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Situational Panic Attacks in Social Anxiety Disorder

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Abstract

Background—Panic attacks (PAs) are common in many psychiatric disorders other than panic disorder, especially social anxiety disorder (SAD). PAs have been associated with increased severity, comorbidity, and impairment in many disorders; therefore, PAs can now be used as a descriptive specifier across all DSM-5 disorders. However, the clinical implications of PAs in SAD remain unclear.

Methods—The aim of the present investigation was to examine demographic and clinical characteristics associated with SAD-related situational panic attacks in a large, representative epidemiological sample of individuals with SAD ($N = 1138$). We compared individuals with SAD who did and did not endorse situational PAs in terms of demographic factors, fear/avoidance of social situations, distress, impairment, and diagnostic comorbidity.

Results—Being male, black, Asian, or over 65 years old was associated with a decreased likelihood of experiencing situational PAs, whereas being unemployed was associated with an increased likelihood. Individuals with situational PAs also exhibited greater fear and avoidance of social situations, impairment, coping-oriented substance use, treatment utilization, and concurrent and longitudinal psychiatric comorbidity.

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Judy Wong: I contributed to manuscript writing and presented a preliminary version of the study at a professional meeting.

Richard G. Heimberg: I contributed to the generation of the study idea, study design, manuscript writing, and editorial review.

Carlos Blanco: I contributed to the generation of the study idea, study design, and reviewed the manuscript and provided comment and input.

Shang-Min Liu: I contributed to the design and conduct of data analysis.

Shuai Wang: I contributed to the design and conduct of data analysis.

Franklin R. Schneier: I contributed to the generation of the study idea, study design, and reviewed the manuscript and provided comment and input.

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Conflict of Interest No authors have any conflicts of interest to disclose.

Limitations—Consistent with most epidemiologic studies, the information collected relied on self-report, and not all participants were available for both waves of assessment.

Conclusions—The present findings suggest that situational PAs are associated with more severe and complex presentations of SAD. Implications for the assessment and treatment of SAD, as well as for the use of PAs as a descriptive specifier for SAD, are discussed.

Keywords

Social anxiety disorder; social phobia; panic attacks; epidemiology; NESARC

Panic attacks (PAs) are associated with heightened prevalence of psychiatric disorders (Baillie and Rapee, 2005; Goodwin and Gotlib, 2004; Kessler et al., 2006; Kinley et al., 2009; Kinley et al., 2011) and, among individuals with psychiatric disorders, with increased severity of pathology (Craske et al., 2010; Frank et al., 2000; Goodwin and Roy-Byrne, 2006; Jack et al., 1999). Therefore, a change introduced in the DSM-5 is that the presence of PAs is coded as a specifier that can be applied across all disorders to indicate potentially more severe and complex cases (American Psychiatric Association [APA], 2013). However, the clinical implications of PAs in social anxiety disorder (SAD) remain unclear. The goal of the present study was to examine whether SAD-related PAs are associated with demographic features as well as increased disorder severity, comorbidity, and impairment in a large, epidemiological sample.

Data from longitudinal epidemiological studies suggest that PAs are a risk factor for general psychopathology. In comparison to individuals without PAs, those who experience PAs, but do not meet criteria for panic disorder, exhibit higher rates of most anxiety, mood, and substance use disorders (Goodwin and Gotlib, 2004; Kessler et al., 2006; Kinley et al., 2009). They are also more likely to develop a future anxiety or mood disorder (Goodwin et al., 2004; Kinley et al., 2011). In the general population, individuals who experience PAs appear to be at increased risk for more frequent psychopathology, greater distress and disability, and greater utilization of healthcare resources (Katerndahl and Realini, 1997).

PAs are also related to increased severity and comorbidity among individuals with psychiatric disorders. For instance, among individuals with mood disorders, PAs are associated with elevated depressive symptoms, more comorbid disorders, a greater number of suicide attempts, and poorer treatment response (Feske et al., 2000; Goodwin and Hoven, 2002; Roy-Byrne et al., 2000). Research on PAs in posttraumatic stress disorder (e.g., Boscarino and Adams 2009; Cogle et al., 2010; Falsetti et al., 2001) and psychotic disorders (e.g., Goodwin and Davidson, 2002) has yielded similar findings. Therefore, individuals with PAs appear to represent more severe, more difficult to treat cases across many different psychiatric disorders (Craske et al., 2010).

