



Research article

Links between posttrauma appraisals and trauma-related distress in adolescent females from the child welfare system[☆]



Tejaswinhi Srinivas*, Anne P. DePrince, Ann T. Chu

University of Denver, USA

ARTICLE INFO

Article history:

Received 5 February 2015

Received in revised form 6 May 2015

Accepted 16 May 2015

Available online 11 June 2015

Keywords:

Child welfare

Appraisal

Posttraumatic stress

Dissociation

Depression

Interpersonal trauma

ABSTRACT

Research on predictors of trauma-related distress in youth has tended to focus on trauma exposure and individual difference characteristics. This study extends previous research by examining the role of posttrauma appraisals in predicting trauma-related distress in a sample of female adolescents with current or prior involvement in the child welfare system and a history of maltreatment. Participants' posttrauma appraisals accounted for unique variance in trauma-related distress, above and beyond key trauma exposure and individual difference variables. Further, posttrauma appraisals of alienation accounted for unique variance in posttraumatic stress, dissociation, and depression symptom severity, and posttrauma appraisals of shame accounted for unique variance in posttraumatic stress symptom severity. These results suggest that posttrauma appraisals may represent an important predictor of trauma-related distress for youth with current or prior involvement in the child welfare system. They also replicate findings in youth and adult literature on interpersonal trauma, lending further support to the existence of specific pathways between certain appraisals and various forms of trauma-related distress. We discuss the implications of our study for trauma-informed practice within the child welfare system.

© 2015 Elsevier Ltd. All rights reserved.

Introduction

Nationwide epidemiological data from the United States document that youth exposed to interpersonal trauma are at increased risk for adverse mental health outcomes (Kilpatrick et al., 2003). Youth involved in the child welfare system (CWS) demonstrate even higher risk for adverse mental health outcomes than the general population; by definition, they have experienced at least one, and typically multiple, incidents of interpersonal traumatic events that precipitate removal from the home (Ko et al., 2008). For CWS-involved youth, the most frequent types of interpersonal trauma include neglect, family violence, traumatic grief/separation, physical abuse, and emotional abuse; and the most prevalent adverse mental health outcomes include forms of psychological distress such as posttraumatic stress, depression, internalizing, and externalizing symptoms (Dorsey et al., 2012; Greeson et al., 2011; Kisiel, Fehrenbach, Small, & Lyons, 2009; Pecora, Jensen, Romanelli, Jackson, & Ortiz, 2009). We hereafter refer to these and other forms of psychological distress following trauma as *trauma-related distress*, as this term encompasses distress beyond simply posttraumatic stress symptoms.

[☆] This project was supported by a Professional Research Opportunities for Faculty Award from the University of Denver as well as Award No. 2009-MU-MU-0025 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this report are those of the authors and do not necessarily reflect those of the Department of Justice or the National Institute of Justice. Thank you to the Traumatic Stress Studies Group at the University of Denver.

* Corresponding author at: Department of Psychology, University of Denver, 2155 S. Race Street, Denver, CO 80208, USA.

Research on predictors of trauma-related distress among CWS-involved youth has tended to focus on predictors that relate to characteristics of trauma exposure or individual difference characteristics. For example, findings have shown that the following trauma exposure factors are associated with greater trauma-related distress in CWS-involved youth: exposure to multiple (versus single) occurrences of trauma; exposure to multiple types (versus single type) of trauma, also referred to as complex trauma exposure or poly-victimization; chronic (versus acute or short-term) trauma exposure; or trauma perpetrated by a caregiver or close other (versus a stranger) (Greeson et al., 2011; Kisiel et al., 2009). Abuse by a caregiver or close other—also known as childhood betrayal trauma—has been linked with more severe dissociative symptoms in youth as well (Chu & DePrince, 2006). Additionally, several individual difference characteristics have been found to be associated with greater trauma-related distress in CWS-involved youth, including female sex, adolescent (versus child) age group, and ethnic minority status (Greeson et al., 2011). Critically missing from the literature on predictors of trauma-related distress in CWS-involved youth is consideration of the role of *posttrauma appraisals*.

Prior Research on Posttrauma Appraisals and Trauma-Related Distress

Posttrauma appraisals refer to cognitive, affective, and emotional states that arise from and are consciously identified and differentiated by the individual in the course of processing and making sense or meaning of the traumatic event and its sequelae (Ehlers & Clark, 2000; Ellsworth & Scherer, 2003; Frijda, 1986; Scherer, 1987). For example, a CWS-involved female adolescent with prior exposure to sexual abuse by her father may reflect on her experience and endorse appraisals of shame or guilt. Researchers have increasingly indicated the importance of exploring posttrauma appraisals alongside more traditional predictors of trauma-related distress such as trauma exposure and individual difference characteristics (DePrince, Chu, & Pineda, 2011; Ehlers & Clark, 2000; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999).

While virtually no research specifically explores links between posttrauma appraisals and trauma-related distress in CWS-involved youth, a burgeoning body of literature in adult interpersonal trauma, and a more limited but emerging body of literature in youth interpersonal trauma, has begun to document evidence of these links. The literature on adults exposed to different forms of interpersonal trauma has shown links between shame appraisals and posttraumatic stress symptoms (Andrews, Brewin, Rose, & Kirk, 2000; Beck et al., 2011; La Bash & Papa, 2013; Wilson et al., 2011); self-blame appraisals and depression symptoms (Flicker, Cerulli, Swogger, & Talbot, 2012; Hassija & Gray, 2012; Hazzard, 1993; Kaysen, Scher, Mastnak, & Resick, 2005); betrayal appraisals and dissociation symptoms (DePrince et al., 2011; Smith & Freyd, 2013); and alienation appraisals and posttraumatic stress symptoms (DePrince et al., 2011). Among youth exposed to interpersonal trauma, research has shown links between self-blame appraisals and posttraumatic stress, dissociation, and depression symptoms (Daigneault, Tourigny, & Hebert, 2006; Feiring, Taska, & Lewis, 1998); self-blame appraisals and internalizing symptoms (Kerig, 1998); guilt appraisals and posttraumatic stress symptoms (Kletter, Weems, & Carrion, 2009); and shame appraisals and depression symptoms (Feiring et al., 1998). Literature in both adult and youth interpersonal trauma thus suggests the potential relevance of a wide range of appraisals including betrayal, self-blame, alienation, and shame, associated with different forms of trauma-related distress including posttraumatic stress, dissociation, and depression symptoms.

