



Avoidance and Depression among Socially Anxious Adults



Ethan Moitra, James D. Herbert, Evan M. Forman

Introduction

- Social Anxiety Disorder (SAD), a debilitating anxiety disorder characterized by intense fear of negative evaluation by others in interpersonal and social performance situations and associated avoidance of these situations, is the most prevalent anxiety disorder in the U.S. (Kessler et al, 1994). SAD is a chronic and debilitating anxiety disorder, associated with high comorbidity, significant functional impairment, and significant economic costs (Herbert & Dalrymple, 2005; Reich et al., 1994). Originally termed the “neglected anxiety disorder” (Liebowitz, Gorman, Fyer, & Klein, 1985) due to the paucity of research devoted to it, SAD has received considerable attention by researchers and scholars alike over the past two decades.
- The literature suggests social anxiety typically develops in adolescence and is often followed by the development of depressive symptoms (Schneier et al., 1992; Wittchen et al., 1999). Although comorbidity rates of SAD and depression have been studied extensively (Essau et al., 1999), little research has been conducted to analyze the development of depressive symptoms among people with SAD. Social anxiety can be conceptualized as consisting of two related but distinct dimensions: fear/anxiety and behavioral avoidance. This distinction is supported by the variation in avoidance behavior among socially anxious adults. The current investigation evaluated the hypothesis that the behavioral avoidance component of SAD mediates depressive symptoms in this population.

Method

- The present study examined symptomatology among an outpatient sample of adults seeking treatment for SAD. One hundred and ninety-nine participants (99 male, 100 female) were recruited via community advertisements, internet sources, and professional referrals for a free treatment program. The participants' ages ranged from 18 to 59, with a mean age of 32.84 (SD = 10.71). Thirty-two participants were full-time students, 34 were unemployed, 130 were gainfully employed, and one was retired. Participants' self-identified race was as follows: 3.5% Asian American, 18.4% Black/African American, 3.5% Hispanic/Latino, 69.2% White/Caucasian, and 5.4% “other.” Their education level ranged from some high school (1.5%) to graduate or professional school (19.9%) with a mean education level of “some college.”
- Participants completed the Beck Depression Inventory-II (BDI-II; Beck and Steer, 1987), the Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987), and the Social Phobia and Anxiety Inventory (SPAI; Turner et al., 1989) at pretreatment, midtreatment, posttreatment, and follow-up assessments; only the pretreatment data are analyzed here. The BDI-II is used to measure depressive symptoms and the SPAI provides a comprehensive indication of social anxiety severity. The LSAS provides two scores with respect to a variety of social situations: level of fear and level of avoidance of these situations. Data from the latter scale, behavioral avoidance, are used here.

Results

- The mean level of depressive symptoms among the sample was 13.5 (SD =9.9). Their mean score on the avoidance subscale on the LSAS was 37.1 (SD=12.7) and their mean severity of social anxiety was 112.0 (SD=22.9). Mediation analyses were conducted according to steps of analysis as outlined by Barron and colleagues (Barron & Kenny, 1986; Frazer, Tix, & Barron, 2004).
- Steps 1 through 3 were assessed to establish Paths a , b , c , and c' as described in Barron & Kenny (see Figures 1 and 2). First, depressive symptoms were regressed on social anxiety symptoms to establish the “Path c ” relationship between the predictor (i.e., social anxiety symptoms) and the outcome (i.e., depressive symptoms). The unstandardized regression coefficient ($b = .127$) associated with the effect of social anxiety on depressive symptoms was significant ($p < .0001$). Next, behavioral avoidance was regressed onto social anxiety to establish Path a (Step 2). The unstandardized coefficient ($b = .330$) associated with this relation also was significant ($p < .0001$). Lastly, Step 3 was conducted to test whether behavioral avoidance was significantly related to depressive symptoms. We regressed depressive symptoms simultaneously on social anxiety symptoms and behavioral avoidance symptoms to establish Paths b and c' . The coefficient associated with the relations between behavioral avoidance and depressive symptoms (controlling for social anxiety symptoms) was significant ($b = .173$, $p = .020$). This significant relationship confirms the condition for Step 3 was met. Lastly, this third regression equation also provided an estimate of Path c' , the relation between social anxiety symptoms and depressive symptoms, controlling for behavioral avoidance. Path c' ($b = .068$, $p = .055$) was smaller than Path c but since it was not equal to zero, behavioral avoidance is not indicated as a complete mediator. However, the lack of statistical significance in Path c' was notable (see Table 1 for summary of results).
- To assess whether this drop from .127 to .068 (i.e., from c to c') was indeed significant, we utilized the test for statistical significance as described by Kenny and colleagues (1998). A z score of the mediated effect was calculated by dividing a standard error term (the multiplication of the unstandardized regression coefficients from Paths a and b) by $b^2sa^2 + a^2sb^2 + sa^2sb^2$, where a and b are unstandardized regression coefficients and sa and sb are their standard errors. In this case, we multiplied the unstandardized regression weights for Path a (.330) and Path b (.173) and divided by the square root of $(.173)^2(.026)^2 + (.330)^2(.074)^2 + (.026)^2(.074)^2$ which yielded a z score of 2.29 which is greater than 1.96, the effect size needed to indicate significance beyond the .05 level.
- Lastly, the proportion of the total effect that is mediated was calculated according to methods outlined by Shrout and Bolger (2002) according to the following formula: ab/c . Using the unstandardized regression coefficients, we calculated $(.330)*(.173)/(.127) = .4495$. Thus, 44.95% of the total effect of social anxiety symptoms on depressive symptoms is mediated by behavioral avoidance.