Although much research suggests that PAs are associated with more severe psychopathology across psychiatric disorders, there are only a few published studies examining PAs in SAD. As SAD is one of the disorders most highly associated with PAs (Kessler et al., 2006), it is important to clarify the clinical implications of PAs in SAD. Unlike PAs in panic disorder, which are characteristically unexpected (APA, 2013), PAs that occur in SAD are triggered

by feared social situations and are referred to as *expected* or *situational* (Jack et al., 1999; APA, 2013). One study has demonstrated that individuals with SAD who experience SAD-related PAs exhibit increased fear and avoidance of social situations and are more distressed and impaired by their social anxiety (Jack et al., 1999). Our group recently examined clinical correlates of SAD-related panic symptom profiles and found that elevations in the most observable panic symptoms (e.g., sweating, trembling/shaking) were associated with increased fear of being judged by others (Potter et al., 2014). These findings suggest that, among individuals with SAD, experiencing situational PAs may be associated with increased severity of social anxiety as well as related distress and impairment.

Thus far, the few published studies on SAD-related situational PAs have been conducted among those seeking treatment. The purpose of the current study was to examine whether SAD-related PAs are associated with demographic characteristics and greater concurrent and prospective SAD severity, comorbidity, distress and impairment in a large, representative epidemiological sample of individuals with SAD. We used the sample of individuals with SAD from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). We hypothesized that endorsing SAD-related PAs at Wave 1 would be associated with greater concurrent psychiatric comorbidity, fear and avoidance of social situations, coping-oriented substance use, treatment utilization, distress, and impairment. We also hypothesized that endorsing SAD-related PAs at Wave 1 would be associated with increased likelihood of developing a new psychiatric disorder by Wave 2 and with greater coping-oriented substance use and treatment utilization at Wave 2.

Methods

Sample

The current sample was drawn from the NESARC, a multi-wave, longitudinal survey of a nationally representative sample of the US adult population conducted by the National Institute on Alcoholism and Alcohol Abuse (NIAAA; Grant et al., 2003b; Grant et al., 2004; Grant et al., 2005). The target population was civilians 18 years and older (Grant et al., 1995; Ruan et al., 2008). All procedures, including informed consent, received full ethical review and approval from the U.S. Census Bureau and U.S. Office of Management and Budget.

Wave 1 of the NESARC was conducted in 2001 – 2002 ($N = 43,093$; Grant et al., 2003b; Grant et al., 2004). During Wave 2, conducted in 2004 – 2005, attempts were made to follow-up with all of the original participants, and 86.7% completed Wave 2 interviews (Grant et al., 2005). The cumulative response rate from the two waves was 70.2%, and sample weights were developed to adjust for Wave 2 non-response (Ruan et al., 2008).

The present analyses were conducted on Wave 1 data from the respondents who met criteria for a current diagnosis of SAD and who responded to questions regarding SAD-related PAs ($N = 1138$) or Wave 2 data from the subset of Wave 1 respondents who also responded to Wave 2 interviews ($N = 989$).

Measures

NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule, DSM-IV Version (AUDADIS-IV)—The AUDADIS-IV was developed to assess current substance use and mental disorder (Grant et al., 1995). It is a structured diagnostic interview designed for administration by professional interviewers who are not clinicians. In the present investigation, the AUDADIS-IV was administered at Waves 1 and 2 to assess demographic characteristics, SAD and clinical correlates (e.g., treatment utilization, coping-oriented substance use), SAD-related PAs, and other psychiatric disorders. The AUDADIS-IV administered at Wave 2 assessed participants' experiences since their Wave 1 interview.

Consistent with the DSM-IV (APA, 1994), a diagnosis of SAD required marked fear of at least one of 13 specific social situations or an "other situation" category, as well as clinically significant distress and/or impairment. Exploratory and confirmatory factor analyses on the 13 specific social situations suggest that they load onto three factors: public performance (e.g., speaking in front of other people), close scrutiny (e.g., being interviewed), and social interaction (e.g., going to parties/social gatherings; Iza et al., 2014). Individuals who endorsed significant fear of over half of the social situations were considered to meet criteria for the generalized subtype of SAD. Test-retest reliability of the diagnosis of SAD was fair ($k = 0.42\text{--}0.46$; Grant et al., 2005; Grant et al., 2008), similar to other assessments used in other epidemiological studies (Kessler et al., 2005; Ruscio et al., 2008). Participants who endorsed having ever experienced a PA (i.e., having experienced at least four of the 13 PA symptoms) were asked if they had ever had a PA related to their feared social situation(s). Those who responded "yes" during the Wave 1 interview were coded as experiencing SAD-related PAs in all analyses, and those who responded "no" or who had never experienced a PA were coded as not experiencing SAD-related PAs.