Exploring Posttrauma Appraisals

Posttrauma appraisals represent a potentially important, but thus far neglected, predictor of trauma-related distress in CWS-involved youth. Exploring the role of posttrauma appraisals among CWS-involved youth may help identify new avenues for understanding risk and intervention in this group at elevated risk for negative mental health outcomes. As compared with the youth population at large, or even with specific youth victim populations, CWS-involved youth represent a special and more vulnerable subpopulation, typically having experienced a wider range of trauma types as well as added stressors of removal from the home and possibility of multiple placements/displacements in terms of residence, school, and peer group (Ko et al., 2008). The potentially unique experience of CWS involvement suggests additional and particular importance to exploring the role of posttrauma appraisals for this youth population. Furthermore, greater understanding of the role of posttrauma appraisals could improve the quality of trauma-informed care for CWS-involved youth, directing attention to targeting and addressing relevant appraisals in evidence-based mental health treatment.

Current Study

The current study had two main goals: (a) to expand research on predictors of trauma-related distress in CWS-involved youth beyond the traditional focus on trauma exposure and individual difference characteristics to consideration of posttrauma appraisals; and (b) to explore the nature of appraisal-distress links in a youth population. To meet these goals, the study considered links between posttrauma appraisals and trauma-related distress in a sample of female adolescents with current or prior involvement in the CWS and a history of abuse or neglect. Based on the reviewed literature and study constraints, we considered a wide range of six different *posttrauma appraisals*, including betrayal, self-blame, fear, alienation, anger, and shame; and three different forms of *trauma-related distress*, including posttraumatic stress, dissociation, and depression symptom severity. In line with the first goal, we tested whether adolescents' posttrauma appraisals following a traumatic event accounted for variance in trauma-related distress, above and beyond key trauma exposure and individual difference characteristics. In line with the second goal, we examined which posttrauma appraisals were associated with

Table 1
Demographic characteristics.

	N (%)
Race/ethnicity	
White or Caucasian	41 (31.8%)
Hispanic or Latina	49 (38.0%)
Black or African-American	36 (27.9%)
Asian or Asian-American	3 (2.3%)
American Indian or Alaskan Native	10 (7.8%)
Other	38 (29.5%)
Sexual orientation	
Heterosexual or straight	96 (74.4%)
Lesbian or gay	5 (3.9%)
Bisexual or pansexual	25 (19.4%)
Asexual	1 (0.8%)
Not sure	2 (1.6%)
Current place of residence	
Biological/natural family	37 (28.7%)
Foster home	22 (17.1%)
Group home	14 (10.9%)
Residential treatment facility	13 (10.1%)
Independent living program	18 (14.0%)
Relatives' home	10 (7.8%)
Alone	8 (6.2%)
Adoptive family's home	7 (5.4%)
Types of schools/educational programs attending/attended in past	
Public school	121 (93.8%)
Alternative school	61 (47.3%)
School at residential treatment center	43 (33.3%)
School at day treatment center	35 (27.1%)
Online school	34 (26.4%)
GED courses	23 (17.8%)
College	12 (9.3%)
Home school	10 (7.8%)
Private school	9 (7.0%)
Vocational training	4 (3.1%)
Job corps	3 (2.3%)
Other school settings	2 (1.6%)
Already have high school diploma or GED	16 (12.4%)
Not attending school	6 (4.7%)

Total percentage for certain demographic categories (i.e., race/ethnicity, types of schools/educational programs attending/attended in past) exceeds 100, because participants could select multiple responses within these categories as relevant.

different forms of trauma-related distress. Due to the exploratory nature of our study, we considered links between all measured posttrauma appraisals and all measured forms of trauma-related distress.

Method

Participants

Adolescent females with current or past CWS involvement were referred by their case workers, service providers, or legal guardians, based on known history of maltreatment, to participate in a larger study testing the efficacy of two different intervention programs designed to decrease revictimization in teen dating relationships (please see DePrince, Chu, Labus, Shirk, & Potter, 2015). The current sample represents a subsample of the larger study and includes adolescents who completed assessments at the third (T3) of four timepoints, the only timepoint during which adolescents completed a measure of posttrauma appraisals. All predictor and outcome variables reported here were measured at T3, with the exception of complex trauma, childhood betrayal, and ethnic minority status. Female adolescents in the current T3 sample reported ages ranging from 13 to 20, with a mean age of 16.5 ($SD = 1.6$). Table 1 presents additional demographic information for this T3 sample.

Measures

Posttrauma Appraisals. Posttrauma appraisals were assessed with the Trauma Appraisal Questionnaire (TAQ; DePrince, Zurbriggen, Chu, & Smart, 2010), a 54-item self-report measure of six posttrauma appraisals: betrayal, self-blame, fear, alienation, anger, and shame. The TAQ has demonstrated excellent reliability and validity. Response options were on a Likert scale ranging from "1 = strongly disagree" to "5 = strongly agree." The TAQ was administered immediately following administration of the Traumatic Events Screening Inventory for Children (TESI-C; Ford et al., 2002), which assesses exposure to five

major kinds of interpersonal trauma (described below). Interviewers began administration of the TAQ with the following instructions to participants: “Thinking about the types of events we’ve just been talking about, please think of the most stressful event you’ve experienced or the event that has had the most impact on your life. We are interested in how you feel now when you think about the event. For each of the following items, please tell me how much you agree or disagree with the description of your thoughts, feelings, or experiences now when you think about the event.” Interviewers then queried for a brief description of the event, and they were trained to ensure that the event participants described reflected an interpersonal trauma. We defined *trauma* based on existing assessment tools for measuring traumatic events in youth populations. For example, the Child and Adolescent Needs and Strengths assessment (CANS; Lyons, Gawron, & Kisiel, 2005) and the Trauma History Profile (THP) section of the UCLA PTSD Reaction Index (Pynoos & Steinberg, 2006) are both clinician report tools that measure a range of traumatic events in youth, including neglect, family violence, traumatic grief/separation, physical abuse, emotional abuse, and sexual abuse.

