

**Behavioral Inhibition and Posttrauma Symptomatology:
Moderating Effects of Safety Behaviors and Biological Sex**

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Abstract

Behavioral inhibition – a temperamental tendency characterized by general sensitivity to negative outcomes – is a trait-level factor thought to contribute to maintenance of posttraumatic stress disorder (PTSD). Anxiety-related safety behaviors – actions performed to prevent or mitigate feared outcomes and associated distress – may impact the nature of the relation between behavioral inhibition and trauma-focused symptoms by interfering with natural habituation of anxiety. The current research examined the unique and interactive effects of behavioral inhibition, safety behaviors, and biological sex on PTSD symptom clusters in undergraduates ($N = 133$; 74% female; 77% White/Non-Hispanic) reporting exposure to Criterion-A trauma. Regression models indicated direct effects of safety behaviors for cognition-mood ($p = .001$, $pr = .323$) and intrusion ($p < .001$, $pr = .354$) clusters. A main effect of behavioral inhibition was also noted for cognition-mood ($p = .046$, $pr = .178$). Participant sex moderated the relation between safety behaviors and arousal-reactivity symptoms ($p = .035$, $pr = .187$) with men demonstrating a stronger association as compared to women. Sex also moderated the relation between safety behaviors and avoidance-reactivity ($p = .033$, $pr = -.190$) with only women evidencing an association between safety behaviors and symptoms. Safety behaviors moderated the relation between behavioral inhibition and arousal-reactivity ($p = .002$, $pr = .272$) such that inhibition only predicted symptoms at high utilization of safety behaviors. Results suggest trauma-related safety behaviors are associated with more severe posttrauma symptoms though effects vary across sex and symptom cluster.

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Behavioral inhibition is broadly conceptualized as a general sensitivity to novel situations and potential negative outcomes. Within the larger clinical literature, research demonstrates consistent associations between behavioral inhibition and anxiety-related difficulties (Gray, 1978; Chronis-Tuscano et al., 2009) with theoretical models identifying elevated inhibition as a risk factor for the development and maintenance of psychopathology (Biedermann et al., 1990; Hirshfeld-Becker et al., 2008; Myers, VanMeenan, & Servatius, 2012). Anxiety-related safety behaviors – actions committed to mitigate or prevent feared outcomes and associated distress – are also believed to interfere with the natural habituation of anxiety by preventing disconfirmation of problematic expectancies (e.g., “I will be unable to handle this situation) and disrupting learned capacity to manage negative emotional states (Blakey & Abramowitz, 2016). Given their proposed impact, frequent participation in safety behaviors may inadvertently enhance the negative impact of trait-level inhibition on anxiety and anxiety-related pathology. Aims of the current project were to examine the unique and interactive effects of behavioral inhibition and anxiety-related safety behaviors on posttrauma symptoms in students exposed to significant life stress.

Posttraumatic stress disorder (PTSD) is a mental health condition defined by persistent distress and functional impairment in response to events involving actual or threatened death, serious injury, and/or sexual violence (APA, 2013). Current conceptualizations identify PTSD as a clinical syndrome composed of four interrelated dimensions: intrusion; avoidance; negative alterations in cognition and mood (cognition-mood); and changes in arousal and reactivity (arousal-reactivity; APA, 2013; Hetzel- Riggan, & Harbke, 2014; Miller et al., 2013; Tsai et al.,

2015). Intrusion symptoms include involuntary re-experiencing of traumatic events via spontaneous memories, nightmares, flashbacks, and/or cued emotional and physiological response to reminders of the experience. Avoidance reactions, by contrast, involve efforts to prevent the experience of thoughts or feelings associated with the event as well as efforts to avoid trauma-related cues. Symptoms concerning cognition and mood include inability to recall important aspects of the trauma; persistent and exaggerated negative beliefs about oneself, others, or the world; feelings of blame regarding the cause or consequences of the trauma; persistent negative emotion following exposure; loss of interest in activities; feelings of detachment from others; and numbing of positive emotional experience. Arousal-reactivity symptoms consist of angry or aggressive outbursts; reckless behavior; hypervigilance; exaggerated startle; difficulties concentrating; and sleep disturbances. In addition to high levels of comorbidity with other mental-health conditions (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), PTSD is linked to reductions in global functioning and overall quality of life (Olatunji, Cisler, & Tolin, 2007; Schnurr, Lunney, Bovin, & Marx, 2009) with research demonstrating unique impacts of various symptom domains (Collimore, McCabe, Carleton, & Amundson, 2008; Kimerling, Clum, & Wolfe, 2000; Lunney & Schnurr, 2007; Sullivan, Fehon, Andres-Hyman, Lipschitz, & Grilo, 2006).

