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Anxiety, depression, type D personality, somatosensory amplification levels and childhood traumas in patients with panic disorders

Panik bozukluğu olan hastalarda anksiyete, depresyon, D tipi kişilik, bedensel duyumları abartma seviyeleri ve çocukluk çağı travmaları

Yasin Taşdelen [1], İbrahim Yağcı [2]

[1] Department of Psychiatry, Aydın State Hospital, Aydın, Turkey
[2] Department of Psychiatry, Kars Harakani State Hospital, Kars, Turkey

ORCID ID of the author(s)
YT: 0000-0003-4985-0690
İY: 0000-0003-0755-2695

Abstract

Aim: Persons with type D personality have been shown to be predisposed to depression and anxiety disorders. However, to our knowledge, there are no studies which have investigated the relationship between panic disorder (PD) and type D personality. Our aim in the current study was to determine whether PD was associated with Type D personality, anxiety, depression, childhood trauma and somatosensory amplification by comparing the characteristics of patients with and without PD.

Methods: We designed a questionnaire based case-control study. The study group included 100 patients with panic disorder, and control group consisted of 100 healthy individuals. Sociodemographic Data Form, Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Type D Personality Scale (DS14), Childhood Trauma Questionnaire (CTQ) and Somatosensory Amplification Scale (SSAS) were carried out for each participant.

Results: The patient and control groups were found to be similar in terms of sex, marriage status, education status and employment status. Compared to the control group, scores for BAI ($P<0.01$), BDI ($P<0.01$), CTQ ($P<0.01$), DS-14 ($P<0.01$) were found to be significantly higher in the patient group. The frequency of Type D personality was also higher in the patient group.

Conclusion: Our findings show that patients with PD have significantly higher scores in anxiety, depression, Type D Personality, CTQ total scores measures compared to controls. We did not find any associations between PD and somatosensory amplification. We believe our findings will contribute significantly to the limited literature on this topic.

Keywords: Panic disorder, Type D personality, Childhood trauma, Depression, Anxiety

Öz

Amaç: D tipi kişiliğe sahip kişilerin depresyon ve anksiyete bozukluklarına yatkın oldukları gösterilmiştir. Ancak, bildiğimiz kadarıyla panik bozukluğu ve D tipi kişilik arasındaki ilişkiyi araştıran hiçbir çalışma bulunmamaktadır. Bu çalışmada amacımız, Panik bozukluk tanısı olan ve olmayan hastaların özelliklerini karşılaştırarak Panik bozukluğun D Tipi kişilik, kaygı, depresyon, bedensel duyumları abartma ve çocukluk çağı travmaları ile ilişkili olup olmadığını belirlemekti.

Yöntemler: Anket bazlı bir vaka kontrol çalışması tasarladık. Çalışmaya panik bozukluğu olan 100 kişi ve 100 sağlıklı kişi dahil edildi. Her bir katılımcıya Sosyodemografik Veri Formu, Beck Depresyon Ölçeği (BDÖ), Beck Anksiyete Ölçeği (BAÖ), D Tipi Kişilik Ölçeği (DS-14), Çocukluk Çağı Travma Ölçeği (ÇÇTÖ) ve Bedensel Duyumları abartma Ölçeği (BDAÖ) yapıldı.

Bulgular: Olgu ve kontrol gruplarının cinsiyet, evlilik durumu, eğitim ve çalışma durumu açısından farklılık olmadığı bulundu. Hasta grubunda kontrol grubuna göre BAÖ ($P<0.01$); BDÖ ($P<0.01$); ÇÇTÖ ($P<0.01$); DS-14 ($P<0.01$) anlamlı olarak yüksek bulunmuştur. D Tipi kişilik sıklığı da hasta grubunda daha yüksekti.