Following description of the trauma, participants responded to TAQ items. Responses to the items of each appraisal scale were summed and divided by the total number of item responses for that scale to produce overall betrayal, self-blame, fear, alienation, anger, and shame appraisal mean scores for each participant, with higher scores indicating stronger appraisals. Coefficient alphas for each of the scales ranged from .83 to .90.

Trauma Exposure Characteristics. We assessed three main trauma exposure characteristics: TAQ trauma event type, complex trauma, and childhood betrayal. TAQ trauma event type refers to the target interpersonal trauma event participants reported before answering TAQ items—the trauma event to which responses about posttrauma appraisals were tied. We assessed for trauma event type in order to control for any effect of trauma type on trauma-related distress. Due to smaller sample size and brevity in participants’ description of the target interpersonal trauma, we could not code participants’ responses into typical trauma event type categories found in assessment tools such as the CANS and the THP. Instead, we coded participants’ responses for trauma event into one of two categories: “1” for victimization of some kind, whether directly or through witnessing violence, and including emotional, physical, and sexual abuse, and family violence; and “–1” for traumatic loss or neglect, including death, illness of, or separation from a loved one. These categories were chosen to differentiate between types of trauma with two possibly distinct qualities at their core—victimization versus loss.

Complex trauma refers to exposure to multiple types of trauma, and it has been associated with greater trauma-related distress in CWS-involved youth (Greeson et al., 2011; Kisiel et al., 2009). To control for its effect on trauma-related distress, we measured complex trauma with items from the TESI-C corresponding to five different types of trauma: physical abuse, emotional abuse, sexual abuse, witnessing family violence, and neglect (Ford et al., 2002). Total complex trauma score was calculated on the basis of participants’ responses on the TESI-C at T1, T2, and T3 to account for any ongoing trauma experiences. Endorsement of each trauma type at any of the three timepoints resulted in a score of “1” for presence (versus “0” for absence); scores for each trauma type were then summed to produce a total complex trauma score, with a maximum possible score of “5” corresponding to each measured trauma type.

Childhood betrayal refers to trauma perpetrated by a caregiver or close other, and it has been associated with greater trauma-related distress in CWS-involved youth (Greeson et al., 2011; Kisiel et al., 2009). To control for its effect on trauma-related distress, we measured childhood betrayal by collecting data on the perpetrator(s) of each interpersonal trauma measured in the TESI-C. We added the following prompt for each affirmative response on the five TESI-C trauma items: “Who did this to you?” Using a childhood betrayal coding approach similar to that in DePrince and colleagues (2011), we classified each response by participant’s level of closeness to the perpetrator into one of two levels of childhood betrayal. High betrayal was defined as abuse perpetrated by someone very close to the participant, such as a caregiver, immediate family member, or dating partner. Low betrayal was defined as abuse perpetrated by an extended family member, other individual somewhat close to the participant, or acquaintance/stranger, or no reported exposure to interpersonal trauma. If the participant indicated that she had been abused by more than one person, the perpetrator with whom the victim had the closest relationship was used for classification. If the level of betrayal varied across different types of abuse (e.g., high betrayal physical abuse but low betrayal sexual abuse), the highest level of betrayal across all eight items was used for classification. Classification into childhood betrayal level was based on responses to the TESI-C at T1, T2, and T3 to account for any ongoing betrayal. Each participant received a single score for childhood betrayal level: “1” for high betrayal, or “–1” for low betrayal.

Individual Difference Characteristics. We assessed two main individual difference characteristics through responses to demographic questions about age and ethnic minority status. Given the amount of developmental change that occurs throughout adolescence, we controlled for participants’ age at T3, the timepoint at which posttrauma appraisals were assessed. Additionally, we controlled for ethnic minority status given demonstrated links with greater trauma-related distress in CWS-involved youth (Greeson et al., 2011). Following Greeson and colleagues’ (2011) method of measuring race according to a binary, White/non-White categorization scheme in much larger samples (800–2,300 participants depending on the analysis), we measured ethnic minority status with a binary, “1” for “yes” and “2” for “no” coding scheme.

Trauma-Related Distress. We assessed three forms of trauma-related distress: posttraumatic stress, dissociation, and depression symptom severity. Posttraumatic stress symptom severity was assessed with the Posttraumatic Stress Subscale of the Trauma Symptom Checklist for Children (TSCC; Briere, 1996), a ten-item subscale that measures posttraumatic stress

symptoms associated with youth traumatic experiences. The TSCC is a widely used self-report measure of symptomatology with demonstrated validity and reliability. Participants rated each symptom item on a scale from “0” to “3,” according to its current frequency of occurrence. Coefficient alpha was .88. Dissociation symptom severity was assessed with the Dissociation Subscale of the TSCC (Briere, 1996), a ten-item subscale that measures dissociation symptoms associated with youth traumatic experiences. Participants rated each symptom item on a scale from “0” to “3,” according to its current frequency of occurrence. Coefficient alpha was .87. Depression symptom severity was assessed with the Beck Depression Inventory-2 (BDI-II; Beck, Steer, & Carbin, 1988), a 21-item self-report questionnaire that measures current symptoms of depression. The BDI-II is among the most widely used self-report measures of depression with demonstrated validity and reliability. Participants rated items regarding the presence and intensity of depression symptoms and cognitions on a scale from “0” to “3.” Coefficient alpha was .86.

