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CORRELATION AMONG EXPERIENTIAL AVOIDANCE, ANXIETY SENSITIVITY AND BEHAVIORAL INHIBITION SYSTEM IN GENERALIZED ANXIETY DISORDER AND PANIC DISORDER PATIENTS

Serap Akdeniz Görgülü[1], Hayriye Baykan[2] & Tunay Karlıdere[3]

[1] M.D., Specialist: Psychiatry Clinic of Bigadiç State Hospital Balıkesir/Turkey
[2] Assoc. Prof.: Department of Psychiatry, Balıkesir University Faculty of Medicine Balıkesir/Turkey
[3] Prof Dr.: Department of Psychiatry, Balıkesir University Faculty of Medicine Balıkesir/Turkey

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Summary

Purpose: *This study aimed to analyze the concepts of experiential avoidance, anxiety sensitivity and behavioral inhibition system through healthy volunteers and patients diagnosed with anxiety disorder. It was planned to analyze and evaluate the correlation among the levels of experiential avoidance, anxiety sensitivity and behavioral inhibition system in various anxiety groups.*

Method: *Within the scope of this study, clinical interviews were carried out with patients who sought treatment at the Psychiatry Department of the Hospital of Balıkesir University Medical Faculty. The study included 50 Generalized Anxiety Disorder (GAD) patients and 50 Panic Disorder (PD) patients who fulfilled the study criteria and accepted to participate in the study. A voluntary control group of 50 individuals with similar age and gender with the patients was formed. The participants were evaluated through the Acceptance and Action Questionnaire-II (AAQ-II), Behavioral Inhibition System/Behavioral Approach System Scale (BIS/BAS Scale), and Anxiety Sensitivity Index-3 (ASI-3).*

Results: *In this study, the anxiety sensitivity, behavioral inhibition system sensitivity and experiential avoidance levels were all found to be higher in both the GAD and PD patients than the controls. On the other hand, the scale scores did not significantly differ between the GAD patients and PD patients. Positive correlations were determined among anxiety sensitivity, experiential avoidance and behavioral inhibition system. Our data provided findings supporting that the development of anxiety disorders entails increased anxiety sensitivity, behavioral inhibition system sensitivity and experiential avoidance levels.*

Discussion: *The literature has shown, through separate studies, a correlation among experiential avoidance, anxiety sensitivity and behavioral inhibition system as well as a correlation between these concepts and anxiety disorders, and this study handled them altogether to reveal their correlation with anxiety in a clinical environment.*

Keywords: *Generalized anxiety disorder, Panic disorder, Experiential avoidance, Anxiety sensitivity, Behavioral inhibition system.*

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INTRODUCTION

Anxiety is a state of worry due to a dread over an internal or external threat, which impairsthe physical, mental, somatic and cognitive domains in an individual. Severity may vary from mild feelings of unease and tension to panic (Öztürk&Uluşahin 2015). It is frequently observed in both social screenings and clinical practice. The process and mechanisms involved in the development of anxiety have been continuously and thoroughly analyzed, keeping the research up-to-date.

The Reinforcement Sensitivity Theory developed by Jeffrey A. Gray about the effect of personality traits on anxiety has set forth two motivational systems called the Behavioral Approach System (BAS) and Behavioral Inhibition System (BIS). It has been asserted that these two systems govern an individual's impulsive and anxious behavior in addition to sensitivity to signals of reward and punishment. (Gray 1970, Gray 1987). The connection of this theory with anxiety disorders, depression, attention deficit hyperactivity disorder, eating disorders, schizophrenia, substance abuse and personality disorders has been put forward, especially correlating BIS sensitivity with increased risk of anxiety disorders (Bijttebieret al. 2009).

Anxiety sensitivity and experiential avoidance are the two self-regulation mechanisms having predictive value in anxiety development.

Anxiety sensitivity is defined as an individual's predisposition toward evaluating anxiety symptoms as harmful and dangerous, and a three-factor structure (physical anxiety factor, cognitive anxiety factor and social anxiety factor) has been put forward in this regard. (Tayloret al. 2007) The physical anxiety factor of anxiety sensitivity represents the fear experienced in the face of physical symptoms such as fast heartbeat and shortness of breath.