Sonuç: Bulgularımız, Panik bozukluğu olan hastaların anksiyete, depresyon, D Tipi Kişilik, Çocukluk çağı travmatik yaşantıları toplam puanları kontrol grubuna göre anlamlı olarak yüksektir. Panik bozukluk ve bedensel duyumları abartma arasında anlamlı bir ilişki bulamadık. Bulgularımızın bu konudaki sınırlı literatüre önemli katkı sağlayacağına inanıyoruz.

Anahtar kelimeler: Panik bozukluk, D tipi kişilik, Çocukluk çağı travmaları, Depresyon, Anksiyete

Corresponding author / Sorumlu yazar:
Yasin Taşdelen
Address / Adres: Aydın Devlet Hastanesi, Psikiyatri Anabilim Dalı, Aydın, Türkiye
e-Mail: yasintasdelen@hotmail.com

Introduction

Panic disorder (PD) is one of the anxiety disorders. It is a chronic or recurrent condition that significantly deprives the individual of social and functional ability [1]. The life-time prevalence of PD is reported to be 1.5–2.5%, while the prevalence of panic attack is around 7–9%. A systematic review which assessed studies from Europe reported a 12-month prevalence rate of 1.8% for PD, in 2005 [2]. Various studies have linked PD with major depression [3], higher anxiety (or sensitivity) [4], having suffered childhood abuse [5], neural fear triggers and several other psychosocial factors including personality traits [6]. Neuroticism, a major personality trait causing persons to disproportionately suffer from stressful events, has especially been associated with PD. Individuals with high neuroticism scores tend to have high levels of stress, are burdened heavily by stressful events, and experience sadness and depression more frequently. These characteristics are also exhibited by persons with type D personality, albeit at varying levels.

Individuals with type D personality are characterized by negative affectivity and social inhibition, meaning they are more likely to experience negative affect (similar to neuroticism) whilst also being less likely to express subsequent feelings in social environments [7]. For the sake of an example, this personality type may be likened to a psychological pressure cooker; outside effects cause significant pressure for the individual, however they are unable to express their feelings, leading to reduced quality of life and significant stress [8]. Persons with type D personality have been shown to be predisposed to depression and anxiety and stress disorders [9].

Our aim in the current study was to determine whether PD was affected by factors such as Type D personality, Somatosensory Amplification, depression, anxiety and a history of childhood trauma by comparing the characteristics of patients with and without PD.

Materials and methods

The study was a clinical observational study of case-control type. The characteristics of patients with panic disorder were compared with controls. Enrollment to the study was continued until a total of 100 persons with panic disorder and 100 controls were included into the study. Panic disorder diagnoses were made according to the DSM-5 diagnostic criteria by experienced psychiatrists (Table 1). Ethical approval was obtained from the Kafkas University Ethical Committee (no: 6, date: 25.04.2018).

Inclusion criteria were the fact that the patient was diagnosed with panic disorder by the psychiatric physician was to be over 18 years of age and the patients agreed to participate in the study. For the control group, the patient did not have any psychiatric disorder, accepted to participate in the study and was over 18 years of age. Exclusion Criteria were determined the refusal to participate after being informed and the presence of clinically detected mental retardation and illiteracy.

Measurements

The age, gender, marriage status, educational status and employment status of all patients and controls were recorded.

Afterwards, all participants underwent the following questionnaires: Somatosensory Amplification Scale (SSAS), Beck Anxiety Inventory (BAI), Beck Depression Inventory (BDI) and the Childhood Trauma Questionnaire. All questionnaires were applied to patients under the management of a psychiatrist and in the presence of a single nurse, both of which were blinded to the study protocol. The scales used were evaluated by the psychiatrist. Each questionnaire was completed in 20–25 minutes.

Somatosensory Amplification Scale (SSAS)

Developed by Barsky et al. [10], this 10-item scale determines how patients interpret somatic symptoms and reports the level of somatization as a continuous variable. All items are equally weighted (1 to 5 points) and the total score from the questionnaire may range from 10 to 50. A higher score indicates greater somatic amplification.