Whereas epidemiological research suggests that 50 - 60% of US men and women will experience at least one traumatic event over the course of their lifetime, only a minority of individuals (7.8%) go on to develop disorder (Kessler et al., 1995), emphasizing a need to identify risk factors contributing to the maintenance of chronic symptoms. Behavioral inhibition is characterized as a trait-level disposition marked by sensitivity to perceived stress, novelty, and potential punishment (Gray, 1972; Kagan, Reznick, & Snidman, 1987; Morgan, 2006). Trait-

level inhibition is thought to influence avoidance motivation (Carver & White, 1994) with research identifying consistent links between behavioral inhibition and anxiety-related psychopathology (e.g., Biedermann et al., 1990; Chronis-Tuscano et al., 2009; Fox et al., 2005; Hirshfield-Becker et al., 2008; Myers, VanMeenan, & Servatius, 2012). Studies show that college students reporting high levels of trait inhibition acquire avoidant responses to aversive stimuli faster than their uninhibited counterparts and take longer to extinguish this learning (Allen, Myers, & Servatius, 2014; Holloway, Allen, Myers, & Servatius, 2014). Research by Caulfield, VanMeenan, and Servatius (2015) has noted similar effects of behavioral inhibition on avoidant learning in adolescent samples suggesting common impact across populations.

Evidence for enhanced associative learning and delayed extinction suggests that behavioral inhibition may serve as a vulnerability factor for the development and maintenance of symptoms following exposure to stressful or traumatic events (Anastasides et al., 2014). Existing data support the hypothesized association between trait-level inhibition and trauma-related symptoms across a number of survivor populations. Research with military veterans has shown relations between retrospective reporting of behavioral inhibition in childhood and current associative learning (Myers, VanMeenan, McCauley, Beck, Phang, & Servatius, 2012). Additional analyses in this population provide evidence for associations between self-reported adult inhibition and PTSD symptom severity (Myers et al., 2012) even after controlling for both trait anxiety and combat exposure (Myers, VanMeenan, & Servatius, 2012). Similar effects are found in female college students exposed to Criterion-A trauma (Pickett et al., 2011). Research by Contractor, Elhai, Ractliffe, and Forbes (2013) further suggests that relations with self-reported behavioral inhibition may differ across individual symptom clusters. Data collected from trauma-exposed medical patients indicate stronger associations of trait inhibition with

avoidance and arousal-reactivity symptoms relative to other PTSD symptom clusters. While preliminary, results suggest that the relation between behavioral inhibition and PTSD severity may function differentially across individual symptom dimensions.

Given existing research showing stable associations between trait-level behavioral inhibition and aspects of posttrauma responding, behaviors impacting the nature of these relations should also be considered. One potential factor identified both in theory and existing empirical work is the occurrence of anxiety-related safety behaviors. Safety behaviors are broadly conceptualized as actions, overt or covert, intended to prevent contact and/or distress associated with a feared stimulus (see Blakey & Abramowitz, 2016). Examples of safety behaviors in survivors of significant trauma may include remaining near exits in crowded places or carrying objects (e.g., cell phones, medications) to prevent feared outcomes. Safety-behaviors are thought to inhibit natural habituation during exposure to anxiety-related cues by preventing opportunities for disconfirmation of existing fear associations (Bouton, 2004; Craske et al., 2008; Graham & Milad, 2011). Reliance on these behaviors is also believed to disrupt individuals' capacity to tolerate conditioned distress and negative affective states (Craske, Treanor, Conway, Zbozinek, & Vervliet, 2014; Keough, Riccardi, Impano, Mitchell, & Schmidt, 2010). Evaluation of youth diagnosed with anxiety-related pathology shows that utilization of safety behaviors during treatment is associated with lower levels of improvement (Hedtke, Kendall, & Tiwari, 2009). Additional research with obsessive-compulsive youth suggests that while safety behaviors may reduce acute anxiety during exposure, reliance on these actions may exacerbate distress over the long-term (Chu et al., 2015).