The cognitive anxiety factor examines the fear of losing cognitive control whereas the social anxiety factor relates to the fear that others may notice the anxiety symptoms of an individual. (Bijttebier et al. 2009) It has been reported that the analysis of these sub-factors provides a more detailed outcome in determining the correlation of anxiety sensitivity with various psychopathologies. The strongest connection with the physical factor is observed in Panic Disorder whereas it has been argued that the cognitive factor is mostly correlated with Generalized Anxiety Disorder (Rodriguez et al. 2004) and Depression (Olthuiset al.2014). As for the social factor, it has been correlated with Social Anxiety Disorder (Wheaton et al.2012).

Experiential avoidance is one of the concepts of Acceptance and Commitment Therapy, defining an individual's unwillingness to experience those physical sensations, emotions, thoughts, memories and images that he/she considers as negative (Hayes et al. 1996), in which strategies for avoiding negative experiences such as distraction, suppression, inhibition and denial may be utilized (Hayes et al. 2004); yet,strict and vigorous application of these strategies complicates adjustment (Kashdan et al.2006). It has been determined that experiential avoidance plays a role in the development of anxiety in addition to various other psychopathologies (Cookson et al. 2019,Hayeset al. 1996).

In general, it has been emphasized that the BIS is related to the motivation of avoidance. In this regard, increased BIS activity is considered to increase an individual's inclination to perceive a negative emotional experience as a potential threat against his/her safety. (Everhart et al. 2000, Serrano-Ibáñez et al. 2019) It is another matter that needs to be illuminated as to which mechanisms play a role in the progress from high BIS activation toward the development of anxiety disorder. According to the Reinforcement Sensitivity Theory, an individual becomes susceptible to certain BIS or BAS sensitivity through genetic and biological factors, and such susceptibility ismodified by environmental variables and learning processes in the course of time. (Hundt et al. 2008) Hypotheses aiming to explain the correlation between the BIS and BAS and psychopathologies report that self-regulation mechanisms play a mediating role. (Bijttebier et al. 2009) The literature emphasizes the mediating role of anxiety sensitivity and experiential avoidance between the BIS and psychopathologies (Pickett et al. 2011, Pickett et al. 2012, Serrano-Ibáñez et al. 2019).

It is argued that anxiety sensitivity and experiential avoidance are correlated (Zvolensky& Forsyth 2002) and that those individuals with high anxiety sensitivity will have exaggerated beliefs about the harmful effects of anxiety and try to avoid situations that provoke anxiety. (Reiss 1991, Schmidt et al.2006) It is reported that in different psychopathologies, experiential avoidance plays a mediating role with regard to anxiety sensitivity (Espel-Huynha et al. 2019) and that it is an expansive psychological process covering also anxiety sensitivity (Pickett et al. 2012).

It is aimed to study personality traits (BIS) and the factors considered as mediating mechanisms in the development of anxiety disorder (anxiety sensitivity and experiential avoidance). In this study, in the light of the available data, it is expected that the BIS, anxiety sensitivity and experiential avoidance will be higher in those groups consisting of patients with anxiety disorder than the healthy control group. In addition, it will be determined as to whether these factors vary between the two different anxiety disorder groups. Literature involves data that separately defines the correlation among experiential avoidance, anxiety sensitivity and the behavioral inhibition system; however, the majority of such studies have not been conducted on a clinical sample, and there are only a limited number of studies that deal with all three factors together. Therefore, in this study, a clinical sample group was chosen consisting of patients with generalized anxiety disorder and panic disorder in order to evaluate the BIS, anxiety sensitivity and experiential avoidance in combination. The respective analyses aim to reveal the correlation among these three variables.

SUBJECTS AND METHOD

Selection of the Study Group

The sample group of this study was created by those patients who applied to the Psychiatry Polyclinic of Balıkesir University between January 2017 and June 2017. In the power analysis conducted for this study, the probability of Type I error was determined as 0.05 and power (1- β) as 0.80, and the sample size was calculated as 51 (n1=n2=n3=51) for all groups. The number of groups in the study was detected as 3 and the maximum difference score between any two means as 5. The expected standard deviation within the groups is 5.