Current anxiety disorders other than SAD (panic disorder, specific phobia, and generalized anxiety disorder), mood disorders (major depressive disorder, bipolar I disorder, bipolar II disorder, and dysthymia), and substance use disorders (alcohol and drug-specific abuse and dependence) were also diagnosed using the AUDADIS-IV. All diagnoses were consistent with DSM-IV criteria. Lifetime personality disorders (avoidant, dependent, obsessive-compulsive, paranoid, schizoid, and histrionic personality disorder) were assessed at Wave 1. Psychotic disorders were not directly assessed in the interview. Instead, participants were asked if they had ever been told by a doctor or other health professional that they had schizophrenia or a psychotic disorder. Test-retest reliability was fair to good for mood and other anxiety disorders ($k = 0.40\text{--}0.60$) and personality disorders ($k = 0.40\text{--}0.67$) and was good to excellent for substance use disorders ($k_s > 0.74$; Grant et al., 1995; Grant et al., 2003a; Grant et al., 2004).

Short Form-12 Version 2 Health Survey (SF-12)—Psychosocial functioning was assessed during Waves 1 and 2 using the SF-12 (Ware et al., 1996), a reliable and valid measure commonly used in population surveys (Jenkinson et al., 1997). Three subscales of the SF-12 (social functioning, role emotional functioning, and mental health) and two summary scores (physical component summary and mental component summary) were used.

Statistical Analysis

First, weighted percentages were computed to derive prevalence, demographic correlates, and clinical correlates of SAD with/without PAs. Second, a series of cross-sectional logistic regression analyses were conducted examining differences between individuals with SAD who did/did not experience SAD-related PAs at Wave 1 on demographic variables assessed at Wave 1. Any demographic variables that emerged as significantly different between the groups were included as covariates in all subsequent analyses. Third, a series of cross-sectional logistic regression analyses were conducted examining differences between individuals with SAD who did/did not experience SAD-related PAs at Wave 1 on psychological variables also assessed at Wave 1 (e.g., fear/avoidance of social situations, SAD-related distress and impairment, coping-oriented substance use, treatment utilization, and diagnostic comorbidity). Analyses of covariance (ANCOVAs) were also conducted to examine group differences on number of feared or avoided social situations and scores on the SF-12 at Wave 1.

Finally, a series of longitudinal analyses were conducted examining differences between individuals with SAD who did/did not experience SAD-related PAs at Wave 1 on psychological variables assessed at Wave 2. Adjusted odds ratios were calculated measuring group differences on SAD-related distress and impairment, coping-oriented substance use, treatment utilization, and newly endorsed psychiatric diagnoses at Wave 2. ANCOVAs were also conducted to examine group differences on scores on the SF-12 at Wave 2. Standard errors and 95% confidence intervals for all regression analyses were estimated using SUDAAN statistical software (Research Triangle Institute, 2004) to adjust for design effects of the NESARC.

Results

Characteristics of the SAD-related PAs group

Almost one-quarter (21.65%, $SE = 1.65\%$) of individuals who met criteria for SAD at Wave 1 experienced SAD-related PAs. Of those who experienced SAD-related PAs, almost half (44.26%, $SE = 4.06$) reported having PAs *only* in social situations. Almost three-quarters of the SAD-related PAs group (72.43%, $SE = 3.31$) reported ever having avoided social situations due to fear of having a PA, and just over two-thirds of the group (68.35%, $SE = 3.67$) reported ever being frightened of social situations due to fear of having a PA.

Cross-sectional group differences at Wave 1

Demographic characteristics—Being male, black, Asian, or over 65 years old was associated with a decreased likelihood of experiencing SAD-related PAs. Men were 1.5 times less likely to experience SAD-related PAs than women ($OR = 0.67$, 95% $CI = 0.47 - 0.97$). Compared to white individuals, black individuals were about two times less likely to experience SAD-related PAs ($OR = 0.45$, 95% $CI = 0.25 - 0.81$), and Asian individuals were almost 17 times less likely ($OR = 0.06$, 95% $CI = 0.01 - 0.50$). Additionally, individuals who were over 65 years were 2.6 times less likely to experience SAD-related PAs than were younger individuals ($OR = 0.38$, 95% $CI = 0.17 - 0.84$). Unemployed individuals were about twice as likely to experience SAD-related PAs as employed

individuals ($OR = 2.10$, $95\% CI = 1.45 - 3.05$). There were no observed group differences related to education or marital status. Given the observed between-group differences on gender, race/ethnicity, age, and employment, these demographic variables were included as covariates in all other analyses.