Beck Anxiety Inventory (BAI)

Beck et al. [11] developed this 21-question inventory for the measurement of anxiety symptoms among patients. All items are scored on a scale of 0–3 points with possible total scores ranging between 0-63 points. A high total score reflects the presence of high anxiety in a patient.

Beck Depression Inventory (BDI)

This inventory was also developed by Beck et al. [12]. It is another 21-item questionnaire and determines the severity and risk of depression in an individual. Each item is scored between 0–3 and the resultant total scores range from 0 to 63 points.

The Childhood Trauma Questionnaire

This questionnaire was developed by Bernstein and colleagues for the evaluation of childhood maltreatment [13]. The 28-item test determines the presence and severity of 5 maltreatment types: emotional and physical neglect, and emotional, physical and sexual abuse. The points gathered in these subsections are then summed up, resulting in a final total score.

Evaluation of Type D personality

The assessment of type D personality was performed via the Type D Scale-14 (DS14) [14]. The DS14 questionnaire is comprised of two sets of questions which evaluate negative affectivity (7-items) and social inhibition (7-items). Each item is evaluated on a 5-point Likert scale ranging from 0 to 4 points (0=false, 1=rather false, 2=neutral, 3=rather true to 4=true). The possible total score of each section ranges between 0–28. Those with ≥10 points on both scales are classified as having type D personality.

Statistical analysis

The SPSS version 20 software package for windows was used to evaluate all data. Normal distribution was tested with the Shapiro-Wilk test. The Student's t-test was used to compare data with normal distribution, and the Mann-Whitney U-test was used to compare data without normal distribution. Analysis of Covariance (ANCOVA) with age as a covariate was used for comparing variables that correlated with age. Categorical data was analyzed using Chi-square tests. $P \leq 0.05$ values were considered statistically significant.

Results

The case and control groups were found to be similar in terms of sex (P=0.725), marriage status (P=0.388), education status (P=0.453) and employment status (P=0.118). The mean age of the control group (24.68 (5.62) years) was lower than that of the case group (29.26 (8.04) years) (P=0.001). The distribution of sociodemographic characteristics in both groups are shown in Table 2.

Compared to the control group, mean BAI (P=0.001), BDI (P=0.001), CTQ (P=0.001) and SSAS (P=0.007) scores were found to be higher in the case group. The frequency of Type D personality was also more frequent in the case group (P=0.001). However, after adjusting for age, SSAS was not found to be associated with panic disorder (P=0.061). The mean scores of both groups in terms of psychologic measurements are shown in Table 3.

In the PD group, patients with and without Type D personality were found to be similar in terms of BAI, BDI, CTQ and SSAS total scores. The distribution of psychologic measurements of the case group according to D type personality is shown Table 4.

Table 1: DSM-V Diagnostic Criteria for Panic Disorder

Diagnostic Criteria for Panic Disorder
1) Recurrent unexpected panic attacks
2) At least one of the attacks has been followed by a month or more of one or both of the following:
a) Persistent concern or worry about additional panic attacks or their consequences (eg, losing control, having a heart attack, "going crazy").
b) A significant maladaptive change in behavior related to the attacks (eg, behaviors designed to avoid having panic attacks, such as avoidance of exercise or unfamiliar situations).
3) The disturbance is not attributable to the physiological effects of a substance (eg, medication or illicit drug) or another medical condition (eg, hyperthyroidism, cardiopulmonary disorders).
4) The disturbance is not better explained by another mental disorder. As examples, the panic attacks do not occur only in response to:
a) Feared social situations, as in social anxiety disorder
b) Circumscribed phobic objects or situations, as in specific phobia
c) Obsessions, as in obsessive-compulsive disorder
d) Reminders of traumatic events, as in posttraumatic stress disorder
e) Separation from attachment figures, as in separation anxiety disorder

Table 2: The distribution of sociodemographic characteristics in the case and control groups

