

# Social Anxiety and PTSD: The Role of Intolerance of Uncertainty, Anxiety Sensitivity, and Depression

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## Introduction

- Symptoms of social anxiety (SA) and posttraumatic stress disorder (PTSD) frequently co-occur (e.g., Hofmann et al., 2003).
- The available research suggests there are higher levels of social anxiety disorder (SAD) among PTSD populations than vice versa.
- Higher levels of SA have been found in persons with PTSD relative to those without. Rates of SAD among veterans with PTSD have ranged from 12% (Orsillo, Weathers, et al., 1996; Roszell et al., 1991) to as high as 32% (Orsillo, Heimberg, et al., 1996). In civilian samples, prevalence rates of SAD in PTSD patients have ranged from 4 to 46% (Green et al., 1992; Hubbard et al., 1995; Zayfert et al., 2002, 2005).
- There is evidence supporting a relationship between SA, intolerance of uncertainty (Carleton et al., 2007), anxiety sensitivity (i.e., the fear of anxiety symptoms based on the belief that they have harmful consequences; Reiss & McNally, 1985; Rector et al., 2007), and depressive symptoms (Magee et al., 1996).
- The purpose of the present study was to investigate the interrelationships between SA, intolerance of uncertainty, anxiety sensitivity, depressive symptoms, and PTSD.

## Method

- Participants included 141 University of Regina students (77.3% women; ages 17-45;  $M=19.8$ ;  $SD=3.1$ ).
- Demographics were supplemented with:
  - Social Phobia Inventory (SPIN; Connor et al., 2000)
  - Social Anxiety and Distress Scale, Likert Scale (SADS; Watson & Friend, 1969)
  - The aggregate short form of the Social Interaction Anxiety Scale and Social Phobia Scale (SIPS; Carleton et al., in press)
  - Posttraumatic Checklist-Civilian Version (PCL-C; Weathers et al., 1993) and a questionnaire regarding traumatic life experiences
  - Anxiety Sensitivity Index-3 (ASI-3; Taylor et al., 2007)
  - Intolerance of Uncertainty Scale – Short Form (IUS-12; Carleton et al., 2007)
  - Center for Epidemiologic Studies Depression Scale (CESD; Radloff, 1977).
- Most participants ( $n=121$ , 86%) reported a traumatic event. These participants were then divided into two groups based on whether or not they met criteria for a probable diagnosis of PTSD. Participants were categorized with a probable diagnosis of PTSD if they reported a score > 44 on the PCL-C (Blanchard et al., 1996). This resulted in a probable PTSD group with 17 participants (82.4% women), and a control group with 104 participants (75% women).
- An analysis of variance (ANOVA) was performed with the SPIN, SADS, SIPS, IUS-12, ASI-3, and CESD as dependent variables. Multivariate analyses of covariance (MANCOVA) controlling for each of IUS-12, ASI-3, and CESD scores were used to evaluate between group differences.

## Results

- There was no difference in the proportion of men and women between the probable PTSD group and the control group,  $\chi^2(1) = .08$ ,  $p > .10$ ,  $V = .11$ .
- There were no significant differences between men and women on the SPIN, SADS, SIPS, IUS-12, ASI-3, and CESD (all  $ps > .10$ ).
- Participants with probable PTSD scored significantly higher on all measures of SA relative to those without PTSD ( $p < .05$ ); they also reported significantly higher scores on measures of intolerance of uncertainty, anxiety sensitivity, and depressive symptoms. ( $p < .05$ ; see Table 1).
  - SPIN,  $F(1,119) = 9.58$ ,  $p < .01$ ,  $\eta^2 = .07$
  - SADS,  $F(1,119) = 1.23$ ,  $p < .01$ ,  $\eta^2 = .08$
  - SIPS,  $F(1,119) = 5.93$ ,  $p < .05^a$ ,  $\eta^2 = .08$
  - IUS-12,  $F(1,119) = 7.32$ ,  $p < .05^a$ ,  $\eta^2 = .09$
  - ASI-3,  $F(1,119) = 14.64$ ,  $p < .01^a$ ,  $\eta^2 = .17$
  - CESD,  $F(1,119) = 45.76$ ,  $p < .001$ ,  $\eta^2 = .28$

<sup>a</sup>Welch correction was used.
- When any of intolerance of uncertainty, anxiety sensitivity, or depressive symptoms were statistically controlled, the groups no longer differed on any SA measure (all  $ps > .05$ ; see Table 2).

