported in others.

Possible reasons for variability in reported prevalence include sample size, the instrument used, timing of assessment during pregnancy, and sociocultural differences. For example, some studies indicate that depression rates rise notably in the third trimester, particularly as childbirth approaches and anxiety increases (Lancaster et al., 2010). Because a large proportion of our sample was at 27 weeks and beyond, relatively higher mean scores may be related to this distribution.

Economic status was significant both for mean scores and categorical distributions. In the low-income group, BDI means were clearly higher, and the proportions of moderate and severe depression were greater. In the literature, economic hardship is frequently described as one of the strongest determinants of depression during pregnancy (Kozhimannil et al., 2011). Women with lower income may experience difficulty accessing health services, may have more limited social support, and may face heightened stress levels. Economic hardship can raise anxiety, which may negatively affect psychological well-being, and our findings are consistent with previous evidence that economic conditions play an important role in mental health. Mean BDI scores also differed significantly by type of marriage, and scores were higher among women who married by mutual consent ("love marriage"); however, depression categories did not differ significantly between groups, which contrasts with some reports in the literature. Lower BDI scores among women in arranged marriages may reflect the potentially protective role of extended family support. Support from elders and relatives may reduce feelings of isolation during pregnancy and, in turn, lower depression risk. Although some studies have reported arranged marriage as a stress-related factor, the direction of this association may vary depending on sociocultural context (Nemati et al., 2021).

Mean BDI scores were also significantly higher among women with unplanned pregnancies, even though categorical distributions were not significantly different. Many studies have reported that there is a greater risk of depression when the pregnancy is unplanned. For instance, Orr et al. (2002) reported a twofold higher risk of depression in cases of unplanned pregnancy. In the present study, mean BDI scores were significantly higher in women with unplanned pregnancies, but the categorical classifications were not significant. In the present study, this pattern was observed in the means but not in the categories. Psychological distress, economic burden, and relationship conflict regarding an unplanned pregnancy can raise the risk of depression. In support of this argument, national and international studies have shown that unplanned pregnancy is a risk factor for depression (Lin et al., 2017).

Significant differences in mean BDI scores and categorical distributions were observed in women who agreed with the

statement "My social life will be restricted". This was one of the strongest correlates of depression. The literature also supports this; negative expectations regarding social life may facilitate the emergence of depression. The expectation of social restriction may heighten feelings of helplessness and, consequently, increase the risk of depression. Concerns about social exclusion and uncertainty about the future may also act as triggers (Fisher et al., 2012). Women who reported that their sexual life was affected had significantly higher mean BDI scores and more severe categorical distributions.

Previous studies have reported that pregnancy may negatively affect sexual life, which can, in turn, result in relationship problems and depressive symptoms (Connolly et al., 2005). In several cultures, sexuality becomes a taboo during pregnancy, which can inhibit discussion and intensify feelings of loneliness. Women who reported deterioration in their relationship with their spouse/partner had higher mean scores and greater categorical severity. The onset or worsening of depressive symptoms has been associated with inadequate partner support, emotional loneliness, and conflict with one's partner. According to Bennett et al. (2004), partner support may help women manage challenges related to antenatal depression and may therefore be protective; these results are consistent with that view. The study also found that those who reported verbal violence had significantly higher mean BDI scores and greater categorical severity. Studies have consistently reported a link between domestic violence and depression during pregnancy (Lukasse et al., 2014). Psychological violence, in particular, is associated with a major increase in risk. According to WHO (2022), verbal violence can deepen depression through reduced self-esteem, heightened stress responses, and social withdrawal, which coincides with these findings.

It couldn't find a significant association between participants' age and mean BDI scores, though BDI category distributions across the age groups differed significantly ($p = 0.007$). Among the youngest cohort (18–24 years), women were more likely to fall into the severe depression category. Several studies have shown that younger age may be a risk factor for depression during pregnancy (Gavin et al., 2005), particularly in early (and especially first) pregnancies, possibly because younger mothers may find it more difficult to adapt to the maternal role and may have limited social support. Others have found no connection between age and depression (Rahman et al., 2003). The restricted age span of our sample likely contributed, at least in part, to the absence of any difference in mean scores. Correspondingly, BDI mean scores and BDI category distributions showed no significant associations with education level either. Although mean BDI scores were not associated with employment status, categorical analysis showed a significant association; women with severe depression were more likely to be unemployed. Some studies have indicated that employed women may be at higher risk of depression when job demands are combined with household responsibilities (Da Costa et al., 2000). In the present study, however, significance was only reached at the category level; unemployment may be related to more severe strata of depression but not necessarily to a shift in mean scores.

Certain studies have found that multiparity can increase the risk of depression due to a higher caregiving workload

(Miranda et al., 1998). However, this pattern was not observed in the present study. There were no significant differences in BDI scores by number of pregnancies or gestational week, and there were no significant associations in the categorical distributions. The absence of differences may be attributed to comparable trimester distribution and relatively similar obstetric characteristics. Nonetheless, some studies have reported higher rates of depression in the third trimester (Field et al., 2010).

Conclusions and Recommendations

Most pregnant women included in the study were in the mild depression group. Depression scores were significantly higher among women with low income, those experiencing an unplanned pregnancy, those who believed their social life would be restricted, those reporting a negative impact on sexual life, those experiencing deterioration in their relationship with their spouse, and those reporting exposure to verbal violence. Depression scores were significantly lower among pregnant women in arranged marriages.

Based on the findings, it is recommended that depression screening be integrated into routine obstetric follow-ups; that pregnant women with low income and inadequate social support receive psychosocial support and social service support; and that group training and couples counseling services aimed at strengthening spousal and family communication be expanded.

Limitations

The data obtained in this study are limited to participants' self-reported responses. The findings are applicable to the study sample. Because the study was conducted at a single center, it is difficult to state with certainty whether the same conclusions would apply to pregnant women in other regions. Since data relied on participants' statements, recall bias and socially desirable responding are possible. In addition, because the study included only pregnant women presenting during particular weeks, it may not

fully capture differences across trimesters. Finally, as a cross-sectional study, it cannot establish cause-and-effect relationships; it presents only the current situation.

Declarations

Ethical Approval and Consent to Participate

This study was conducted after obtaining ethics approval from the Istanbul Okan University Ethics Committee for Research in Science, Social Sciences, and Non-Interventional Health Sciences (Decision No. 185, dated 05.02.2025) and institutional permission from the Istanbul Provincial Directorate of Health, Health Services Presidency, Research-Printed Publication-Announcement Content Evaluation Commission (Decision No. 2025/07, dated 23.05.2025).

Publication Permission

Not applicable.

Availability of Data and Materials

Not applicable.

Conflict of Interest

The authors declare no conflict of interest.

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Author Contributions

ÖA, KDB, and NAD made major contributions to the writing of the Methods and Discussion sections and to drafting the Turkish and English abstracts; they also contributed to the overall writing and review of the manuscript. ÖA and KDB analyzed and interpreted the research data and contributed to the overall writing and review of the manuscript. ÖA, KDB, and NAD made major contributions to writing the Introduction and Discussion sections. ÖA made major contributions to data collection. All authors read and approved the final version of the manuscript.

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RESEARCH ARTICLE / ARAŞTIRMA MAKALESİ

The Hidden Face of Emergencies: Psychiatric Consultations in the Emergency Department – Predictors of Psychiatric Admission and Treatment Refusal

Acillerin Görünmeyen Yüzü: Acil Serviste Psikiyatri Konsültasyonlarının Analizi-Psikiyatri Servisine Yatış ve Tedavi Reddi Belirleyicileri

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Abstract:

Individuals presenting to emergency departments (EDs) with psychiatric complaints often experience longer waiting times and lower quality of care than those with general medical conditions. Given the heterogeneity of this population, identifying its characteristics is essential for effective service planning and targeted interventions. This study examined the sociodemographic and clinical features of patients referred for psychiatric consultation in an ED, as well as factors associated with psychiatric inpatient admission and treatment refusal. This retrospective descriptive study included all patients aged ≥ 18 years who were referred from the ED to the psychiatry department between 6 October 2022 and 1 March 2024 ($n = 2,146$). Data were obtained from hospital records and analyzed using descriptive statistics and multivariable logistic regression. Women accounted for 53.9% of presentations, and 70.7% of consultations occurred outside regular working hours. The most common reason for consultation was a suicide attempt (21.0%), with drug ingestion accounting for 81.1% of these cases. The most frequently recorded diagnoses were psychotic, depressive, and anxiety disorders. Overall, 4.5% of patients were admitted to the psychiatric ward, and 5.6% were discharged following treatment refusal. Psychotic disorders, bipolar disorder in a manic or hypomanic episode, and suicide attempts involving drug overdose were associated with an increased likelihood of psychiatric admission, whereas management without psychotropic medication was associated with a reduced likelihood. Treatment refusal was more common among patients with an unclear psychiatric history and less frequent among those with a documented psychiatric diagnosis. These findings underscore suicide attempts and severe mental disorders as key priorities for emergency psychiatric care and highlight the importance of communication-focused strategies to reduce treatment refusal in the ED setting.

Keywords: Emergency departments, Emergency psychiatric services, Hospital admission, Treatment refusal, Suicide.

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Öz:

Ruhsal yakınmalarla acil servise başvuran bireyler, genel tıbbi yakınmaları olanlara kıyasla daha uzun bekleme süreleri ve daha düşük nitelikte bakım alabilmektedir. Bu heterojen grubun özelliklerinin tanımlanması, hizmet planlaması ve hedefe yönelik müdahaleler açısından önemlidir. Bu çalışmada, bir şehir hastanesi acil servisinde psikiyatri konsültasyonu istenen hastalarda sosyodemografik/klinik özellikler ile psikiyatri servisine yatış ve tedavi reddinin belirleyicileri incelenmiştir. Retrospektif ve tanımlayıcı tasarımdaki çalışmaya, 6 Ekim 2022–1 Mart 2024 arasında acilden psikiyatri bölümüne konsülte edilen, 18 yaş ve üzeri 2146 olgu dâhil edilmiştir. Veriler hastane kayıtlarından toplanmış; tanımlayıcı istatistikler ve çok değişkenli lojistik regresyon analizleri ile değerlendirilmiştir. Başvuruların %53,9'u kadındır; konsültasyonların %70,7'si mesai dışı saatlerde gerçekleşmiştir. En sık konsültasyon nedeni intihar girişimi (%21,0) olup, girişimlerin %81,1'i ilaç alımıdır. En yaygın tanımlar psikotik bozukluk, depresif bozukluk ve anksiyete bozukluğudur. Hastaların %4,5'i psikiyatri servisine yatırılmış, %5,6'sı ise tedavi reddi nedeniyle taburcu edilmiştir. Psikotik bozukluk, mani/hipomani döneminde bipolar bozukluk ve ilaçla intihar girişimi yatış olasılığını artırırken, ilaçsız izlem yatış olasılığını azaltmıştır. Tedavi reddi, psikiyatrik tanı öyküsü belirsiz olanlarda artmış, tanısı bilinenlerde azalmıştır. Bulgular, intihar girişimleri ve ciddi ruhsal bozuklukların acil serviste öncelikli müdahale alanları olduğunu ve tedavi reddini azaltmaya yönelik iletişim temelli stratejilerin gerekliliğini göstermektedir.

Anahtar Kelimeler: Acil servisler, Acil psikiyatrik hizmetler, Hastaneye yatış, Tedavi reddi, İntihar.

Introduction

Psychiatric emergencies encompass all acute mental states that threaten an individual's physical, mental, and social integrity, impair functioning, and reduce quality of life, and that arise in the areas of thoughts, feelings, and behaviors (Örüm, 2020). The proportion of individuals presenting to emergency departments of general hospitals with psychiatric complaints or symptoms ranges from 3% to 12% (Hazlett et al., 2004; Zeller et al., 2014; Zhang & Das, 2024).

Psychiatric emergencies can arise from various causes such as psychosocial stressors, adverse life events, chronic mental disorders, side effects of medications or intoxications, and substance use disorders (Büyükbayram & Engin, 2018; Sudak, 2005). The clinical presentation may sometimes manifest with obvious behaviours like suicide attempts or aggression, while at other times, it may lead to emergency room visits due to somatic complaints such as palpitations, shortness of breath, or chest pain (Aykut et al., 2020; Hazlett et al., 2004).

Emergency psychiatric approach involves a comprehensive assessment of the patient, determining the level of urgency, developing an appropriate treatment and care plan, and making decisions about discharge, hospitalization in a psychiatric ward, or transfer to another unit. Considering patients' sociodemographic and psychosocial characteristics during this process is critically important for appropriate referral and risk management (Aykut et al., 2020).

The decision to admit a patient to the psychiatry service is primarily based on the risk of self-harm or harm to others, severe psychotic symptoms, intoxication, significant functional impairment, or intense agitation (Galderisi et al., 2024). However, this decision is not solely based on clinical symptoms; the patient's motivation for treatment, level of cooperation, insight, and sources of social support also significantly influence the need for hospitalization (Hawton et al., 2015; Karasch et al., 2020; Kirchner et al., 2022). Refusal of treatment, a common situation encountered in emergency services, is associated with multifaceted factors such as insufficient insight, severity of psychopathology, fear of stigma, previous negative treatment experiences, and social-ethnic or cultural factors (Galderisi et al., 2024; Ribeiro et al., 2016). Findings in the

literature indicate that individuals with uncertain psychiatric histories or limited prior contact with the healthcare system tend to have higher rates of treatment refusal (Jaeger et al., 2019).

Several studies have shown that individuals who seek emergency care for mental health complaints may experience longer wait times and receive lower-quality care compared to patients presenting with general medical complaints (Judkins et al., 2019). Modeling this heterogeneous patient group, which encompasses a wide range of mental and medical complications, at the community level is important for understanding the relationship between public expectations, attitudes toward mental health services, and the social and clinical characteristics of patients presenting with mental health complaints. However, there remains a lack of data on health institutions, such as city hospitals, adopting new organizational models. Identifying the basic sociodemographic and clinical features of this patient group will help service providers accurately define their needs and develop intervention strategies appropriate to their social and clinical characteristics (Zhang & Das, 2024).

The aim of this study is to retrospectively evaluate the sociodemographic characteristics, reasons for admission, and diagnoses of cases consulted from the emergency department to psychiatry in a newly opened city hospital; additionally, to identify factors that influence hospitalization and refusal of treatment in the psychiatry department.

Method and Materials

This study was planned as a retrospective and descriptive study. Prior to the study, approval was obtained from the Scientific Research Evaluation and Ethics Committee of Ankara Etlik City Hospital on 09/11/2024 with decision number AEŞH-BADEK-2024-838. The study was conducted in accordance with the principles of the Declaration of Helsinki, and, due to its retrospective nature, informed consent was not obtained from the individuals.

The study included all patients who presented to the hospital's emergency department between October 6,

2022, and March 1, 2024, and were consulted by the psychiatry department. During this period, the total number of emergency department visits was 372,265, and the total number of consultations requested for these visits was 166,860. Of these consultations, 4,723 were made for the psychiatry department, accounting for 2.83% of all consultations. Duplicate consultations related to the same admission were excluded, and a total of 2,146 psychiatry consultations were included in the analysis. The inclusion criterion was being 18 years or older, and files with incomplete data were excluded from the analysis.

For data collection, the 'Sociodemographic and Clinical Data Form' developed by the researchers was used. Through this form, sociodemographic characteristics such as patients' age, gender, marital status, education level, and employment status; modes of presentation to the emergency department; history of psychiatric disorders; and the presence of additional medical illnesses were recorded. Additionally, reasons for requesting psychiatric consultation, diagnosed psychiatric conditions, applied treatment methods, and discharge outcomes were retrospectively obtained from hospital information management system records.

In the data analysis, descriptive statistics were primarily used to characterize the study group. The findings are presented as numbers, percentages, minimum–maximum values, means, standard deviations, and medians. To examine the determinants of hospitalization and treatment refusal in the psychiatry ward, univariate and multivariate logistic regression analyses were applied. In univariate logistic regression analyses, $p < 0.25$ was considered statistically significant, whereas in multivariate logistic regression analyses, $p < 0.05$ was considered statistically significant. To reduce the effect of outliers, cases with a Cook's Distance value > 1 were excluded from the analysis. Cases that could not be included in the model due to missing data were also removed from the relevant analyses. All statistical analyses were performed using IBM SPSS Statistics, version 29.0.