Fear and avoidance of social situations—Individuals with SAD-related PAs reported fear or avoidance of a significantly greater number of social situations at Wave 1 ($M = 8.83$, $SE = 0.27$) than did those who did not have SAD-related PAs ($M = 7.10$, $SE = 0.12$; $F = 32.04$, $p < .0001$). Table 1 presents information on fear or avoidance of the 13 specific social situations at Wave 1 among individuals in the SAD with/without SAD-related PAs groups. Individuals with SAD-related PAs were about two to three times as likely to endorse fear or avoidance of all five of the social interaction situations and three of the close scrutiny situations, and they were more likely to meet criteria for the generalized subtype of SAD.

There were no between group differences observed for fear/avoidance of the four public performance situations. The majority of both groups endorsed strong fear or avoidance of these four situations, with percentages ranging from 73% to 91%.

SAD-related impairment and distress—Information on SAD-related impairment and distress at Wave 1 is presented in Table 2. Individuals with SAD-related PAs were significantly more likely to endorse interference with relationships, doing things they were supposed to do (e.g., work), usual activities, or doing things they wanted to do. There were no group differences observed for feeling upset or uncomfortable in relation to social anxiety.

Psychosocial functioning—Individuals with SAD-related PAs exhibited poorer psychosocial functioning on the SF-12 across all five of the assessed domains, $F_s > 6.05$, $p_s < .0166$ (data not shown).

Coping-oriented substance use—Information on use of substances to cope with social anxiety at Wave 1 is presented in Table 2. Individuals with SAD-related PAs were about twice as likely to have used alcohol to cope with social anxiety in the past year or during their lifetimes. They were also more likely to have used drugs (i.e., medications without a prescription or recreational drugs) to cope with social anxiety in the past year or during their lifetimes.

Treatment utilization—Information on treatment utilization at Wave 1 is presented in Table 2. Individuals with SAD-related PAs were significantly more likely to have ever sought treatment for social anxiety and to have sought treatment in the past year.

Diagnostic comorbidity—Table 3 presents information on other current diagnoses at Wave 1. Individuals with SAD-related PAs were more likely to have another current anxiety disorder, especially panic disorder. They were also more likely to have any current mood disorder, substance use disorder, any lifetime personality disorder and a psychotic disorder.

Longitudinal group differences at Wave 2

Only those with 12-month SAD who were still participating at Wave 2 are included in the longitudinal analyses presented below. For Wave 2 comorbidity, sample size varies by disorder, as those who met lifetime criteria for the specific disorder at Wave 1 were excluded.

SAD-related impairment and distress—Information on impairment and distress at Wave 2 is presented in Table 4. Individuals with SAD-related PAs at Wave 1 were significantly more likely to endorse interference with doing things they were supposed to do (e.g., work) and with doing things they wanted to do at Wave 2. There were no group differences observed for other types of interference (e.g., relationships, usual activities) or for feeling upset or uncomfortable in relation to social anxiety at Wave 2.

Psychosocial functioning—Individuals with SAD-related PAs at Wave 1 exhibited poorer psychosocial functioning on the SF-12 across all five of the assessed domains at Wave 2, $F_s > 4.19$, $ps < .0198$ (data not shown).

Coping-oriented substance use—There were no group differences observed regarding use of substances to cope with social anxiety use between Waves 1 and 2 (see Table 4).

Treatment utilization—Information on treatment utilization between Waves 1 and 2 is presented in Table 4. Individuals with SAD-related PAs at Wave 1 were significantly more likely to have seen a counselor or another professional, been a patient in a hospital, or been prescribed medication for social anxiety at Wave 2.

Diagnostic comorbidity—Table 5 presents group differences in newly reported comorbid psychiatric disorders between Waves 1 and 2. Individuals with SAD-related PAs at Wave 1 were significantly more likely to newly meet diagnostic criteria for panic disorder, generalized anxiety disorder, or a psychotic disorder at Wave 2.