The impact of safety behaviors on anxiety-related pathology suggests that these reactions may also interfere with the natural habituation of distress following exposure to significant

trauma. Theory suggests that safety behaviors likely enhance the effects of behavioral inhibition on the development and maintenance of PTSD (Dunmore, Clark, & Ehlers, 1999; Ehlers & Clark, 2000). Existing research has found evidence for an impact of emotional avoidance on the relation between behavioral inhibition and PTSD. Pickett and colleagues (2011) noted an interaction of experiential avoidance and behavioral inhibition among trauma-exposed women such that behavioral inhibition was a significant predictor of posttrauma symptoms only at high level of avoidance. Results suggest that safety behaviors intended to mitigate distress in the presence of feared stimuli may enhance the association between behavioral inhibition and individual PTSD symptom clusters.

The aim of the current study was to examine the unique and interactive effects of behavioral inhibition and safety behaviors on PTSD symptom dimensions. A series of multiple regression models was used to examine effects for each symptom cluster. Participant sex was also considered as a potential moderator of the associations between trait inhibition and posttrauma symptom severity given broad evidence of gender effects in the extant literature (Tolin & Foa, 2006; Breslau et al., 1999; Felmingham et al., 2010; Armour et al., 2011; Kessler et al., 1995). Safety behaviors were expected to strengthen associations between behavioral inhibition and PTSD symptom dimensions. Women were expected to evidence stronger associations between safety behaviors and posttrauma symptoms than men in the current sample.

Method

Participants

Participants were university students involved in an ongoing study of interpersonal and functional outcomes following significant trauma. Students disclosing exposure to one or more potentially traumatic events during an initial screening were invited to participate in the larger

study. Following provision of informed consent, participants completed semi-structured clinical interviews with a graduate- or doctoral-level clinician to assess frequency and severity of Criterion-A exposure. In the occurrence of multiple forms of trauma, individuals were instructed to identify an index event resulting in the largest degree of current distress. Following the interview, participants completed a series of online questionnaires targeting multiple aspects of psychosocial functioning. All assessment procedures received local institutional review board approval.

Of the 147 participants that completed the initial clinical interview, two failed to report an event consistent with Criterion-A described in the DSM-5 and were removed from the dataset. Another twelve participants were excluded from subsequent analyses due to missing questionnaire data. Individuals with missing questionnaire data did not differ from those in the final set in terms of sex, age, or PTSD symptom dimensions (all $p \geq .182$). Final sample ($N = 133$) characteristics are displayed in Table 1.

Measures

Behavioral Inhibition

Behavioral inhibition was measured using the Behavioral Inhibition System scale (BIS) of the BIS/BAS Scales (Carver & White, 1994). The BIS/BAS is a 24-item self-report measure targeting sensitivity of avoidant and appetitive motivation systems theorized by Gray (1972). Participants rate their agreement (1 = *very true for me* to 4 = *very false for me*) with statements targeting general aversive or appetitive reactions. BIS scores are calculated by summing the response values (range = 4 – 28) with higher scores indicating increased inhibition. The BIS scale has been shown to have adequate validity and reliability in college students and adults (Carver & White, 1994; Poythress et al., 2008). Internal consistency of scores in the current

study was acceptable ($\alpha = .79$).

Posttraumatic Safety Behavior Questionnaire (PSBQ)

The PSBQ is a self-report instrument developed to assess various trauma-related safety behaviors. Item generation was based on general conceptualizations of anxiety-related safety behaviors, theoretical models of PTSD, clinical experience, and consultation with experts in trauma and anxiety. To ensure responses were functionally consistent with working definitions of safety behaviors (Telch & Lancaster, 2012; Thwaites & Freeston, 2005), participants were instructed only to consider behaviors performed “to prevent a feared outcome and/or reduce distress associated with a traumatic experience.” Participants rated the degree to which they engaged in a series of 23 assessed safety behaviors using a 0 (*never*) to 4 (*always*) scale. Possible PSBQ total scores range 0-92, with higher scores indicating more frequent safety behavior use. The PSBQ showed acceptable internal consistency in the current sample ($\alpha = .79$).