Findings

The study included 2,146 individuals who applied to the emergency department and were referred for psychiatric consultation between October 6, 2022, and March 1, 2024. As shown in Table 1, out of the 2,146 people included in the study, 1,157 (53.9%) are women and 989 (46.1%) are men. 29.3% of applications occurred during working hours, while 70.7% occurred outside working hours. Among the participants, 37% are single, 31.5% are married, and 9.9% are divorced/separated/widowed. In terms of occupational distribution, the largest groups are employed individuals (22.4%) and unemployed individuals (21.2%), while students (5.8%), housewives (19.4%), and retirees (4.8%) are represented in smaller proportions. Regarding education level, 1.1% of applicants are uneducated, 0.7% are only literate, 11.9% have primary education, 20.7% have high school education, 11.9% hold a bachelor's degree, and 0.4% have postgraduate education. Regarding the mode of arrival at the emergency department, 47.7% arrived voluntarily as outpatients, 20.5% arrived voluntarily by ambulance, 10.4% arrived involuntarily by ambulance, 9.8% arrived at a relative's request, and 3.7% arrived at the police's request.

In the assessment of the patients' medical histories, it was found that 62.8% had a history of psychiatric disorder, 25.6% had no psychiatric history, 1.5% had uncertain information regarding this, and 10.1% could not access the relevant data. Regarding comorbid medical conditions, 19.8% of cases had additional illnesses, 54.6% had none, 7.8% had uncertain information, and 17.8% lacked this data. When examining the emergency treatment methods applied, 46.7% of the cases received drug-free monitoring, 34.4% received oral psychotropic treatment, and 16.8% received parenteral psychotropic treatment; a very small number of patients received detection (0.1%), gastric lavage (0.9%), or other treatment methods (1.1%).

When evaluating the reasons for requesting psychiatric consultation, the largest group of referrals consists of suicide attempts (21.0%). This is followed by aggression/violence/agitation (11.6%), anxiety symptoms (9.9%), exacerbation of known mental illnesses (8.1%), acute psychotic symptoms (5.9%), and depressive symptoms (2.9%). In smaller proportions, consultations were requested due to medication side effects/intoxication (2.0%), delirium (2.4%), behavioural problems related to dementia (0.5%), alcohol and substance-related intoxication/withdrawal syndromes (each less than 1%), and somatic complaints (2.4%). Additionally, 4.5% of the referrals involved suicidal thoughts, 2.3% involved self-mutilation behaviours, and 0.7% involved self-mutilative thoughts. The consultation requests were made without specified reasons in 5.2% of cases, and in 4.5% of cases, for hospitalization/transfer without specifying a reason. Lower proportions include preoperative assessment (3.7%), refusal of treatment (0.2%), communication problems with the treatment team (0.3%), and threats to harm others (0.3%).

When examining methods of suicide attempts, it has been determined that the most common method is the use of medication (81.1%). This is followed by the use of sharp or cutting tools (7.6%), firearms (3.0%), hanging (2.4%), ingestion of chemical substances (2.4%), jumping from a height (1.9%), and other methods (1.6%).

27.5% of the applicants reported visiting a psychiatric outpatient clinic in the past month, 51.9% had no outpatient visits, and in 20.6% of cases, this information could not be obtained. As a result of psychiatric evaluation, a diagnosis was made, or the existing diagnosis was confirmed in 1,261 cases (55.9%), 731 cases (32.4%) were placed under observation or referred to the outpatient clinic for further examination, and no active psychopathology was detected in 263 cases (11.7%).

Looking at the distribution of diagnoses, the most common disorders were psychotic disorders (22.9%), depressive disorders (19.3%), and anxiety disorders (16.9%). These diagnoses were followed by bipolar disorder (6.4%), mixed anxiety and depressive disorder (6.2%), adjustment disorder (3.9%), and substance/alcohol use disorders (around 10%). Lower rates were recorded for personality disorders (1.3%) and other psychiatric disorders (6.9%).

During discharge, the most frequently applied supportive consultation was 41.3%. Additionally, 9.9% of patients were started on antipsychotics, 7.2% on anxiolytics, and 3.4% on antidepressants; 1.1% received other treatment options. Furthermore, family consultations were conducted in 21.7% of cases. Regarding outcomes, 4.5% of patients were transferred to the psychiatric ward, 3.4%

were admitted to another service or intensive care unit, 0.6% were referred to another hospital, 5.6% were discharged after refusing treatment, and 1.3% were followed under other outcome categories. The ages of the

patients who applied to the emergency department ranged from 18 to 96 years, with a mean age of 38.3 ± 16.7 (median=34). The number of applications ranged from 1 to 13, with an average of 1.47 ± 1.43 (median=1)

Table 1. Comparison of demographic characteristics of mothers in the case and control groups

		n	%
Gender	Female	1157	53,9
	Male	989	46,1
Time of Request	Working hours	628	29,3
	After hours	1518	70,7
Marital Status	Married	675	31,5
	Single	795	37,0
	Divorced/Widowed	212	9,9
	Unavailable data	464	21,6
Employment Status	Employed	481	22,4
	Student	124	5,8
	Housewife	416	19,4
	Retired	102	4,8
	Unemployed	456	21,2
	Unavailable data	567	26,4
Education	Illiterate	23	1,1
	Literate	16	0,7
	Primary school	256	11,9
	High school	444	20,7
	Bachelor's	256	11,9
	Postgraduate	9	0,4
	Missing data	1142	53,2
Mode of Admission	By ambulance	663	30,9
	Outpatient	1313	61,2
	Unavailable data	170	7,9
Psychiatric History	Yes	1348	62,8
	No	550	25,6
	Unknown	32	1,5
	Unavailable data	216	10,1
Treatment Administered	Observation without medication	964	46,7
	Psychotropic oral	710	34,4
	Psychotropic parenteral	346	16,8
	Restraint	3	0,1
	Gastric lavage	19	0,9
	Other	22	1,1
Reason for Consultation Request	Consulted without a specified reason	137	5,2
	Consultation for admission/transfer	117	4,5
	Referral for admission from another center	55	2,1
	Preoperative consultation	97	3,7
	Consultation for drug side effects	32	1,2
	Exacerbation of a known and followed-up psychiatric disorder	212	8,1
	Communication problems with the treatment team	7	0,3
	Refusal of treatment (medication, surgery, etc.)	6	0,2
	Aggression, violence, agitation	311	11,9
	Aggression, violence, agitation	259	9,9
	Depressive symptoms	75	2,9
	Acute psychotic symptoms	154	5,9
	Delirium symptoms	62	2,4

	Behavioural problems due to dementia	12	0,5
	Drug side effect/drug intoxication	52	2,0
	Alcohol-related	34	1,3
	Substance-related	47	2,2
	Somatic complaints	63	2,4
	Other (sleep, eating, etc.) problems	123	4,7
	Self-mutilative thoughts	140	5,3
	Suicidal ideation or attempt	666	25,5
Suicide Attempt Methods	Hanging	14	2,4
	Firearm	17	3,0
	Sharp object	44	7,6
	Drug	467	81,1
	Chemical substance	14	2,4
	Jumping from a height	11	1,9
	Other	9	1,6
Outpatient Clinic Visit in the Last Month	Yes	590	27,5
	No	1114	51,9
	Unavailable data	442	20,6
Psychiatric Diagnosis	Established/present	1261	55,9
	Follow-up/psychiatry outpatient follow-up	731	32,4
	No active psychopathology considered	263	11,7
Diagnosed Psychiatric Disorders	Disorder related to psychoactive substance use (alcohol, substance, etc.)	144	10,0
	Depressive disorder	279	19,3
	Psychotic disorder	330	22,9
	Anxiety disorder	244	16,9
	Mixed anxiety and depressive disorder	89	6,2
	Bipolar affective disorder	183	12,7
	Adjustment disorder/reactive symptoms	56	3,9
	Personality disorder	19	1,3
	Other	99	6,9
Discharge Treatments	Supportive interview	1728	41,3
	Antidepressant	144	3,4
	Antipsychotic	413	9,9
	Anxiolytic	301	7,2
	Other	45	1,1
Treatment Outcomes	Family interview	908	21,7
	Transfer to psychiatric ward	189	4,5
	Transfer to another ward/ICU	141	3,4
	Referral to another hospital	27	0,6
	Other	54	1,3
	Patient discharged due to refusal of treatment	234	5,6

Note. Since participants could provide more than one response, the total sample size may exceed the number of participants.

A multivariate logistic regression analysis was conducted to examine variables associated with hospitalization in the psychiatric service. The model included: gender, age, number of visits, time of request, marital status, employment and education status, manner of arrival to the emergency department, history of psychiatric disorder, types of treatment applied, reason for consultation request, method of suicide attempt, outpatient clinic visits in the last month, and psychiatric diagnosis variables. First, univariate logistic regression was performed for each variable, and variables significant at $p < 0.025$ were included in the final model (Hosmer et al., 2013). To reduce the effect of outliers, 11 cases with Cook's Distance > 1 were excluded from the analysis; additionally, 1,288

individuals were excluded from the model due to missing data. The analysis was conducted on 847 individuals. According to the omnibus test, the regression model was statistically significant ($\chi^2 = 212.733$; $p < 0.001$), and the variables in the model explained 44.9% of the variance in hospitalization to the psychiatry service. The Hosmer–Lemeshow test results indicated that the model had an acceptable fit ($X^2 = 3.753$; $p = 0.879$). According to the analysis, the likelihood of hospitalization among patients managed without medication was significantly lower than among those managed with medication ($OR = 0.34$; 95% $CI = 0.125–0.936$; $p = 0.037$). Conversely, the likelihood of hospitalization increased significantly in patients who underwent gastric lavage ($OR = 14.11$; 95% $CI = 1.727–$

115.402; $p=0.014$). The presence of suicidal thoughts increased the odds of hospitalization by 3.95 times ($OR=3.953$; 95% $CI=1.283-12.177$; $p=0.017$), while patients who attempted suicide had a lower likelihood of hospitalization ($OR=0.105$; 95% $CI=0.023-0.481$; $p=0.004$). Particularly, those who attempted suicide with medication had approximately four times higher odds of hospitalization compared to other methods ($OR=3.815$; 95% $CI=1.297-11.218$; $p=0.015$). Compared to individuals without a psychiatric diagnosis, those with a

psychiatric diagnosis, those called in for follow-up or further examination, and those without active psychopathology had a significantly lower likelihood of hospitalization (ORs between 0.06 and 0.063, $p<0.001$). Conversely, when considering diagnosis groups, patients with psychotic disorders had about four times higher odds of hospitalization ($OR=4.034$; 95% $CI=1.793-9.080$; $p<0.001$), and those in the manic/hypomanic phase of bipolar disorder had over 21 times higher odds ($OR=21.436$; 95% $CI=5.578-82.368$; $p<0.001$).

Table 2: Regression analysis findings on the determinants of admission to the psychiatry ward

Variables	B	p	Exp(B)	95% Confidence Interval	
				Lower	Upper
Treatment Administered					
Observation without medication (No/Yes)	-1,074	0,037	0,342	0,125	0,936
Gastric lavage (No/Yes)	2,647	0,014	14,118	1,727	115,402
Reason for Consultation Request					
Suicidal Ideation (No/Yes)	1,374	0,017	3,953	1,283	12,177
Suicide Attempt (No/Yes)	-2,255	0,004	0,105	0,023	0,481
Suicide Attempt Methods					
Drug (No/Yes)	1,339	0,015	3,815	1,297	11,218
Psychiatric Diagnosis					
Established/present (No/Yes)	-2,817	<0,001	0,060	0,013	0,281
Follow-up or referred to the psychiatry outpatient clinic for further evaluation (No/Yes)	-2,832	<0,001	0,059	0,013	0,267
No active psychopathology considered (No/Yes)	-2,771	0,001	0,063	0,012	0,328
Diagnosis					
Psychotic disorder (No/Yes)	1,395	<0,001	4,034	1,793	9,080
Bipolar affective disorder (mania, hypomania) (No/Yes)	3,065	<0,001	21,436	5,578	82,368
Constant	0,127	0,925	1,135		
Omnibus Test: $X^2=212,733$ ($p<0,001$) Nagelkerke $R^2=0,449$ Hosmer-Lemeshow Test: $X^2=3,753$ ($p=0,879$)					
Dependent Variable: Admission to Psychiatric Ward (0=No; 1=Yes)					

A logistic regression analysis was conducted to identify factors associated with treatment rejection; variables included gender, age, number of visits, time of request, marital status, employment and education status, mode of arrival to the emergency department, presence of psychiatric disorder in medical history, types of treatments applied, outpatient visits in the past month, and psychiatric diagnosis. Variables with $p<0.25$ in univariate logistic regression analyses were included in the multivariate model (Hosmer et al., 2013). In this analysis, 10 cases with Cook's Distance >1 were removed from the data set; additionally, 461 individuals were excluded due to missing data. The final model was conducted on 1,675 cases.

According to the omnibus test, the model was statistically significant ($X^2 = 89.879$; $p < 0.001$) and explained 26.3% of the variance in treatment rejection. The Hosmer–Lemeshow test indicated that the model had an acceptable fit ($X^2 = 1.305$; $p = 0.995$). Based on the multivariate analysis, cases with an uncertain psychiatric history had a significantly higher likelihood of treatment rejection ($OR=9.94$; 95% $CI=2.232-44.294$; $p=0.003$). Conversely, those with a diagnosed psychiatric disorder had a significantly lower likelihood of treatment rejection ($OR=0.13$; 95% $CI=0.025-0.698$; $p=0.017$). Other variables were not statistically significantly associated with treatment rejection in the multivariate model.

Table 3: Regression analysis findings on the determinants of treatment refusal

Variables	B	p	Exp(B)	95% Interval Lower	Confidence Upper
History of psychiatric disorder (Reference = None)		0,010			
History of psychiatric disorder (Uncertain)	2,297	0,003	9,943	2,232	44,294
Psychiatric Diagnosis					
Established/present (No/Yes)	-2,022	0,017	0,132	0,025	0,698
Constant	-2,335	0,046	0,097		
Omnibus Test: $X^2=89,879$ ($p<0,001$) Nagelkerke $R^2=0,263$ Hosmer-Lemeshow Test: $X^2=1,305$ ($p=0,995$)					
Dependent Variable: Treatment Refusal (0=No; 1=Yes)					

Note. The first group was taken as the reference for nominal variables. Variables included in the final model but not statistically significant are omitted from the table to reduce its length.

Discussion

Patients who present to the emergency department for psychiatric reasons represent a heterogeneous but high-risk group. This situation highlights the critical importance of emergency psychiatric services within the healthcare system. Our study provides up-to-date sociodemographic and clinical data from a broad group of patients referred for psychiatric consultation in a city hospital emergency department, contributing to the literature in this field from Turkey.

The study found that women are represented at a higher rate among those seeking psychiatric complaints. This finding is consistent with studies reporting that women more frequently seek healthcare services during mental health crises (Naskar et al., 2019). However, the close ratio of women to men suggests that this difference may be limited. The higher frequency of women visiting emergency services can be explained by social and clinical factors related to help-seeking behavior. Indeed, it has been reported that women are more open than men in expressing mental distress and seeking professional help, while men may delay seeking help even when experiencing depressive symptoms and suicidal thoughts (Nock et al., 2008; Owens et al., 2002; Tarsuslu and Durat, 2018). Additionally, the higher prevalence of mood and anxiety disorders in women may also influence this distribution (Farjane-Medina et al., 2022; Salk et al., 2017). Conversely, the fact that gender does not determine hospitalization or refusal of treatment suggests that clinical decisions in emergency psychiatry are more often based on acute risk indicators such as symptom severity, suicide risk, and behavioral control loss.

The fact that the majority of applications occur outside working hours indicates that emergency services are the most accessible units during mental health crises, consistent with studies reporting a concentration of applications in the evenings and on weekends (Cincioğlu et al., 2022). The most common form of application being self-initiated outpatient visits suggests that help-seeking behaviour is prominent, and this finding aligns with the literature (Nock et al., 2008; Owens et al., 2002). This situation demonstrates that emergency services are not only a place for mandatory intervention but also an accessible point of contact for individuals experiencing mental health crises.

The fact that most patients have a psychiatric history suggests that individuals with existing mental disorders frequently use the emergency department as a primary point of contact during crisis periods, and that acute exacerbations of chronic mental illnesses increase the burden on emergency psychiatric services (Gairin et al., 2003; Olfson et al., 2016). Additionally, the detection of comorbid medical conditions in 19.8% of cases highlights the importance of comorbidities in psychiatric referrals (Gairin et al., 2003; Hawton et al., 2015; Olfson et al., 2016).

