Araştırma / *Original article*

Alexithymia is not a good predictor of suicidal ideation in patients with social anxiety disorder

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ABSTRACT

Objective: This study was to determine the relation between alexithymia and suicidal ideation and factors associated with suicidal ideation in patients with social anxiety disorder (SAD). Also we determined whether alexithymia is predictor of suicidal ideation related with SAD. **Methods:** *One hundred and sixty-four SAD (n=57), panic disorder (PD) (n=58), healthy controls (HC) (n=49) subjects (according to DSM-5) were included to study. Alexithymia was measured by Toronto Alexithymia Scale-20(TAS-20), suicidal ideation was measured by Suicidal Ideation Scale (SIS), social anxiety level were evaluated with Liebowitz Social Anxiety Scale and anxiety and depression level evaluated with Beck Depression Inventory and Beck Anxiety Inventory, State and Trait Anxiety Scales.* **Results:** *Alexithymia, the rate of was found to be 38.6% in SAD patients and 29.3% in PD patients. In SAD group, significant correlation was found between TAS 20, its factors and SIS. With path analysis, it was found that TAS 20 total scores predicted SIS scores only indirectly and via their effects on trait anxiety and subjective depressive symptoms.* **Conclusion:** *In alexithymic SAD patient's suicidal ideation may occur when comorbid depression is present. Based upon the findings alexithymia may not be a good predictor of suicidal ideation for preventing suicidal attempts in patients with social anxiety disorder. (Anatolian Journal of Psychiatry 2018; 19(x):xx-xx)*

Aleksitimi, sosyal anksiyete bozukluğu hastalarında intihar düşüncelerinin iyi bir belirteci değildir

ÖZ

Amaç: Bu çalışma aleksitimi ile intihar düşüncesi arasındaki ilişkiyi ve sosyal anksiyete bozukluğu (SAB) hastalarında intihar düşünceleriyle ilişkili etkenleri belirlemek için yapılmıştır. Aynı zamanda aleksitiminin SAB ile ilişkili intihar düşüncelerinin bir öncüsü olup olmadığını belirlemeye çalıştık. **Yöntem:** *Çalışmaya DSM-5 ölçütlerine göre SAB (s=57), panik bozukluğu (PB) (s=58), sağlıklı kontrol (s=49) olan 164 kişi alınmıştır. Aleksitimi, Toronto Aleksitimi Ölçeği-20 (TAÖ-20) ile, intihar düşünceleri İntihar Düşünceleri Ölçeği (İDÖ) ile değerlendirilmiştir. Sosyal anksiyete düzeyi Liebowitz Sosyal Anksiyete Ölçeği ve anksiyete ve depresyon düzeyleri Beck Depresyon Ölçeği ve Beck Anksiyete Ölçeği ile Durumluk Sürekli Anksiyete Ölçeği ile değerlendirilmiştir.* **Sonuçlar:** *Aleksitimi oranı SAB hastalarında %38.6, PB hastalarında da %29.3 oranında bulundu. SAB grubunda, TAÖ-20 alt ölçekleri ve İDÖ arasında anlamlı korelasyon bulundu. Path analizi ile TAÖ-20 total puanlarının İDÖ puanlarını dolaylı öngördüğü ve bunun da sürekli anksiyete ve öznel depresif belirtiler üzerindeki etkileri aracılığıyla olduğu bulundu.* **Tartışma:** *Aleksitimik SAB hastalarında, intihar düşünceleri depresyon eş tanısı olduğunda görülebilir. Bu bulgulara dayanarak, aleksitiminin SAB hastalarında intihar girişimlerini önlemek için intihar düşüncelerinin iyi bir belirteci olmadığı*

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INTRODUCTION

Alexithymia is multi-component construct pertaining to personality and originally observed among patients with psychosomatic disorders. The components include difficulty in recognition/ definition of one's emotions, inadequate differentiation of physical sensations and emotions in response to emotional stimuli, lack of imagination/limited imaginary processes and extroverted cognitive style.[1,2] Relationship of the alexithymia concept with depressive disorders, anxiety disorders (especially, panic disorder, PD), somatoform disorders, eating disorders, alcohol/substance use disorders, personality disorders and pathological gambling have been evaluated in previous studies.[3-8] The exact nature of the relationship between alexithymia and psychopathology is debated with some authors suggesting that is associated with depression while others suggest that it is a secondary reaction to decrease psychic and somatic pain.[6,8,9]