Discussion

The aim of the present investigation was to examine demographic and clinical correlates of SAD-related PAs in a representative sample of individuals with SAD. Results largely support our hypotheses that individuals with SAD who experience PAs related to feared social situations would exhibit fear/avoidance of a greater number of social situations as well as greater concurrent and longitudinal comorbidity, treatment utilization, and impairment compared to those with SAD who did not endorse SAD-related PAs. They were more likely to meet DSM-IV criteria for the generalized subtype of SAD, the more debilitating form of the disorder (Safren et al., 1997; Stein et al., 1998), and endorsed greater fear and/or avoidance of most of the social interaction and close scrutiny situations. Fear and avoidance of social interaction and close scrutiny situations is not as common as fear of public performance situations and may reflect additional underlying dimensions of social anxiety, such as fear of others noticing anxiety symptoms or of being rejected by others (Safren et al., 1998; Stein, 1996). Therefore, individuals with SAD-related PAs may

experience a more pervasive form of SAD that might necessitate addressing multiple underlying dimensions in treatment.

Individuals with SAD-related PAs also exhibited increased concurrent and longitudinal impairment and psychosocial dysfunction, which is consistent with results from previous studies on treatment-seeking samples (Jack et al., 1999; Potter et al., 2014). The present investigation contributes evidence from a representative epidemiological sample that SAD-related PAs are a marker of more severe SAD. Individuals who experience SAD-related PAs may be more impaired because, as discussed above, they are more likely to fear and/or avoid social situations that involve personal relationships (i.e., social interaction situations) and academic or job performance (i.e., close scrutiny situations). Our findings that those with SAD-related PAs were also more likely to seek treatment and use drugs and/or alcohol to cope with social anxiety further demonstrate that this group is of public health concern. Assessing for the presence of SAD-related PAs appears to be a useful clinical practice that will help identify patients who might benefit from more involved or augmented treatment (e.g., treatments that incorporate interoceptive exposure; Craske et al., 1991; Reiss et al., 1996).

Our finding that individuals with SAD-related PAs exhibited greater comorbidity with other psychiatric disorders adds further support to the notion that PAs are associated with a wide range of psychopathology and may be a marker of transdiagnostic processes (Batelaan et al., 2012; Goodwin and Hamilton, 2001). The SAD with situational PAs group exhibited a significantly higher prevalence of almost all assessed disorders at Wave 1 and greater risk of developing panic disorder, generalized anxiety disorder, and a psychotic disorder by Wave 2. The increased likelihood of having received a new diagnosis of a psychotic disorder by Wave 2 is perhaps most surprising and suggests that SAD-related PAs may indicate risk for developing serious mental illness. SAD-related PAs may indicate the presence of underlying transdiagnostic vulnerability factors maintaining the associations between PAs and increased psychopathology. Heightened activation in localized brain regions, such as the amygdala (Pannekoek et al., 2013), and anxiety sensitivity (Boswell et al., 2013) have emerged as promising maintenance factors for the clinical risk of PAs and merit further attention as potential targets for transdiagnostic treatments.

Although we had no specific hypotheses regarding demographic differences, it is noteworthy that black and Asian individuals were less likely to experience SAD-related PAs than white individuals. There is much research suggesting that assessing for the presence of four or more of the DSM-5 PA symptoms does not capture the PA experience for many non-White individuals, due to different cultural expressions of panic (APA, 2013; Craske et al., 2010). Black and Asian individuals often report PAs that are highly characterized by only one of the DSM-5 PA symptoms and involve symptoms that are not included in the DSM-5 list of PA symptoms and may therefore be less likely to meet criteria for experiencing PAs according to DSM-based diagnostic interviews, such as the one used here (Choy et al., 2008; Friedman and Paradis, 2002; Kleinknecht et al., 1997). Future research on the cultural validity of assessments of PAs is necessary to clarify the clinical implications of PAs for culturally diverse groups.

The present study has limitations that are consistent with those of most large-scale surveys. First, as the NESARC sample was limited to adults from civilian households and group living quarters, the present findings may not generalize to populations that were not accounted for, such as adolescents or prisoners. Second, the information collected relied on self-report and did not include biological characteristics that could impact the associations of SAD-related PAs. Third, 151 of the individuals with SAD at Wave 1 did not participate in Wave 2, which may have influenced our longitudinal results. Fourth, the AUDADS-IV does not assess the amount of time it takes PA symptoms to peak, which may have led to an overestimation of the prevalence of SAD-related PAs in the current sample. Finally, the Wave 2 AUDADS-IV interview assessed for newly incident cases of psychiatric disorders; however, some individuals may have reported symptoms as newly incident that were actually part of pre-existing diagnoses.