The prominence of psychotic disorder, depressive disorder, and anxiety disorder in the diagnosis distribution aligns with the literature, indicating that the most common conditions in emergency psychiatry are psychotic and mood disorders (Örüm, 2020; Sudak, 2005; Zhang & Das, 2024). The frequent occurrence of psychotic disorders highlights the need for careful assessment of these patients in emergency services due to agitation, impaired reality

evaluation, and the risk of self-harm or harm to others. Depressive disorders and anxiety disorders are also significant groups for emergency services because of their associations with suicidal thoughts and attempts, as well as their presentation with somatic complaints (Hawton et al., 2012; Nock et al., 2008).

The relatively low number of applications related to substance and alcohol use may be associated with regional differences, sociocultural factors, preference for other healthcare facilities, or recording deficiencies. Therefore, this finding may not fully reflect the true prevalence and should be reevaluated in prospective studies. Among the reasons for consultation, the fact that suicide attempts are the most common and that most of these attempts involve medication intake highlights the critical importance of suicide behaviour and intoxication in emergency services. The literature also emphasizes that drug intoxication is a common method of self-harm and that these cases carry high risks both medically and psychiatrically (Boğan et al., 2024; Owens et al., 2002; Betz & Boudreaux, 2016). These findings indicate the need to clarify intoxication protocols in emergency services, to routine suicide risk assessments, and to structure post-discharge follow-up.

In the emergency department, the use of monitoring and supportive counseling without initiating pharmacological treatment in a significant proportion of cases highlights the important role of crisis-focused, short-term psychosocial interventions in emergency psychiatry. The literature indicates that not every emergency psychiatric case requires pharmacotherapy; in patients with low risk levels and no acute agitation symptoms, supportive counseling, safety planning, and short-term crisis intervention may be sufficient (Miller et al., 2017; Betz & Boudreaux, 2016). Conversely, in cases with psychotic symptoms, significant agitation, or high suicide risk, pharmacological intervention and hospitalization when necessary are prioritized (Hawton et al., 2015; Betz & Boudreaux, 2016). The frequent use of supportive counseling and family meetings at discharge aligns with modern crisis intervention approaches that aim to strengthen social support networks and reduce the risk of re-admission (Miller et al., 2017). Transfers to psychiatric or other departments necessitate a multidisciplinary approach, while cases that end in treatment refusal underscore the importance of strengthening the therapeutic alliance, employing motivational interviewing techniques, and implementing post-discharge follow-up plans (Ribeiro et al., 2016). These findings support the idea that pharmacological and psychosocial interventions in emergency psychiatry should be addressed together in a risk-based, individualized manner.

The logistic regression findings regarding hospitalization and treatment refusal in the psychiatry department shed light on clinical and system-level processes. The low likelihood of hospitalization in cases managed with medication-free observation suggests that most mild and moderate cases can be managed on an outpatient basis. Conversely, the increased likelihood of hospitalization in cases that underwent gastric lavage indicates that medication intoxications are considered high-risk from both medical and psychiatric perspectives (Hawton et al., 2015; Owens et al., 2002). Although suicidal ideation increases the probability of hospitalization, the relatively low rates of psychiatric admission following suicide attempts may be related to these cases primarily being

monitored and treated in internal medicine departments. While the literature reports that suicidal thoughts and behaviours are strong predictors of hospitalization (Betz & Boudreaux, 2016; Ribeiro et al., 2016), it is also emphasized that internal medicine admissions are particularly prominent in cases of intoxication. Our findings are consistent with the literature regarding increased hospitalization likelihood in intoxication-related attempts, but they differ somewhat in that suicidal behaviour alone is not a definitive factor for psychiatric admission.

The significant increase in hospitalization likelihood during manic/hypomanic episodes in psychotic disorder and bipolar disorder indicates that these conditions are associated with agitation, impulsivity, and increased risk of self-harm or harm to others, which is consistent with previous studies (Boğan et al., 2024; Hawton et al., 2015). Kirchner et al. (2022) reported that severe psychiatric symptoms, involuntary hospitalization, and physician-directed hospitalization are the main factors increasing admissions. Conversely, the lower hospitalization rates observed in patients with prior diagnoses or under follow-up may be related to better integration into the treatment system and the ability to manage crises more frequently on an outpatient basis.

In terms of treatment refusal, the higher likelihood of refusal in individuals with an uncertain psychiatric history and the lower likelihood in those with an existing diagnosis suggest that clarity of the patient's history and previous contacts with the healthcare system facilitate treatment adherence (Ribeiro et al., 2016). Jaeger et al. (2019) also reported that individuals with prior treatment experience have lower rates of treatment refusal. These findings are consistent with the literature emphasizing the relationship between treatment refusal, psychiatric history, and previous interactions with the healthcare system.

Judkins et al. (2019) reported that patients presenting with mental health complaints may encounter longer wait times and lower quality of care. When considered alongside our study, these points point to significant systemic implications. The high volume of after-hours visits, suicidal attempts, and psychotic/mood disorders is prominent; however, the limited hospitalization rate and notable treatment refusal suggest that factors such as time pressure in the emergency department, crowded environment, limited staff, and insufficient psychosocial support may be influential. Therefore, providing psychiatric nurse or psychologist support during peak hours, standardizing crisis intervention and referral protocols, and routine structured information and motivational interviewing for high-risk groups are important areas for improvement.

Overall, our findings indicate that emergency departments are the first point of contact in psychiatric crises; suicide attempts, agitation, psychotic symptoms, and intoxication are the primary areas requiring intervention. After-hours admissions and psychiatric history should be considered when classifying risk. The combined use of pharmacological and psychosocial approaches in emergency psychiatry, strengthening consultation-liaison collaboration, and, especially, the systematic application of communication- and motivation-based strategies in cases of treatment refusal are consistent with the World Health Organization's person-centered and rights-based mental health service approach (WHO, 2021). In this regard, our study not only characterizes the patient profile

but also offers practical priorities for organizing mental health services in emergency departments.

Limitations and Strengths of the Study

One significant limitation of this study is the missing information in some patient files. In particular, incomplete or unclear data on psychiatric diagnoses or reasons for consultation requests may have affected the accuracy and completeness of the analyses. Additionally, obtaining data from only a single hospital limits the generalizability of the findings. The retrospective design of the study is also another limitation, as it makes it difficult to ensure that cases are documented completely and consistently.

However, the strengths of this study are also noteworthy. A detailed examination of the most common psychiatric symptoms and consultation reasons revealed the diversity of mental disorders encountered in the emergency department. Additionally, findings obtained from a relatively large sample highlight the importance of collaboration, coordination, and information sharing between psychiatry and other specialties within the scope of Consultation-Liaison Psychiatry.

Conclusion

This study reveals the sociodemographic and clinical characteristics of cases referred for psychiatric consultation in the emergency department of a city hospital, demonstrating that mental health issues constitute a significant portion of emergency visits. The findings indicate that psychiatric emergency consultations should be regarded not only as individual crisis situations but also as a critical area requiring rapid diagnosis, appropriate referral, and effective multidisciplinary collaboration within the healthcare system. Therefore, strengthening psychiatric consultation services in emergency departments and increasing healthcare workers' awareness and competence in this field are of great importance for both patient safety and the sustainability of service quality.

Declarations

Ethics Approval and Participation Permit

Approval has been obtained from the Ankara Etlik City Hospital Scientific Research Evaluation and Ethics Committee for the implementation of the study, with decision number AEŞH-BADEK-2024-838 dated 09/11/2024.

Publication Permission

Not Applicable.

Availability of Data and Materials

Not Applicable.

Conflict of Interest

The authors declare no conflict of interest.

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Author Contributions

YK and SBA significantly contributed to the methods and discussion sections of the article, as well as to the writing and editing of the abstract and summary. They also contributed to the overall writing and critical review of the manuscript. MRV and KÖÇ made substantial contributions to data collection. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

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Mental Health Challenges During the Perinatal Period and Preventive Midwifery Approaches

Perinatal Dönemde Ruh Sağlığı Güçlükleri ve Koruyucu Ebelik Yaklaşımları

Buse Alış¹, Vildan Balcı², Gözde Gökçe İşbir³

Abstract:

This narrative review aims to examine mental health problems observed during the perinatal period and to evaluate the preventive roles of midwives. The perinatal period is a critical transitional phase characterized by intense biological, psychological, and social changes, during which emerging mental health problems affect both maternal and infant outcomes. A literature search was conducted in PubMed, Scopus, Web of Science, TR Index, and Google Scholar for English and Turkish studies published between January 2010 and October 2025. A total of 50 peer-reviewed studies meeting the inclusion criteria were analyzed using thematic analysis. Findings indicate that the most common perinatal mental health problems are anxiety, depression, fear of childbirth, and birth-related trauma. An increasing trend in the prevalence of these conditions has been observed in the post-pandemic period. Evidence highlights that woman-centered and continuity-based midwifery models play a critical role in early risk identification, provision of psychosocial support, and appropriate referral processes. However, significant gaps remain in midwives' mental health literacy, the standardized use of screening tools, and referral systems. In conclusion, integrating mental health-sensitive midwifery practices into routine maternal healthcare, supported by structured screening-referral-follow-up mechanisms, interdisciplinary collaboration, and strengthened education programs, can lead to sustainable improvements in maternal and infant health outcomes.

Keywords: Mental health, Perinatal period, Well-being, Midwifery.

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Öz:

Bu anlatsal derleme, perinatal dönemde görülen ruh sağlığı sorunlarını incelemeyi ve ebelerin koruyucu rollerini değerlendirmeyi amaçlamaktadır. Perinatal dönem, kadınların yoğun biyolojik, psikolojik ve sosyal değişimler yaşadığı kritik bir geçiş sürecidir ve bu süreçte ortaya çıkan ruh sağlığı sorunları hem anne hem de bebek sağlığını etkilemektedir. Ocak 2010–Ekim 2025 tarihleri arasında PubMed, Scopus, Web of Science, TR Index ve Google Scholar veritabanlarında yayımlanan İngilizce ve Türkçe çalışmalar taranmış, dahil edilme kriterlerini karşılayan 50 hakemli çalışma tematik analiz ile değerlendirilmiştir. Bulgular, perinatal dönemde en sık görülen ruh sağlığı sorunlarının anksiyete, depresyon, doğum korkusu ve doğumla ilişkili travma olduğunu göstermektedir. Pandemi sonrası dönemde bu sorunların prevalansında artış eğilimi dikkat çekmektedir. Kanıtlar, kadın merkezli ve bakımın sürekliliğine dayalı ebelik modellerinin erken risk belirleme, psikosozal destek sağlama ve uygun yönlendirme süreçlerinde kritik bir rol oynadığını ortaya koymaktadır. Bununla birlikte, ebelerin ruh sağlığı okuryazarlığı, standart tarama araçlarının kullanımı ve yönlendirme sistemlerinde önemli eksiklikler bulunmaktadır. Sonuç olarak, perinatal ruh sağlığına duyarlı ebelik uygulamalarının rutin anne sağlığı hizmetlerine entegrasyonu; yapılandırılmış tarama–sevk–takip mekanizmaları, disiplinler arası iş birliği ve güçlendirilmiş eğitim programları ile desteklendiğinde, anne ve bebek sağlığı üzerinde sürdürülebilir iyileşmeler sağlayabilir.

Anahtar Kelimeler: Ruh sağlığı, Perinatal dönem, İyilik hâli, Ebelik.

Introduction

The perinatal period, encompassing pregnancy and the first year postpartum, represents a critical developmental phase characterized by profound biological, psychological, and social transitions. During this period, women are particularly vulnerable to mental health problems that can affect not only maternal well-being but also fetal development, mother–infant bonding, and long-term child outcomes (Stein et al., 2014; Massaer et al., 2025). Perinatal mental health exists on a continuum ranging from psychological well-being to clinically significant disorders, requiring both preventive and therapeutic approaches.

Anxiety and depression are among the most prevalent mental health problems during the perinatal period and constitute a growing global public health concern (Dennis et al., 2017; Racine et al., 2021). Recent evidence suggests that prevalence rates have increased significantly following the COVID-19 pandemic, particularly in low- and middle-income countries (Roddy Mitchell et al., 2023; Fancourt et al., 2025). These conditions are associated with adverse obstetric outcomes such as preterm birth and low birth weight, as well as long-term developmental risks for children (Field, 2018; Stein et al., 2014). Socioeconomic stress, inequalities in access to healthcare, and insufficient social support are key determinants contributing to this burden (Al-Humadi et al., 2025).

The biopsychosocial model provides a comprehensive framework for understanding perinatal mental health by emphasizing the interaction of biological, psychological, and social determinants (Engel, 1977; Wadehul et al., 2020). Within this framework, woman-centered care has emerged as a fundamental approach to improving perinatal outcomes. This model prioritizes respect, individualized support, shared decision-making, and continuity of care, all of which are associated with improved psychological and clinical outcomes (Nilsson et al., 2018; Cummins et al., 2025).

Midwives play a central role in implementing these approaches due to their continuous contact with women throughout pregnancy, childbirth, and the postpartum period. Evidence indicates that midwives contribute significantly to the early identification of mental health problems, the provision of psychosocial support, and the facilitation of continuity of care (Cibralic et al., 2023; Doi

et al., 2025). However, despite this critical role, important gaps remain in midwives' mental health literacy, the standardized use of screening tools, and the implementation of structured referral systems (ElKhalil et al., 2025; Kassier & Madlala, 2018).

In Türkiye, awareness of perinatal mental health has increased in recent years; however, routine implementation of standardized screening tools and structured referral pathways remains limited. Existing research is predominantly descriptive, focusing on prevalence and risk factors rather than evaluating the effectiveness of interventions (Yılmaz & Yar, 2021). This gap highlights the need for a comprehensive synthesis of current evidence to better understand both the challenges and opportunities in perinatal mental healthcare. Therefore, this narrative review aims to synthesize current evidence on perinatal mental health challenges and to evaluate preventive and supportive midwifery approaches within a biopsychosocial and woman-centered care framework.

Method

This study was designed as a narrative review aiming to provide an integrative and critical synthesis of heterogeneous evidence on perinatal mental health and midwifery practices. A comprehensive literature search was conducted in PubMed, Scopus, Web of Science, TR Index, and Google Scholar for studies published between January 2010 and October 2025 in English and Turkish. Search terms were developed to cover both perinatal mental health and midwifery practices and were combined using Boolean operators (“AND”, “OR”). Keywords included prenatal and postnatal mental health, maternal mental health, midwifery, continuity of care, woman-centered care, trauma-informed care, digital health, postpartum depression, anxiety, psychological well-being, and psychosocial support. Searches were performed in titles, abstracts, and keywords.

Studies were included if they focused on the perinatal period (from the 22nd week of pregnancy to the first year postpartum), addressed maternal mental health outcomes such as anxiety, depression, fear of childbirth, trauma-related symptoms, postpartum depression, or psychosis, and examined midwifery practices, care models,

interventions, or professional roles. Only original research articles, systematic reviews, and meta-analyses published in peer-reviewed journals were included. Editorials, opinion papers, case reports, conference abstracts, studies without full text, duplicate records, and studies unrelated to perinatal mental health or midwifery practice were excluded.

The search initially yielded 72 records, of which 12 duplicates were removed. Following title and abstract screening, 10 studies were excluded due to irrelevance or lack of full text. A total of 50 studies met the inclusion criteria and were included in the final analysis. Study selection was conducted independently by two researchers, and disagreements were resolved through discussion, with consultation of a third reviewer when necessary.

Due to methodological heterogeneity, quantitative synthesis was not performed. Instead, thematic content analysis was applied. Data extraction focused on study characteristics, mental health outcomes, and midwifery-related findings. The studies were categorized into three main themes: (i) mental health problems during pregnancy, (ii) mental health problems in the postpartum period, and (iii) preventive and supportive midwifery approaches. In addition, sociocultural factors such as gender roles, social support, and cultural perceptions of motherhood were considered, particularly within the Turkish context. As this was a narrative review, no formal risk-of-bias assessment tool was used; however, studies were critically evaluated for design, sample characteristics, and relevance to the research aim.

