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# Comorbidity of social anxiety disorder and antisocial personality disorder in the National Epidemiological Survey on Alcohol and Related Conditions (NESARC)

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ABSTRACT

Social anxiety disorder (SAD) and antisocial personality disorder (ASPD) are not often thought of as being comorbid. However, recent research suggests the existence of a SAD subtype with characteristics atypical of SAD but common to ASPD. Thus, we explored two competing hypotheses: (1) SAD and ASPD represent opposite ends of a single dimension, or (2) SAD and ASPD exist on two separate dimensions that may be positively correlated. Data were obtained from the National Epidemiological Survey on Alcohol and Related Conditions. SAD–ASPD was related to greater impairment and psychiatric comorbidity than either disorder alone. The SAD–ASPD group was also more likely to seek treatment for their SAD symptoms and to drink before/during antisocial acts than the SAD only group. The presence of SAD for individuals with ASPD (and vice versa) does not appear to provide any "protective benefits." SAD and ASPD appear to be two separate but correlated disorders.



## 1. Introduction

Social anxiety and antisocial behaviors are not typically conceptualized as co-occurring. Individuals with social anxiety are often characterized as shy, submissive, behaviorally inhibited, and risk-averse (Gilbert, 2001). However, recent research has shown that some socially anxious individuals exhibit characteristics quite different than the prototypical person with social anxiety disorder (SAD). For example, Kashdan, McKnight, Richey, and Hofmann (2009) demonstrated that some individuals with SAD exhibit a number of risk-prone behaviors, including aggression, sexual impulsivity, and problematic substance use. This atypical risk-prone pattern was evident in 21% of persons with SAD in their large community sample.

Although previous research has shown that anxiety disorders, especially SAD and posttraumatic stress disorder (PTSD), are associated with antisocial personality disorder (ASPD) and engagement in antisocial behaviors in general (Goodwin & Hamilton, 2003; Sareen, Stein, Cox, & Hassard, 2004), little is known about the co-occurrence of SAD and ASPD. However, examination of individuals with comorbid SAD–ASPD is important for several reasons. First, it provides an opportunity to increase our understanding of the prevalence and demographic characteristics of this understudied group. Second, it can enhance our knowledge of the clinical features of this comorbid group, including characterization of which ASPD criteria, antisocial behaviors, and feared social situations they tend to endorse. This would be valuable for increasing clinical recognition of such comorbidity. Third, it may help guide the development of interventions that specifically focus on SAD and ASPD. Conventional therapies directed at SAD or ASPD may need modification to be effective for this comorbid group.

This work also has theoretical implications for conceptualizing dimensions of psychopathology. Two competing hypotheses may be useful for conceptualizing the co-occurrence of SAD and ASPD, its prevalence, and its impact: (1) SAD and ASPD may represent opposite ends of a single dimension. Consistent with this view, Hofmann, Korte, and Suvak (2009) found that social anxiety and psychopathic attributes were negatively associated and suggested that these traits may be on opposite ends of a spectrum related to adherence to social norms and concern for other people's approval. If so, symptoms/behaviors associated with each of these disorders would be negatively correlated. Accordingly, individuals with SAD–ASPD would be relatively rare, and the distress/interference they experience might be milder than that of individuals with either SAD or ASPD alone. (2) SAD and ASPD exist on two separate dimensions that may be positively correlated. According to this hypothesis, the presence of either SAD or ASPD should increase the likelihood

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of having the other diagnosis and comorbid SAD–ASPD would be associated with greater impairment/severity.

This study sought to address several specific questions. For instance, do individuals with SAD–ASPD endorse different ASPD diagnostic criteria than individuals with ASPD alone? If SAD and ASPD exist on a single dimension, individuals with SAD–ASPD may endorse ASPD criteria that are less confrontational (e.g., consistent irresponsibility) rather than criteria that are associated with direct social interaction (e.g., physical aggressiveness). However, since individuals with the atypical, risk-prone subtype of SAD exhibited moderate to high levels of anger and aggression (Kashdan et al., 2009; Kashdan & McKnight, 2010), it is plausible that individuals with SAD–ASPD may be more likely to endorse ASPD criteria for physical aggressiveness than individuals with ASPD alone (supporting the multi-dimensional conceptualization). Similar arguments can be made about the specific types of antisocial behaviors in which individuals with SAD–ASPD tend to engage compared to individuals with ASPD alone.

In line with the multi-dimensional hypothesis, previous research has found that anxiety disorders comorbid with ASPD are associated with additional comorbid disorders, greater levels of distress and dysfunction, poorer quality of life, and a higher frequency of suicidal ideation than either diagnosis alone (Goodwin & Hamilton, 2003; Sareen et al., 2004). However, few studies have investigated the specific impact of co-occurring SAD–ASPD on impairment across a wider range of social, occupational, and emotional/psychological outcomes. Given the results of these previous studies, SAD–ASPD individuals appear more likely to experience greater impairment across a variety of domains than individuals with SAD or ASPD alone. However, one study found higher levels of impairment in conduct-disordered boys without an anxiety disorder than boys with an anxiety disorder (Walker et al., 1991).