	Case group (n=100)	Control group (n=100)	P-value
Sex			
Male	51(47.2%)	57(52.8%)	0.725
Female	49(53.3%)	43(46.7%)	
Age	29.26±8.04	24.68±5.62	0.001
Marriage status			
Single	56(47.5%)	62(52.5%)	0.388
Married	44(53.7%)	38(46.3%)	
Education			
Primary School	16(51.6%)	15(48.4%)	
Secondary School	24(52.2%)	22(47.8%)	0.453
High School	45(53.6%)	39(46.4%)	
University	15(38.5%)	24(61.5%)	
Employment			
No	50(56.2%)	39(43.8%)	0.118
Yes	50(45.0%)	61(55.0%)	

Table 3: The distribution of psychiatric measurement scores in the case and control groups

	Case group (n=100) Mean(SD)	Control group (n=100) Mean(SD)	P-value
BAI	42.94(10.43)	6.96(3.27)	0.001*
BDI	25.44(11.47)	12.37(3.56)	0.001*
CTQ			
Physical Neglect	12.98(2.34)	11.85(3.33)	0.016*
Physical Abuse	18.34(2.48)	15.85(2.84)	0.001*
Emotional Neglect	11.53(1.49)	11.15(2.75)	0.779
Emotional Abuse	23.83(2.19)	21.19(3.24)	0.001*
Sexual Abuse	11.86(1.30)	11.96(2.85)	0.570
Total scale	78.54(6.13)	72.09(8.46)	0.001*
SSAS	32.66(8.31)	30.71(6.10)	0.061

SD: Standard deviation, DS-14: Type D Personality, BDI: Beck Depression Inventory, BAI: Beck Anxiety Inventory, SSAS: Somatosensory Amplification Scale, CTQ: Childhood Trauma Questionnaire, * P<0.05

Table 4: The distribution of psychiatric measurements in the case group according to D type personality

	Type D (n=84) Mean (SD)	Non-type D (n=16) Mean (SD)	P-value
BAI	7.00 (3.21)	6.75 (3.64)	0.677
BDI	12.27 (3.46)	12.88 (4.10)	0.613
CTQ	78.31 (6.15)	79.75 (6.04)	0.409
SSAS	30.73 (6.15)	30.63 (6.02)	0.854

SD: Standard deviation, BDI: Beck Depression Inventory, BAI: Beck Anxiety Inventory, SSAS: Somatosensory Amplification Scale, CTQ: Childhood Trauma Questionnaire

Discussion

In the current study, patients with panic disorder were compared with controls in terms of sex, age, marriage, education and employment status as well as psychological measurements. The results demonstrated that patients with PD were similar to controls in regard to sex, marriage, education and employment status, whereas, age was found to be significantly higher in the PD group. In regard to psychological measurements adjusted for age difference, those with PD were found to have higher total scores in the BAI, BDI and CTQ scales. SSAS scores were similar in both groups.

There are only a few studies in the literature that have focused on the relationship between psychiatric disease and Type D personality. In a study by Michal and colleagues, it was reported that those with Type D personality had higher risk for psychiatric problems such as social inhibition, depression, panic and somatization. The same study also reported that Type D personality immensely increased the risk for PD (OR: 5.09 (3.43-7.58), 2.2% vs 10.4%) [15]. Grande et al. reported that Type D personality was present in 62.5% of individuals who were followed by their psychiatry department with various types of mental distress [16]. In another study, in which patients with non-cardiac chest pain were assessed for panic disorder and depression, the authors reported that Type D personality was more frequent in those who had comorbid depression and panic disorder [17]. In the current study, 56 individuals from the PD group (56%) were found to have type D personality, while only 16 of those in the control group (16%) had Type D personality, as measured by DS14. In other words, 77.8% of patients who had Type D personality were patients with PD. This finding indicates the presence of an association between PD and Type D. Contrasting results also exist; one study reported the lack of an association between PD and Type D personality among 571 patients with chronic heart disease [18].