Findings

Mental Health Challenges During Pregnancy

Anxiety and Depression

Anxiety and depression are the most common mental health problems during the prenatal period, ranging from mild distress to clinically significant disorders (Dennis et al., 2017; Racine et al., 2021). Prevalence estimates suggest that symptoms affect approximately 10–25% of pregnant women under typical conditions, increasing to 25–40% in the post-pandemic period (Tomfohr-Madsen et al., 2021; Ghazanfarpour et al., 2022). These conditions are associated with adverse outcomes, including preterm birth, low birth weight, impaired maternal functioning, and difficulties in mother–infant bonding (Field, 2018). These findings indicate that prenatal mental health problems are not only common but also clinically significant, underscoring the need for systematic screening and early intervention within routine antenatal care.

Fear of Childbirth (Tokophobia)

Fear of childbirth is defined as an intense and persistent fear that extends beyond situational anxiety and negatively affects women's psychological well-being (Nilsson et al., 2018). Prevalence ranges between 6% and 15%, varying across contexts (O'Connell et al., 2021). It is commonly associated with fear of pain, loss of control, and previous negative birth experiences.

Severe fear of childbirth is linked to increased medical interventions, including elective cesarean section requests, indicating its clinical relevance not only for mental health but also for obstetric outcomes.

Mental Health Challenges in the Postpartum Period

Postpartum Blues

Postpartum blues is a common, transient condition characterized by mood instability, irritability, and sleep

disturbances, typically occurring within the first two weeks postpartum (ACOG, 2015). It affects approximately 50–85% of women and is considered a significant risk factor for postpartum depression. Although self-limiting, its high prevalence highlights the importance of early psychosocial monitoring in the immediate postpartum period.

Postpartum Anxiety

Postpartum anxiety includes a spectrum of symptoms from mild distress to clinically significant disorders (Dennis et al., 2017). Prevalence estimates indicate that symptoms affect 15–40% of women, with clinically significant anxiety in approximately 9–10% (Racine et al., 2021).

Elevated maternal anxiety is associated with impaired mother–infant interaction and adverse child socio-emotional outcomes, emphasizing its importance in early postnatal assessment.

Postpartum Depression

Postpartum depression is one of the most prevalent perinatal mental health disorders, with global rates estimated at 10–20% and higher prevalence in low- and middle-income settings (WHO, 2016). It is associated with impaired maternal functioning and adverse child developmental outcomes (Stein et al., 2014). These findings reinforce the importance of early identification through validated screening tools and timely referral to appropriate care services.

Birth Trauma

Childbirth may be experienced as traumatic, particularly in cases involving loss of control, inadequate support, or perceived threats to safety (Keedle et al., 2025). Such experiences are associated with increased risk of post-traumatic stress symptoms and impaired bonding (Polte et al., 2019). Birth trauma may also influence future reproductive decisions and highlights the importance of supportive and respectful maternity care.

Postpartum Psychosis

Postpartum psychosis is a rare but severe psychiatric emergency occurring in approximately 1–2 per 1000 births (NICE, 2022). It is characterized by severe mood disturbances, hallucinations, and disorganized behavior, with significant risk for maternal and infant safety. Its severity underscores the need for immediate recognition and urgent multidisciplinary intervention.

Preventive Approaches for Women's Mental Health During the Prenatal and Postnatal Periods

Protecting perinatal mental health involves reducing psychosocial risks, strengthening maternal resilience, and ensuring early identification and supportive interventions. Midwives play a central role in high-risk cases through screening, counseling, education, follow-up, and referral.

Psychosocial support includes the use of standardized tools (e.g., EPDS, GAD-7), individualized counseling, and educational interventions that enhance mental health literacy and promote help-seeking behaviors (WHO, 2016; NICE, 2022; Dişiz et al., 2023). Continuity of care enables monitoring of symptoms and evaluation of interventions, while midwife-led, community-based

models integrating screening, counseling, and referral improve maternal mental health outcomes and mother–infant bonding (WHO, 2022; Robinson & Kaushal, 2025). Overall, preventive midwifery practices contribute to the protection and promotion of perinatal mental health at both individual and public health levels.

Prenatal Psychosocial Counseling

Prenatal care supports maternal and fetal health by identifying physiological, psychological, and environmental risks early and providing continuous counseling. The WHO emphasizes a woman-centered approach that includes emotional well-being, social context, and individual needs to promote a positive pregnancy experience (WHO, 2016; WHO, 2022). Psychosocial counseling strengthens mental well-being, enhances social support, reduces stress, and facilitates adaptation to parenthood. Approaches based on respectful communication, shared decision-making, and continuity of care improve engagement with services. Integrating trauma-informed screening for psychosocial risks, including intimate partner violence, enables early identification and timely referral of high-risk cases (Keedle et al., 2025).

Childbirth Preparation Classes

Midwife-led childbirth preparation classes address the physiology of birth, pain management, and coping strategies. Participation is associated with higher birth satisfaction, more positive experiences, and an increased sense of control (Dişsiz et al., 2023). By improving self-efficacy and addressing negative beliefs, these programs reduce fear of childbirth, with consistent evidence of enhanced perceived control and lower fear levels (Nilsson et al., 2018; O’Connell et al., 2021). They also support psychosocial adaptation to motherhood and represent a key woman-centered preventive approach to maternal mental health (Cummins et al., 2025; Robinson & Kaushal, 2025).

Supportive Care During Childbirth

The WHO recommends continuous, woman-centered support during childbirth, including the ongoing presence of a trained professional who provides physical, emotional, and informational support (Nilsson et al., 2018). Evidence shows that such care improves obstetric and psychosocial outcomes, including higher rates of spontaneous vaginal birth, shorter labor, reduced interventions, and greater maternal satisfaction, with lower fear and anxiety (Hodnett et al., 2013; Bohren et al., 2017). Integrated into routine care, continuous support plays a key role in protecting perinatal mental health and promoting holistic maternal care (Nilsson et al., 2018; Keedle et al., 2025).

Postpartum Skin-to-Skin Contact

Skin-to-skin contact (SSC) refers to placing the naked newborn on the mother’s bare chest immediately after birth. The WHO recommends its routine implementation for all births, provided that maternal and neonatal conditions are stable, and considers it a key component of respectful, evidence-based care (Nilsson et al., 2018). Evidence shows that SSC promotes early initiation of breastfeeding, enhances mother–infant bonding, and supports neonatal physiological adaptation by regulating heart rate, temperature, respiration, and glucose levels, while increasing maternal oxytocin release (Cooijmans et al., 2017). Within midwife-led care models, SSC is a cost-

effective intervention integrating physical and psychosocial benefits. Midwives play a central role in initiating and sustaining this practice, thereby supporting maternal mental health and early bonding (Stein et al., 2014; Nilsson et al., 2018).

Early Initiation and Continuation of Breastfeeding

The WHO and UNICEF recommend initiating breastfeeding within the first hour after birth, maintaining exclusive breastfeeding for six months, and continuing alongside complementary feeding thereafter (WHO, 2018; UNICEF, 2019). Early initiation supports maternal mental health and mother–infant interaction by reducing stress, enhancing emotional regulation, and increasing oxytocin levels, thereby lowering the risk of depression and anxiety and strengthening maternal confidence (Field, 2018; Netsi et al., 2023). For infants, breastfeeding promotes immune function, healthy microbiota, and long-term cognitive and emotional development, while reducing morbidity and mortality (WHO, 2018; UNICEF, 2019; TNSA, 2018). Within midwife-led care, breastfeeding is supported through individualized counseling and encouragement, contributing to both physical and psychosocial outcomes in the perinatal period (Cibralic et al., 2023; Robinson & Kaushal, 2025).

Debriefing the Birth Experience

Debriefing is a structured, supportive approach that helps women process and interpret negatively perceived birth experiences (Bastos et al., 2015; O’Connell et al., 2021). It is used to reduce early postpartum distress and prevent the consolidation of negative memories in women experiencing trauma-related symptoms (Garthus-Niegel et al., 2013; Bastos et al., 2015). Through guided reflection, women are supported in expressing their experiences and reconstructing meaning, thereby improving emotional adjustment. Evidence suggests that debriefing can reduce subclinical post-traumatic stress symptoms, enhance sense of control, and support postpartum adaptation (Ayers et al., 2006; Bastos et al., 2015). In midwife-led care, debriefing can be integrated into routine follow-up as a brief psychosocial intervention to promote emotional regulation, self-efficacy, and resilience during the transition to motherhood (O’Connell et al., 2021).

Postpartum Follow-up and Counseling

The postpartum period carries both physiological and psychosocial risks for both the mother and the infant. The World Health Organization (WHO) recommends that healthy mothers and newborns be observed in a healthcare facility for at least 24 hours after birth (WHO, 2016). During postpartum follow-ups, midwives should evaluate the woman’s mood, level of social support, and adaptation to parenthood, providing psychological counseling when necessary or making referrals for further evaluation (Çevik & Vurğec, 2022).

Mindfulness and Self-Compassion Approaches

Mindfulness and self-compassion practices support mental well-being by enhancing women’s abilities to cope with stress, anxiety, and depression (Pan et al., 2019). These practices increase self-awareness and strengthen parental satisfaction and self-efficacy by reducing feelings of guilt and inadequacy (Hulsbosch et al., 2021).

Mind-Body Interaction Practices

Mind–body practices, including yoga, meditation, music therapy, and aromatherapy, are used as complementary approaches to support perinatal mental health. Their

application should be individualized according to the physiological and psychological characteristics of each stage of the perinatal period (Corbijn van Willenswaard et al., 2017; Pan et al., 2019; Tsai et al., 2019). Evidence suggests that practices such as prenatal yoga, mindfulness, relaxation techniques, and music therapy can reduce

anxiety, support coping, and facilitate emotional adjustment across the perinatal period when appropriately adapted to maternal condition (Tsai et al., 2019). Within midwifery care, these approaches are tailored to individual needs and should be applied safely, ensuring they do not replace medical or psychological treatment (ACOG, 2015; WHO, 2016).

Midwifery Approaches to Mental Health in the Prenatal and Postnatal Periods

Midwives play a central role in perinatal mental health through holistic care across pregnancy and the postpartum

period. However, evidence highlights persistent gaps in mental health literacy and limited emphasis on psychosocial assessment in routine practice (ElKhalil et al., 2025; Kassier & Madlala, 2018). Despite these challenges, midwives contribute to early identification of psychological problems, psychosocial assessment, counseling, and referral, supported by standardized tools such as the Edinburgh Postnatal Depression Scale (EPDS) and GAD-7 (NICE, 2022; WHO, 2022). The literature underscores the need for structured education in perinatal mental health. Although midwives do not diagnose or prescribe treatment, they play a key role in supporting decision-making and advocating for women within multidisciplinary care teams (Maulina et al., 2025; Greentree et al., 2025). Figure 1 summarizes the relationship between perinatal mental health risk factors, midwifery interventions, and outcomes.

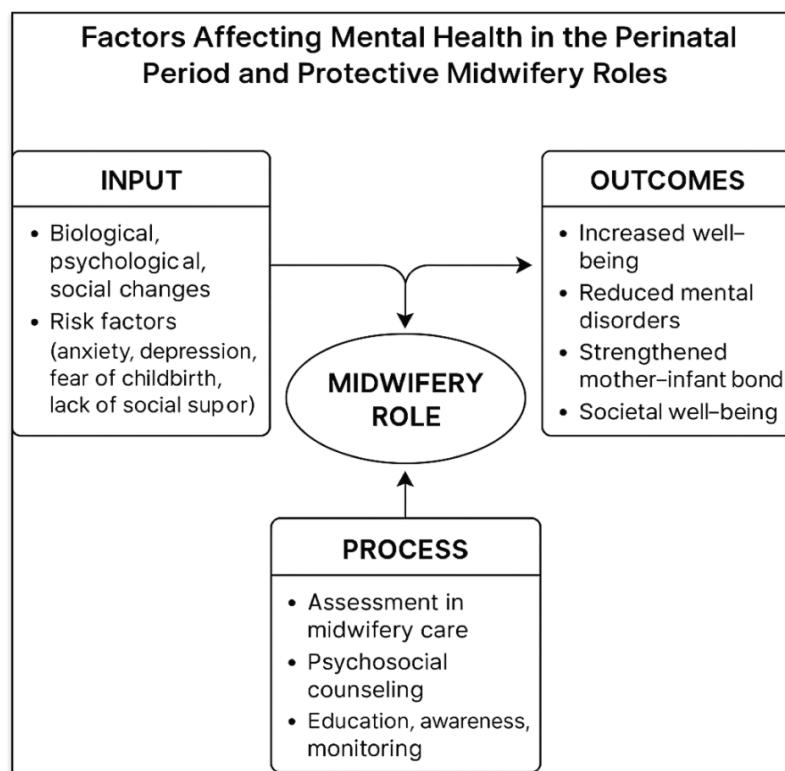


Figure 1. Factors affecting mental health in the perinatal period and protective midwifery roles

Discussion

This review highlights that integrating mental health-sensitive practices into midwifery care is essential for improving women's psychological well-being during the perinatal period. The findings confirm that the perinatal period represents a complex biopsychosocial phase characterized by increased vulnerability to anxiety, depression, fear of childbirth, and trauma-related symptoms (Stein et al., 2014; Dennis et al., 2017; Racine et al., 2021). These conditions are not only prevalent but also associated with significant short- and long-term consequences for both mothers and their children,

reinforcing the importance of early identification and preventive interventions (Field, 2018).

A key contribution of this review is the synthesis of evidence demonstrating the central role of midwives in addressing perinatal mental health challenges. Preventive and supportive midwifery practices—particularly routine screening, individualized psychosocial support, and continuity-based care models—emerge as fundamental components of effective perinatal mental healthcare (WHO, 2022; Cibralic et al., 2023). International studies consistently show that midwife-led models integrating screening, counseling, and referral pathways are associated with improved psychological outcomes, reduced maternal distress, and enhanced birth experiences (Hodnett et al., 2013; Bohren et al., 2017).

However, despite the availability of validated screening tools such as the Edinburgh Postnatal Depression Scale, their use in routine clinical practice remains inconsistent. This limitation is particularly evident in settings where structured referral systems are lacking, reducing the effectiveness of early detection and delaying access to appropriate care (NICE, 2022). Furthermore, persistent gaps in midwives' mental health literacy—especially in trauma-informed care—continue to limit their capacity to respond effectively to psychosocial needs (Maulina et al., 2025; ElKhalil et al., 2025).

The contrast between global evidence and the situation in Türkiye is particularly notable. While international research increasingly focuses on intervention effectiveness and structured care models, studies in Türkiye remain largely descriptive, emphasizing prevalence and risk factors (Yılmaz & Yar, 2021). This suggests that psychosocial assessment and referral processes are not yet fully standardized and may depend on individual professional initiative rather than system-level protocols.

Another important finding is the role of continuity-based, woman-centered care models. These approaches not only improve clinical outcomes but also enhance women's sense of control, emotional safety, and satisfaction with the birth experience (Nilsson et al., 2018; Cummins et al., 2025). Continuity of care allows for ongoing monitoring of psychological symptoms, facilitates trust-based relationships, and enables timely intervention, making it a cornerstone of effective perinatal mental health services.

Overall, improving perinatal mental health outcomes requires more than isolated interventions. It necessitates an integrated care framework that combines standardized screening–referral pathways, strengthened midwifery competencies, and effective interdisciplinary collaboration aligned with national health policies (WHO, 2022). Without these structural components, the impact of individual-level interventions may remain limited.

Limitations

This study has several limitations. Restricting inclusion to English- and Turkish-language publications (2010–2025) may have introduced language bias and limited generalizability, particularly in low- and middle-income settings. As a narrative review, no quantitative synthesis was conducted, and the included studies were methodologically heterogeneous, with limited randomized and longitudinal designs. The inclusion of Google Scholar may have increased the risk of duplicate or lower-quality sources despite careful screening. The focus on midwifery practices also limited the multidisciplinary scope, and cultural differences in the conceptualization of mental health may have affected comparability. Future research should adopt more rigorous designs, broader global representation, and stronger interdisciplinary approaches.

Conclusion and Recommendations

The prenatal and postnatal periods represent a critical phase characterized by profound biological, psychological, and social changes, during which women are particularly vulnerable to mental health problems. This review highlights that perinatal mental health is not only a clinical concern but also a significant public health issue with long-term implications for maternal, infant, and family well-being.

The findings emphasize the central role of midwives in early identification, psychosocial support, trauma-informed care, and continuity of care. Evidence indicates that woman-centered, continuity-based midwifery models contribute to improved psychological outcomes, enhanced birth experiences, and stronger mother–infant bonding.

