

## Introduction

- Posttraumatic Stress Disorder (PTSD) symptoms are often discussed in two contrasting but related ways.
- PTSD is diagnosed in terms of four symptom clusters (APA, 2013): avoidance, negative cognitions/mood, reexperiencing, and overarousal.
- Practically (i.e., in clinical settings) PTSD symptoms are usually discussed in terms of overall severity (e.g., Resick et al., 2015).
- These different ways of understanding PTSD symptoms coincide with recent thinking about the hierarchical structure of psychopathology (Kotov et al., 2017).
- Hierarchical models typically demonstrate one factor at the top of a structure reflecting general symptom severity followed by series of lower-order echelons of factors reflecting increasing specificity of dysfunction.
- The second echelon typically reflects internalizing and externalizing spectra.
- The fifth echelon typically resembles maladaptive variants of Big Five personality traits (Antagonism, Detachment, Disinhibition, Negative Affect, and Psychoticism).
- However, this research has typically examined general psychopathology in either general psychiatric or community samples.
- In this study we sought to extend this research to the context of traumatic stress by examining the hierarchical structure of PTSD symptoms.

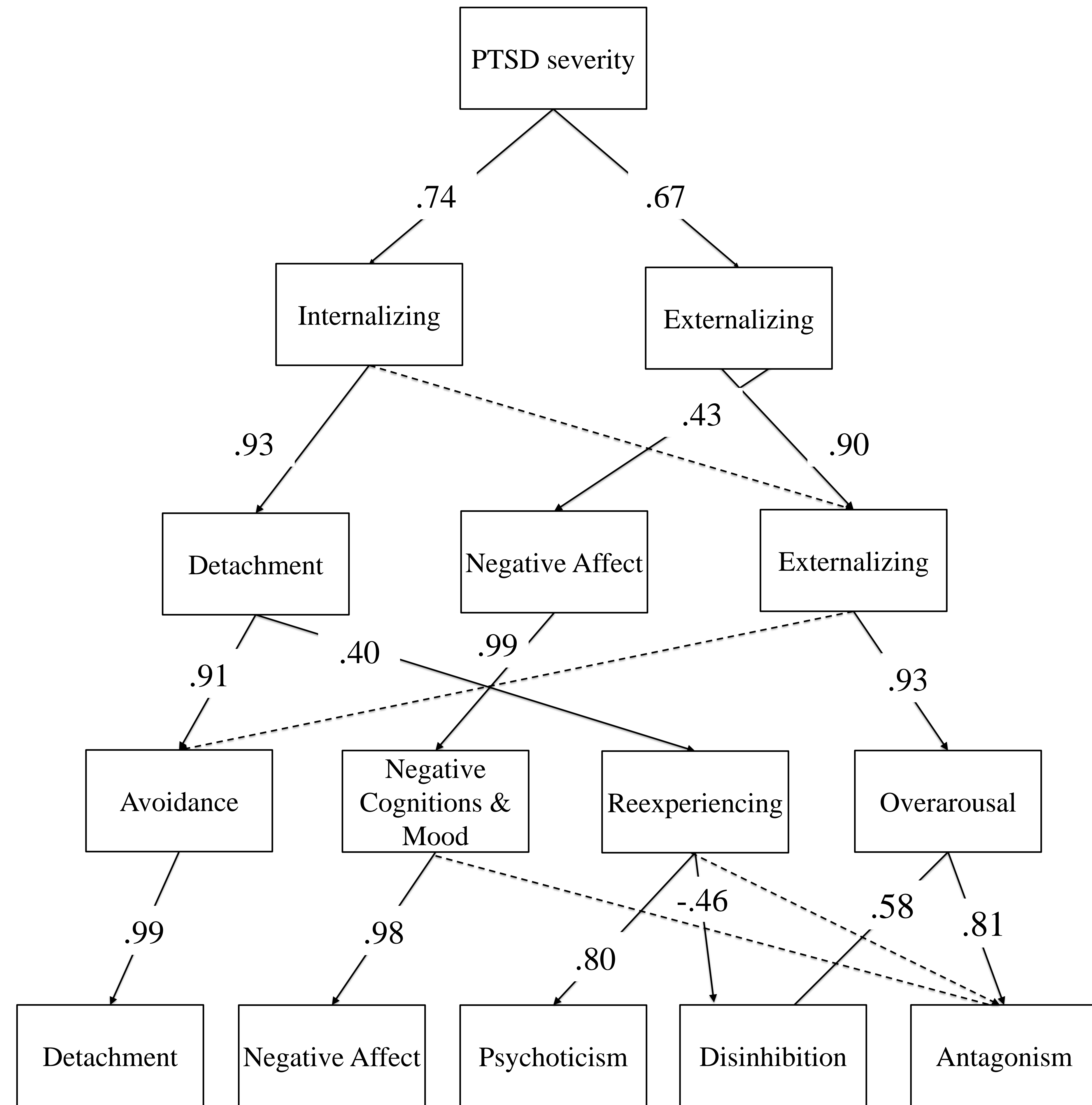
## Method

- Participants were 209 trauma-exposed students at a large public university in the Midwestern U.S.
- Sample was predominantly female (65%) with ages ranging from 18 to 40 years ( $M = 21$ ,  $SD = 2$ ).
- Demographics of the sample were as follows: 63% White, 22% Asian, 9% Black, 6% Mixed/Other.