Responses to all the items in the Posttraumatic Stress and Dissociation Subscales of the TSCC and the BDI-II were summed to obtain total posttraumatic stress, dissociation, and depression symptom scores for each participant. Higher scores on each of the measures indicated greater symptom severity. Posttraumatic stress, dissociation, and depression symptom severity were all assessed at T3, to explore links with responses regarding posttrauma appraisals that were also assessed at T3.

Procedure

All procedures were approved by a university institutional review board. Following referral, adolescent females received a letter about the Healthy Adolescent Relationships Project via their caseworker, foster parents, or service providers. If an adolescent indicated interest in participating in the project, the research team facilitated acquisition of parental or DHS consent (depending on custodial status) for adolescents under age 18. At the first interview (T1), graduate-level interviewers informed adolescents about the scope of the study, including that they would be asked about exposure to interpersonal trauma, as well as their rights as participants, in both written and verbal formats. The interviewer administered an “assent/consent quiz” designed to assess understanding of the assent/consent information (e.g., questions to assess understanding of confidentiality, voluntary nature of the research). Adolescents were considered assented/consented into the study if they answered the quiz questions correctly and provided written assent/consent (depending on their age). Notably, every participant in this sample passed the assent/consent quiz.

Following assent/consent procedures, participants completed a baseline three-hour T1 assessment. As part of the larger study, participants were randomized to receive one of two intervention programs designed to decrease revictimization in teen dating relationships. Following the 12-week intervention, adolescents were invited back for three additional two-hour assessments: T2, immediately post-intervention/control; T3, two months post-intervention/control; and T4, six months post-intervention/control. (Please see the Results section for an explanation of how we addressed the potential contribution of the intervention on outcome variables.) Pre-, post-, two-month, and six-month assessments were all administered one-on-one by graduate-level research staff who were blind to randomization condition. At the end of each interview, participants were compensated \$40 for their time and \$10 to help cover transportation costs.

Results

Data Analysis Overview

Descriptive statistics were used to explore frequencies of key categorical control variables including TAQ trauma event type, complex trauma, childhood betrayal, and ethnic minority status. Hierarchical multiple regression analyses were used to assess links between posttrauma appraisals and trauma-related distress. On the first step, we entered trauma exposure and individual difference characteristics including TAQ trauma event type, complex trauma, childhood betrayal, participant age, and participant ethnic minority status. To assess whether adding appraisals to the model significantly increased the variance in outcomes explained, we entered the six posttrauma appraisal variables (betrayal, self-blame, fear, alienation, anger, and shame) in Step 2 and examined change in R^2 . Outcome variables included severity of posttraumatic stress, dissociation, and depression symptoms.

Table 2 presents descriptive statistics including mean, standard deviation, and range for all continuous variables in the analyses. Skew and kurtosis were satisfactory for all variables. Table 3 presents bivariate correlations for the predictor variables in the analyses.

We considered two remaining issues before running the main analyses: (a) missing data; and (b) the impact of interventions tested in the larger study. In terms of the former, missing responses for the TAQ trauma event type and complex trauma variables were responsible for missing data. Independent sample *t*-tests and Pearson's chi-square tests showed significant differences in complex trauma, childhood betrayal, and posttraumatic stress symptom severity between those missing versus not missing data on TAQ trauma event type, and no significant differences in any of the predictor or outcome variables for those missing versus not missing data for complex trauma. No other significant differences were detected for any other predictor or outcome variables. Examination of means for variables with significant differences revealed higher means for complex trauma, childhood betrayal, and posttraumatic stress symptom severity for those *not missing* versus missing data, suggesting that participants missing data on the TAQ trauma event type variable did not in fact have higher levels of exposure or symptom impairment than the sample as a whole. We thus proceeded with multiple regression analyses

Table 2
Mean, SD, and range for continuous variables.

	Mean	SD	Range
Age	16.53	1.58	13.00–20.00
Betrayal (mean score)	2.79	1.16	1.00–5.00
Self-blame (mean score)	1.76	.84	1.00–4.55
Fear (mean score)	1.85	.68	1.00–4.10
Alienation (mean score)	2.39	.94	1.00–4.64
Anger (mean score)	2.06	.92	1.00–4.33
Shame (mean score)	1.91	1.00	1.00–4.57
Posttraumatic stress symptoms (total score)	9.20	6.46	0.00–27.00
Dissociation symptoms (total score)	7.87	5.80	0.00–23.00
Depression symptoms (total score)	11.42	7.99	0.00–35.00

Table 3
Bivariate correlations among independent variables in multiple regression analyses.

	Complex trauma	Childhood betrayal	Age	Ethnic minority status	Betrayal	Self-blame	Fear	Alienation	Anger	Shame
TAQ trauma event type	.21	.23 [†]	.12	−.09	.17	−.16	.03	−.05	.08	.16
Complex trauma		.62 ^{**}	.07	−.13	.39 ^{**}	−.04	.36 ^{**}	.24 [*]	.36 ^{**}	.33 ^{**}
Childhood betrayal			.06	−.15	.12	−.16	.19	.05	.16	.12
Age				.04	.15	−.03	.02	.01	−.03	.06
Ethnic minority status					.12	−.03	−.08	.01	−.07	−.06
Betrayal						.36 ^{**}	.44 ^{**}	.54 ^{**}	.43 ^{**}	.40 ^{**}
Self-blame							.47 ^{**}	.57 ^{**}	.34 ^{**}	.61 ^{**}
Fear								.66 ^{**}	.71 ^{**}	.69 ^{**}
Alienation									.64 ^{**}	.61 ^{**}
Anger										.57 ^{**}

[†] $p < .10$.