However, important gaps remain in the standardization of screening practices, referral pathways, and midwives' mental health competencies. Addressing these gaps requires strengthening perinatal mental health education, expanding trauma-informed care training, and integrating structured screening–referral–follow-up systems into routine care.

From a systems perspective, improving perinatal mental health outcomes depends on effective interdisciplinary collaboration and alignment with national health policies. Without these structural components, the impact of individual-level interventions may remain limited.

In conclusion, integrating mental health–sensitive, midwife-led care into routine perinatal services represents a key strategy for improving maternal and infant health outcomes. Sustainable impact can only be achieved through standardized care pathways, strengthened professional competencies, and a coordinated, system-level approach to perinatal mental healthcare.

Declarations

Ethical Approval and Consent to Participate

Not applicable. This article is a review based on previously published studies and does not involve human participants or animal research.

Consent for Publication

Not applicable.

Availability of Data and Materials

Not applicable. All data are derived from previously published sources cited in the manuscript.

Competing Interests

The authors declare that they have no competing interests.

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Authors' Contributions

B.A.: Conceptualization, Design, Literature Review, Critical Revision, and Writing.

V.B.: Conceptualization, Design, Literature Review, Critical Revision, and Writing.

G.G.İ.: Conceptualization, Design, Literature Review, Critical Revision, and Writing.

Use of Artificial Intelligence (AI)

Artificial intelligence–assisted tools were used during the language-editing and clarity-enhancement stages of the manuscript. All scientific content, interpretations, and final editorial decisions remain the sole responsibility of the authors.

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INSTRUCTION FOR AUTHORS

GENERAL INFORMATION

Aims and Scope:

The aim of the Cyprus Turkish Journal of Psychiatry and Psychology, Cyprus, Turkey and in the world, mainly Psychiatry and Psychology, to provide the scientific level of theoretical knowledge and clinical experience to create and promote a forum. In the Cyprus Turkish Journal of Psychiatry and Psychology, original research articles, review articles, case reports, letters / debates, books and dissertations will be published. The Turkish Cypriot Journal of Psychiatry and Psychology, whose short name is Cyp Turk J of Psychiatry and Psychol, is published both in print (ISSN: 1302-7840) and online (E-ISSN: 2667-8225).

Cyprus Turkish Journal of Psychiatry and Psychology recommends that authors follow the Recommendations for the conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals formulated by the International Committee of Medical Journal Editors (ICMJE).

Link: <http://www.icmje.org/icmje-recommendations.pdf>

Publication Frequency:

The journal is published 4 issues per year, in March, June, September and December.

Manuscripts are published after review of the editorial board and at least two reviewers, and after making necessary corrections.

Publication Language:

The language of the Cyprus Turkish Journal of Psychiatry and Psychology is Turkish and English. Articles published in full text in Turkish also contain the English title, abstract and keywords. Again, Articles Published in English contain Turkish title, abstract and keywords.

It is a policy that the Editorial Board attaches importance to the writing and grammar rules of the articles. It is expected that the articles should be written in an understandable, clear, and plain language in accordance with grammar, spelling rules and field writing.

Articles accepted for publication by the Editorial Board are read by language (Turkish, English) editors. During the evaluation process of the articles, the editorial board, referees, or language editors may suggest corrections regarding the writing of the article. It is the authors' responsibility to make these corrections.

Authors seeking assistance with English language editing, translation, or figure and manuscript formatting to fit the journal's specifications should consider using Cyprus Mental Health Institute Language Services. Visit Cyprus Mental Health Institute Language Services on ruhsagligienstitusu.com.

Open Access Policy:

Cyprus Turkish Journal of Psychiatry and Psychology is an open access, double-blind peer-reviewed journal. Each article accepted by peer review is made freely available online immediately upon publication, is published under a Creative Commons license and will be hosted online in perpetuity. There is no charge for submitting a paper to the journal.

The Cyprus Turkish Journal of Psychiatry and Psychology is published with the policy of transparency, open access and sharing of information in publishing. The Journal supports the Budapest Open Access Initiative. For this purpose, the open access policies available at <http://www.budapestopenaccessinitiative.org/boai-10-translations/turkish-translation> are adopted by the Editorial Board of the Cyprus Turkish Journal of Psychiatry and Psychology. In addition, articles published in the Cyprus Turkish Journal of Psychiatry and Psychology within the scope of open access policies are licensed under "Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License" (<https://dergipark.org.tr/en/pub/ktppdergisi/archive>).

Journal Content:

At the stage of submission, the application letter, title, authors and institutions, contact address, Turkish abstract and the title and summary of the manuscript should be written at the relevant stages.

Turkish abstract should be added to the works written in English. In the main text of the manuscript it will be used as follows: Introduction, Materials and Methods, Results, Discussion, Acknowledgments, References, Tables and Figures.

Manuscripts must not have been previously published or sent to another journal for publication.

Article Types:

The Journal accepts the following paper types for publication:

a) Original Articles: These should only include original findings from high-quality planned research studies such as experimental designs, outcome studies, case-control series, surveys with high response rates, randomized controlled trials, intervention studies, studies of screening and diagnostic tests, and cost-effectiveness analyses.

b) Review articles: These are systematic and critical assessments of the literature.

c) Viewpoints: These should be experience-based views and opinions on debatable or controversial issues that affect the profession. The author should have sufficient, credible experience on the subject.

d) Practical Psychotherapy: Manuscripts describing the use of psychotherapy in a single case or a series of cases can be submitted to this section. We are mainly looking for articles that describe the practicalities in conducting psychotherapy, the hurdles faced, how they were overcome, etc.

e) Case Series: More than one new, interesting, and rare cases belonging to a particular diagnosis/clinical feature/treatment can be reported in this section.

f) Commentaries: These should address important topics and may be linked to multiple or a specific article recently published in Cyprus Turkish Journal of Psychiatry and Psychology.

g) Letter to the Editor: In this section, the authors publish their short observations on the mental health field.

Authorship:

The Cyprus Turkish Journal of Psychiatry and Psychology follows the requirements for authorship recommended by the International Medical Journal Editors Committee. Articles should be submitted for evaluation only after approval by all contributing authors. During the article submission phase, the Author Form must be sent together. Submitters should carefully check that all contributors to the article are considered contributing authors.

The list of authors should include anyone who can legally claim authorship. Accordingly, each author must meet all the following criteria:

Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND

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Final approval of the version to be published; AND

Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and

Those who do not meet the above 4 criteria should be named in the Acknowledgements.

The terms set forth herein have been arranged in accordance with the guidelines of the Journal Editors (ICMJE). For further details please see:

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Authors have to transfer the copyrights of their articles to the Cyprus Turkish Journal of Psychiatry and Psychology at the time of article application. For this, the "Copyright Transfer Form" is filled and the publication rights of the articles are transferred to the journal. All authors sign the form, scan it in the browser and electronically upload it to the TÜBİTAK ULAKBİM DERGİPARK system (<https://dergipark.org.tr/en/pub/ktppdergisi>) with the article.

The Editorial Board of the Cyprus Turkish Journal of Psychiatry and Psychology is authorized to publish the article.

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For guidance on conflict of interest statements, please see the ICMJE recommendations.

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/author-responsibilities-conflicts-of-interest.html#two>

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The Cyprus Turkish Journal of Psychiatry and Psychology requires all authors to state their funds consistently under a separate heading. In the absence of funding, the acknowledgment should include the following statements after and before the resources section: "This research has not received a private grant from any funding institution in the public, commercial or non-profit sectors."

Statement of Conflict of Interests:

The policy of the Cyprus Turkish Journal of Psychiatry and Psychology is that all authors indicate conflict of interests in their articles. If there is no conflict, please use the phrase 'Author (s) declares no conflict of interest'. Please refer to the ICMJE recommendations for guidance on conflict of interest statements. <http://www.icmje.org/recommendations/browse/roles-and-responsibilities/author-responsibilities-conflicts-of-interest.html#two> All applications must be accompanied by the ICMJE Conflict of Interest Forms.

Ethics Committee:

Local ethics committee approval should be obtained for researches. In the manuscripts that report the results of the experimental studies, there should be a sentence indicating that the informed consent of the volunteer or the patients were taken after all the procedure(s) is fully described. In the case of such a study, the authors must accept internationally recognized guidelines and Turkish provisions of the regulations and also send the approval of the Ethics Committee from the institution. Studies on animals should be made clear of what has been done to prevent pain and discomfort.

Medical research involving human subjects must be conducted according to the World Medical Association Declaration of Helsinki.

<https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/>

Submitted manuscripts should conform to the ICMJE Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals.

<http://www.icmje.org/icmje-recommendations.pdf>

All papers reporting animal and/or human studies must state in the methods section that the relevant Ethics Committee or Institutional Review Board provided (or waived) approval.

All submissions must be accompanied by a title page.

Write the manuscript title.

Provide the full name and institution of the review committee, in addition to the approval number.

Include a statement to the editor that the paper being submitted has not been published, simultaneously submitted, or already accepted for publication elsewhere.

Include a statement that the manuscript has been read and approved by all the authors, that the requirements for authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work.

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Please also refer to the ICMJE Recommendations for the Protection of Research Participants.

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/protection-of-research-participants.html>

All research involving animals submitted for publication must be approved by an ethics committee with oversight of the facility in which the studies were conducted. The journal has adopted the Consensus Author Guidelines on Animal Ethics and Welfare for Veterinary Journals published by the International Association of Veterinary Editors.

<http://www.veteditors.org/consensus-author-guidelines-on-animal-ethics-and-welfare-for-editors/>

Clinical Studies:

The Cyprus Turkish Journal of Psychiatry and Psychology complies with the requirement of the ICMJE that clinical trials are recorded in a WHO approved public trials registry as an evaluation condition for publication at or before the initial patient registration. At the end of the abstract, the trial registration name and URL and registration number should be included.

Reporting Guidelines:

Relevant EQUATOR Network reporting guidelines should be followed depending on the type of study. For example, all randomized controlled trials submitted for publication must include a complete CONSORT flowchart as figure. Systematic reviews and meta-analyses should be arranged according to the completed PRISMA flowchart. The EQUATOR wizard can help you determine the appropriate grid.

Other resources can be found in NLM's Research Reporting Guidelines and Initiatives.

Research Data:

As the Cyprus Turkish Journal of Psychiatry and Psychology, we believe that the clarity, transparency and reproducibility of the research should be facilitated. Regarding the subject, we encourage authors to share their research data in an appropriate public repository subject to ethical considerations and to include a data accessibility statement in their article files.

ARTICLE WRITING RULES AND FEATURES

General Information:

The language of the Cyprus Turkish Journal of Psychiatry and Psychology is Turkish and English. Manuscripts should be written in a clear, fluent, simple language and long narratives should be avoided. Turkish equivalents of foreign words and abbreviations must be fully written in parenthesis where they crossed. Generic names of drugs should be used. Footnotes should not be used.

The names of the authors should be placed at the bottom right of one line of the article title and the title, institution, address, telephone, e-mail address should be given with the asterisk (*). Authors / text-specific terminology and / or abbreviations should be explained in footnotes. The author (s) must be the person (s) who makes the work and writes directly.

If the research has received financial support from an organization or has been presented in a congress, it should be placed on the last word of the title of the manuscript (*) and should be indicated as a bottom note.

Articles are on one side of A4 paper size, 2.5 cm on all sides. It should be written with "Times New Roman" font with 12 pt and one and a half line spacing. The Turkish title should not exceed 19 words. Subheadings must be preceded by line spacing, no space between paragraphs and no paragraph indented.

Footnotes should be used to provide additional information, not for source representation, should be numbered on the page, written in 10 pt and 1 line spacing and justified. The page numbers must also be placed at the bottom with 11 pt. Accepted articles are published in order.

Preparation of articles:

Title page:

The Turkish and English title of the article should not exceed 19 words. Abbreviations should not be used in the title. In the article, only the names and surnames of the authors who directly contributed to the study, their titles, and the institutions they work for should be written clearly. Funds and organizations supporting the study should be specified on the title page.

Contact information of the author to be contacted should be written at the bottom of the title page (Author's name, surname, full address, postal code, telephone number, fax number and e-mail address should be written).

Abstracts:

Abstracts should be written in Turkish and English and should contain a maximum of 250 words. The abstract should be organized according to purpose-method-results-discussion sections. Turkish and English key words (3-8) for the article should be given right after the abstracts. English keywords should be given in accordance with "Medical Subject Headings (MESH)" (<http://www.nlm.nih.gov/mesh/MBrowser.html>). Turkish keywords should be in accordance with Turkey Science Terms (TBT) (<http://www.bilinterimleri.com>). Using abbreviations in abstracts should be avoided as much as possible. When abbreviations must be used, they should be used after they are defined in parentheses at the first mention.

Article Text Body:

Research articles: After the abstract, the subtitles of introduction-method and materials-results-discussion-resources should be included, the latest information on the subject should be included, the method should be written clearly, the validity and reliability studies of the measurement tools used and the tests used for evaluation, standard deviation, test values must be specified. In the discussion, the clinical and theoretical benefits of the results, application areas, and innovations should be emphasized. Articles should not exceed 3500 words. The article should contain a maximum of 6 tables or figures. Care should be taken that the number of references does not exceed 50 resources.

Review articles: The purpose, the method used, the sources used, the results obtained should be stated. Articles should not exceed 3500 words. The article should contain a maximum of 6 tables or figures. Care should be taken that the number of references does not exceed 50 resources.

Case reports: Case reports should include introduction, description of the cases, discussion and references sections. The article should not exceed 3000 words. It should be noted that the number of references for typical or rare cases that are found useful in terms of clinical or theoretical education should not exceed 30 references. The number of tables or figures should not exceed 2.

Perspectives: In these articles, experience-based opinions on controversial or controversial issues affecting the profession should be discussed with the introduction of the literature. The article should not exceed 2500 words. Number of Resources should not exceed 20. The number of tables or figures should not be more than 2.

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Comments: The features of the article discussed with the introduction should be discussed in the light of the literature. The article should not exceed 2500 words. Number of Resources should not exceed 20. The number of tables or figures should not be more than 2.

Letter: Opinions in which a discussion forum can be formed on various issues in the journal are included in the letter section. The article should not exceed 500 words.

Translation, book and thesis presentation: Translation, book and thesis introductions should be short, an original copy of the translation texts and thesis should be sent. The article should not exceed 500 words.

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References should be written in parentheses in the text by including the surnames and publication date of the manuscripts. If more than one source is to be shown, the (;) sign must be used between the references. References should be sorted alphabetically.

Single author References;

(Akyolcu, 2007)

References with two authors;

(Saymer and Demirci, 2007, p. 72)

References with three, four and five authors;

For the first use in the text: (Ailen, Ciambur and Welch 2000, pp. 12 .13) In repeated use within the text: (Ailen et al., 2000).

References with six and more authors;

(Çavdar et al., 2003)

References in References Section

All references should be given in a separate section at the end of the text in alphabetical order.

Examples of literature writing are given below.

Book

a) Book Example

Onur, B. (1997). Developmental Psychology, Ankara: İmge Kitapevi.

b) Translation of Books

Schuckit MA. (1993). Alcohol and Substance Abuse. K Kamberoglu (trans.), Izmir: Kanyilmaz Matbaası.

c) Multi Writer Turkish Book

Tonta, Y., Bitirim, Y. and Sever, H. (2002). Performance evaluation in Turkish search engines. Ankara: Total Informatics.

d) English Book

Kamien R., & amp; Kamien, A. (2014). Music: An appreciation. New York, NY: McGraw-Hill Education.

e) Section in English Book

Bassett, C. (2006). Cultural studies. In G. Hall & C. Birchall (Eds.), New cultural studies: Adventures in theory (pp. 220 Bir237). Edinburgh, UK: Edinburgh University Press.

f) Section in Turkish Book

Erkmen, T. (2012). Organizational culture: Functions, elements, the importance of business management and leadership. M. Zencirkiran (Ed.), In the book of Organizational Sociology (pp. 233an263). Bursa: Dora Edition Publication.