Posttrauma Symptoms

Trauma-related symptoms were assessed using the PTSD Symptom Checklist for DSM-5 (PCL-5; Weathers et al, 2013). The PCL-5 is a 20-item self-report instrument evaluating symptoms of PTSD as specified in DSM-5. Participants then rate distress related to individual symptoms over the past 30 days on a five-point Likert scale (0 = *Not At All Bothered*; 4 = *Extremely Bothered*). Scores for Intrusion, Avoidance, Cognition-Mood, and Arousal-Reactivity dimensions were calculated as the sum of ratings for relevant symptom criteria. The PCL-5 has been shown to demonstrate good validity and reliability in both civilian and military populations (Sveen, Bondjers, & Willebrand, 2016; Wortmann et al., 2016; Weathers et al., 2013). Participants were asked to complete the PCL-5 with regard to the index event identified during the trauma history interview. Internal consistency of scores in the current sample ranged from

acceptable to good across intrusion ($\alpha = .80$), avoidance ($\alpha = .73$), cog-mood ($\alpha = .86$), and arousal-reactivity ($\alpha = .76$) clusters.

Analytic Strategy

A series of multiple regression models were implemented to examine the unique and interactive effects of behavioral inhibition, trauma-related safety behaviors, and biological sex on individual PTSD symptom clusters. Analyses of interactive effects were conducted using simple slopes procedures described by Aiken and West (1991). Effect sizes for individual regression coefficients for this study are reported as partial correlations (pr) with values of .14, .36, and .51 serving as interpretive benchmarks for small, medium, and large effects, respectively (Cohen, 1968). Means, standard deviations, and bivariate correlations between variables are presented in Table 2.

Results

Preliminary Screening

Continuous variables failed to provide evidence for severe violations of univariate normality (skew $\leq |1.22|$; kurtosis $|\leq 1.22|$; Tabachnick & Fidel, 2007). Initial screening indicated minimal concerns with multicollinearity (VIF ≤ 1.60) or multivariate outliers (Mahalanobis distance ≤ 16.70). Residual plots for all models failed to provide evidence for violations of linearity, normality, or homoscedasticity assumptions.

Intrusion

Safety behaviors demonstrated a unique association with traumatic intrusions such that greater engagement held a unique relation with elevated symptom severity ($\beta = .419, p < .001, pr = .354$; see Table 3). No other effects were found to be significant ($p \geq .222$).

Avoidance

An interactive effect of participant sex and trauma-related safety behaviors was noted for avoidance ($\beta = -.252$, $p = .033$, $pr = -.190$). Simple slopes analysis revealed a significant effect of safety behaviors for women ($\beta = .507$, $p < .001$, $pr = .441$) but not men ($\beta = -.068$, $p = .786$, $pr = -.024$; see Figure 1). No direct or interactive effects of behavioral inhibition were observed in this model ($p \geq .106$).

Cognition-Mood

Analysis of cognition-mood indicated a unique effect of trauma-related safety behaviors with elevated safety behaviors associated with more severe symptoms ($\beta = .383$, $p = .001$, $pr = .323$). A main effect of behavioral inhibition was also noted ($\beta = .184$, $p = .046$, $pr = .178$). Results indicated a marginal effect of participant sex ($\beta = .190$, $p = .061$, $pr = .167$) with males reporting greater severity of cognition-mood symptoms as compared to women. No higher order effects were observed in this model ($p \geq .114$).

Arousal

Evaluation of arousal-reactivity revealed an interaction of safety behaviors and behavioral inhibition ($\beta = .265$, $p = .002$, $pr = .272$) as well as an interaction of participant sex and safety behaviors ($\beta = .226$, $p = .035$, $pr = .187$). Further analysis indicated a reliable association of behavioral inhibition and arousal-reactivity at high levels of safety behavior ($\beta = .417$, $p = .001$, $pr = .304$) with no effect for individuals reporting less frequent engagement ($\beta = -.114$, $p = .311$, $pr = -.091$; see Figure 2). Evaluation of the interaction of safety behavior and participant sex indicated a stronger effect of safety behaviors on arousal-reactivity for men ($\beta = .993$, $p < .001$, $pr = .364$) as compared to women ($\beta = .477$, $p < .001$, $pr = .453$); see Figure 3).