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$.

with listwise deletion. In terms of the latter issue of intervention impact, we used a series of ANOVAs to compare subsample participants by intervention groups on predictor and outcome variables. Because no significant differences were detected, we did not control for treatment group when running the hierarchical multiple regression analyses in order to maximize power.

Descriptive Statistics and Multiple Regression Analyses

In terms of the TAQ trauma event type to which responses regarding posttrauma appraisals were tied, approximately 38.4% of the responding sample reported an event involving victimization, whether experienced directly or through witnessing; and 66.1% reported an event involving loss or neglect, including death, illness of, or separation from a loved one. In terms of complex trauma, approximately 23.7% of the responding sample reported experiencing two types of interpersonal trauma, 19.3% three types, 13.2% four types, and 12.3% five types. In terms of childhood betrayal, approximately 79.1% of the responding sample reported experiencing high betrayal, and 20.9% low betrayal. Approximately 68.2% identified as non-White, and 31.8% identified as White.

Table 4 presents the results of hierarchical multiple regression analyses testing links between specific posttrauma appraisals and different forms of trauma-related distress while controlling for TAQ trauma event type, complex trauma, childhood betrayal, participant age, and participant ethnic minority status. The table details regression coefficients and estimated R^2 for each model tested.

In the model predicting posttraumatic stress symptom severity, the full model was significant, $F(11, 75) = 6.34, p < .001, R^2 = .52$, as was the change in $R^2, F(6, 75) = 10.35, p < .001$. Alienation and shame appraisals accounted for unique variance; greater alienation and shame appraisals were associated with higher posttraumatic stress symptom severity. In the model predicting dissociation symptom severity, the full model was significant, $F(11, 75) = 4.24, p < .001, R^2 = .42$, as was the change in $R^2, F(6, 75) = 6.64, p < .001$. Alienation appraisals accounted for unique variance; greater alienation appraisals were associated with higher dissociation symptom severity. In the model predicting depression symptom severity, the full model was significant, $F(11, 76) = 3.56, p < .001, R^2 = .38$, as was the change in $R^2, F(6, 76) = 5.31, p < .001$. Alienation appraisals accounted for unique variance; greater alienation appraisals were associated with higher depression symptom severity. None of the other predictor variables accounted for unique variance in any of the models.

Table 4
Regression models predicting trauma-related distress symptom severity.

Model tested	Step	Adjusted R ²	Variable	B	SE B	β	t
Posttraumatic stress symptoms	Step 1	-.03	TAQ trauma event type	-.78	.84	-.11	-.93
			Complex trauma	.97	.67	.21	1.45
			Childhood betrayal	.03	1.46	.00	.02
			Age	.34	.54	.07	.63
	Step 2	.44**	TAQ trauma event type	-1.32	.68	-.19	-1.94 [^]
			Complex trauma	-.14	.55	-.03	-.26
			Childhood betrayal	.05	1.10	.01	.05
			Age	.03	.42	.01	.07
			Ethnic minority status	-.32	.65	-.04	-.49
			Betrayal	.53	.72	.09	.73
			Self-blame	-1.50	1.12	-.17	-1.33
			Fear	1.69	1.40	.18	1.21
			Alienation	2.83	.93	.42	3.03**
			Anger	-.78	1.00	-.10	-.78
			Shame	3.11	1.04	.45	2.99**
			Dissociation symptoms	Step 1	-.01	TAQ trauma event type	-.72
Complex trauma	.68	.58				.17	1.17
Childhood betrayal	.50	1.27				.06	.39
Age	.06	.47				.02	.14
Step 2	.32**	Ethnic minority status		-.74	.74	-.12	-.99
		TAQ trauma event type		-.68	.65	-.11	-1.05
		Complex trauma		.02	.52	.01	.04
		Childhood betrayal		.70	1.05	.08	.67
		Age		-.07	.40	-.02	-.16
		Ethnic minority status		-.47	.63	-.07	-.75
		Betrayal		-.39	.69	-.07	-.57
		Self-blame		.18	1.07	.02	.17
		Fear		1.33	1.44	.15	.92
		Alienation		2.46	.97	.38	2.53 [^]
		Anger		.25	.96	.04	.26
		Shame		1.02	.99	.17	1.03
Depression symptoms	Step 1	.01	TAQ trauma event type	.64	.92	.08	.70 [^]
			Complex trauma	1.29	.73	.25	1.75
			Childhood betrayal	-1.13	1.60	-.10	-.71
			Age	-.35	.59	-.07	-.60
	Step 2	.27**	Ethnic minority status	1.17	.94	.14	1.24
			TAQ trauma event type	.55	.86	.07	.64
			Complex trauma	.57	.69	.11	.82
			Childhood betrayal	-1.07	1.38	-.09	-.77
			Age	-.66	.52	-.13	-1.26
			Ethnic minority status	1.34	.83	.16	1.62
			Betrayal	.33	.91	.05	.36
			Self-blame	1.11	1.42	.11	.78
			Fear	-2.46	1.90	-.22	-1.30
			Alienation	2.72	1.28	.33	2.12 [^]
			Anger	1.09	1.26	.13	.87
			Shame	2.00	1.31	.26	1.52

[^] $p < .10$.

^{*} $p < .05$.

^{**} $p < .01$.

^{***} $p < .001$.

Discussion

We examined links between six specific posttrauma appraisals and three forms of trauma-related distress in a sample of female adolescents with current or prior involvement in the CWS and a known history of maltreatment. Descriptive analyses showed that participants had experienced a high rate of complex trauma, with a vast majority (86.8%) reporting two or more types of trauma. This is similar to the rate of complex trauma reported in [Dorsey and colleagues' \(2012\)](#) study of youth in treatment foster care (86.5%), and higher than [Greeson and colleagues' \(2011\)](#) study of treatment-referred youth in the CWS (70.4%) and [Kisiel and colleagues' \(2009\)](#) study of youth in the Illinois CWS (34.6%). Regression analyses showed that posttrauma appraisals accounted for unique variance in all forms of trauma-related distress, above and beyond the effect of key trauma and participant characteristics such as TAQ trauma event type, complex trauma, childhood betrayal, age, and ethnic minority status. Furthermore, analyses revealed specific links between alienation appraisals and posttraumatic stress, dissociation, and depression symptom severity; and shame appraisals and posttraumatic stress symptom severity.