In summary, the present findings suggest that SAD-related PAs are a marker of more severe and impaired cases. Future research should focus on examining how PAs interact with features of SAD, such as fear of evaluation by others, to exacerbate distress and impair psychosocial functioning. Future studies aimed at identifying transdiagnostic processes that may account for the associations of SAD-related PAs with a broad array of clinical features are also necessary. The present findings are consistent with the building literature supporting the use of PAs as a transdiagnostic specifier (Batelaan et al., 2012; Craske et al., 2010; Goodwin and Hamilton, 2001), as is recommended in the DSM-5 (APA, 2013), and contribute evidence that this is an appropriate and beneficial clinical practice in the assessment of SAD.

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Table 1

Endorsement of strong fear and/or avoidance of social situations among the SAD with/without SAD-related panic attacks groups at Wave 1

	SAD with SAD-related Panic Attacks <i>n</i> = 245		SAD without SAD-related Panic Attacks <i>n</i> = 893				
Types of Social Situations	%	<i>SE</i>	%	<i>SE</i>	AOR	95% CI	
Public Performance							
Speaking or talking in front of other people	89.12	2.38	90.75	1.19	0.80	0.46	1.39
Taking part or speaking in a class	80.26	3.01	80.89	1.45	0.99	0.63	1.55
Taking part or speaking at a meeting	80.74	3.19	73.39	1.72	1.50	0.96	2.36
Performing in front of other people	85.78	2.64	82.26	1.49	1.07	0.64	1.77
Interaction							
Having conversations with people you don't know well	72.87	3.91	58.31	2.05	1.85	1.18	2.93
Going to parties or social gatherings	72.68	3.43	55.67	2.01	1.89	1.27	2.83
Eating or drinking in public	35.85	3.81	18.09	1.59	2.32	1.54	3.48
Dating	43.65	4.06	24.87	1.76	2.48	1.65	3.71
Being in a small group situation	38.26	3.79	16.62	1.42	3.19	2.13	4.80
Close Scrutiny							
Writing while someone else was watching	37.26	3.92	23.51	1.66	2.03	1.39	2.97
Being interviewed	63.47	3.51	47.42	1.96	1.81	1.28	2.56
Taking an important exam	62.63	3.74	52.62	2.05	1.42	0.97	2.07
Speaking to an authority figure – like a teacher or boss	66.88	3.51	48.74	2.01	2.07	1.42	3.01
Generalized subtype of SAD	68.11	3.68	44.44	2.15	2.59	1.75	3.82

Note. AOR = Adjusted Odds Ratio (controlling for gender, race/ethnicity, age, and employment). Different categories of social situations were derived based on a factor analytic study conducted by Iza et al. (2014). Significant differences between groups are presented in bold print.

Table 2

Indices of SAD-related impairment, distress, treatment utilization, and coping-oriented substance use among the SAD with/without SAD-related panic attacks groups at Wave 1

	SAD with SAD-related Panic Attacks <i>n</i> = 245		SAD without SAD-related Panic Attacks <i>n</i> = 893				
	%	SE	%	SE	AOR	95% CI	
Impairment & distress							
Feeling upset or uncomfortable related to social anxiety	92.42	1.74	91.90	1.06	1.06	0.60	1.89
Interfere with relationships	60.54	3.69	34.48	1.83	2.89	2.01	4.17
Interference with doing things you were supposed to do (e.g., working)	53.57	3.61	21.43	1.52	4.17	2.88	6.04
Interference with usual activities	63.29	3.93	23.61	1.78	5.27	3.55	7.82
Interference with something you wanted to do	76.27	3.34	45.44	2.06	3.61	2.41	5.41
Treatment utilization							
Ever seen a counselor, therapist, doctor, psychologist, etc.	47.05	4.00	13.56	1.39	5.00	3.37	7.42
Ever gone to an emergency room	9.64	2.05	0.84	0.31	10.96	4.97	24.17
Ever been a hospital inpatient overnight or longer	6.83	1.54	0.92	0.43	4.78	1.45	15.71
Been prescribed medicine by a doctor	36.62	3.66	8.22	1.14	4.99	3.25	7.66
Any treatment seeking past year	40.55	3.91	8.01	1.20	6.87	4.28	11.02
Coping-oriented alcohol use							
Ever?	25.60	3.28	15.83	1.49	1.76	1.16	2.67
Last 12 months?	10.50	2.36	5.20	0.95	2.33	1.14	4.74
Coping-oriented drug use							
Ever?	11.89	2.38	3.22	0.69	4.08	1.93	8.63
Last 12 months?	2.74	1.50	0.89	0.33	4.64	1.48	14.54