When we compared other psychological measurements, those with PD tended to have significantly higher scores in the anxiety (BAI), depression (BDI) and childhood trauma (CTQ) scales. Considering the differences between the groups in terms of BAI, BDI and CTQ scores, we decided to compare the results of PD patients with and without Type D personality; however, no differences were found between the groups in any of the psychological measures. This finding may be explained by the fact that the case group was comprised of PD patients; hence all would be expected to have high anxiety, leading to similarities in psychiatric measurements.

Psychiatric disease in adult age has been associated with a history of childhood adversities in a number of studies [19]. However, in terms of PD, several studies have shown that childhood adversity seems to have little –if any– effect on

disease frequency [20,21]. Nevertheless, a large meta-analysis of psychiatric studies demonstrated that individuals with PD had a higher frequency of physical trauma during their childhood, while there were no associations between PD and other childhood adversities, such as emotional trauma or sexual abuse [22]. A study by Bandelow and colleagues [23] reported an association between PD and three factors: anxiety disorders running in the family, experience of traumatic events in the childhood, and poor parentage. However, in a later study focused on anxiety disorders, they could not find any association between personality disorders and having a history of physical or sexual abuse in the childhood [24]. In a very informative study by Goodwin et al., the frequency of panic attack and panic disorder were found to be significantly increased among those who suffered childhood physical or sexual abuse [25]. In the current study, childhood adversities were evaluated with the CTQ which showed that those with and without PD had similar results for emotional neglect and sexual abuse subscales, while physical neglect, physical abuse, sexual abuse and total scores were higher among patients with PD. These results suggest that those who suffer physical and sexual adversities in their childhood may be predisposed to panic disorders in their adulthood. However, Segenfredo et al. [26] reported very interesting findings in their evaluation of patients with PD. They found that, compared to controls, emotional abuse, mother overprotection and father overprotection were higher among those with PD. This suggests that both childhood abuse and overprotection may increase the possibility of PD later on in life.

It is evident that the literature on this topic is very conflicted in regard to the associations between PD and childhood trauma. In the light of previous studies and our results, it is reasonable to assume that the risk of PD is increased among those who suffer childhood adversities, especially in the form of physical abuse. However, the fact that studies have associated PD with both ends of the spectrum of negative parental influences (abuse and overprotection) demonstrates the existence of a gap in knowledge regarding the influence of childhood adversities on psychiatric disease in the adulthood.

Clark et al. [27] have strongly argued that PD is associated with misinterpretation of bodily sensations. Furthermore, patients with anxiety disorder were shown to have significant somatosensory amplification in a very recent study [28]. However, studies on PD report highly conflicting results. While some have shown increased SSAS scores in patients with PD compared to controls and those with depression [29], others suggest that somatosensory amplification does not have a role in PD [30]. In our study, although the PD group was found to have higher SSAS scores initially, statistical significance disappeared after adjustment for age. The lack of difference between our groups supports the findings of studies which suggest there is no association between PD and somatosensory amplification.

This study was a self-reported case-control study and inherits all limitations associated with such studies. The number of patients may also be considered low for the generalization of results. However, although several studies have been performed for the evaluation of Type D personality and its effects, the most prominent among these were based on study groups with cardiac disease. This is one of the first studies to evaluate the effects of Type D personality on patients with a diagnosis of PD in the absence of other diseases. We also investigated the role of childhood adversity and somatosensory amplification. Another strength of the study is the fact that all evaluations were performed with widely accepted measures such as the BAI, BDI, CTQ and SSAS questionnaires.

Conclusions

Our results have shown that patients with PD have significantly high scores in childhood adversity, anxiety and depression measures compared to controls. Type D personality was found to be significantly more frequent among those with PD; however, there were no differences among PD patients with and without Type D personality in terms of psychiatric measurements. It was also interesting to observe that PD was not associated to somatosensory amplification. We believe our findings will contribute significantly to the limited literature on this topic. We also believe future studies will benefit from strengthening inclusion and exclusion criteria for patients and increasing the number of psychiatric measures in order to determine whether PD patients with and without Type D personality have significant differences in characteristics.

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