- We screened for trauma exposure using the *Brief Betrayal Trauma Survey* (BBTS; Freyd & Goldberg, 2006), a 24-item scale of different traumatic experiences ( $\alpha = .88$ ).
- We measured PTSD symptoms using the *PTSD Checklist for DSM-5* (PCL-5; Weathers et al., 2013), a 20-item scale assessing DSM-5 PTSD symptom criteria ( $\alpha = .95$ ).

## Data Analysis & Results

- We examined the structure of the PTSD symptoms using hierarchical factor analysis (Goldberg, 2006) entering individual PCL-5 items as variables.
- Analysis terminated in an 11-echelon solution that reflected both hierarchical structure and the four PTSD symptom clusters (see Figure 1 for abbreviated results).

Figure 1. *Top Five Echelons of the Structural Hierarchy of PTSD Symptoms.*



Notes: dashed lines indicated modest ( $r \leq .40$ ) but statistically significant ( $p < .05$ ) paths; table of factor loadings can be accessed using the QR code.

## Discussion

- Findings show that the four diagnostic clusters of PTSD symptoms replicate and are nested within the more general hierarchical structure of psychopathology.
- These results provide evidence for the structural validity of the cluster-based diagnosis of PTSD.
- Future research could examine the degree to which these clusters (vs. higher- or lower-order factors of psychopathology) contribute to psychological distress in trauma survivors.
- For example, research suggests that prediction of distress associated with personality disorders does not improve past four factors (Bastiaansen et al., 2015).
- However, this has not yet been examined in the context of trauma-related distress.



Table 1. *Eigenvalues and Factor Loadings for Top Five Echelons of the Structural Hierarchy of PTSD Symptoms.*