Note. AOR = Adjusted Odds Ratio (controlling for gender, race/ethnicity, age, and employment). Significant differences between groups are presented in bold print.

Table 3

Endorsement of 12-month criteria for other psychiatric disorders among the SAD with/without SAD-related panic attacks groups at Wave 1

Comorbid disorders	SAD with SAD-related Panic Attacks <i>n</i> = 245		SAD without SAD-related Panic Attacks <i>n</i> = 893		AOR	95% CI	
	%	SE	%	SE			
Any Psychiatric Disorder	96.92	1.14	77.91	1.64	7.74	3.42	17.54
Any Axis I Disorder	91.91	1.98	64.01	1.91	5.41	3.05	9.60
Any Substance Use Disorder	49.64	3.79	30.96	2.05	2.03	1.37	3.01
Nicotine Dependence	41.08	3.72	23.24	1.85	1.97	1.31	2.96
Alcohol Use Disorder	16.53	3.08	12.12	1.39	1.58	0.88	2.85
Alcohol Abuse	3.75	1.32	4.60	0.81	0.81	0.36	1.83
Alcohol Dependence	12.77	2.74	7.52	1.21	2.19	1.09	4.43
Drug Use Disorder	10.50	1.94	4.16	0.81	3.52	1.76	7.04
Drug Abuse	6.50	1.72	2.65	0.61	3.12	1.31	7.44
Drug Dependence	6.00	1.59	2.10	0.56	4.26	1.70	10.68
Any Mood Disorder	60.56	3.77	29.77	1.92	3.09	2.08	4.57
Major Depressive Disorder	28.28	3.55	17.63	1.52	1.49	0.98	2.27
Bipolar I	29.06	3.45	8.81	1.04	3.66	2.45	5.47
Bipolar II	2.61	1.10	2.02	0.53	1.38	0.51	3.78
Dysthymia	10.46	2.55	5.74	0.90	1.56	0.76	3.19
Any Anxiety Disorder	79.77	3.20	40.34	2.05	5.39	3.45	8.42
Panic Disorder	49.43	3.81	5.97	0.96	15.22	9.60	24.12
Specific Phobia	55.98	3.85	32.28	1.93	2.50	1.74	3.59
GAD	41.26	3.91	10.76	1.27	5.09	3.35	7.74
Pathological Gambling	0.20	0.15	0.49	0.21	0.29	0.04	2.02
Psychotic Disorder	6.42	1.32	0.42	0.20	10.57	3.41	32.77
Any Personality Disorder	81.49	3.14	55.24	1.97	3.43	2.08	5.66
Avoidant	48.37	3.80	25.33	1.77	2.51	1.72	3.64
Dependent	13.66	2.72	3.43	0.72	3.32	1.77	6.22
Obsessive-Compulsive	40.47	3.93	30.99	1.76	1.48	1.01	2.18
Paranoid	46.81	3.93	23.72	1.93	2.88	1.93	4.30
Schizoid	36.27	3.47	17.01	1.49	2.91	1.95	4.35
Histrionic	10.57	2.31	8.08	1.12	1.35	0.75	2.42
Antisocial	16.22	2.81	9.27	1.16	1.93	1.10	3.39

Note. AOR = Adjusted Odds Ratio (controlling for gender, race/ethnicity, age, and employment). Any Axis I disorder, any psychiatric disorder and any anxiety disorder categories do not include SAD or disorders that are not listed in the table. Significant differences between groups are presented in bold print.