Discussion

While research suggests that behavioral inhibition may serve as an underlying risk factor

for PTSD (e.g., Myers et al., 2012; Myers, VanMeenan, & Servatius, 2012; Pickett et al., 2011), clinical theories suggest that safety behaviors may enhance this relation, contributing to the maintenance of anxiety-related symptoms (Craske et al., 2008; Dunmore, Clark, & Ehlers, 1999; Ehlers & Clark, 2000). Gender differences in factors associated with post-trauma recovery (e.g., Olf et al., 2007; Tolin & Foa, 2006) further indicate that the impact of safety behaviors may be influenced by biological sex. The current study examined the direct and interactive effects of behavioral inhibition, safety behaviors, and participant sex on PTSD symptom dimensions.

Consistent with hypotheses, analyses indicated a moderating effect of safety behaviors on the relation between trait-level inhibition and posttrauma arousal-reactivity symptoms. Specifically, behavioral inhibition demonstrated a positive association with arousal-reactivity among participants reporting frequent engagement in safety behaviors. Trait inhibition failed to show a corresponding association with arousal-reactivity at low levels of compensatory behavior. Interactive effects in these data could be attributable to the interplay of safety behaviors and perceived danger (Arntz, Rauner, & van den Hout, 1994)). Existing research indicates that safety behaviors may inadvertently produce increased perceptions of threat by reinforcing beliefs of the feared event as dangerous (Gangemi, Mancini, & van den Hout, 2012; Lavy & van den Hout, 1994; Saunders, 2013). Consequently, the link between trait-level inhibition and elevated arousal-reactivity (e.g., hypervigilance, difficulty concentrating, exaggerated startle response) may be enhanced for survivors demonstrating frequent use of avoidant coping strategies. Alternatively, safety behaviors may exacerbate the association between behavioral inhibition and arousal-reactivity by limiting new learning concerning the distressing stimuli, thus, impeding natural habituation of anxiety (Bouton, 2004; Craske et al., 2008). Individuals demonstrating more frequent engagement in safety behaviors may misattribute anxiety reductions to these

compensatory reactions. Interference with corrective learning could serve to maintain the association of trait-level inhibition and posttrauma arousal-reactivity.

Safety behaviors also demonstrated differential associations with arousal-reactivity and avoidance clusters across men and women. Although safety behaviors were associated with trauma-related arousal and reactivity in both groups, effects were stronger among men. Clinical research provides evidence for sex differences in stress coping (Matud, 2004; Olf, Langeland, Draijer, & Gersons, 2007; Ullman & Filipas, 2005) which may contextualize these findings. Specifically, men exposed to significant trauma demonstrate a more sensitized arousal system resulting in greater levels of hypervigilance and aggression as compared to women (Olf et al., 2007). The utilization of safety behaviors to alleviate trauma-related stress in male survivors could increase the prevalence of hypervigilant and aggressive responses and exacerbate arousal-reactivity symptoms. Contrasting effects for arousal-reactivity, safety behaviors evidenced an association with trauma-related avoidance uniquely among female participants. Data indicating elevated levels of avoidant- and emotion-oriented coping among women (Matud, 2004; Olf et al., 2007) suggests female survivors may be more likely to employ safety behaviors as a means of preventing contact with trauma-related distress.

Direct effects of trauma-related safety behaviors were noted for intrusion and cognition-mood symptoms. Safety behaviors' interference with the development of distress tolerance (Craske et al., 2014; Keough et al., 2010) may explain their relation to traumatic intrusions. Specifically, a reduced ability to withstand distressing situations suggests that elevated emotional and physiological responding to trauma-related cues may yield increased posttrauma intrusion severity. Limited distress tolerance may also contribute to the impact of trauma-related safety behaviors on cognition-mood such that reduced capacity to endure stressful encounters may fuel

negative beliefs about oneself and persistent negative emotions. Additionally, given the high comorbidity between anxiety and negative cognitions (e.g., Brady & Kendall, 1992; Kessler et al., 1995) and emotions, the interference of safety behaviors with natural anxiety habituation may contribute to these effects.