Testing steps in mediational model	B	SEB	β
Testing Step 1 (Path c)			
Outcome: Depressive Sx			
Predictor: Social Anxiety Sx	0.127	0.025	0.346***
Testing Step 2 (Path a)			
Outcome: Behavioral Avoidance			
Predictor: Social Anxiety Sx	0.33	0.026	.688***
Testing Step 3 (Paths b and c')			
Outcome: Depressive Sx			
Mediator: Behavioral Avoidance	0.173	0.074	0.227*
Predictor: Social Anxiety Sx	0.068	0.035	0.187

*** $p < .0001$

* $p < .05$

Table 1.

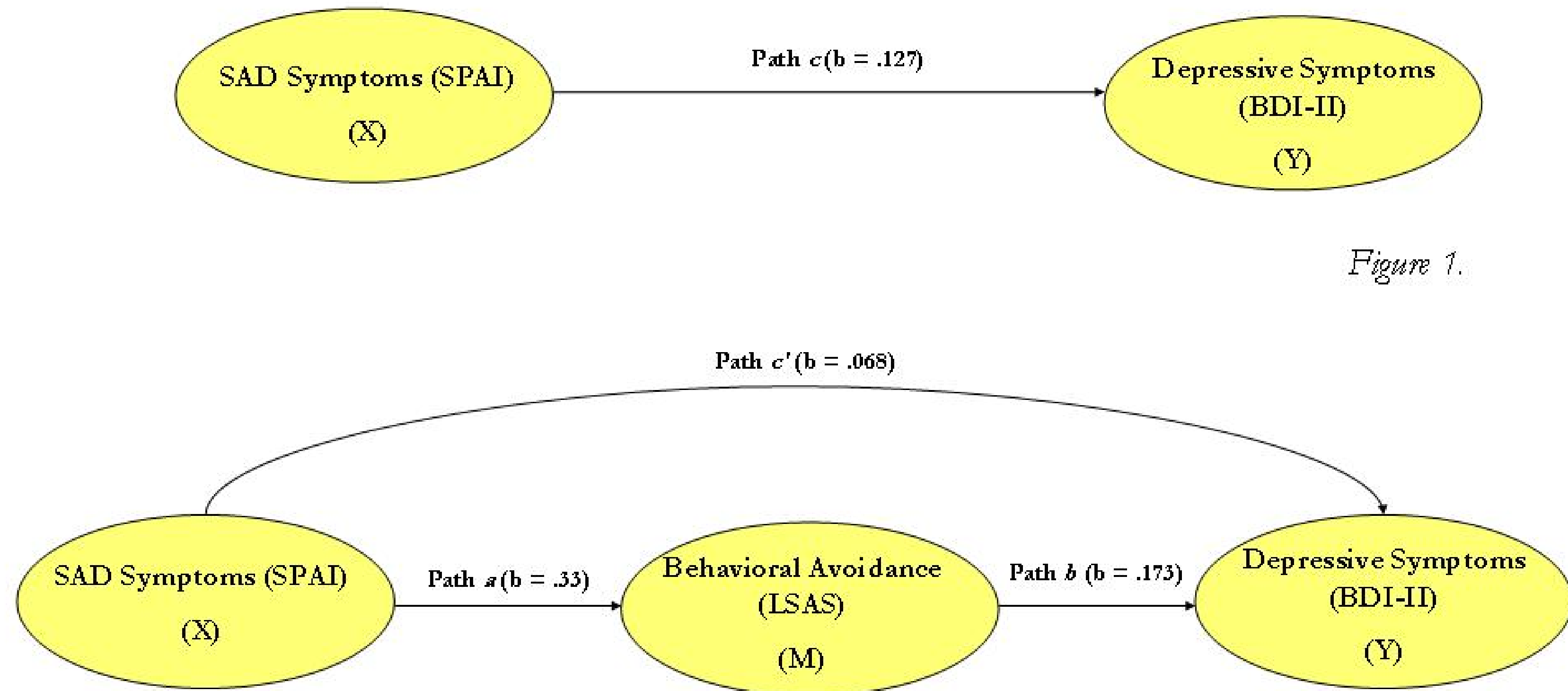


Figure 1.

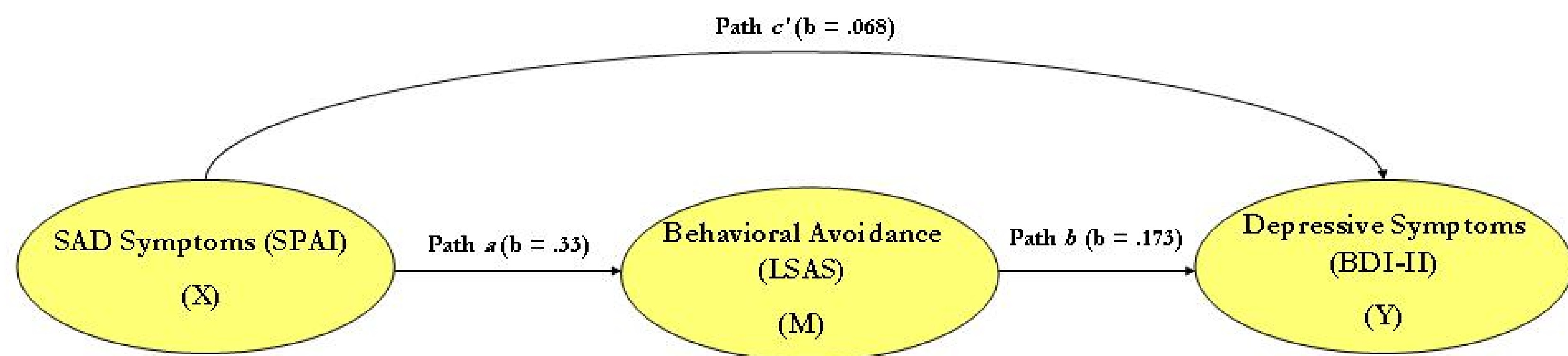


Figure 2.

Discussion

- These results support the hypothesis that behavioral avoidance plays a mediational role in the relationship between social anxiety symptoms and depressive symptoms, albeit a partial mediation effect. It is difficult to confirm SAD symptoms preceded behavioral avoidance in these analyses but the epidemiological data suggest that in most cases, the onset of SAD precedes the onset of depressive symptoms (Schneier et al., 1992; Wittchen et al., 1999). Indeed, it appears behavioral avoidance may be the mechanism by which some individuals develop depressive symptoms. This is consistent with research on the development of depression, due to factors such as decrease in social support (Booth et al., 1992; Russell et al., 1991) and decrease in positive reinforcement for healthy activities (Beck et al., 1979).