Table 4

Indices of SAD-related impairment, distress, treatment utilization, and coping-oriented substance use among the SAD with/without SAD-related panic attacks groups at Wave 2

	SAD with SAD-related Panic Attacks <i>n</i> = 83		SAD without SAD-related Panic Attacks <i>n</i> = 410				
Since the last interview...	%	SE	%	SE	AOR	95% CI	
Impairment & distress							
Feeling upset or uncomfortable related to social anxiety	80.19	7.76	72.64	4.49	1.60	0.55	4.69
Interfere with relationships	54.06	9.35	31.43	4.75	1.85	0.69	4.97
Interference with doing things you were supposed to do (e.g., working)	51.28	9.60	20.22	4.12	3.95	1.31	11.92
Interference with usual activities	51.23	9.46	24.33	4.33	2.67	0.97	7.38
Interference with something you wanted to do	69.86	8.06	39.50	4.57	2.88	1.15	7.27
Treatment utilization							
Ever seen a counselor, therapist, doctor, psychologist, etc.	50.39	9.21	18.57	3.46	4.62	1.75	12.24
Ever gone to an emergency room	3.69	2.10	3.60	2.23	0.78	0.13	4.68
Ever been a hospital inpatient overnight or longer	12.62	8.16	0.61	0.60	45.91	2.05	1026.00
Been prescribed medicine by a doctor	40.86	8.98	12.57	3.40	5.56	1.63	19.02
Any treatment seeking past year	34.43	8.95	13.15	3.34	3.30	0.97	11.16
Coping-oriented alcohol use							
Since last interview?	3.89	2.53	7.28	2.62	0.31	0.06	1.72
Last 12 months?	3.89	2.53	5.55	2.35	0.50	0.09	2.76
Coping-oriented drug use							
Since last interview?	0.00	0.00	0.00	0.00	N/A	N/A	N/A
Last 12 months?	0.00	0.00	0.00	0.00	N/A	N/A	N/A

Note. AOR = Adjusted Odds Ratio (controlling for gender, race/ethnicity, age, and employment). Only those people with 12-month SAD but without lifetime alcohol/drug use disorders at Wave 1 who were still participating at Wave 2 are included. Significant differences between groups are presented in bold print.

Table 5

Endorsement of new onset of other psychiatric disorders among the SAD with/without SAD-related panic attacks groups at Wave 2

Comorbid disorders	SAD with SAD-related Panic Attacks <i>n</i> = 245		SAD without SAD-related Panic Attacks <i>n</i> = 893		AOR	95% CI	
	%	SE	%	SE			
Any Axis I Disorder	20.13	16.48	18.64	3.94	1.80	0.18	17.89
Any Substance Use Disorder	4.38	2.03	5.92	1.44	0.68	0.17	2.68
Nicotine Dependence	25.00	1.95	4.48	1.01	0.84	0.29	2.42
Alcohol Use Disorder	2.29	1.45	4.38	1.23	0.51	0.10	2.54
Alcohol Abuse	1.80	0.97	3.61	0.89	0.59	0.16	2.13
Alcohol Dependence	2.93	1.43	3.07	0.81	1.06	0.31	3.61
Drug Use Disorder	3.27	1.66	1.20	0.73	2.21	0.39	12.57
Drug Abuse	2.34	1.24	0.47	0.27	4.62	0.52	40.88
Drug Dependence	3.56	2.19	1.59	0.68	1.79	0.47	6.76
Any Mood Disorder	22.38	6.73	10.07	2.15	2.34	0.88	6.18
Major Depressive Disorder	5.12	1.88	5.57	1.47	0.67	0.22	2.07
Bipolar I	9.27	3.34	5.24	1.13	1.68	0.68	4.12
Bipolar II	3.24	1.80	1.10	0.41	3.03	0.63	14.45
Dysthymia	1.28	0.83	1.18	0.43	1.17	0.30	4.62
Any Anxiety Disorder	30.57	11.04	16.91	2.23	1.97	0.53	7.35
Panic Disorder	21.43	6.86	4.56	1.15	4.20	1.41	12.55
Specific Phobia	25.21	5.93	15.00	1.94	1.70	0.85	3.42
Generalized Anxiety Disorder	19.63	4.31	8.39	1.48	2.09	1.07	4.07
Psychotic Disorder	4.78	2.23	0.84	0.41	4.54	1.14	18.03

Note. AOR = Adjusted Odds Ratio (controlling for gender, race/ethnicity, age, and employment). Only those people who did not have the lifetime comorbid disorder at Wave 1 are included for each comorbidity. Comorbid disorders were assessed within the past 12 months. Any Axis I disorder does not include disorders that are not listed in the table; any anxiety disorder does not include SAD. Significant differences between groups are presented in bold print.