Article

a) Article

Mutlu, B. and Savaşer, S. (2007). Causes of stress in parents in the intensive care unit after surgery and attempts to reduce. Istanbul University Florence Nightingale Nursing Journal, 15 (60), 179ing182.

b) More Than Seven Writers in Article

Lal, H., Cunningham, A. L., Godeaux, O., Chlibek, R., Diez-Domingo, J., Hwang, S.-J. ... Heineman, T. C. (2015). Efficacy of an adjuvanted herpes zoster subunit vaccine in older adults. New England Journal of Medicine, 372, 2087 Medicine2096. <http://dx.doi.org/10.1056/nejmoa1501184>

Thesis, Presentation, Paper

a) Thesis

Yellow, E. (2008). Cultural identity and policy: Interculturalism in Mardin. (Unpublished PhD Thesis). Ankara University Institute of Social Sciences, Ankara.

b) Congress Presentation

Çepni, S., Bacanak, A. and Özsevgeç, T. (2001, June). The relation of science teacher candidates attitudes towards science branches and their success in science branches. Paper presented at the X. National Educational Sciences Congress, Abant İzzet Baysal University, Bolu

Tables and Figures:

Tables should be written on a separate page with single spacing. Each table should have a number and descriptive information on top. If abbreviations are included in the table, the expansions of these abbreviations should be placed under the table in the form of subtitles and in alphabetical order.

When using previously printed or electronically published tables, written permission must be obtained from both the author and the publisher, and this must be sent to the editor of the journal by fax or mail.

Transverse and longitudinal lines should not be used in the table, only straight lines should be drawn at the top and bottom.

The visuals and note examples in the articles should be numbered as Figure / Table 1.... with their short explanations centered. All images should be sent separately in JPG format with a minimum resolution of 300 dpi in order to avoid resolution problems in printing. Placements in the text can be changed according to the page layout when necessary.

Tables, graphics, figures and photographs should not be more than six, they should be placed on a separate page and their place in the text should be specified. Periods should not be used in arabic numbers and decimals.

Article Submission:

Article submissions are through the magazine park system and are given below;

Link: <https://dergipark.org.tr/tr/>

THE BLIND REVIEW AND EVALUATION PROCESS

Blind refereeing is a method applied for publishing scientific publications with the highest quality. This method forms the basis of the objective evaluation process of scientific studies and is preferred by many scientific journals. All studies submitted to the Cyprus Turkish Journal of Psychiatry and Psychology are evaluated by blinding according to the following stages.

Blind Arbitration Type:

The Cyprus Turkish Journal of Psychiatry and Psychology uses the double blind method in the evaluation process of all studies. In the double blind method, the identities of the authors and referees of the studies are hidden.

Initial Evaluation Process:

Studies submitted to the Cyprus Turkish Journal of Psychiatry and Psychology are first evaluated by the editors. At this stage, studies that do not comply with the purpose and scope of the journal, are weak in terms of language and expression rules in Turkish and English, contain scientific critical errors, have no original value and do not meet the publication policies are rejected. Authors of rejected studies are informed within one month at the latest from the date of submission. Studies that are deemed appropriate are sent to a field editor for the field of interest for pre-evaluation.

Pre-Evaluation Process:

In the pre-evaluation process, field editors examine the introduction and literature, method, findings, conclusion, evaluation and discussion sections of the studies in detail in terms of journal publishing policies and scope and originality. Studies deemed unsuitable as a result of this review are returned within four weeks at the latest with the field editor's evaluation report. Studies found appropriate are taken into the refereeing process.

Refereeing Process:

Studies are refereed according to their content and expertise of the referees. The editor of the field who examines the study suggests at least two referees from the referee pool of the Cyprus Turkish Journal of Psychiatry and Psychology, or may suggest new referees suitable for the field of study. The referee suggestions from the field editor are evaluated by the editors and the studies are forwarded to the referees by the editors. Referees must guarantee that they will not share any process and document about the work they evaluate.

Referee Reports:

Referee evaluations are generally; It is based on originality, method used, compliance with ethical rules, consistent presentation of findings and results, and review of the literature. This review is based on the following factors: Introduction and literature: the evaluation report includes the presentation and aims of the problem in the study, the importance of the subject, the scope of the literature on the subject, its currency and the originality of the study.

Method: The evaluation report includes information on the suitability of the method used, the selection and characteristics of the research group, validity and reliability, as well as an opinion on the data collection and analysis process

Findings: The evaluation report includes opinions on the presentation of the findings obtained within the framework of the method, the accuracy of the analysis methods, the consistency of

the findings reached with the aims of the research, the presentation of the tables, figures and visuals needed, and the conceptual evaluation of the tests used.

Evaluation and discussion: the evaluation report includes discussion of the topic based on the findings, compliance with the research question (s) and hypothesis (s), generalizability and applicability.

Conclusion and suggestions: the evaluation report includes a contribution to the literature, an opinion on suggestions for future studies and applications in the field.

Style and expression: the evaluation report includes the opinion about the content of the study title, the use of Turkish in accordance with the rules, the submission and references to the language of the full text in accordance with the examples under the journal publication principles.

General evaluation: the evaluation report includes an opinion about the originality of the study as a whole, and its contribution to the literature and practices in the field.

During the evaluation process, the referees are not expected to make adjustments according to the typographical features of the study.

Referee Evaluation Process:

The time given to the referees for the referee evaluation process is 3 weeks. Correction suggestions from referees or expert editorial board members must be completed by the authors within 3 weeks. Referees can examine the revisions of a work and decide whether it is appropriate or, if necessary, request corrections more than once.

Evaluation Result:

Comments from referees are reviewed by the field editor within two (2) weeks at the latest. As a result of this review, the editor of the field transmits its final decision regarding the study to the editors.

Editorial Board Decision:

Editors prepare editorial board opinions on the study based on the opinions of the field editor and referees. The opinions prepared are forwarded to the author (s) by the editor together with the field editor and referee recommendations within 1 week at the latest. In this process, the works that are given negative opinions are returned without requesting a plagiarism check. The final decision is made according to the results of the plagiarism audit reports for the studies with positive opinions.

Publication Evaluation Process:

It is envisaged that the publication evaluation process of the studies submitted to the Cyprus Turkish Journal of Psychiatry and Psychology will be completed within approximately 3 months. However, the period between the date when the referees or editors request a correction from the author (s) and the date when the author (s) complete the corrections are not included in this 3-month period.

Citation and Reference Control:

According to the publication ethics of the Cyprus Turkish Journal of Psychiatry and Psychology, it is mandatory to cite the articles accurately and completely. Authors must ensure that they have written entirely original works and that if authors have used the works and / or words of others, it is properly quoted or quoted. This audit is done first by the referees during the evaluation and then by the editors according to the result of the similarity-plagiarism (iThenticate) program. All works plagiarism report is also checked over intihal.net.

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The articles that are edited in the Cyprus Turkish Journal of Psychiatry and Psychology are published in electronic media under the title of "Early View" by giving a Digital Object Identifier (DOI). Minor adjustments can be made, if necessary, while early view articles are published in the journal. Articles in early view are published in volumes and numbers determined by the Editorial Board, by removing the "EARLY VIEW" watermark on it. After the electronic journal is published, the printed version of the Cyprus Turkish Journal of Psychiatry and Psychology, which includes the same articles, is also published in the same month.

Archiving:

The data and full texts of the articles published in the Cyprus Turkish Journal of Psychiatry and Psychology are published as .pdf on the server of TÜBİTAK ULAKBİM DERGİPARK,

OCLC WorldCat and EBSCOhost digital archiving (<https://dergipark.org.tr/en/pub/ktpdergisi/archive>), (<https://www.worldcat.org/>) stored and archived in a closed way. (LOCKSS; <https://dergipark.org.tr/en/pub/ktpdergisi/lockss-manifest>).

EASE Statement on Quality Standards

The European Association of Science Editors encourages all editors to ensure that reports of research on COVID-19 meet required standards and comply with agreed guidelines, and that any limitations are clearly stated. Members of EASE have noted poor standards of reporting in many studies related to the COVID-19 pandemic. Medical and public health measures to treat infected patients and to limit the spread of the coronavirus have to be based on high quality evidence if they are to succeed. EASE urges all involved in collecting and publishing data related to the pandemic to adhere to ethical guidelines, and to follow standard reporting guidelines (see www.equator-network.org), for example CONSORT for clinical trials and STROBE for epidemiological studies. Demographic data should include age and sex of all individuals and follow the SAGER guidelines to ensure that data on sex and gender are fully and correctly reported. We encourage full and open sharing of data where possible.

We recognise that in times of crisis it may not always be possible to obtain all required data, and that reporting may – of necessity – be curtailed. To avoid misinterpretation, but also to facilitate the rapid sharing of information, we encourage editors to ensure that authors include a statement of limitations on their research. This will inform readers and strengthen the usefulness of any published research.

In addition, whilst always advocating high language standards, we acknowledge that to facilitate rapid dissemination of important research it may be necessary to limit editorial involvement to ensuring that the published research is understandable, and not to enforce stringent language requirements on authors.

The relevant statement can be found at the website <https://ease.org.uk/publications/ease-statements-resources/ease-statement-on-quality-standards/>.

YAZARLARA BİLGİLER

GENEL BİLGİLER

Amaçlar ve Kapsam:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin amacı, Kıbrıs Türkiye ve Dünya'da Psikiyatri ve Psikoloji başta olmak üzere kuramsal bilgileri ve klinik deneyimleri bilimsel düzeyde sunmak, yaygınlaştırmak bir forum oluşturmaktır. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde Psikiyatri ve Psikoloji ile ilgili alanlardaki araştırma, gözden geçirme/ derleme, olgu sunumu, eğitimde/ uygulamada ve psikiyatride yeni ufuklar açacak özgün yazılar/görüşler, çeviri yazılar, mektup/tartışma, kitap ve tez tanıtımı yayımlanır. Kısa Adı KTPP Dergisi olan Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi hem basılı (ISSN: 1302-7840) hem de online (E-ISSN: 2667-8225) olarak yayımlanmaktadır. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, yazarların International Committee of Medical Journal Editors (ICMJE) tarafından formüle edilen Tıbbi Dergilerde Bilimsel Çalışmanın Yürütülmesi, Raporlanması, Düzenlenmesi ve Yayınlaması için Önerilere uymalarını önermektedir. Link: <http://www.icmje.org/icmje-recommendations.pdf>

Yayın Sıklığı:

Dergi Mart, Haziran, Eylül ve Aralık olmak üzere üç ayda bir, dört sayı olarak yayımlanır. Dergiye gönderilen yazılar yayın kurulu ve en az iki danışmanın incelemesinden ve gerekli düzeltmeler yapıldıktan sonra yayımlanır.

Yayın Dili:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin yayın dili Türkçe ve İngilizce'dir. Türkçe tam metin yayımlanan makalelerde İngilizce başlık, öz ve anahtar sözcükler de yer alır. Yine İngilizce Yayınlanan Makalelerde Türkçe başlık, öz ve anahtar sözcükler yer alır.. Makalelerin yazımı ve dil bilgisi kurallarına uygun olması, Editörleri Kurulunun önem verdiği bir politikadır. Makalelerin dil bilgisi, yazım kuralları ve alan yazına uygun, anlaşılır, açık ve yalın bir dil ile yazılması beklenir. Editörler Kurulu'nca yayına kabul edilen makaleler, dil (Türkçe, İngilizce) editörlerince okunur. Yazarlara, makalelerin değerlendirme sürecinde editörler kurulu, hakemler ya da dil editörlerince makalenin yazımına ilişkin düzeltmeler önerilebilir. Bu düzeltmelerin yapılması, yazarların sorumluluğundadır. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi herhangi bir çeviri hizmeti vermemektedir. Derginin beklentilerine uyması için İngilizce düzenleme, çeviri veya şekil ve makale biçimlendirme konusunda yardım arayan yazarlar, Kıbrıs Ruh Sağlığı Enstitüsü Dil Hizmetlerini kullanmayı düşünebilirler. Kıbrıs Ruh Sağlığı Enstitüsü'ndeki dil hizmetleri için enstitünün web sitesi http://ruhsagligienstitusu.com/*u ziyaret edilebilir.

Açık Erişim Politikası:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, açık erişimli, çift kör hakemli bir dergidir. Hakem değerlendirmesi sonrasında kabul edilen her makale, yayımlandıktan hemen sonra çevrimiçi olarak ücretsiz olarak bir Creative Commons lisansı altında yayımlanır ve sürekli olarak çevrimiçi olarak barındırılır. Dergiye makale göndermenin herhangi bir bedeli yoktur.

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, yayıncılıkta saydamlık, açık erişim sağlama ve bilginin paylaşılması politikasıyla yayımlanmaktadır. Dergimiz, Budapeşte Açık Erişim Girişimi'ni desteklemektedir. Bu amaçla <http://www.budapestopenaccessinitiative.org/boai-10-translations/turkish-translation> web adresinde bulunan açık erişim politikaları, Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi Editörler Kurulu'nca benimsenmektedir. Ayrıca, açık erişim sağlama politikaları kapsamında Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yayımlanan makaleler "Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License" ile lisanslanmıştır. (<https://dergipark.org.tr/en/pub/ktppdergisi/archive>)

Dergi yazım içeriği:

Gönderim aşamasında, başvuru mektubu, başlık, yazarlar ve kurumları, iletişim adresi, Türkçe özet ve yazının İngilizce başlığı ve özeti ilgili aşamalarda yazılmalıdır. İngilizce yazılan çalışmalara da Türkçe özet eklenmesi gerekmektedir. Yazının ana metnindeyse şu sıra kullanılacaktır: Giriş, Gereç ve Yöntem, Bulgular, Tartışma, Teşekkür, Kaynaklar. Yazıların daha önce

yayımlanmamış ya da yayımlanmak üzere başka dergiye gönderilmemiş olması gerekir.

Yazı Cesitleri:

Dergi aşağıdaki yazı türlerini yayın için kabul eder:a)Özgün Makaleler: Bunlar sadece deneysel tasarımlar gibi yüksek kaliteli planlanmış araştırma çalışmalarından orijinal bulgular içeren sonuç çalışmaları, vaka-kontrol serileri, yüksek yanıt oranlarına sahip anketler, randomize kontrollü çalışmalar, müdahale çalışmaları, tarama ve teşhis testleri çalışmaları ile maliyet-etkinlik analizleri.

b)Derleme makaleleri: Bunlar, literatürün sistematik ve eleştirel değerlendirmeleridir.

c)Vaka Serileri: Bu bölümde belirli bir tanıya / klinik özelliğe / tedaviye ait birden fazla yeni, ilginç ve nadir vaka rapor edilebilir.

d)Bakış Açıkları: Bu yazılar, mesleği etkileyen tartışmalı veya tartışmalı konulara ilişkin deneyime dayalı görüş ve görüşler olmalıdır. Yazar konu hakkında yeterli ve güvenilir deneyime sahip olmalıdır.

e)Pratik Psikoterapi: Tek vakada veya bir dizi vakada psikoterapinin kullanımını anlatan yazılar bu bölüme gönderilebilir. Esas olarak psikoterapi uygulamasındaki pratiklikleri, karşılaşılan engelleri, nasıl aşıldıklarını vb. Açıklayan makaleler arıyoruz.

f)Yorumlar: Bunlar önemli konuları ele almalıdır ve Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yakın zamanda yayımlanan birden fazla veya belirli bir makaleye bağlanabilir.

g)Editöre Mektup: Bu bölümde yazarlar ruh sağlığı alanı ile ilgili kısa gözlemlerini bu bölümde yayımlarlar.

Yazarlık:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, Uluslararası Tıp Dergisi Editörleri Komitesi tarafından yazarlık için önerilen gereksinimlerini takip etmektedir. Makaleler, yalnızca katkıda bulunan tüm yazarlar tarafından onay verildikten sonra değerlendirilmek üzere sunulmalıdır. Makale gönderim aşamasında Yazar Formu da birlikte gönderilmelidir. Makaleyi gönderenler, makaleye katkıda bulunan herkesin katkıda bulunan yazarlar olarak kabul edildiğini dikkatlice kontrol etmelidir. Yazar listesi, yasal olarak yazarlık iddia edebilecek herkesi içermelidir. Buna göre, her yazar aşağıdaki kriterlerin tümünü karşılamalıdır:

Çalışmanın ana fikir veya tasarımına önemli katkılar veya çalışma için verilerin toplanması, analizi veya yorumlanması; VE Çalışmanın taslağını hazırlamak veya önemli entelektüel içerik için eleştirel olarak yeniden gözden geçirmek; VE Yayımlanacak versiyonun son onayı; VE

İşin herhangi bir kısmının doğruluğu veya bütünlüğü ile ilgili soruların uygun şekilde araştırılıp çözülmesini sağlamada çalışmanın tüm yönlerinden sorumlu olmayı kabul etmek Yazarlık kriterlerini karşılamayan tüm katkıda bulunanların Teşekkür bölümünde belirtilmelidir. Yazarlık hakkında daha fazla bilgi için lütfen International Committee of Medical Journal Editors (ICMJE) yazarlık kılavuzuna bakın.