Do individuals with SAD–ASPD differ in their treatment-seeking behavior for SAD compared to those with SAD alone? If individuals with SAD–ASPD tend to experience greater impairment than individuals with SAD or ASPD alone, they may be more likely to seek treatment for their SAD symptoms as a result of their heightened levels of distress and interference. However, ASPD has been shown to negatively affect treatment seeking behavior (Helzer & Pryzbeck, 1988). Therefore, individuals with SAD–ASPD may be less likely than individuals with SAD alone to seek treatment for their social anxiety.

Are SAD–ASPD individuals more likely to drink heavily before/during their engagement in antisocial behaviors than individuals with ASPD alone? Sareen et al. (2004) demonstrated that there may be an additive effect of anxiety and ASPD on the odds of lifetime comorbidity for alcohol use disorder. Because drinking is sometimes used as a coping strategy and/or method of self-medication among individuals with SAD before, during, and after anxiety-provoking events (Abrams, Kushner, Medina, & Voight, 2001, 2002; Buckner, Heimberg, Ecker, & Vinci, 2013; de Boer, Schippers, & Van der Staak, 1993; Schneier et al., 2010), they may be more likely to use alcohol before/during antisocial acts since these particular types of behaviors often violate social norms and therefore should increase the likelihood that they will produce anxiety among individuals with SAD.

The present study sought to fill these gaps in the literature using data from the National Institute on Alcohol Abuse and Alcoholism's (NIAAA) National Epidemiological Survey on Alcohol and Related Conditions (NESARC), which consists of a large, representative sample of the U.S. population. First, we examined whether individuals with SAD–ASPD would differ from individuals with ASPD or SAD alone on the type and mean number of ASPD criteria and antisocial behaviors endorsed. Second, we examined whether individuals with SAD–ASPD would report greater impairment than individuals with SAD or ASPD alone. We examined a wide range of indicators, including measures of emotional/psychological well-being, psychiatric comorbidity, number of feared social situations, and various single-item questions used to assess social/interpersonal/occupational functioning and quality of life. Third, we examined whether individuals with SAD–ASPD would be less likely to seek treatment for their SAD symptoms than individuals with SAD alone. Finally, we examined whether individuals with SAD–ASPD would be more likely to drink heavily before and during their engagement in antisocial behaviors than individuals with ASPD or SAD alone.

## 2. Method

### 2.1. Sample

The 2001–2002 NESARC is a survey of a representative sample of the United States adult population, conducted by the NIAAA (Grant, Dawson, et al., 2003; Grant, Hasin, Chou, Stinson, & Dawson, 2004; Grant et al., 2005). It targeted civilians 18 or older living in households or group living quarters. Face-to-face interviews were conducted with 43,093 respondents. The survey response rate was 81%. Blacks, Hispanics, and young adults (age 18–24 years) were over-sampled, with data adjusted for over-sampling, household- and person-level non-response.

The weighted data were then adjusted to represent the U.S. civilian population based on the 2000 Census. All potential NESARC respondents were informed in writing about the nature of the survey, the statistical uses of the survey data, the voluntary aspect of their participation and the Federal laws that rigorously provide for the strict confidentiality of identifiable survey information. Those respondents consenting to participate were interviewed. The research protocol was approved by the U.S. Census Bureau and the U.S. Office of Management and Budget.

We examined 1773 respondents with SAD and no ASPD, 1212 with ASPD and no SAD, and 210 with both SAD and ASPD (total $N = 3195$).

### 2.2. Measures

#### 2.2.1. Demographic characteristics

Age, gender, race-ethnicity, education, marital status, employment status, and individual income were examined.

#### 2.2.2. DSM-IV diagnostic interview

The NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule, DSM-IV Version (AUDADIS-IV) was used to assess lifetime DSM-IV diagnoses (Grant, Dawson, et al., 2003). The AUDADIS-IV is a structured diagnostic interview designed for administration by professional interviewers who are not clinicians.

#### 2.2.3. Social anxiety disorder

Diagnosis of SAD required a marked or persistent fear of one or more social or performance situations (operationalized here as at least 1 of 14 social interaction or performance situations, including an "other situation" category) in which embarrassment or humiliation may occur. The fear had to be recognized as excessive or unreasonable. In addition, exposure to the situation must have almost invariably provoked anxiety, and the feared social situations must have been avoided or endured with intense anxiety. All diagnoses of SAD required that the DSM-IV clinical significance criterion be met (i.e., symptoms of the disorder must have caused clinically significant distress or impairment in social, occupational, or other areas of functioning). Unlike the diagnoses provided by other instruments used in epidemiologic surveys (Alonso et al., 2004; Kessler et al., 1998; Wittchen, Essau, Zerssen, Krieg, & Zaudig, 1992), AUDADIS-IV diagnoses of SAD excluded persons with SAD