The conditions sought in the patients involved at least a primary school degree, and age older than 18 and younger than 65. The exclusion criteria were additional diagnosis for mental retardation, schizophrenia, bipolar mood disorder, psychotic disorder, cognitive disorders, alcohol and substance use disorders, anxiety disorder due to general medical condition, depression due to general medical condition, and pregnancy. 55 patients diagnosed with Generalized Anxiety Disorder (GAD) and 52 patients diagnosed with Panic Disorder (PD), who met the

inclusion criteria upon an evaluation by the experienced clinicians of the Psychiatry Polyclinic of Balıkesir University who were knowledgeable about the study design, were given information about the study and subsequently referred to the researcher. 5 patients diagnosed with GAD and 4 patients diagnosed with PD were not included in the study since they made a decision to discontinue. 2 more patients diagnosed with PD who met the inclusion criteria were added to the study. The remaining 50 GAD patients and 50 PD patients provided their written consent. The patients were re-evaluated by the researcher, the diagnoses of whom were verified by DSM 5 after they were given the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). The sociodemographic data form developed by the researcher, the Acceptance and Action Questionnaire II (AAQ-II), the Behavioral Inhibition System / Behavioral Approach System Scale (BIS/BAS Scale) and the Anxiety Sensitivity Index-3 (ASI-3) were performed on each patient.

In the interviews held with volunteers who were older than 18 and younger than 65 with at least a primary school degree, no previous mental disorder diagnosis and no history of psychiatric treatment, the researcher excluded psychiatric diagnoses by administering the SCID-I and verification with DSM 5. 50 healthy volunteers (HC) having similar age, gender and educational characteristics with the patient groups, who accepted to join the study, hence provided their written consent were included in the study. The HC group was also given the sociodemographic data form developed by the researcher, the AAQ-II, the BIS/BAS Scale and the ASI-3.

All participants were informed about the study and provided their written informed consent. This study was approved by the Ethical Committee of Balıkesir University.All procedures contributing to this work complied with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Measurement Tools

The age, gender, marital status, professional and educational status of the participants were questioned using the sociodemographic data form developed by the researcher.

The Structured Clinical Interview form for DSM-IV Axis I Disorders (SCID-I / Clinical Version) is a structured scale consisting of a total of 6 modules which was performed by the interviewer to examine Axis I psychiatric disorder diagnosis. Structured scales enhance diagnostic reliability and contribute to the prevention of overlooked diagnosis.This scale was developed by First et al. in 1997, the Turkish adaptation and reliability study of which was conducted by Özkürkçügil et al. In the Turkish adaptation, the rate of concordance for all diagnoses was reported as 98.1% and the Kappa coefficient as 0.86 (First et al. 1997,Özkürkçügil et al. 1999).

The Acceptance and Action Questionnaire II (AAQ-II) was developed by Bond et al. in 2011 (24) which is a 7-point Likert-type self-report consisting of 7 items that question willingness to remain in contact with negative experiences. In the original scale, the Cronbach's alpha reliability coefficient is 0.84 (0.78–0.88). It was adapted into Turkish by Yavuz et al. with a Cronbach's alpha reliability coefficient found as 0.84. Increased scores in this questionnaire showhigher rates of psychological inflexibility and experiential avoidance (Bond et al. 2011, Yavuz et al. 2014).

The Behavioral Inhibition System / Behavioral Approach System Scale (BIS/BAS Scale) was developed by Carver and White in 1994 based on the Reinforcement Sensitivity Theory developed by Jeffrey Alan Gray. It is a four-point Likert-type scale with two sub-scales of Behavioral Inhibition System (BIS) and Behavioral Approach System (BAS) as well as three sub-scales under the BAS sub-scale, i.e.funseeking, reward responsiveness and drive. It is a self-report scale. The Cronbach's alpha reliability coefficients of the sub-scales of the original scale have been reported to vary between 0.65 and 0.83. The Turkish validity and reliability study was conducted by Şişman in 2012 for which the Cronbach's alpha reliability coefficients were determined as 0.69 for the behavioral inhibition sub-scale, 0.57 for the reward responsiveness sub-scale, 0.63 for the funseeking sub-scale and 0.69 for the drive sub-scale. It has been observed that the Turkish version reveals a 4-factor structure similar to the original scale (Şişman 2012).

