Betrayal Trauma: Associations With Psychological and Physical Symptoms in Young Adults

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Abstract

Betrayal trauma, or trauma perpetrated by someone with whom a victim is close, is strongly associated with a range of negative psychological and physical health outcomes. However, few studies have examined associations between different forms of trauma and emotional and physical symptoms. The present study compared betrayal trauma to other forms of trauma as predictors of young adults' psychological and physical symptoms, and explored potential mediators. A total of 185 university undergraduate students completed the Brief Betrayal Trauma Survey, the Trauma Symptom Checklist, the Toronto Alexithymia Scale, and the Pennebaker Inventory of Limbic Languidness. For each set of symptoms, simultaneous multiple regressions assessed the relative contributions of low versus high betrayal trauma to psychological and physical health reports. Structural equation models examined traumatic stress symptoms and alexithymia as mediators of the relationship between betrayal trauma and physical health symptoms. A total of 151 participants (82%) reported exposure to at least 1 of 11 forms of trauma queried ($M = 2.08$,

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SD = 1.94); 96 participants (51.9%) reported at least 1 betrayal trauma. Traumas characterized by high betrayal predicted alexithymia, anxiety, depression, dissociation, physical health complaints, and the number of days students reported being sick during the past month, whereas other traumas did not. Structural equation modeling revealed that traumatic stress symptoms and alexithymia mediated the association between betrayal trauma and physical health complaints. These results indicate that betrayal trauma is associated with young adults' physical and mental health difficulties to a greater extent than are other forms of trauma. Results may inform assessment, intervention, and prevention efforts.

Keywords

betrayal trauma, traumatic stress, alexithymia, depression, health

Although overall trauma exposure has been linked to psychological and physical health difficulties (e.g., Schnurr & Green, 2004; Springer, Sheridan, Kuo, & Carnes, 2007), both theory and research indicate that some forms of trauma may be more deleterious than others (e.g., Charuvastra & Cloitre, 2008; Copeland, Keeler, Angold, & Costello, 2007; Shalev & Freedman, 2005). The current study draws on betrayal trauma theory to test the impact of exposure to trauma that involves higher levels of betrayal (HB trauma) versus exposure to trauma with lower levels of betrayal (LB trauma) on psychological and physical health symptoms in young adults. Because people exposed to HB trauma often also experience LB trauma (Goldberg & Freyd, 2006), this study assesses the relative impact of trauma type within the same sample of individuals. In addition, this study explores potential psychological mediators of the associations between trauma exposure and health outcomes.

According to betrayal trauma theory (Freyd, 1996; Freyd, DePrince, & Gleaves, 2007), traumas vary in the degree to which they involve betrayal stemming from the victim–perpetrator relationship. For example, child abuse or intimate partner violence perpetrated by someone on whom a victim depends or is close involves a higher degree of betrayal than an assault by a stranger. Traumas that are low in betrayal also include incidents such as motor vehicle accidents and natural disasters. Data consistently reveal strong links between HB trauma exposure and psychological difficulties. For instance, longitudinal studies implicate childhood abuse as a precursor for psychological problems across the life span (e.g., Lansford et al., 2002). Childhood abuse and intimate partner violence are associated with anxiety

(MacMillan et al., 2001; Springer et al., 2007) as well as with depression and dysthymia (e.g., Coker et al., 2002; Kaufman & Charney, 2001).

At least two forms of disruptions in information processing have been linked to childhood abuse: dissociation and alexithymia (e.g., DePrince, Freyd, & Malle, 2007; DePrince, Weinzierl, & Combs, 2008; Leahy, Pretty, & Tenenbaum, 2004; Mazzeo & Espelage, 2002; Plattner et al., 2003). Dissociation involves disruptions in typical emotional, cognitive, and social information processing related to the self, while alexithymia involves difficulties identifying and describing emotional experiences. Whereas dissociation captures the fragmentation of information processing related to the self broadly (e.g., disruptions in memory and cognition), alexithymia refers specifically to limited awareness and ability to describe emotional states. Deficits in emotional awareness are common in invalidating environments such as child abuse, in which caregivers provide insufficient or inappropriate responses to children's needs (Linehan, 1993). However, research on alexithymia remains very limited, particularly compared to other trauma-related outcomes.

The modest available research demonstrates links among trauma, alexithymia, maladaptive coping strategies, and psychological and physical health symptoms (e.g., Deary, Scott, & Wilson, 1997; Gerke, Mazzeo, & Kliewer, 2006; Paivio & McCulloch, 2004; Mazzeo & Espelage, 2002). Alexithymia may be related to an implicit fear of emotions themselves and to a sense that emotions are overwhelming (Lane, Sechrest, Riedel, Shapiro & Kaszniak, 2000; Taylor, Bagby, & Parker, 1997). Alexithymia may also exacerbate negative psychological symptoms because individuals' abilities to identify their emotional experiences and to respond appropriately are impaired.