These results suggest that posttrauma appraisals may represent an important predictor of trauma-related distress in CWS-involved youth, contributing variance apart from predictors of traditional focus such as trauma exposure and individual difference characteristics. Notably, trauma exposure and individual difference characteristics were not found to contribute significant variance to indicators of trauma-related distress in this sample. However, bivariate correlations did reveal significant associations between complex trauma and posttraumatic stress and dissociation symptom severity, and between childhood betrayal and posttraumatic stress symptom severity. Our small sample size may have lowered power considerably, making it difficult to detect links between traditional predictor variables and distress. Trauma exposure and individual difference characteristics may also contribute shared and overlapping portions of variance that emerge separately in larger samples with higher power, as is true of the studies with CWS-involved youth reviewed above.

Our results also replicate appraisal-distress links in youth and adult literature on interpersonal trauma, as between alienation appraisals and posttraumatic stress, dissociation, and depression symptoms (DePrince et al., 2011; Ehlers, Maercker, & Boos, 2000); and shame appraisals and posttraumatic stress symptoms (Andrews et al., 2000; Beck et al., 2011; DePrince et al., 2011; La Bash & Papa, 2013; Wilson et al., 2011). They thus corroborate existing findings and provide additional support for similarities in appraisal-distress links for youth and adult survivors of interpersonal trauma.

Additionally, the results shed some light on the nature of similarities in appraisal-distress links. Alienation appraisals emerged as a significant predictor of all three forms of trauma-related distress, consistent with research in adults (DePrince et al., 2011). The alienation subscale of the TAQ tapped disconnection from the self and others with the following items: (a) I feel lonely; (b) There is a huge void inside me; (c) Even though I have friends, I am still lonely; (d) I mostly stay to myself; (e) I am disconnected from people; (f) I've cut myself off from other people; (g) I can't get close to people; (h) I've lost a piece of myself; (i) My friends don't understand my reactions; and (j) I don't want to have to trust anyone. Disconnection from the self may be related to memory problems in posttraumatic stress symptoms, and depersonalization in dissociation symptoms. Disconnection from others may be related to avoidance in posttraumatic stress symptoms, derealization in dissociation symptoms, and isolation typical of depression symptoms. Furthermore, unlike the youth population at large and other youth victim populations, CWS-involved youth suffer from added stressors of displacement from home, school, and peer groups that may promote feelings of alienation. This may even occur as part of an adaptive response whereby keeping distance from self and others protects against subjectively felt pain in case those relationships are further disrupted. Because our data do not allow for causal claims, an alternative explanation is that particular and overlapping elements of distress involved in posttraumatic stress, dissociation, and depression symptoms may contribute to a sense of separation from oneself or others.

Posttrauma appraisals of shame also emerged as a significant predictor of posttraumatic stress symptoms. Shame seems to involve social emotion, as feeling shame appears to be predicated upon having some mental representation of others' negative opinions or judgments of oneself. Partly due to its social quality, shame has been described as a highly negative and painful phenomenological state that elicits a desire to shrink into oneself and hide or disappear from others (Feiring et al., 1998). For CWS-involved youth, perceived rejection by one's own family may exacerbate feelings of shame and the urge to turn away from others. Significant associations between shame and posttraumatic stress symptoms may then be related to inclinations toward avoidance. Again, an alternative explanation for a reverse causal pathway is that the distress involved in posttraumatic stress symptoms may contribute to a turning inward and away from others.

Implications for Practice

The role of posttrauma appraisals as an understudied but important predictor of trauma-related distress in CWS-involved youth has potentially far-reaching implications for practice. Ko and colleagues (2008) suggest that the cultivation of trauma-informed practice within the CWS will require a more comprehensive understanding of the factors that bring youth to the attention of the CWS as well as the integration of concrete protocol components including the use of relevant assessment tools, training in and use of evidence-based treatments, and increased collaboration across youth-serving systems.

Our findings suggest that a more comprehensive understanding of the impact of interpersonal trauma on CWS-involved youth, and of variability in distress levels across youth, will require greater appreciation for the way individuals process or make meaning of the trauma they have experienced, apart from simply considering the severity or complexity of their experiences, or the risk factors their background or development level may confer. CWS professionals might consider using a brief assessment tool for appraisals that, alongside other assessment tools, could help with understanding youth experiences, gauging youth need for further trauma-focused assessment, and referral to appropriate service providers. Professionals could seek training in and begin to implement evidence-based treatments such as Trauma-Focused Cognitive Behavioral Therapy (TF-CBT). As a treatment that can be used in the foster care setting and with youth who have experienced multiple traumas (Cohen & Mannarino, 2008), TF-CBT also contains key components that involve targeting negative cognitions, and that could be adapted for addressing appraisals such as alienation and shame. Finally, strengthening collaborations and partnerships across CWS, mental health, education, and other youth-serving professionals with the goal of providing wraparound care to youth may help manage and reduce appraisals of alienation that appear to be connected to different forms of distress.

Limitations

Limitations relating to sample characteristics were as follows. Our sample size was somewhat small, resulting in lower power to detect appraisal–distress links. Nevertheless, we documented specific links between alienation appraisals and post-traumatic stress, dissociation, and depression symptom severity; and shame appraisals and posttraumatic stress symptom severity. While our sample age was relatively wide in surveying adolescents aged 13–20, younger children were not included. Children may demonstrate less cognitive and emotional development than adolescents and adults, such that similarities in appraisal–distress links may not in fact hold for younger populations.