The Anxiety Sensitivity Index-3 (ASI-3) is a self-report scale developed by Taylor et al.in 2007for a multi-dimensional assessment of anxiety sensitivity through its physical, social and cognitive sub-categories. It consists of a total of 18 items in three sub-categories measured on a five-point Likert-type scale, (Taylor et al. 2007) In 5 different countries, the internal consistency coefficients were found to be in the range of 0.79–0.86 for the physical factor, 0.79–0.91 for the cognitive factor and 0.73 – 0.86 for the social factor.The adaptation into Turkish and validity-reliability study of which was done by Mantar et al.In the Turkish version, the Cronbach's alpha reliability coefficientswere reported as 0.89 for physical symptoms, 0.88 for cognitive symptoms and 0.82 for social symptoms. A cutoff score was not calculated in the Turkish version,the use of which is recommended in comparative studies (Mantar et al. 2010).

The statistical analyses were conducted by the SPSS Statistics 15.0 software package. Chi Square test and One-Way ANOVA test were used in analyzing demographic data. The scale scores of each group were analyzed by Kolmogorov-Smirnov test in order to evaluate internal normality. In comparing the scale scores of those groups determined to be unsuitable for normal distribution in terms of data, the Kruskal Wallis test and Post Hoc Dunn paired comparison methods were used. The Spearman Correlation Analysis was conducted to evaluate the inter-correlation and significance of the scales and subscales of each group of Generalized Anxiety Disorder, Panic Disorder and Healthy Control. In all these analyses, the statistical significance level was taken as $p<0.05$.The variables were analyzed by Multiple Binary Logistic Regression in the Generalized Anxiety Disorder, Panic Disorder and Healthy Control Groups.

RESULTS

Descriptive Data

This study involved a total of 150 participants consisting of 50 patients diagnosed with GAD, 50 patients diagnosed with PD and 50 HCs.

There were no statistically significant differences between the patient groups and the control group in terms of age, gender, employment status and marital status.

It was taken into consideration as to whether this was the first psychiatric application for the patients in the GAD and PD groups or whether they previously underwent treatment for such diagnoses, as a result of which no significant difference between the groups was found (Table 1).

Scale Scores

In this study, it was determined that the significant difference among the groups ($p<0.001$) in terms of the total score of ASI-3 and all three sub-tests (“physical symptoms”, “social symptoms” and “cognitive symptoms”) came from the control group and that there was no significant difference between the GAD group and the PD group (Table 2).

A significant difference was observed in the AAQ-II scale scores and the BIS domain of the BIS/BAS scale ($P<0.001$). The significant difference determined in the paired comparisons also came from the control group (Table 2).

No significant difference was determined among the groups in the three sub-scales of the BAS domain (Table 2).

Table 1. Socio-Demographic features

	GAD	PD	HC
Average age	39,3	38,4	38,9
Education status			
0-8 years	20(%40)	20(%40)	20(%40)
Over 8 years	30(%60)	30(%60)	30(%60)
Marital status			
Married	40(%80)	33(%66)	38(%76)
Single	10(%20)	17(%34)	12(%24)
Employment status			
Working	28(%56)	24(%48)	35(%70)
Not Working	22(%44)	26(%52)	15(%15)
Psychiatric application			
Previously underwent treatment	19(%38)	25(%50)	-
First psychiatric application	31(%62)	25(%50)	-

Table 2. Comparison of the scales and subscales used in the study between the groups

	GAD			PD			HC			Statistical analysis		
	Median	Min	Max	Median	Min	Max	Median	Min	Maxs	KW- kikare	P	posthocdunn p<0.05
ASI-Total	40,5	10	66	40,5	18	69	9,0	0	29	83,055	<0.001	3 vs2
ASI-Physical	16,0	2	24	16,5	5	24	4,0	0	14	78,394	<0.001	3 vs 12
ASI-Cognitive	14,0	3	27	14,0	3	26	3,5	0	15	64,960	<0.001	3 vs 12
ASI-Social	10,5	0	20	10,0	2	20	2,0	0	10	58,858	<0.001	3 vs 12
AAQ-II	31,0	10	49	31,5	13	49	10,0	7	25	80,180	<0.001	3 vs 12
BIS-Total	24,0	14	28	23,0	16	28	21,0	11	28	25,794	<0.001	3 vs 12
BAS-Total	39,0	25	51	40,0	26	51	41,0	24	52	0,990	0,610	NS
BAS-Reward	18,0	12	20	18,0	13	20	19,0	13	20	1,353	0,508	NS
BAS-Funseeking	11,0	7	16	12,0	4	16	11,0	4	16	1,194	0,551	NS
BAS- Drive	11,0	4	16	11,0	4	16	11,0	4	16	0,226	0,893	NS