Alexithymia in context of anxiety disorders is especially studied in panic and social anxiety disorders and there are studies reporting both elevated levels alexithymia and no change.[10,11] As for other psychopathologies, some authors explained its presence in relation to depression while other authors posited the presence of alexithymia in social anxiety disorder (SAD) as a facet of avoidance of aversive emotions and physiological arousal symptoms in social interaction.[10-13]

The relationships between anxiety disorders and suicidality has been frequently investigated especially for panic disorder (PD) and the consensus for rates of suicidality in those disorders is 6.0-60.0% depending on sampling and measurement characteristics.[14] The relationships between SAD and suicidality has received relatively scant attention. According to the Epidemiological Catchment Area Study, rates of suicidal ideation for SAD with and without comorbidity were 15.7% and 9.8%; respectively.[15] Contrarily, in the National Comorbidity Survey, suicidal ideation and attempts were found only for post-traumatic stress disorder (PTSD) among the anxiety disorders (as per DSM-III-R, PTSD, SAD, PD, generalized anxiety disorder) evaluated.[16] Similarly and although depending on a biased sample, a meta-analysis of the FDA database rate of reported suicide among patients with SAD was only 0.11% (1 in 917).[17] Some of the authors proposed that suicidal ideation may be seen in SAD but that suicide attempts only occurred in presence of comorbidity especially depression.[18]

The role of alexithymia in suicidality observed in anxiety disorders was infrequently evaluated. In one of the first studies, Iancu and colleagues found that elevated symptoms of alexithymia in patients with PD was correlated with elevated suicidality although the correlations between symptoms of depression and suicidality was most significant.[19] In a further study, among patients with PD, difficulty in identifying feelings domain of alexithymia was found to be related with suicidality.[20] Two previous studies from Turkey evaluated alexithymia in presence of SAD and reported that elevated symptoms of alexithymia were related with more severe symptoms, higher comorbidity and disability although they did not report the relationships with suicidality.[21,22] A recent review on the role of alexithymia in suicidality in context of psychopathology reported that the majority of the studies supported the increase in risk with alexithymia.[23]

As far as we are aware, there is no previous study in the literature investigating the relation between alexithymia and suicidal ideation in patients with SAD. The aim of the present study was to determine the relation between alexithymia and suicidal ideation and factors associated with suicidal ideation in patients with SAD. We also aimed to determine whether alexithymia is a predictor of suicidal ideation in in patients with SAD.

METHODS

The present study was approved by the Başkent University Ethics Committee (Project no. KA 13/268) and was supported by the Investigation Fund of the University. All of the study procedures were in accordance with procedures set forth in Declaration of Helsinki and local laws and regulations.

Study design

Study center, time-frame and sampling: The study was conducted between January 2014 and June 2017 at the Department of Psychiatry of the Başkent University Medical Faculty.

Inclusion criteria were a primary diagnosis of either SAD or PD, aged >18 years, having a literacy level adequate to complete self-report measures and providing informed consent. 17 patients were excluded due to a psychotic disorder, mental retardation, bipolar disorder, alcohol/substance abuse, serious chronic diseases, using immunosuppressive drugs, and for women being pregnant/lactating. Patients with SAD should not have comorbid PD and those with PD should be free of SAD.

Study procedures and measures

Patients were informed about the study and Sociodemographic Information Form was completed after written informed consent was procured.

Sociodemographic Information Form: This form included questions on age, sex, marital/professional and academic status, history of smoking and alcohol use, age of onset of disease, duration of untreated symptoms, role of stressful life events in the onset of disease, admission to hospital, suicide attempts and ideation, social stressors and the presence of stressful life events within the last six months.

Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I): It is a structured clinical interview schedule administered by the interviewer for investigating the diagnoses of Axis-I psychiatric disorders It was developed by First et al. and Turkish reliability and validity study was carried out by Özkürkçügil et al.[24,25.]