Measurement and design limitations were as follows. All study measures were self-report, allowing for both under- and over-reporting errors. However, replication of appraisal–distress links in the broader youth and adult literature lends support to the validity of the findings. Due to lack of great detail in participants' description of the trauma event they rated, our coding of trauma event type remained somewhat rudimentary out of necessity. Despite this more limited ability to control for trauma event type, we were able to find specific appraisal–distress links. Our data did not include other prevalent indicators of distress in CWS-involved youth such as behavioral dysregulation or externalizing symptoms (Greeson et al., 2011), or other potentially important predictors of distress such as number of changes in placement (Newton, Litrownik, & Landsverk, 2000). Finally, cross-sectional collection of data at one timepoint precluded the ability to test the potential mediational role of appraisals in the relationship between exposure to interpersonal trauma and trauma-related distress.

Strengths and Future Directions

Our study expanded research on predictors of trauma-related distress in CWS-involved youth beyond the traditional focus on trauma exposure and individual difference characteristics to consideration of posttrauma appraisals. Additionally, our study explored the nature of appraisal–distress links in youth survivors of interpersonal trauma. We tested links with six specific posttrauma appraisals (i.e., betrayal, self-blame, fear, alienation, anger, shame) and three different forms of trauma-related distress (i.e., posttraumatic stress, dissociation, and depression symptom severity), thereby allowing for exploration of a wide variety of appraisal–distress links. Further, our study tested appraisal–distress links in a sample of adolescents that had experienced a wide range of interpersonal trauma. Results showed specific appraisal–distress links that replicated findings in the youth and adult literature on interpersonal trauma, lending further support to the existence of specific pathways between appraisals and distress, and suggesting some generalizability of findings to other interpersonal trauma-exposed adolescent populations. Future studies would ideally address limitations in our study as well as build upon its strengths. Larger sample size would allow for greater power in testing specific appraisal–distress links. Use of implicit or physiological measures of appraisal may help capture cognitive, affective, or emotional responses that are below the level of conscious awareness or articulation. Testing appraisal–distress links in child survivors of interpersonal trauma will be critical to understanding potential differences in childhood versus adolescence and adulthood. Inclusion of placement history, behavioral dysregulation, and externalizing symptom indicators would allow for testing appraisal–distress links with additional, relevant predictors and forms of distress. Longitudinal design and inclusion of relevant measures at multiple timepoints would allow for testing the potential mediational role of appraisals in the relationship between exposure to interpersonal trauma and trauma-related distress. Finally, similarities in appraisal–distress links in adolescent and adult survivors of interpersonal trauma suggest that certain adult treatments for trauma-related distress may be adapted or modified and then tested for efficacy in adolescent populations.

References

- Andrews, B., Brewin, C. R., Rose, S., & Kirk, M. (2000). Predicting PTSD symptoms in victims of violent crime: The role of shame, anger, and childhood abuse. *Journal of Abnormal Psychology, 109*(1), 69–73. <http://dx.doi.org/10.1037/0021-843X.109.1.69>
- Beck, J., McNiff, J., Clapp, J. D., Olsen, S. A., Avery, M. L., & Hagewood, J. (2011). Exploring negative emotion in women experiencing intimate partner violence: Shame, guilt, and PTSD. *Behavior Therapy, 42*(4), 740–750. <http://dx.doi.org/10.1016/j.beth.2011.04.001>
- Beck, A. T., Steer, R. A., & Carbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*(1), 77–100. [http://dx.doi.org/10.1016/0272-7358\(88\)90050-5](http://dx.doi.org/10.1016/0272-7358(88)90050-5)
- Briere, J. (1996). *Trauma symptom checklist for children*. Odessa, FL: Psychological Assessment Resources.
- Chu, A., & DePrince, A. P. (2006). Development of dissociation: Examining the relationship between parenting, maternal trauma and child dissociation. *Journal of Trauma & Dissociation, 7*(4), 75–89.
- Cohen, J. A., & Mannarino, A. P. (2008). Trauma-Focused Cognitive Behavioural Therapy for children and parents. *Child and Adolescent Mental Health, 13*(4), 158–162.
- Daigneault, I., Tourigny, M., & Hébert, M. (2006). Self-attributions of blame in sexually abused adolescents: A mediational model. *Journal of Traumatic Stress, 19*(1), 153–157. <http://dx.doi.org/10.1002/jts.20101>
- DePrince, A. P., Chu, A. T., Labus, J., Shirk, S. R., & Potter, C. (2015). Testing two approaches to revictimization prevention among adolescent girls in the child welfare system. *Journal of Adolescent Health, 56*(2), S33–S39.
- DePrince, A. P., Chu, A. T., & Pineda, A. S. (2011). Links between specific posttrauma appraisals and three forms of trauma-related distress. *Psychological Trauma: Theory, Research, Practice, and Policy, 3*(4), 430–441. <http://dx.doi.org/10.1037/a0021576>
- DePrince, A. P., Zurbriggen, E. L., Chu, A. T., & Smart, L. (2010). Development of the Trauma Appraisal Questionnaire. *Journal of Aggression, Maltreatment & Trauma, 19*(3), 275–299. <http://dx.doi.org/10.1080/10926771003705072>
- Dorsey, S., Burns, B. J., Southerland, D. G., Cox, J. R., Wagner, H. R., & Farmer, E. Z. (2012). Prior trauma exposure for youth in treatment foster care. *Journal of Child and Family Studies, 21*(5), 816–824. <http://dx.doi.org/10.1007/s10826-011-9542-4>
- Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy, 38*(4), 319–345.