Results should be interpreted within the context of relative strengths and weaknesses of the study. While safety behaviors have been studied extensively in the context of many anxiety disorders, little work has examined their impact in the context of trauma- and stressor-related pathology (Blakey & Abramowitz, 2016). The current project expands this emerging literature and is the first to examine the impact of trauma-related safety behaviors on PTSD severity at the cluster level. Additionally, the use of a mixed-trauma sample provides initial support for the potential generalization of effects across a variety of survivor populations.

Despite the heterogeneity of index events, participants in the current study were relatively homogenous with respect to age, education, and racial/ethnic background. Epidemiological research has identified emerging adults as a sub-population with elevated risk for trauma exposure and negative psychological outcomes (Breslau, Kessler, Chilcoat, Schultz, Davis, & Andreski, 1998; Roberts, Gilman, Breslau, Breslau, & Koenen, 2011) suggesting a particular need to examine this group. However, differences in PTSD across ethnicity (Breslau, Davis, & Andreski, 1995; Roberts, et al., 2011) and age (Brewin, Andrews, & Valentine, 2000; Clapp & Beck, 2012) indicate that generalization of these results to more diverse population should be made with caution. Further studies should seek to examine these effects within increasingly diverse samples.

The incorporation of a novel measure of trauma-related safety behaviors is also a potential limitation of the study. No existing measures of posttraumatic safety behaviors were

available in the current literature preventing the use of a well-validated instrument. Initial pilot testing of the PSBQ suggest positive psychometric characteristics with item-level data holding associations consistent with operationalizations of anxiety-related safety behaviors. While internal consistency in the current sample was acceptable, further information regarding the properties of this measure is needed.

Finally, the cross-sectional nature of these data does not permit an analysis of directional relations between behavioral inhibition and PTSD. While many researchers posit that trait-level inhibition serves as a risk factor in the development and maintenance of PTSD (e.g., Myers et al., 2012; Pickett et al., 2011), it is possible that exposure to significant trauma may impact trait-level inhibition and exacerbate sensitivity to distress. Longitudinal studies should seek to examine the temporal relations and potential bidirectional associations between behavioral inhibition and PTSD.

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Table 1. *Sample Demographics^a* (N = 133)

Age (SD)	20.15 (3.91)
Sex (% female)	74.4%
Race/Ethnicity	
Caucasian	77.4%
Hispanic	6.8%
Other	5.3%
Index Trauma	
Sexual Assault	37.6%
Motor Vehicle Accident	25.6%
Physical Assault	10.5%
Witnessed Suicide	6.8%
Combat	3.0%
Fire/Explosion	3.0%
Threatened	3.0%
Illness	2.3%
Other	8.3%

^a Categories may not sum to 100% given incomplete reporting

Table 2. Means, Standard Deviations, and Bivariate Correlations of Primary Variables

Measure	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1: PCL _{Int}	—						
2: PCL _{Avoid}	.651**	—					
3: PCL _{Cog-Mood}	.552**	.611**	—				
4: PCL _{Arous}	.709**	.574**	.709**	—			
5: BIS	.197*	.248**	.194*	.191*	—		
6: PSBQ	.471**	.480**	.398**	.598**	.171*	—	
7: SEX	-.101	-.094	.016	-.011	-.430**	-.102	—
<i>M</i>	4.20	2.61	5.08	4.29	21.04	22.53	.26
<i>SD</i>	3.57	2.15	5.48	4.28	3.89	10.71	—

* $p < 0.05$, ** $p < 0.01$

PCL_{Int} = Intrusion Subscale of PCL-5; PCL_{Avoid} = Avoidance Subscale of the PCL-5; PCL_{Cog-Mood} = Cognitive Distortion Subscale of the PCL-5; PCL_{Arous} = Arousal-Reactivity Subscale of the PCL-5; BIS = Behavioral Inhibition Scale of the BIS/BAS; PSBQ = Posttraumatic Safety Behavior Questionnaire; SEX = biological sex