State and Trait Anxiety Inventory (STAI-I and II): This self-report measure is administered to patients over the age of 14.[26] STAI-I evaluates state while STAI-II measures trait anxiety. Turkish reliability and validity study of both tests were carried out by Le Compte and Oner.[27,28]

Liebowitz Social Anxiety Scale (LSAS): This scale was developed by Liebowitz and colleagues to determine fear and/or avoidance levels of patients with social anxiety disorder.[29] The form is administered by the interviewer and has overall 24 items, 11 of which are focus on social interaction and 13 on performance status. The reliability and validity of the Turkish version was established previously.[30]

Beck Depression Inventory (BDI): This self-report scale was developed by Beck in order to measure the level and severity of subjective depressive symptoms.[31] The scale has 21, 4-point Likert type items and overall scores are obtained with addition of item scores. The

Turkish reliability and validity study was conducted previously and a score of 17 was reported as the cut-off for clinically significant depressive symptoms.[32]

Beck Anxiety Inventory (BAI): This inventory measures the frequency of anxiety symptoms experienced by the individual. It is also a Likert type self-report scale with 21 items and elevated scores are accepted to reflect severity of subjective anxiety. BAI was developed by Beck et al. and its validity and reliability study in Turkish was carried out by Ulusoy et al.[33,34]

Toronto Alexithymia Scale-I (TAS-20): This self-report scale is commonly used to measure the severity of alexithymia. It was developed by Bagbys et al. and has 20 5-point Likert type items.[35,36] The overall score varies between 20-100 with higher scores denoting more severe alexithymia. TAS-20-I has three subscales i.e. difficulty identifying feelings (DIF), difficulty describing feelings (DDF), and externally oriented thinking (EOT). Its validity and reliability study in Turkish was carried out by Gulec et al.[37]

Suicidal Ideation Scale (SIS): This scale was developed by Levine et al. in order to measure the severity of suicidal ideation.[38] SIS includes 17 items with binary (yes/no) responses and overall score ranges between 0 and 17. Higher scores are accepted to reflect more suicidal ideations. Reliability and validity of the Turkish version has been established.[39,40]

Overall, 164 subjects between the ages of 18-56 who referred to psychiatry outpatient clinic, 57 of whom was diagnosed with SAD, 58 of whom with PD and 49 of whom were healthy controls (HC) were included in the present study.

Statistical analysis

Normally distributed continuous variables were expressed as mean and standard deviations. Group comparisons for normally distributed quantitative data one way ANOVA test was used. Post-hoc comparisons were conducted either with LSD or Tamhane's T2 tests according to equality of variances. Multi-way frequency analysis for nominal variables were conducted with log-linear analysis for main effects (with multi-nominal distribution) and follow-up analyses were conducted with chi-square tests. Bonferroni correction for alpha values was used for follow-up analyses. Bivariate nominal comparesons were conducted with chi-square tests and Yates' and Fisher's corrections were used as needed. Part and partial correlations between

psychometric measures were conducted with Pearson correlation analysis. Psychometric scale scores were standardized and direct and indirect effects on suicidality as measured by SIS was analyzed with SPSS PROCESS Macro. In all analyses the significance level was considered to be 0.05 and all analyses were two-tailed.

RESULTS

Sociodemographic features of the sample are summarized in Table 1. Patients with SAD were youngest followed by healthy controls and lastly by PD patients (Table 2). Rates for medical comorbidity, stressors within the last six months and limited social supports were similar for SAD and PD groups and significantly higher than healthy controls. As for alcohol/substance use; PD and control groups were similar and had significantly more frequent use than SAD (post-. hoc comparisons not shown, $p < 0.006$ for signi-

Table 1. Sociodemographic and clinical features of patients with social anxiety disorder, panic disorder and healthy controls

	SAD % (n=57)	PD % (n=58)	HC % (n=49)	p*
Female	43.9	69.0	49.0	0.28
Single	82.5	29.3	57.1	0.12
High school or lower education	43.9	39.7	46.9	0.09
Currently working	31.6	58.6	85.7	0.06
Medical comorbidity	22.8	25.9	10.2	<0.01
Alcohol/substance use	21.1	39.7	30.6	<0.01
Family history for social anxiety	31.6	29.3	0.0	-
Stressors at onset	53.6	75.0	0.0	-
Stressors within last 6 months	62.5	57.1	10.2	0.03
Suicidal ideations	48.2	33.9	0.0	-
Suicide attempts	7.1	3.6	0.0	-
Limited social supports	21.4	19.6	12.2	<0.01

Log-linear analysis; SAD: Social Anxiety Disorder; PD: Panic Disorder; HC: Healthy Controls.