- Ehlers, A., Maercker, A., & Boos, A. (2000). Posttraumatic stress disorder following political imprisonment: The role of mental defeat, alienation, and perceived permanent change. *Journal of Abnormal Psychology, 109*(1), 45.
- Ellsworth, P. C., & Scherer, K. R. (2003). Appraisal processes in emotion. In R. J. Davidson, K. R. Scherer, & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (pp. 572–595). New York, NY, USA: Oxford University Press.
- Feiring, C., Taska, L., & Lewis, M. (1998). The role of shame and attributional style in children's and adolescents' adaptation to sexual abuse. *Child Maltreatment, 3*(2), 129–142. <http://dx.doi.org/10.1177/1077559598003002007>
- Flicker, S. M., Cerulli, C., Swogger, M. T., & Talbot, N. L. (2012). Depressive and a posttraumatic symptoms among women seeking protection orders against intimate partners: Relations to coping strategies and perceived responses to abuse disclosure. *Violence Against Women, 18*(4), 420–436. <http://dx.doi.org/10.1177/1077801212448897>
- Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. M. (1999). The Posttraumatic Cognitions Inventory (PTCI): Development and validation. *Psychological Assessment, 11*(3), 303–314. <http://dx.doi.org/10.1037/1040-3590.11.3.303>
- Ford, J., Racusin, R., Rogers, K., Ellis, C., Schiffman, J., Ribbe, D., & Edwards, J. (2002). *Traumatic Events Screening Inventory for Children (TESI-C) Version 8.4*. White River Junction, UT: National Center for PTSD and Dartmouth Child Psychiatry Research Group.
- Frijda, N. H. (1986). *The emotions*. New York, NY: Cambridge University Press.
- Greeson, J. K., Briggs, E. C., Kisiel, C. L., Layne, C. M., Ake, G. S., III, Ko, S. J., Gerrity, E. T., Steinberg, A. M., Howard, M. L., Pynoos, R. S., & Fairbank, J. A. (2011). Complex trauma and mental health in children and adolescents placed in foster care: Findings from the National Child Traumatic Stress Network. *Child Welfare, 90*(6), 91–108.
- Hassija, C. M., & Gray, M. J. (2012). Negative social reactions to assault disclosure as a mediator between self-blame and posttraumatic stress symptoms among survivors of interpersonal assault. *Journal of Interpersonal Violence, 27*(17), 3425–3441. <http://dx.doi.org/10.1177/0886260512445379>
- Hazzard, A. (1993). Trauma-related beliefs as mediators of sexual abuse impact in adult women survivors: A pilot study. *Journal of Child Sexual Abuse: Research, Treatment, & Program Innovations for Victims, Survivors, & Offenders, 2*(3), 55–69. http://dx.doi.org/10.1300/J070v02n03_04
- Kaysen, D., Scher, C. D., Mastnak, J., & Resick, P. (2005). Cognitive mediation of childhood maltreatment and adult depression in recent crime victims. *Behavior Therapy, 36*(3), 235–244.
- Kerig, P. K. (1998). Gender and appraisals as mediators of adjustment in children exposed to interparental violence. *Journal of Family Violence, 13*(4), 345–363. <http://dx.doi.org/10.1023/A:1022871102437>
- Kilpatrick, D. G., Ruggiero, K. J., Acierno, R., Saunders, B. E., Resnick, H. S., & Best, C. L. (2003). Violence and risk of PTSD, major depression, substance abuse/dependence, and comorbidity: Results from the National Survey of Adolescents. *Journal of Consulting and Clinical Psychology, 71*(4), 692.
- Kisiel, C., Fehrenbach, T., Small, L., & Lyons, J. S. (2009). Assessment of complex trauma exposure, responses, and service needs among children and adolescents in child welfare. *Journal of Child & Adolescent Trauma, 2*(3), 143–160.
- Kletter, H., Weems, C. F., & Carrion, V. G. (2009). Guilt and posttraumatic stress symptoms in child victims of interpersonal violence. *Clinical Child Psychology and Psychiatry, 14*(1), 71–83. <http://dx.doi.org/10.1177/1359104508100137>
- Ko, S. J., Ford, J. D., Kassam-Adams, N., Berkowitz, S. J., Wilson, C., Wong, M., Brymer, M. J., & Layne, C. M. (2008). Creating trauma-informed systems: Child welfare, education, first responders, health care, juvenile justice. *Professional Psychology: Research and Practice, 39*(4), 396–404.
- La Bash, H., & Papa, A. (2013). Shame and PTSD symptoms. *Psychological Trauma: Theory, Research, Practice, and Policy, 6*(2), 159–166. <http://dx.doi.org/10.1037/a0032637>
- Lyons, J. S., Gawron, T., & Kisiel, C. (2005). *Child and adolescent needs and strengths: Comprehensive assessment for Illinois department of Children and Family Services manual*. Winnetka: The Buddin-Praed Foundation.
- Newton, R. R., Litrownik, A. J., & Landsverk, J. A. (2000). Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse & Neglect, 24*(10), 1363–1374.
- Pecora, P. J., Jensen, P. S., Romanelli, L. H., Jackson, L. J., & Ortiz, A. (2009). Mental health services for children placed in foster care: An overview of current challenges. *Child Welfare, 88*(1), 5–26.
- Pynoos, R. S., & Steinberg, A. M. (2006). Recovery of children and adolescents after exposure to violence: A developmental ecological framework. In A. F. Lieberman, & R. DeMartino (Eds.), *Interventions for children exposed to violence* (pp. 17–43). New Brunswick, NJ: Johnson & Johnson Pediatric Institute.
- Scherer, K. R. (1987). Toward a dynamic theory of emotion: The component process model of affective states. *Geneva Studies in Emotion and Communication, 1*, 1–98.
- Smith, C. P., & Freyd, J. J. (2013). Dangerous safe havens: Institutional betrayal exacerbates sexual trauma. *Journal of Traumatic Stress, 26*(1), 119–124. <http://dx.doi.org/10.1002/jts.21778>
- Wilson, J., West, J. F., Messing, J., Brown, S., Patchell, B., & Campbell, J. C. (2011). Factors related to posttraumatic stress symptoms in women experiencing police-involved intimate partner violence. *Advances in Nursing Science, 34*(3), E14–E28.