Table 3. Regression Analyses of PCL-5 Symptom Clusters

Intrusion Symptoms	Model R_{adj}^2	β	b	se	p	pr
Predictors	.203					
SEX		.002	.020	.802	.980	.002
BIS		.110	.101	.082	.220	.093
PSBQ		.419	.140	.033	< .001	.354
BISxPSBQ		.088	.007	.008	.367	.081
BISxSEX		.002	.003	.185	.986	.002
SEXxPSBQ		.019	.014	.093	.876	.014
BISxSEXxPSBQ		-.060	-.012	.022	.595	-.048
Avoidance Symptoms	Model R_{adj}^2	β	b	se	p	pr
Predictors	.266					
SEX		-.002	-.011	.464	.981	-.002
BIS		.139	.077	.047	.106	.121
PSBQ		.358	.072	.019	< .001	.441
BISxPSBQ		.032	.002	.005	.741	.030
BISxSEX		.006	.008	.107	.942	.006
SEXxPSBQ		-.252	-.116	.054	.033	-.190
BISxSEXxPSBQ		-.163	-.019	.013	.133	-.134
Cognition-Mood Symptoms	Model R_{adj}^2	β	b	se	p	pr
Predictors	.166					
SEX		.190	2.381	1.258	.061	.167
BIS		.184	.259	.128	.046	.178
PSBQ		.383	.196	.051	.001	.323
BISxPSBQ		.157	.021	.013	.125	.137
BISxSEX		.080	.256	.290	.114	.141
SEXxPSBQ		.097	.113	.145	.439	.069
BISxSEXxPSBQ		-.002	-.001	.035	.986	-.002
Arousal Symptoms	Model R_{adj}^2	β	b	se	p	pr
Predictors	.393					
SEX		.159	1.533	.838	.066	.164
BIS		.152	.167	.086	.053	.172
PSBQ		.611	.244	.034	< .001	.538
BISxPSBQ		.265	.027	.009	.002	.272
BISxSEX		.026	.065	.193	.738	.030
SEXxPSBQ		.226	.206	.097	.035	.187
BISxSEXxPSBQ		.055	.013	.023	.573	.051

SEX = biological sex; BIS = Behavioral Inhibition Scale of the BIS/BAS; PSBQ = Posttraumatic Safety Behavior Questionnaire; *pr* of .14, .36, and .51 correspond to small, medium, and large effects respectively

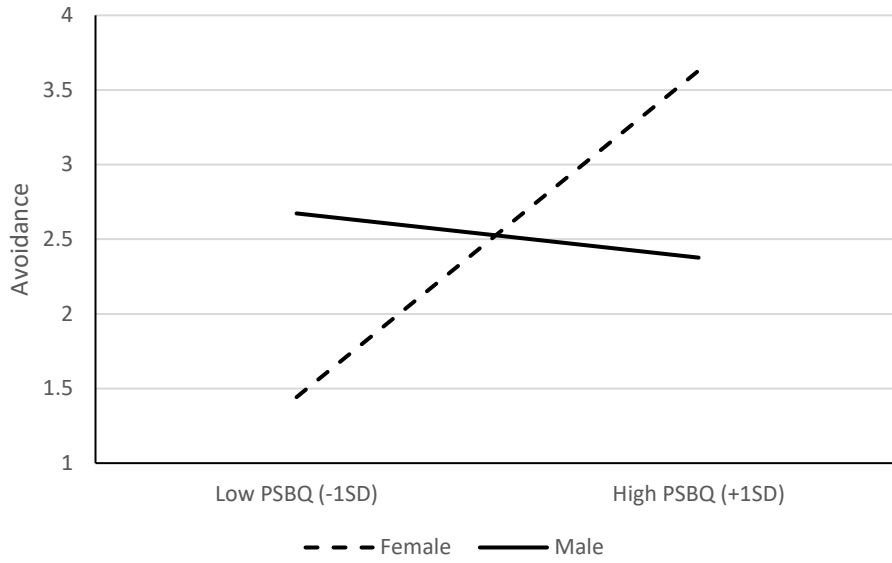


Figure 1. Simple slopes analysis for the association of posttraumatic safety behaviors and posttrauma avoidance for men and women