Table 2. Psychometric measures and clinical variables of patients with social anxiety disorder (SAD), panic disorder (PD), and healthy controls (HC)

	SAD (n=57) Mean±SD	PD (n=58) Mean±SD	HC (n=49) Mean±SD	p*
Age (years)	24.7±7.5	32.8±8.5	28.1±6.6	<0.01†
Age at onset (years)	13.8±4.2	27.2±8.3	-	<0.01
Age at first treatment (years)	23.3±8.2	29.6±8.0	-	<0.01
Treatment duration (days)	254.4±482.6	758.7±960.1	-	<0.01
LSAS-anxiety/fear	66.7±9.6	43.9±12.2	40.1±9.2	<0.01†
LSAS-avoidance	64.4±10.9	43.8±12.6	39.7±8.9	<0.01†
BAI	25.1±11.5	32.0±15.2	3.4±3.1	<0.01
STAI-I	41.3±6.5	41.8±5.2	43.6±6.3	0.14†
STAI-II	51.8±6.1	50.3±4.9	44.3±3.6	<0.01
BDI	20.0±10.8	17.0±10.9	4.1±3.3	<0.01
SIS	7.0±3.3	4.1±3.6	1.0±1.5	<0.01
TAS-20-total	58.3±8.4	60.1±9.0	49.9±7.0	<0.01†
TAS-20- DIF	18.8±8.1	20.2±6.4	10.9±3.6	<0.01
TAS-20-DDF	15.2±3.0	14.7±2.8	12.7±3.1	<0.01†
TAS-20-EOT	24.2±4.0	25.2±4.0	26.3±4.1	0.03†

†: Equal variances with Post- Hoc LSD, all other post-Hoc comparisons with Tamhane's T2; LSAS: Liebowitz Social Anxiety Scale; BAI: Beck Anxiety Inventory; STAI-I: State-Trait Anxiety Inventory-State; STAI-II: State-Trait Anxiety Inventory-Trait; BDI: Beck Depression Inventory; SIS: Suicidal Ideation Scale; TAS-20: Toronto Alexithymia Scale, DIF: Difficulty Identifying Feelings; DDF: Difficulty Describing Feelings; EOT: Externally Oriented Thought.

ficant findings).

The groups differed significantly in terms of psychometric measures. Post-hoc comparisons revealed that for both Liebowitz Subscales SAD scores highest and that patients with PD were similar to healthy controls. For BDI and TAS-20, patients with SAD were similar to those with PD and both groups scored significantly higher than controls. PD scored highest followed by SAD and controls for BAI and for SIS. SAD scored highest followed by PD and then controls. TAS-20 subscales also differed significantly between groups. For difficulty identifying feelings and difficulty describing feelings, SAD and PD groups were similar and scored higher than controls. For externally oriented thinking, PD was similar to controls and scored higher than patients with SAD.

The most common comorbid disorder in for both SAD and PD groups was depression. Comorbid psychiatric disorders have been summarized in Table 3.

Table 3. Comorbid diagnoses in patients with social anxiety disorder (SAD) and panic disorder (PD)

| | SAD (n=57) | | PD (n=58) | | |
	n	%	n	%	p*
Major depressive disorder	23	43.4	19	35.8	0.44
Generalized anxiety disorder	14	26.4	5	9.4	0.01
Obsessive-compulsive disorder	7	13.2	6	11.3	0.77
Special phobia	8	15.1	7	13.2	0.79
Hypochondriasis	1	1.9	6	11.3	0.11
Agoraphobia	0	0.0	10	18.9	-

* Chi-square test with Yates' and Fisher's corrections as needed.

When 61 as a cut-off score in TAS-20 for Alexithymia was used, the rate of was found to be 38.6% (n=22) in SAD patients and 29.3% (n=17) in PD patients. The rates of alexithymia were similar for both groups (χ^2=0.73, df=1, p=0.39, Yates' correction).

In zero-order correlations, SIS correlated signifycantly with BAI, BDI, and all TAS-20 subscales in SAD group while it correlated significantly with BAI, BDI, STAI-II and DIF, DDF subscales in PD group. Contrarily SIS scores only correlated with BAI and BDI scores in the healthy controls. Controlling for BDI; none of the scores correlated significantly with SIS scores in all groups (Table 4, partial correlations not shown).