- These findings suggest important implications for interventions to potentially prevent the onset of depressive symptoms among people with SAD. For example, behavioral modification through in session and in vivo exposure may be an important technique to decrease avoidant behavior and thereby maximize the protective benefits of activity. Although the challenges of recognition and treatment of SAD among adolescents and young adults are formidable (Kashdan & Herbert, 2001), these results indicate early intervention may play a significant role in reducing the prevalence of subsequent depressive symptoms.
- Some limitations of the present investigation must be noted. First, the model presented may be biased because some variables were omitted in analyses. The variables include supplementary measures of social anxiety symptoms and behavioral avoidance. Also, since these analyses represent a nonexperimental design, the mediational effects of behavioral avoidance must be considered consistent with the model but not necessarily causal. Lastly, we should note the role of behavioral avoidance as a partial, though significant, mediator points to the implication that this model may be incomplete. Future investigations will include the use of aggregated data to reduce common method variance associated with using only one measure. We intend to investigate the role of experiential avoidance (Hayes et al., 1999) in the relationship between SAD and depressive symptoms with specific focus on adults with high levels of experiential avoidance and low levels of willingness to experience anxiety-related symptoms. We hypothesize experiential avoidance may play an important role in behavioral avoidance and its ultimate relationship with depressive symptoms.