	Severity	Int	Ext	Detach	Neg Aff	Ext	Avoid	Neg Cog	Reexper	Overarous	Detach	Neg Aff	Psych	Disin	Antag
Eigenvalue	22.2	22.19	12.45	22.2	12.6	10.9	22.19	12.45	10.9	9.89	22.19	12.45	10.9	9.9	8.78
% of Variance	22.64	22.64	33.35	22.64	12.71	11.13	22.64	12.71	11.13	10.08	22.64	12.71	11.13	10.08	8.96
Intrusive Memories	<b>.75</b>	<b>.73</b>	.25	<b>.64</b>	.42	.18	.24	<b>.51</b>	<b>.47</b>	<b>.40</b>	<b>.41</b>	<b>.42</b>	.15	<b>.58</b>	.06
Disturbing Dreams	<b>.67</b>	<b>.58</b>	.35	<b>.57</b>	.22	.37	<b>.41</b>	.37	.28	<b>.54</b>	.24	.20	.22	<b>.81</b>	.13
Reexperiencing	<b>.74</b>	<b>.69</b>	.33	<b>.66</b>	.28	.33	.39	<b>.54</b>	.30	.34	<b>.45</b>	.24	.27	<b>.58</b>	.16
Physiological Reactions	<b>.73</b>	<b>.79</b>	.17	<b>.77</b>	.26	.18	.25	<b>.75</b>	.24	.14	<b>.72</b>	.24	.27	.26	.06
Internal Trigger Avoidance	<b>.76</b>	<b>.83</b>	.17	<b>.75</b>	.37	.12	.21	<b>.77</b>	.34	.03	<b>.73</b>	.32	.17	.23	.19
External Trigger Avoidance	<b>.72</b>	<b>.79</b>	.16	<b>.75</b>	.28	.16	.24	<b>.79</b>	.23	-.02	<b>.77</b>	.23	.24	.14	.17
Trauma Memory Impairment	<b>.56</b>	<b>.39</b>	<b>.41</b>	<b>.75</b>	.33	.15	.24	<b>.76</b>	.30	.03	<b>.74</b>	.30	.26	.15	.10
Negative Beliefs	<b>.76</b>	<b>.67</b>	.38	.26	.39	.31	.37	<b>.40</b>	.28	<b>-.43</b>	.33	.19	.06	.11	.77
Blaming	<b>.75</b>	<b>.77</b>	.23	<b>.51</b>	<b>.66</b>	.03	.20	.39	<b>.73</b>	-.04	.38	<b>.75</b>	.23	.05	.13
Negative Emotions	<b>.81</b>	<b>.70</b>	<b>.43</b>	<b>.45</b>	<b>.70</b>	.21	.10	<b>.50</b>	<b>.67</b>	.13	<b>.47</b>	<b>.67</b>	.12	.22	.03
Anhedonia	<b>.77</b>	<b>.48</b>	<b>.64</b>	.30	<b>.56</b>	<b>.49</b>	.29	<b>.44</b>	<b>.68</b>	.02	<b>.40</b>	<b>.66</b>	.25	.20	.21
Social Isolation	<b>.74</b>	<b>.44</b>	<b>.64</b>	.25	<b>.58</b>	<b>.47</b>	.55	.26	<b>.53</b>	.03	.20	<b>.50</b>	<b>.47</b>	.23	.29
Lack of Positive Emotions	<b>.77</b>	<b>.50</b>	<b>.62</b>	.22	<b>.74</b>	<b>.38</b>	<b>.52</b>	.11	<b>.61</b>	.27	.03	<b>.58</b>	<b>.44</b>	<b>.43</b>	.16
Irritability/Aggression	<b>.76</b>	<b>.50</b>	<b>.60</b>	.33	<b>.54</b>	<b>.47</b>	<b>.44</b>	.20	<b>.71</b>	-.04	.13	<b>.66</b>	.27	.26	<b>.42</b>
Risk Taking	<b>.55</b>	.14	<b>.73</b>	.02	.39	<b>.64</b>	<b>.52</b>	.27	<b>.52</b>	.09	.23	<b>.53</b>	<b>.53</b>	.17	.14
"Super Alert"	<b>.65</b>	.32	<b>.65</b>	.36	.13	<b>.71</b>	<b>.67</b>	.08	.30	-.33	.00	.23	<b>.42</b>	.09	<b>.69</b>
Easily Startled	<b>.64</b>	.30	<b>.67</b>	.34	.12	<b>.73</b>	<b>.74</b>	.31	.08	.00	.26	.05	<b>.66</b>	.21	.33
Difficulty Concentrating	<b>.71</b>	<b>.45</b>	<b>.58</b>	.36	.39	<b>.52</b>	<b>.56</b>	.28	.38	.13	.17	.10	<b>.75</b>	.26	.15
Sleep Difficulty	<b>.60</b>	.31	<b>.59</b>	.25	.03	<b>.55</b>	<b>.59</b>	.21	.26	-.01	.21	.29	<b>.67</b>	-.22	.09

Note: factor loadings  $\geq |.40|$  indicated by boldface font; the lowest echelon of the hierarchy includes factors reflecting avoidance, concentrating difficulties, detachment, flashbacks, hypervigilance, intrusions, irritable risk-taking, jumpiness, memory problems, negativity, and sleep problems; Int = Internalizing, Ext = Externalizing, Neg Aff = Negative Affect, Avoid = Avoidance, Neg Cog = Negative Cognitions & Mood, Reexper = Reexperiencing, Overarous = Overarousal, Psych = Psychoticism, Disin = Disinhibition, Antag = Antagonism.