Lastly TAS20 Total, BDI, BAI, STAI-II (trait anxiety) and SIS scores were standardized and path analysis was attempted with observed variables. With path analysis it was found that TAS-20 total scores predicted SIS scores only indirectly and via their effects on trait anxiety and subjective depressive symptoms. This held true for the whole sample as well as patients with SAD and PD (Figure 2, total effect of TAS-20 total on SIS B=0.47, p=0.00; B=0.29, p=0.06 and B=0.40, p<0.01; respectively). The model as a whole explained 46.0 to 59.0% of the variance in standardized SIS scores.

DISCUSSION

In this single center, cross-sectional case-control study evaluating the role of alexithymia in suicidality among patients with SAD and PD; subjectively reported suicidality was highest in SAD followed by PD and controls. Rates of alexithymia according to established cut-offs for TAS-20 were similar for PD and SAD groups while scores in subscales differed across groups. Both SAD and PD were similarly impaired in identifying and describing feelings compared to controls while both PD and controls displayed more externally oriented thinking compared to SAD. Zero-order correlations across groups revealed that SIS scores correlated significantly with various measures while controlling for BDI removed all significant correlations. Path analysis with standardized scores showed that for SAD, PD and healthy controls, alexithymia predicted subjectively reported suicidality indirectly and via depressive symptoms.

Table 4. Zero-order correlations among psychometric measures according to patient groups

Social anxiety disorder

	SIS	BAI	BDI	TAS-20DIF	TAS-20DDF	TAS-20EOT	STAI-II
SIS	-						
BAI	0.30*						
BDI	0.67**	0.42**					
TAS-20DIF	0.46**	0.21	0.56**				
TAS-20DDF	0.28*	0.14	0.31*	0.52**			
TAS-20EOT	-0.39**	-0.11	-0.43**	-0.42**	-0.07		
STAI-II	0.19	0.27*	0.22	0.31*	0.28*	0.13	-

Panic disorder

	SIS	BAI	BDI	TAS-20DIF	TAS-20DDF	TAS-20EOT	STAI-II
SIS	-						
BAI	0.35**						
BDI	0.64**	0.48**					
TAS-20DIF	0.52**	0.25	0.50**				
TAS-20DDF	0.38**	0.02	0.30*	0.46**			
TAS-20EOT	-0.17	-0.48**	-0.24	-0.02	0.04		
STAI-II	0.27**	0.41**	0.21	0.20	0.20	-0.07	-

Healthy controls

	SIS	BAI	BDI	TAS-20DIF	TAS-20DDF	TAS-20EOT	STAI-II
SIS	-						
BAI	0.28*						
BDI	0.48**	0.74**					
TAS-20DIF	0.20	0.24	0.21				
TAS-20DDF	0.26	0.07	0.13	0.04			
TAS-20EOT	0.24	-0.21	-0.01	-0.04	0.42**		
STAI-II	0.08	0.11	0.15	0.20	-0.05	0.05	-