(GAD:1, PD:2, HC:3)

Table 3. Correlation analysis of scale and subscale scores in GAD patients

		ASI-Total	ASI-Physical	ASI-Cognitive	ASI-Social	AAQ-II	BIS-Total	BAS-Total	BAS-Reward	BAS-Funseeking
ASI-Physical	rs	0,782								
	P	<0.001								
ASI-Cognitive	rs	0,883	0,546							
	P	<0.001	<0.001							
ASI-Social	rs	0,756	0,353	0,599						
	P	<0.001	0,012	<0.001						
AAQ-II	rs	0,683	0,584	0,641	0,453					
	P	<0.001	<0.001	<0.001	0,001					
BIS-Total	rs	0,473	0,435	0,346	0,405	0,481				
	P	0,001	0,002	0,014	0,003	0,000				
BAS-Total	rs	0,332	0,192	0,339	0,349	0,070	0,072			
	P	0,018	0,182	0,016	0,013	0,629	0,618			
BAS-Reward	rs	0,152	0,103	0,144	0,094	0,075	0,049	0,566		
	P	0,291	0,478	0,319	0,514	0,603	0,737	<0.001		
BAS-Funseeking	rs	0,243	0,141	0,184	0,320	0,033	0,022	0,672	0,205	
	P	0,090	0,328	0,202	0,024	0,817	0,881	<0.001	0,153	
BAS- Drive	rs	0,251	0,241	0,240	0,217	-0,004	0,098	0,822	0,349	0,561
	P	0,079	0,092	0,093	0,130	0,979	0,498	<0.001	0,013	<0.001

Table 4. Correlation analysis of scale and subscale scores in PD patients

		ASI-Total	ASI-Physical	ASI-Cognitive	ASI-Social	AAQ-II	BIS-Total	BAS-Total	BAS-Reward	BAS-Funseeking
ASI-Physical	rs	0,655								
	P	<0.001								
ASI-Cognitive	rs	0,854	0,353							
	P	<0.001	0,012							
ASI-Social	rs	0,855	0,330	0,677						
	P	<0.001	0,019	<0.001						
AAQ-II	rs	0,553	0,465	0,576	0,341					
	P	<0.001	0,001	<0.001	0,015					
BIS-Total	rs	0,391	0,043	0,421	0,401	0,292				
	P	0,005	0,768	0,002	0,004	0,039				
BAS-Total	rs	0,174	-0,092	0,176	0,288	0,070	0,121			
	P	0,227	0,524	0,221	0,042	0,630	0,402			
BAS-Reward	rs	0,086	-0,105	0,069	0,162	0,093	0,170	0,698		
	P	0,553	0,466	0,636	0,262	0,521	0,239	<0.001		
BAS- Funseeking	rs	0,082	-0,124	0,075	0,206	0,065	0,160	0,897	0,621	
	P	0,571	0,392	0,607	0,151	0,654	0,268	<0.001	<0.001	
BAS- Drive	rs	0,268	-0,024	0,276	0,343	0,064	0,080	0,875	0,441	0,651
	P	0,060	0,866	0,052	0,015	0,661	0,583	<0.001	0,001	<0.001

Table 5. Correlation analysis of scale and subscale scores in HC

		ASI-Total	ASI-Physical	ASI-Cognitive	ASI-Social	AAQ-II	BIS-Total	BAS-Total	BAS-Reward	BAS-Funseeking
ASI-Physical	rs	0,829								
	P	<0.001								
ASI-Cognitive	rs	0,818	0,480							
	P	<0.001	<0.001							
ASI-Social	rs	0,773	0,506	0,565						
	P	<0.001	<0.001	<0.001						
AAQ-II	rs	0,622	0,525	0,551	0,418					
	P	<0.001	<0.001	<0.001	0,003					
BIS-Total	rs	0,336	0,296	0,334	0,141	0,299				
	P	0,017	0,037	0,018	0,329	0,035				
BAS-Total	rs	-0,033	-0,015	-0,040	0,009	0,114	0,036			
	P	0,821	0,917	0,782	0,951	0,430	0,804			
BAS-Reward	rs	0,128	0,068	0,170	0,106	0,226	0,215	0,759		
	P	0,375	0,638	0,239	0,464	0,114	0,133	<0.001		
BAS- Funseeking	rs	-0,163	-0,134	-0,162	-0,075	-0,009	-0,150	0,708	0,369	
	P	0,258	0,352	0,260	0,606	0,952	0,297	<0.001	0,008	
BAS- Drive	rs	0,049	0,113	-0,029	0,051	0,140	0,111	0,819	0,534	0,381
	P	0,735	0,433	0,840	0,723	0,333	0,442	<0.001	<0.001	0,006

Scale Correlations

The "reward responsiveness", "funseeking" and "drive" sub-scales in the BAS domain of the BAS/BIS scale correlated with each other as well as the total BAS score (Tables 3,4,5).