## Discussion

- The present study demonstrated that persons with a probable diagnosis of PTSD scored higher on SA measures relative to persons without a probable diagnosis of PTSD. These results are in line with previous research that showed higher levels of SA among individuals with PTSD relative to those without PTSD (e.g., Kashdan et al., 2006).
- Persons with a probable diagnosis of PTSD were also more likely to score higher on measures of intolerance of uncertainty, anxiety sensitivity, and depression. These results are consistent with studies that found significant associations between anxiety sensitivity and PTSD symptoms (e.g., Feldner et al., 2006), or between depressive symptoms and PTSD symptoms (e.g., Lang et al., 2002).
- When controlling for intolerance of uncertainty, anxiety sensitivity, or depressive symptoms, the two groups no longer differed on any of the SA measures.
- It may be that SA is closely linked to intolerance of uncertainty, anxiety sensitivity, and depressive symptoms in persons with probable PTSD. Interventions targeting these constructs may also reduce levels of SA in PTSD populations.
- Research is needed to further investigate co-occurring symptoms of SA and PTSD, and to investigate the causal relationship between SA, PTSD, intolerance of uncertainty, anxiety sensitivity, and depressive symptoms.

Table 1. Descriptive statistics for scores in probable PTSD and no PTSD groups.

	SPIN		SADS		SIPS		IUS-12		ASI-3		CESD	
	Probable PTSD	No PTSD	Probable PTSD	No PTSD	Probable PTSD	No PTSD	Probable PTSD	No PTSD	Probable PTSD	No PTSD	Probable PTSD	No PTSD
<b>n</b>	17	104	17	104	17	104	17	104	17	104	17	104
<b>M</b>	28.53	17.38	58.29	39.41	21.41	12.44	34.18	25.89	27.47	14.54	29.94	12.95
<b>SD</b>	16.83	13.24	24.47	22.26	14.67	9.7	12.16	8.38	13.39	9.52	13.16	8.92

Table 2: MANCOVA Summary.

Control Variable	DV	Between Subject Effects for Each Control Variable						Dependent Variable Differences After Control Variable					
		SS	df	MS	F	p	Partial $\eta^2$	SS	df	MS	F	p	Partial $\eta^2$
IUS-12	SPIN	10189.79	1	10189.79	96.93	<.01	.45	9.68	1	9.68	.86	.36	.01
	SADS	18707.06	1	18707.06	52.69	<.01	.31	707.79	1	707.79	1.99	.16	.02
	SIPS	5253.23	1	5253.23	78.62	<.01	.40	106.73	1	106.73	1.60	.21	.01
ASI-3	SPIN	729.90	1	729.90	56.22	<.01	.32	16.25	1	16.25	.13	.72	<.01
	SADS	8374.92	1	8374.92	18.92	<.01	.14	811.36	1	811.36	1.83	.18	.02
	SIPS	4178.75	1	4178.75	55.04	<.01	.32	23.85	1	23.85	.31	.58	<.01
CESD	SPIN	4312.54	1	4312.54	27.84	<.01	.19	2.65	1	2.65	.02	.90	<.01
	SADS	9497.87	1	9497.87	21.93	<.01	.16	99.51	1	99.51	.23	.63	<.01
	SIPS	1935.70	1	1935.70	2.39	<.01	.15	35.43	1	35.43	.37	.54	<.01