— Men: $b = -.014, p = .786, pr = -.024$
 - - - Women: $b = .102, p < 0.001, pr = .441$

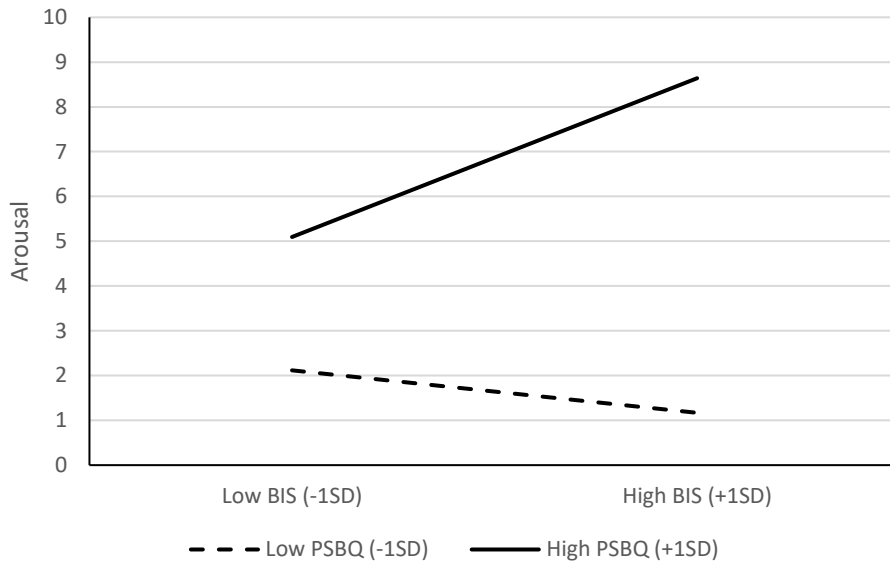


Figure 2. Simple slopes analysis for the association of behavioral inhibition and posttrauma arousal symptoms for high and low levels of posttraumatic safety behaviors

High Safety Behaviors (+1SD): $b = .459$ $p = .001$, $pr = .304$
 Low Safety Behaviors (-1SD): $b = -.126$, $p = .311$, $pr = -.091$

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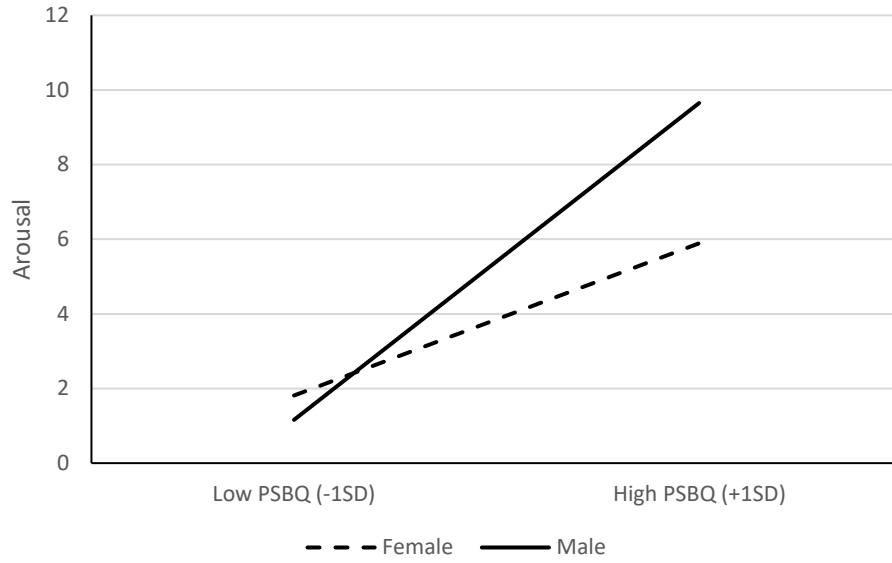


Figure 3. Simple slopes analyses for the association of posttraumatic safety behaviors and posttrauma arousal-reactivity for men and women

Men: $b = .396, p < 0.001, pr = .364$
 Women: $b = .190, p < 0.001, pr = .453$