*p<0.05; ** p<0.001; SIS: Suicidal Ideation Scale; BAI: Beck Anxiety Inventory; BDI: Beck Depression Inventory; TAS-20: Toronto Alexithymia Scale; DIF: Difficulty Identifying Feelings; DDF: Difficulty Describing Feelings; EOT: Externally Oriented Thought; STAI-II: State Trait Anxiety Inventory-Trait*
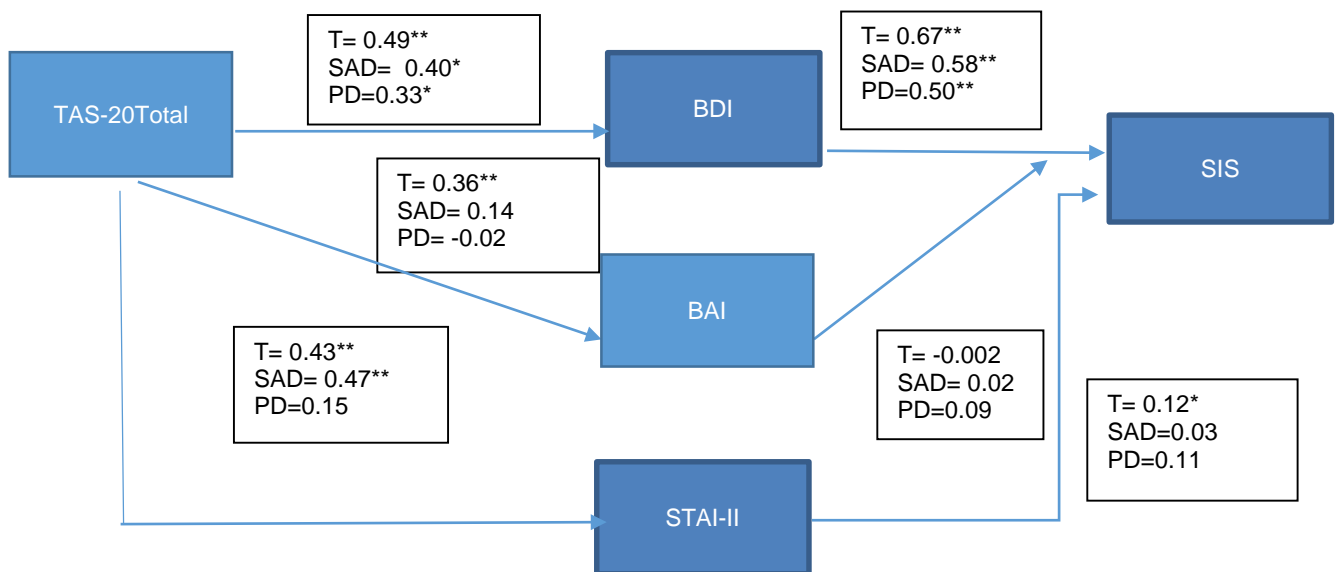

Figure 1: Direct and indirect effects on suicidal ideation scale scores (all scores standardized), *: p <0.05, **: p< 0.001, T: Total Sample, SAD: Social Anxiety Disorder, PD: Panic Disorder

In various studies, the relationship between alexithymia and suicidal ideation and behavior has been described in general population, generalized anxiety disorder, obsessive compulsive disorder, alcoholism, eating disorders, and depressive disorders.[23,41] The majority of the studies supported the role of alexithymia in suicidality although controversies on the exact nature of relationships between those constructs remain.[18-23,41] The role of alexithymia in suicidality observed among patients with SAD is relatively neglected and our study is the first one to evaluate both constructs at the same time and comparing those results with PD and controls. Various studies on differing populations evaluated the contribution of domains of alexithymia in suicidality and suggested that difficulties in identifying/describing feelings may be related with both depression and suicide.[20,42-44] In accordance with those views TAS20-difficulty in identifying feelings and difficulty in describing feelings correlated with SIS scores in our patients with SAD and PD and this correlation became non-significant after controlling for subjective depressive symptoms. Our results support the importance of both depressive symptoms and alexithymia in suicidality for patients with SAD but suggest that alexithymia acts indirectly via depressive symptoms. Those results should be replicated with further studies.

In studies conducted using TAS-20 with established cut-offs, rates for alexithymia were reported to vary between 28.0-58.35% in SAD patients.[10,11] In the present study, the rate of alexithymia was found to be 38.6% in SAD groups, while it was 29.3% in PD group and did not differ significantly across groups. These rates are consistent with the findings of other studies in the literature.

Our results should be evaluated within their limitations. Firstly, this is a single center study conducted on clinical samples and the results may not be generalized to other centers and to the community. Secondly, we used multiple self-report measures for depressive and anxious symptoms and suicidality and the results may have been affected by shared method variance, although we measured the anxiety construct with multiple measures, suicidality was only measured with SIS. Thirdly, self-report scales are subject to desirability, recall and reporting bias. Fourth, socio-demographic information including that for stressors, alcohol/substance use, suicide attempts and social supports was collected via patient reports and may be subject to recall and reporting bias.

Conclusions

In conclusion, despite its limitations, this single center, cross-sectional case-control study evaluating the role of alexithymia in suicidality among patients with SAD and PD supported an indirect role of alexithymia in suicidality. Subjectively reported suicidality was highest in SAD followed by PD and controls. Rates of alexithymia according to established cut-offs for TAS-20 were similar for PD and SAD groups while scores in subscales differed across groups. Both SAD and PD were similarly impaired in identifying and describing feelings. Further studies should be conducted to determine the validity of results for generalized versus performance subtypes and those with personality disorder features. As there are very few studies performed on this issue, it is our belief that data obtained in the present study will contribute to the literature on the subject.

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