In the BIS domain of the BAS/BIS scale, the scale scores moderately correlated with the total ASI-3 score in the GAD and PD groups whereas a low correlation was observed in the HC group. Low-moderate correlations were found between the scale score in the BIS domain and the "physical symptoms", "cognitive symptoms" and "social symptoms" domains of the ASI-3. The correlation between the BIS and AAQ-II was low in the PD and HC groups whereas it was moderate in the GAD group (Tables 3,4,5).

As for the correlation between the AAQ-II and ASI-3, the AAQ-II scores and the ASI-3 total scores were correlated in all three groups, at a high level in the GAD group and moderately in the PD and HC groups. Low-moderate correlation levels were observed between the AAQ-II scores and the "physical symptom", "cognitive symptom" and "social symptom" domains of the ASI-3 (Tables 3,4,5).

A statistically significant correlation was found upon the analysis of the correlation between the total ASI-3 scores of the GAD, PD and HC groups and the scale scores of the ASI-3 sub-domains of "physical symptoms", "social symptoms" and "cognitive symptoms" as well as the overall correlations of these sub-domains with each other. It was determined that in all three groups, the ASI-3 total scores were highly correlated with the scores of all domains, and in all groups, all sub-domain scores were moderately correlated with each other except for the low correlation between the "physical symptoms" and "social symptoms" and the high correlation between the "social symptoms" and "cognitive symptoms" in the PD group (Tables 3,4,5).

Regression Analysis

Table 6 shows the B, SE, p and OR values obtained in relation to gender, age,AAQ-II, BIS-total, BAS- Reward, BAS- Funseeking, BAS- Drive, ASI-Physical, ASI-Cognitive and ASI-Social as a result of the Multiple Binary Logistic Regression analysis conducted for the dependent variable of GAD. In the present model, the following determinations were made: Model chi-square= 97.82; $p<0.001$; Total classification =93%; Nagelkerke R2=0.83.

Table 7 shows the B, SE, p and OR values obtained in relation to gender, age, AAQ-II, BIS-total, BAS- Reward, BAS- Funseeking and BAS- Drive as a result of the Multiple Binary Logistic Regression analysis of the dependent variable of PD. Due to their obvious effect on the result, the ASI scores were not included in order to measure the correct OR values of the models. In the present model, the following determinations were made: Model chi-square= 97.53; $p<0.001$; Total classification =89%; Nagelkerke R2=0.83.

Table 6. Multiple Binary Logistic Regression; Dependent variable: GAD vs HC

	B	S.E.	p	OR	Lower CI 95% OR	Upper CI 95% OR
GENDER	-0,223	0,504	0,658	0,8	0,298	2,147
AGE	0,08	0,044	0,067	1,083	0,995	1,18
AAQ-II	**0,212**	**0,101**	**0,036**	**1,237**	**1,014**	**1,508**
BIS-TOTAL	-0,216	0,212	0,309	0,806	0,532	1,221
BAS-Reward	-0,098	0,271	0,716	0,906	0,533	1,54
BAS-Funseeking	0,326	0,214	0,129	1,385	0,91	2,109
BAS-Drive	-0,221	0,182	0,225	0,802	0,562	1,146
ASI-Physical	0,205	0,135	0,129	1,227	0,942	1,598
ASI-Cognitive	0,234	0,157	0,135	1,264	0,929	1,719
ASI-Social	0,055	0,163	0,738	1,056	0,768	1,453
Constant	-6,012	5,823	0,302	0,002		