Telif Hakkı Devir Formu:

Yazarlar makalelerinin telif haklarını, makale başvurusu sırasında Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'ne devretmek zorundadır. Bunun için "Telif Hakları Devir Formu" doldurularak yazıların yayın hakları dergiye devredilir. Formu tüm yazarlar imzalar, tarayıcıda tarar ve elektronik olarak makaleyle birlikte TÜBİTAK ULAKBİM DERGİPARK sistemine (<https://dergipark.org.tr/en/pub/ktppdergisi>) yükler. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi Editörler Kurulu, makalenin yayımlanmasında yetkilidir.

Ayrıca yazarların telif hakkı dışında kalan patent hakları, dersleri, sunumları ve kitap çalışmalarında makaleyi ücret ödemeksizin kullanabilme hakkı, satmamak koşuluyla kendi amaçları için makaleyi çoğaltma hakkı, postayla veya elektronik yolla dağıtma hakkı saklıdır. Ayrıca makalenin herhangi bir bölümünün başka bir yayında kullanılmasına Dergiye yollamada (atıfta) bulunulması koşuluyla yazarına izin verilir. Telif Hakları Devir Formu'nu makale başvurusu ile sisteme yüklemeyen yazarların makalelerine işlem yapılmaz. Telif hakkı devri yalnız Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yayımlanan makaleler için geçerlidir.

Finansman:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, tüm yazarların fonlarını tutarlı bir şekilde ayrı bir başlık altında belirtmelerini talep etmektedir. Finansman bulunmaması durumunda teşekkür metninde sonra ve kaynaklar bölümünden önce şu ifadelerin bulunması gerekir: “Bu araştırma, kamu, ticari veya kar amacı gütmeyen sektörlerdeki herhangi bir finansman kuruluşundan özel bir hibe almadı.”

Çatışan Çıkarların Beyanı:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi’nin politikası, tüm yazarlardan çatışan çıkar beyanını yazılarında belirtmeleridir. Çatışma yoksa lütfen ‘Yazar (lar) çıkar çatışması olmadığını beyan eder’ ifadesinin kullanılması gerekir. Çıkar çatışması bildirimleri hakkında rehberlik için lütfen ICMJE önerilerine bakın.

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/author-responsibilities-conflicts-of-interest.html#two>

Tüm başvurulara ICMJE Çıkar Çatışması Formları eşlik etmelidir.

Etik Kurul:

Araştırmalar için yerel etik kurul onayı alınmalıdır. Deneysel çalışmaların sonuçlarını bildiren yazılarda, çalışmanın yapıldığı gönüllü ya da hastalarla uygulanacak prosedür(ler)in özelliği tümüyle anlatıldıktan sonra, onaylarının alındığını gösterir bir cümle bulunmalıdır. Yazarlar, bu tür bir çalışma söz konusu olduğunda, uluslararası alanda kabul edilen kılavuzlara ve T.C ve/veya K.K.T.C. Sağlık Bakanlığı tarafından getirilen yönetmelik ve yazılarda belirtilen hükümlere uyulduğunu belirtmeli ve kurumdan aldıkları Etik Komitesi onayını göndermelidir.

İnsan denekleri içeren tıbbi araştırmalar Dünya Tıp Birliği Helsinki Deklarasyonu’na göre yapılmalıdır.

<https://www.wma.net/policies-post/wma-declaration-of-helsinki-ethical-principles-for-medical-research-involving-human-subjects/>

Gönderilen makaleler, Tıbbi Dergilerde Bilimsel Çalışmanın Yürütülmesi, Raporlanması, Düzenlenmesi ve Yayınlanması için ICMJE Tavsiyelerine uygun olmalıdır.

<http://www.icmje.org/icmje-recommendations.pdf>

Hayvan ve / veya insan çalışmalarını bildiren tüm makaleler ile ilgili Etik Kurul veya Kurumsal İnceleme Kurulunun verdiği onay yöntemler bölümünde belirtilmelidir.

Tüm başvurulara bir başlık sayfası eşlik etmelidir.

Makalenin başlığı olmalı.

Onay numarasına ek olarak inceleme komitesinin tam adı ve kurumu belirtilmeli.

Editöre, gönderilen makalenin basılmadığına, eşzamanlı olarak gönderilmediğine veya başka bir yerde yayınlanmak üzere kabul edilmediğine dair bir açıklama eklenmeli.

Yazının tüm yazarlar tarafından okunduğuna ve onaylandığına, bu belgede daha önce belirtildiği gibi yazarlık gereksinimlerinin karşılandığına ve her yazarın yazının dürüst çalışmayı temsil ettiğine inanıldığına dair bir açıklama eklenmeli.

Yazar, yazının bilgisi dahilinde, herhangi bir üçüncü şahsın telif hakkını veya mülkiyet hakkını ihlal etmediğini beyan etmeli

Bireysel vakaları veya vaka serilerini bildirmek için bilgilendirilmiş onam hakkındaki bilgiler makale metnine dahil edilmelidir. Yayınlanacak hasta bilgileri ve görüntüleri için yazılı bilgilendirilmiş onamın hasta (lar) tarafından mı yoksa yasal olarak yetkili bir temsilci tarafından mı sağlandığına dair bir açıklama gereklidir. Kendi başına hastanın gizliliğini ihlal ettiği için, lütfen makale ile hastanın gerçek yazılı bilgilendirilmiş onayı gönderilmemelidir. Dergi, yazılı bilgilendirilmiş onay aldığını yazılı olarak onaylamanızı talep etmektedir. Ancak yazılı iznin kendisi, örneğin bir hastanın hastane kaydında yazarlar / araştırmacılar tarafından tutulması gerekmektedir. Onay mektubu ayrı bir dosya olarak yüklenebilir. Lütfen ayrıca Araştırma Katılımcılarının Korunması için ICMJE Önerilerine bakın.

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/protection-of-research-participants.html>

Yayınlanmak üzere gönderilen hayvanları içeren tüm araştırmalar, çalışmaların yürütüldüğü tesisin gözetiminde bir etik komite tarafından onaylanmalıdır. Hayvanlar üzerinde yapılan çalışmalarda ağrı, acı ve rahatsızlık verilmemesi için neler yapıldığı açık bir şekilde belirtilmelidir.

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, International Association of Veterinary Editors tarafından yayınlanan Veterinerlik Dergileri için Hayvan Etiği ve Refahına İlişkin Mutabakat Yazım Kılavuzunu benimsemiştir.

<http://www.veteditors.org/consensus-author-guidelines-on-animal-ethics-and-welfare-for-editors/>

Klinik Araştırmalar:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, ICMJE’nin , klinik araştırmaların DSÖ onaylı bir kamu araştırmaları kayıt defterine ilk hasta kaydı sırasında veya öncesinde, yayın için bir değerlendirme koşulu olarak kaydedilmesi şartına uyar. Özetin sonunda deneme kayıt adı ve URL’si ve kayıt numarası yer almalıdır.

Raporlama Yönergeleri:

İlgili EQUATOR Ağı raporlama kılavuzları, çalışmanın türüne bağlı olarak takip edilmelidir. Örneğin, yayınlanmak üzere gönderilen tüm randomize kontrollü çalışmalar , şekil olarak tamamlanmış bir CONSORT akış şemasını içermelidir. Sistematik incelemeler ve meta-analizler, tamamlanmış PRISMA akış şemasına göre düzenlenmelidir. EQUATOR sihirbazı uygun kılavuz belirlemenize yardımcı olabilir.

Diğer kaynaklar, NLM’nin Araştırma Raporlama Yönergeleri ve Girişimlerinde bulunabilir.

Araştırma Verileri:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi olarak, araştırmaların açıklığının, şeffaflığının ve tekrarlanabilirliğinin kolaylaştırılması gerektiği düşüncesindeyiz. Konuyla ilgili olarak yazarları, araştırma verilerini etik değerlendirmelere tabi olarak uygun bir kamuya açık depoda paylaşmaya ve makale dosyalarına bir veri erişilebilirliği beyanı eklemeye teşvik ederiz.

MAKALE YAZIM KURALLARI VE ÖZELLİKLERİ**Genel Bilgileri:**

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi’nin dili Türkçe ve İngilizcedir. Yazılar anlaşılır, akıcı, yalın bir dille yazılmalı ve uzun anlatımlardan kaçınılmalıdır. Yabancı sözcüklerin ve kısaltmaların Türkçe karşılıkları ilk geçtikleri yerde parantez içinde tam olarak yazılmalıdır. İlaçların jenerik adları kullanılmalıdır. Yazılarda dipnot kullanılmamalıdır.

Yazarların adları makale başlığının bir satır sağ altında yer almalı ve yıldız (*) dipnotla unvanı, kurumu, adresi, telefonu, e-posta adresi verilmelidir. Yazara/metne özgü terminoloji ve/veya kısaltmalar ilk kullanımlarında dipnotla açıklanmalıdır. Yazar(lar) doğrudan çalışmayı yapan ve yazan kişi(ler) olmalıdır. Araştırma herhangi bir kuruluş tarafından maddi bir destek görmüşse veya bir kongrede tebliğ edilmişse makalenin başlığının son kelimesi üzerine (*) konularak dip not olarak belirtilmelidir. Makaleler A4 kağıt boyutunun bir yüzüne, tüm kenarlardan 2,5 cm. boşluk bırakılarak, Times New Roman yazı karakteriyle, 12 punto ve 1,5 satır aralığıyla iki yana yaslı olarak yazılmalıdır. Alt başlıklar ve başlık sonrası paragraflar arasında boşluk olmamalı ve hiçbir paragraf girintili yazılmamalıdır. Dipnotlar kaynak gösterimi için değil ek bilgi vermek için kullanılmalı, sayfa altında numaralandırılmalı, 10 punto ve 1 satır aralığı ile iki yana yaslı olarak yazılmalıdır. Sayfa numaraları da 11 puntuyla, sağ altta yer almalıdır. Kabul edilen yazılar sıraya alınarak yayımlanır.

Makalelerin hazırlanması:

Başlık sayfası

Yazının Türkçe ve İngilizce başlığı 19 kelimeyi geçmemelidir. Başlıkta kısaltma kullanılmamalıdır. Yazıda sadece çalışmaya doğrudan katkısı bulunan yazarların ad ve soyadları, unvanları, çalıştıkları kurumlar açık olarak yazılmalıdır. Çalışmayı destekleyen fon ve kuruluşlar başlık sayfasında belirtilmelidir. Başlık sayfasının en altına iletişim kurulacak yazarın iletişim bilgileri yazılmalıdır (Yazarın adı, soyadı, açık adresi, posta kodu, telefon numarası, faks numarası ve e-posta adresi yazılmalıdır).

Özetler:

Özetler Türkçe ve İngilizce olarak yazılmalı ve en fazla 250 kelime içermelidir. Özet, amaç-yöntem-sonuçlar-tartışma bölümlerine göre düzenlenmelidir. Makale için verilecek Türkçe ve İngilizce anahtar sözcükler (3-8 adet) özetlerden hemen sonra verilmelidir. İngilizce anahtar kelimeler “Medical Subject Headings (MESH)”e uygun olarak verilmelidir (<http://www.nlm.nih.gov/mesh/MBrowser.html>). Türkçe anahtar kelimeler Türkiye Bilim Terimleri (TBT)’ne uygun olarak verilmelidir (<http://www.bilimterimleri.com>). Özetlerde kısaltma kullanılmasından mümkün olduğunca kaçınılmalıdır. Kısaltma

kullanılması mutlaka gerektiğinde, ilk geçtiği yerde parantez içinde tanımlandıktan sonra kullanılmalıdır.

Makale Metni Gövdesi:

Araştırma yazıları: Özetten sonra giriş-yöntem ve gereç-sonuçlar tartışma-kaynaklar alt başlıklarını taşımalı, konuyla ilgili en son bilgiler yer almalı, yöntem açık olarak yazılmalı, kullanılan ölçüm araçlarının geçerlilik ve güvenilirlik çalışmaları ile değerlendirme için kullanılan testler, standart sapma, test değerleri belirtilmelidir. Tartışmada sonuçların klinik ve kuramsal yönlerden yararları, uygulanma alanları, getirdiği yenilikler vurgulanmalıdır. Yazılar 3500 kelimeyi geçmemelidir. Yazıda en çok 6 tablo veya figür olmalıdır. Kaynak sayısının 50 kaynağı aşmamasına dikkat edilmelidir.

Derleme yazıları: Amacı, kullanılan yöntem, yararlanılan kaynaklar, çıkarılan sonuçlar belirtilmelidir. Yazılar 3500 kelimeyi geçmemelidir. Yazıda en çok 6 tablo veya figür olmalıdır. Kaynak sayısının 50 kaynağı aşmamasına dikkat edilmelidir.

Olgu sunumu: Olgu sunumlarında giriş bölümü, olguların tanımı, tartışma ve kaynaklar bölümleri yer almalıdır. Yazı 3000 kelimeyi geçmemelidir. Klinik veya kuramsal eğitim yönünden yararlı görülen tipik veya az görülen olguların kaynak sayısının 30 kaynağı aşmamasına dikkat edilmelidir. Tablo veya figür sayısı en fazla 2 olmalıdır.

Bakış Açıları: Bu yazılarda giriş bölümü ile mesleği etkileyen tartışmalı veya tartışılmalı konulara ilişkin deneyime dayalı görüşler literatür eşliğinde tartışılmalıdır. Yazı 2500 kelimeyi geçmemelidir. Kaynak Sayısı 20'yi geçmemelidir. Tablo veya figür sayısı 2'den fazla olmamalıdır.

Pratik Psikoterapi: Bu yazılarda giriş bölümü ile psikoterapi uygulaması ile ilgili bilgiler literatür eşliğinde tartışılmalıdır. Yazı 2500 kelimeyi geçmemelidir. Kaynak Sayısı 20'yi geçmemelidir. Tablo veya figür sayısı 2'den fazla olmamalıdır.

Yorumlar: Giriş bölümü ile tartışılan makalenin özellikleri literatür eşliğinde tartışılmalıdır. Yazı 2500 kelimeyi geçmemelidir. Kaynak Sayısı 20'yi geçmemelidir. Tablo veya figür sayısı 2'den fazla olmamalıdır.

Mektup: Dergide yer alan değişik konularda tartışma forumu oluşturulabilecek görüşler mektup bölümünde yer almaktadır. Yazı 500 kelimeyi geçmemelidir.

Çeviri, kitap ve tez tanıtımı: Çeviri, kitap ve tez tanıtımları kısa olmalı, çeviri yazılarının ve tezin bir özgün kopyası gönderilmelidir. Yazı 500 kelimeyi geçmemelidir.

Teşekkür: Teşekkür yazısı katkı koyan bireylere veya çalışmayı destekleyen fon ve kuruluşlara varsa eklenebilir.

Kaynaklar: Dergide makale içi atıflar ve kaynakça uluslararası APA formatına göre gösterilmelidir. Ayrıntılı bilgi için web sayfasında Kaynaklar bölümüne bakınız.

Metin İçinde Kaynak Gösterme

Kaynaklar metinde parantez içinde yazarların soyadı ve yayın tarihi yazılarak belirtilmelidir. Birden fazla kaynak gösterilecekse kaynaklar arasında (;) işareti kullanılmalıdır. Kaynaklar alfabetik olarak sıralanmalıdır.

Tek yazarlı kaynak;

(Akyolcu, 2007)

İki yazarlı kaynak;

(Sayiner ve Demirci, 2007, s. 72)

Üç, dört ve beş yazarlı kaynak;

Metin içinde ilk kullanımda: (Ailen, Ciambur ve Welch 2000, s. 12-13) Metin içinde tekrarlayan kullanımlarda: (Ailen ve ark., 2000)

Altı ve daha çok yazarlı kaynak;

(Çavdar ve ark., 2003)

Kaynaklar Bölümünde Kaynak Gösterme

Kullanılan tüm kaynaklar metnin sonunda ayrı bir bölüm halinde yazar soyadlarına göre alfabetik olarak numaralandırılmadan verilmelidir.

Kaynak yazımı ile ilgili örnekler aşağıda verilmiştir.