Table 7. Multiple Binary Logistic Regression; Dependent variable: PD vs HC

	B	**S.E.**	**p**	**OR**	**Lower CI 95% OR**	**Upper CI 95% OR**
GENDER	0,051	0,413	0,902	1,052	0,468	2,365
AGE	0,112	0,043	0,010	1,118	1,027	1,218
AAQ-II	**0,542**	**0,138**	**<0,001**	**1,719**	**1,31**	**2,254**
BIS-TOTAL	-0,214	0,205	0,296	0,807	0,54	1,207
BAS- Reward	-0,45	0,32	0,159	0,638	0,341	1,193
BAS- Funseeking	0,061	0,159	0,702	1,063	0,778	1,452
BAS- Drive	-0,106	0,17	0,533	0,899	0,644	1,256
Constant	-1,405	4,679	0,764	0,245		

DISCUSSION

The BAS/BIS scale, which is one of the scales used in this study for analyzing anxiety disorders, is based on the Reinforcement Sensitivity Theory developed by Jeffrey Alan Gray, focusing on two motivational systems effective in different aspects (the behavioral approach system and the behavioral inhibition system) (Şişman 2012). The BAS responds to signals of reward and non-punishment and is related with impulsivity, whereas the BIS responds to stimuli of punishment and non-reward and is sensitive towards innate fear signals and new stimuli (Segarra et al. 2007). BIS assumes the task of preventing behaviors that may result in negative or painful consequences. In this regard, high BIS activation will result in emotions such as sensitiveness, disappointment, sadness, fear and anxiety (Şişman 2012). The BIS is presented as the causal basis of anxiety, and various studies have reported that high BIS activation is correlated with anxiety symptoms (Campbell-Sills et al.2004, Johnson et al. 2003, Segarra et al. 2007). In parallel with the results of such studies, this study also determined that the BIS scale scores were significantly higher in the patient groups with an anxiety disorder (PD and GAD) diagnosis than the control group, thus our data also determined the anxiety level as high in those individuals with high BIS activation.

No significant differences were found upon a comparison of the PD and GAD groups in terms of the BIS, and it was determined that the BIS levels were similar in different anxiety groups. In this regard, this study has introduced new data into the literature in terms of the comparison of BIS severity in patients with different anxiety disorders such as GAD and PD.

It was determined that the total score and all sub-domain scores of the ASI-3 scale investigating anxiety sensitivity were higher in the patient groups (GAD and PD) than the healthy controlsand there was no significant difference between the PD and GAD groups in terms of the ASI-3 total scores. The present data is correlated with the information in the literature correlating anxiety sensitivity with anxiety psychopathology, but reporting that there is no distinct difference between the total anxiety sensitivity and the specific anxiety symptoms and disorders (Wheaton et al. 2012). The lack of significant difference of anxiety sensitivity between PD and GAD also overlaps with the information in the literature providing evidence about the fact that anxiety sensitivity is not a "specific risk factor" for PD (.McNally 2002).

It is considered that the assessment of the sub-domains of anxiety sensitivity may be effective in the comparison of different anxiety disorders. It has been reported that the belief that hyperstimulation resulting from anxiety may have catastrophic physical consequences (anxiety sensitivity physical domain) is closely related with panic disorder and panic attack symptoms. As for the belief that anxiety-related hyperstimulation will lead to loss of mental or cognitive control (anxiety sensitivity cognitive domain), it has been reported to be correlated with generalized anxiety disorder (Wheaton et al. 2012). On the other hand, there are opinions that refer to the cognitive domain of anxiety sensitivity indicating that some PD patients are mainly concerned about the cognitive consequences of panic attacks such as "losing one's mind or going crazy" (Cox et al. 1994). Concerns about physical health overlap with the physical symptom domain of anxiety sensitivity (Olatunji & Wolitzky-Taylor2009, Wheaton et al. 2010). In our sample, a similarity was observed between PD and GAD in terms of the ASI-3 sub-domain scores (physical, cognitive and social). It is evaluated that concerns

about cognitive consequences may be influential on the cognitive domain scores whereas concerns about physical health may affect the physical domain scores, thus become determinative on our data.

Experiential avoidance, considered among maladaptive strategies, has been correlated with worry and generalized anxiety disorder in parallel with the "Cognitive Avoidance Theory" developed by Borkovec, and further, it has been determined that individuals with high experiential avoidance show more symptoms of panic attack and stress in biological provocation tests (Feldner et al.2003, Karekla et al. 2004, Spinhoven et al. 2017, Spira et al. 2004). In addition to studies demonstrating the relationship between experiential avoidance and GAD (Lee et al. 2010, Roemer et al. 2005), in the clinical sample, higher levels of experiential avoidance have been observed in the group with panic disorder or a history of panic attacks compared to the control group (Baker et al. 2004, Tull & Roemer 2007). In our sample, the average AAQ-II score measuring experiential avoidance was determined to be significantly higher in the GAD and PD groups than the control group, thereby supporting the previous connections between anxiety and experiential avoidance. On the other hand, no significant differences were found in the GAD and PD patient groups in terms of experiential avoidance levels. According to another opinion, it will be significant to assess experiential avoidance with other psychological structures in order to understand its predictive value in anxiety disorders (Spinhoven et al. 2017). There is a need for further studies in different cultures comparatively analyzing experiential avoidance in patient groups diagnosed with GAD or PD.

Another dimension of this study was to determine the connections between the BIS, which is one of the personality dimensions, and anxiety sensitivity and experiential avoidance which are considered among the risk factors associated with anxiety. Proven connections between anxiety sensitivity and personality dimensions such as neuroticism are guiding in investigating the connections between anxiety sensitivity and BIS sensitivity (Kotov et al. 2007); and the correlation between the BIS and maladaptive self-regulation strategies was previously studied and the respective connections were shown (Pickett et al. 2011, Tull et al. 2010). In this regard, it has been assumed that there would be a positive relationship between the BIS and anxiety sensitivity and experiential avoidance. In a way proving this hypothesis, this studyhasdetermined, for all three groups (GAD, PD and HC), a correlation between both the total scores of the BIS sub-domain of the BAS/BIS scale and the ASI-3 which measures anxiety sensitivity,and also the BIS scores and the AAQ-II scores measuring experiential avoidance.

Various studies have discussed the mechanisms effective in terms of anxiety sensitivity in the development of psychopathologies. Increased anxiety sensitivity enhances awareness about negative emotional and somatic experiences thereby triggering the utilization of maladaptive strategies. As a result, the individual adopts the behavior of preventing or escaping-avoiding such experiences (Stein et al. 2018). In this regard, the mediating role of experiential avoidance between anxiety sensitivity and psychopathologies such as anxiety, depression, social anxiety disorder and eating disorder has been reported (Espel-Huynha et al. 2019, Pickett et al. 2012). This study also supported the hypothesis of correlation between anxiety sensitivity and experiential avoidance through the correlations in the ASI-3 total score and the AAQ-II scores in our data.

The data obtained in this study supports the literature data about the fact that the BIS, anxiety sensitivity and experiential avoidance are influential on the development of anxiety. The fact that this study was conducted on patients diagnosed with GAD or PD enabled the comparison of these variables in different anxiety disorder groups. The strong aspects of this study consist of the fact that it was conducted on a clinical sample, the diagnoses were made by experienced clinicians, the clinical assessment scales were performed by experienced individuals and the cases were socio-demographically similar. In this way, the influence and interaction of personality traits and self-regulation mechanisms in anxiety disorder patients were evaluated. However, the development of such connections still requires further analysis.

This study has certain limitations. First of all, the cross-sectional design of this study hinders the acquisition of data about the developmental process of the connections among the variables assessed. The data submitted pertain to those obtained in a single interview with the patients. Our findings reveal the correlation of anxiety sensitivity, the BIS/BAS system and experiential avoidance with anxiety,but fail to show the influence of these factors on the follow-up and treatment process of anxiety disorders. Illuminating data in this regard may be obtained by repeatedly assessing patients under follow-up.

This study provides a concept that covers personality traits and self-regulation mechanisms in anxiety disorders. One of the main contributions of this study is that it reveals the connections among the BIS, anxiety sensitivity and experiential avoidance thereby defining risk factors in specific anxiety disorder groups. The fact that this study handles these three factors in combination and reveals the respective correlations may provide fresh perspectives in creatingtargets for psychotherapeutic interventions in the clinical environment. Prospective studies

to be conducted in various cultures about the personality dimensions, self-regulation mechanisms and mediating mechanisms will provide data for resolving and treating anxiety disorders which are quite frequently encountered in the clinical environment.

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Correspondence:
Serap Akdeniz Görgülü, M.D., Specialist: Psychiatry
Clinic of Bigadiç State Hospital Balıkesir/Turkey,
serap-akdeniz@hotmail.com, +90(0266) 614 13 00