Kitap

a) Kitap Örneği

Karasar, N. (1995). Araştırmalarda rapor hazırlama (8.bs). Ankara: 3A Eğitim Danışmanlık Ltd.

b) Kitap Çevirisi

Mucchielli, A. (1991). Zihniyetler (A. Kotil, Çev.). İstanbul: İletişim Yayınları.

c) Çok Yazarlı Türkçe Kitap

Tonta, Y., Bitirim, Y. ve Sever, H. (2002). Türkçe arama motorlarında performans değerlendirme. Ankara: Total Bilişim.

d) İngilizce Kitap

Kamien R., & Kamien, A. (2014). Music: An appreciation. New York, NY: McGraw-Hill Education.

e) İngilizce Kitap İçerisinde Bölüm

Bassett, C. (2006). Cultural studies and new media. In G. Hall & C. Birchall (Eds.), New cultural studies: Adventures in theory (pp. 220-237). Edinburgh, UK: Edinburgh University Press.

f) Türkçe Kitap İçerisinde Bölüm

Erkmen, T. (2012). Örgüt kültürü: Fonksiyonları, öğeleri, işletme yönetimi ve liderlikteki önemi. M. Zencirkıran (Ed.), Örgüt sosyolojisi kitabı içinde (s. 233-263). Bursa: Dora Basım Yayın.

Makale

a) Makale

Granqvist, P. ve Kirkpatrick, L. A. (2004). Religious conversation and perceived childhood attachment: a meta-analysis, The International Journal for the Psychology of Religion, 14(4), 223-250.

b) Yediden Fazla Yazarlı Makale

Rodriguez, E.M., Dunn, M.J., Zuckerman, T., Hughart, L., Vannatta, K., Gerhardt, C.A., Saylor, M., Schuele, C.M. ve Compas, B.E. (2011). Mother-child communication and maternal depressive symptoms in families of children with cancer: integrating macro and micro levels of analysis. Journal of Pediatric Psychology, 38 (7), 732-743

Tez, Sunum, Bildiri

a) Tezler

Karaaziz, M. (2017). Kıbrıs ve Türkiye Doğumlu Kumar Bağımlılarının Kumar Oynama Nedenlerinin ve Kültürlenme Tutum Farklılıklarının Karşılaştırılması. (Yayınlanmamış Doktora Tezi). Yakın Doğu Üniversitesi, Sosyal Bilimler Enstitüsü, Lefkoşa-KKTC.

b) Kongre Bildirisi

Çepni, S., Bacanak A. ve Özsevgeç T. (2001, Haziran). Fen bilgisi öğretmen adaylarının fen branşlarına karşı tutumları ile fen branşlarındaki başarılarının ilişkisi. X. Ulusal Eğitim Bilimleri Kongresi'nde sunulan bildiri, Abant İzzet Baysal Üniversitesi, Bolu.

Tablolar ve Şekiller:

Tablolar tek satır aralıklı olarak ayrı bir sayfaya yazılmalıdır. Her tablonun üstünde numarası ve açıklayıcı bilgi olmalıdır. Tabloda kısaltmalara yer verilmişse bu kısaltmaların açılımı alt yazı şeklinde tablonun altında ve alfabetik sıraya göre yer almalıdır.

Daha önce basılmış veya elektronik olarak yayınlanmış tablolardan yararlanıldığında hem yazarı hem de basım evinden yazılı izin alınmalıdır ve bu, dergi editörlüğüne faks veya posta ile gönderilmelidir.

Tablo içerisinde enlemesine ve boylamasına çizgiler kullanılmamalı, sadece üst ve altına düz çizgi çizilmelidir.

Makalelerde yer alan görseller ve nota örnekleri kısa açıklamalarıyla birlikte ortalananmış olarak Şekil/Tablo 1. ... şeklinde numaralandırılmalıdır. Tüm görseller, baskıda çözünürlük problemi olmaması için minimum 300 dpi çözünürlükte ve JPG formatında ayrıca gönderilmelidir. Metin içerisindeki yerleştirmeler, gerektiğinde sayfa düzenine göre değiştirilebilirler.

Tablo, grafik, şekil ve fotoğraflar altıdan çok olmamalı, ayrı bir sayfaya konmalı, yazıdaki yeri belirtilmelidir. Arabik rakamlar ve ondalıklarda nokta kullanılmamalıdır.

Makale Gönderme:

Makale gönderimleri dergi park sistemi üzerinden olup aşağıda verilmiştir;

Link: <https://dergipark.org.tr/tr/>

KÖR HAKEMLİK VE DEĞERLENDİRME SÜRECİ

Kör hakemlik, bilimsel yayınların en yüksek kalite ile yayınlanması için uygulanan bir yöntemdir. Bu yöntem, bilimsel çalışmaların nesnel (objektif) bir şekilde değerlendirilme sürecinin temelini oluşturmaktadır ve birçok bilimsel dergi tarafından tercih edilmektedir. Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi gönderilen tüm çalışmalar aşağıda belirtilen aşamalara göre körleme yoluyla değerlendirilmektedir.

Körleme Hakemlik Türü:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi, tüm çalışmaların değerlendirme sürecinde çift körleme yöntemini kullanmaktadır.

Çift körleme yönteminde çalışmaların yazar ve hakem kimlikleri gizlenmektedir.

İlk Değerlendirme Süreci:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi gönderilen çalışmalar ilk olarak editörler tarafından değerlendirilir. Bu aşamada, derginin amaç ve kapsamına uymayan, Türkçe ve İngilizce olarak dil ve anlatım kuralları açısından zayıf, bilimsel açıdan kritik hatalar içeren, özgün değeri olmayan ve yayın politikalarını karşılamayan çalışmalar reddedilir. Reddedilen çalışmaların yazarları, gönderim tarihinden itibaren en geç bir ay içinde bilgilendirilir. Uygun bulunan çalışmalar ise ön değerlendirme için çalışmanın ilgili olduğu alana yönelik bir alan editörüne gönderilir.

Ön Değerlendirme Süreci:

Ön değerlendirme sürecinde alan editörleri çalışmaların, giriş ve alan yazın, yöntem, bulgular, sonuç, değerlendirme ve tartışma bölümlerini dergi yayın politikaları ve kapsamı ile özgünlük açısından ayrıntılı bir şekilde inceler. Bu inceleme sonucunda uygun bulunmayan çalışmalar en geç dört hafta içerisinde alan editörü değerlendirme raporu ile iade edilir. Uygun bulunan çalışmalar ise hakemlendirme sürecine alınır.

Hakemlendirme Süreci:

Çalışmalar içeriğine ve hakemlerin uzmanlık alanlarına göre hakemlendirilir. Çalışmayı inceleyen alan editörü, Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi hakem havuzundan uzmanlık alanlarına göre en az iki hakem önerisinde bulunur veya çalışmanın alanına uygun yeni hakem önerebilir. Alan editöründen gelen hakem önerileri editörler tarafından değerlendirilir ve çalışmalar editörler tarafından hakemlere iletilir. Hakemler değerlendirdikleri çalışmalar hakkındaki hiçbir süreci ve belgeyi paylaşmayacakları hakkında garanti vermek zorundadır.

Hakem Raporları:

Hakem değerlendirmeleri genel olarak çalışmaların; özgünlük, kullanılan yöntem, etik kurallara uygunluk, bulguların ve sonuçların tutarlı bir şekilde sunumu ve literatür açısından incelenmesine dayanmaktadır. Bu inceleme aşağıdaki unsurlara göre yapılır:

Giriş ve literatür: değerlendirme raporu çalışmada ele alınan problemin sunumu ve amaçları, konunun önemi, konuyla ilgili literatür kapsamı, güncelliği ve çalışmanın özgünlüğü hakkında görüş içerir.

Yöntem: değerlendirme raporu, kullanılan yöntemin uygunluğu, araştırma grubunun seçimi ve özellikleri, geçerlik ve güvenilirlik ile ilgili bilgilerin yanı sıra veri toplama ve analiz süreci hakkında görüş içerir.

Bulgular: değerlendirme raporu, yöntem çerçevesinde elde edilen bulguların sunumu, analiz yöntemlerinin doğruluğu, araştırmanın amaçları ile erişilen bulguların tutarlılığı, ihtiyaç duyulan tablo, şekil ve görsellerin verilmesi, kullanılan testlerin kavramsal açıdan değerlendirilmesine yönelik görüşler içerir.

Değerlendirme ve tartışma: değerlendirme raporu, bulgulara dayalı olarak konunun tartışılması, araştırma sorusuna/larına ve hipoteze/lerere uygunluk, genellenebilirlik ve uygulanabilirlik ile ilgili görüş içerir.

Sonuç ve öneriler: değerlendirme raporu literatüre katkı, gelecekte yapılabilecek çalışmalara ve alandaki uygulamalara yönelik öneriler hakkında görüş içerir.

Stil ve anlatım: değerlendirme raporu, çalışma başlığının içeriği kapsamı, Türkçe'nin kurallara uygun kullanımı, gönderme ve referansların dergi yayın ilkeleri başlığı altındaki örneklerle doğrultusunda tam metnin diline uygun verilmesi ile ilgili görüş içerir.

Genel değerlendirme: değerlendirme raporu çalışmanın bir bütün olarak özgünlüğü, literatüre ve alandaki uygulamalara sağladığı katkı hakkında görüş içerir.

Değerlendirme sürecinde hakemlerin çalışmanın tipografik özelliklerine göre düzeltme yapmaları beklenmemektedir.

Hakem Değerlendirme Süreci:

Hakem değerlendirme süreci için hakemlere verilen süre 3 haftadır. Hakemlerden veya uzman yayın kurulu üyesinden gelen düzeltme önerilerinin yazarlar tarafından 3 hafta içerisinde tamamlanması zorunludur. Hakemler bir çalışmanın düzeltmelerini inceleyerek uygunluğuna karar verebilecekleri gibi gerekliyse birden çok defa düzeltme talep edebilir.

Değerlendirme Sonucu:

Hakemlerden gelen görüşler, alan editörü tarafından en geç iki (2) hafta içerisinde incelenir. Bu inceleme sonucunda alan editörü çalışmaya ilişkin nihai kararını editörlere iletir.

Yayın Kurulu Kararı:

Editörler, alan editörü ve hakem görüşlerine dayanarak çalışma ile ilgili yayın kurulu görüşlerini hazırlar. Hazırlanan görüşler editör tarafından alan editörü ve hakem önerileri ile birlikte en geç 1 hafta içerisinde yazar(lar)a iletilir. Bu süreçte olumsuz görüş verilen çalışmalar intihal denetimi talep edilmeksizin iade edilir. Olumlu görüş verilen çalışmalar için son karar, intihal denetim raporları sonuçlarına göre verilir.

Yayın Değerlendirme Süreci:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'ne gönderilen çalışmaların yayın değerlendirme sürecinin yaklaşık 3 ay içerisinde sonuçlandırılması öngörülmektedir. Ancak, hakem ya da editörlerin yazar(lar)dan düzeltme istedikleri tarih ile yazar (lar)ın düzeltmeleri tamamladıkları tarih arasındaki süre, bu 3 aylık süreye dahil edilmemektedir.

Değerlendirme Sonucuna İtiraz Etme:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde değerlendirme sonucuna, yazar (lar)ın itiraz etme hakkı saklıdır. Yazar(lar), çalışmalarını için yapılan değerlendirme sonucu görüş ve yorumlara ilişkin itiraz gerekçelerini bilimsel bir dille ve dayanaklarını referans göstererek "mehmet.cakici@neu.edu.tr" adresine e-postayla iletmelidir. Yapılan itirazlar editörler tarafından en geç bir ay içerisinde incelenerek (Çalışmanın hakemlerine yapılan itirazlar hakkında görüş talep edilebilir) yazar (lar)a olumlu veya olumsuz dönüş sağlanır. Yazar (lar)ın değerlendirme sonucuna itirazları olumlu bulunması durumunda, yayın kurulu çalışmanın konu alanına uygun yeni hakemlendirme yaparak değerlendirme sürecini yeniden başlatır.

Atıf ve Kaynakça Denetimi:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi yayın etiğine göre, makalelere atıfların doğru ve eksiksiz verilmesi zorunludur. Yazarlar tamamen orijinal eserler yazdıklarından ve yazarlar başkalarının eserlerini ve / veya sözlerini kullanmışlarsa, bunun uygun şekilde alıntılanmış olduğundan veya alıntı yapıldığından emin olmalıdırlar. Bu denetim, önce değerlendirme sırasında hakemlerce, sonra benzerlik-intihal (iThenticate) programı sonucuna göre editörlerce yapılır. Tüm çalışmalar intihal raporu intihal.net üzerinden de kontrol edilmektedir.

Makalenin Erken Görünümü ve Yayımlanması:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde sayfa düzenlemesi yapılan makaleler elektronik ortamda "Erken Görünüm" başlığı altında Dijital Nesne Kimlik Numarası (Digital Object Identifier, DOI) verilerek yayınlanır. Erken görünümdeki makaleler dergide yayımlanırken gerekli olduğunda küçük düzenlemeler yapılabilir. Erken görünümdeki makaleler sırası geldiğinde Editörler Kurulu'nun belirlediği cilt ve sayıda, üzerindeki "ERKEN GÖRÜNÜM" filigranı kaldırılarak yayımlanır. Elektronik dergi yayımlandıktan sonra, aynı ay içerisinde aynı makalelerin yer aldığı Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nin basılı hali de yayınlanır.

Arşivleme:

Kıbrıs Türk Psikiyatri ve Psikoloji Dergisi'nde yayımlanan makalelere ilişkin veriler ve tam metinler .pdf olarak TÜBİTAK ULAKBİM DERGİPARK, OCLC WorldCat ve EBSCOhost dijital arşivleme sunucusunda yayımlanmaktadır (<https://dergipark.org.tr/en/pub/ktppdergisi/archive>), (<https://www.worldcat.org/>) erişime kapalı bir şekilde saklanır ve arşivlenir (LOCKSS; <https://dergipark.org.tr/en/pub/ktppdergisi/lockss-manifest>).

Kalite Standartları Hakkında EASE Açıklaması

Avrupa Bilim Editörleri Birliği, tüm editörleri COVID-19 hakkındaki araştırma raporlarının gerekli standartları karşılamasını ve üzerinde anlaşılabilir yönergeler uymasını ve tüm sınırlılıkların açıkça belirtilmesini sağlamaya teşvik eder. EASE üyeleri COVID-19 pandemisi ile ilgili birçok çalışmada kötü raporlama standartlarına dikkat çekmiştir. Enfekte hastaları tedavi etmek ve koronavirüsün yayılmasını sınırlamak için tıbbi ve halk sağlığı önlemlerinin başarılı olması, yüksek kaliteli kanıtlara bağlıdır. EASE, pandemi ile ilgili verilerin toplanmasına ve yayımlanmasına dahil olan herkesi etik yönergeler uymaya ve standart raporlama yönergelerine (bkz. www.equator-

network.org), örneğin klinik araştırmalar için CONSORT'a ve epidemiyolojik çalışmalar için STROBE'ye bağlı kalmaya davet etmektedir.

Demografik veriler tüm bireylerin yaş ve cinsiyetini içermeli ve cinsiyet ve toplumsal cinsiyet hakkındaki verilerin tam ve doğru bir şekilde raporlanmasını sağlamak için SAGER yönergelerini takip etmelidir. Mümkün olduğunda verilerin tam ve açık olarak paylaşılmasını teşvik ediyoruz.

Kriz zamanlarında, gerekli tüm verilerin elde edilmesinin her zaman mümkün olmayabileceğini ve zorunlu olarak raporlamanın kısıtlanabileceğini kabul ediyoruz. Yanlış yorumlardan kaçınmak ve aynı zamanda bilgilerin hızlı bir şekilde paylaşılmasını kolaylaştırmak için, editörleri yazarların araştırmalarına bir sınırlama bildirimi eklemeye teşvik ediyoruz. Bu, okuyucuları bilgilendirecek ve yayınlanan herhangi araştırmaların kullanılabilirliğini güçlendirecektir.

Buna ek olarak, her zaman yüksek dil standartlarını savunurken, önemli araştırmaların hızlı bir şekilde yayılmasını kolaylaştırmak amacıyla, yayınlanmış araştırmanın anlaşılabilir olmasını sağlamak ve yazarlar üzerinde katı dil gereklilikleri uygulamamak için, editöryal katılımı sınırlamanın gerekli olabileceğini kabul ediyoruz.

İlgili bildiriye <https://ease.org.uk/publications/ease-statements-resources/ease-statement-on-quality-standards/web> adresinden ulaşılabilir.



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