In addition to psychological sequelae, individuals exposed to HB traumas such as childhood abuse are at increased risk for a range of physical health difficulties (Chartier, Walker & Naimark, 2007; Diaz, Simantov, & Rickert, 2002; Sachs-Ericsson, Blazer, Plant, & Arnow, 2005; Springer et al., 2007). Childhood abuse and intimate partner violence are also associated with perceptions of health problems (e.g., Kendall-Tackett, 2002), health care utilization across medical services (e.g., Bonomi et al., 2008), and disease risk and morbidity (Batten, Aslan, Maciejewski, & Mazure, 2004; Coker et al., 2002; Felitti et al., 1998). However, the studies cited above do not compare these forms of HB trauma to traumas involving less betrayal as predictors of physical health. Furthermore, the pathways through which HB trauma influences physical health remain unclear.

Drawing on theory and empirical research, researchers have suggested that HB traumas may exert an impact on physical health through a number of potential psychological pathways (Kendall-Tackett, 2002; Sachs-Ericsson et al., 2005; Schnurr & Green, 2004); however, few studies have yet to test

directly these proposed pathways. For example, links among HB trauma, anxiety, depression, and compromised immune function (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002; Reiche, Morimoto, & Nunes, 2005; Sheridan, Kuo, & Carnes, 2003) suggest that HB trauma may influence immune function via psychological symptoms. Depression is also associated with other negative health outcomes (Batten et al., 2004; Ford et al., 1998; Kendall-Tackett, 2002). In addition, dissociative or alexithymic tendencies may affect the recognition of and attention to both emotional and physical symptoms (e.g., Deary et al., 1997; Schnurr & Green, 2004).

Alexithymia may influence illness behavior and physical health problems through multiple mechanisms (Lumley, Stettner, & Whemer, 1996). Individuals with difficulties differentiating and regulating emotions experience increased physiological arousal, with consequences for dysregulation of the immune, autonomic, and pituitary-adrenal systems (e.g., Grabe et al., 2010). Because alexithymia is associated with somatization (e.g., Mattila et al., 2008; Tuzer et al., 2011), individuals with higher levels of alexithymia may be more likely to express distress as a physical health problem than as a psychological difficulty. However, the processes through which alexithymia may impair physical health functioning have yet to be fully identified.

The associations between HB trauma and psychological outcomes (such as depression, dissociation, anxiety, and alexithymia) that are in turn related to physical health problems suggest that HB trauma may influence physical health through psychological pathways; however, additional research is needed to clarify these trajectories. Previous studies of psychological mediators between trauma and physical health complaints have produced mixed results and suggest that pathways may vary according to the examined stressors, mediators, and health outcomes. In some research, trauma predicts physical health problems even after controlling for traumatic stress symptoms and depression (Cloitre, Cohen, Edelman, & Han, 2001; Sachs-Ericsson, Kendall-Tackett, & Hernandez, 2007). Other studies indicate that traumatic stress symptoms mediate connections between trauma and health outcomes (e.g., Lang et al., 2006) or observe this pattern in some medical conditions, but not others (Norman et al., 2006). The few studies that examine alexithymia as a mediator of the link between trauma and physical health problems suggest that alexithymia may in fact comprise an important factor (Gerke et al., 2006; Mazzeo & Espelage, 2002; Paivio & McCulloch, 2004).

Current Study

Our primary hypothesis was that HB trauma would be more strongly linked to young adults' mental and physical health problems than would LB trauma. We

also examined traumatic stress symptoms (including anxiety, depression and dissociation) and alexithymia as mediators between HB trauma and health problems. Previous studies that have contrasted the effects of HB trauma with those of other forms of trauma have investigated samples of inpatients (Atlas & Ingram, 1998), abuse survivors (Leahy et al., 2004; Lucenko, Gold, & Cott, 2000), juvenile delinquents (Plattner et al., 2003), or individuals with chronic pain or health problems (Freyd, Klest & Allard, 2005). Others have limited the sample to survivors of sexual trauma (Darves-Bornoz, Berger, Degiovanni, Gaillard, & Lépine, 1999; Ullman, 2007). Thus we know little about the relation between HB trauma and health outcomes in more general, nonreferred populations who may encounter health care providers in diverse outpatient settings. The current study includes variables in addition to posttraumatic stress disorder symptoms, because many victims of HB traumas experience a range of psychological symptoms beyond those included in the current PTSD diagnosis (e.g., Becker-Blease & Freyd, 2005; Herman, 1992).

Method

Participants

Participants were 185 undergraduate students who signed up to participate in an anonymous questionnaire about life experiences for course credit. Participant demographics are presented in Table 1.

Procedure

Participants received course credit when they arrived at the study site. Participants were informed both verbally and through informed consent forms that the survey included personal questions that asked about potentially distressing life events. Both the consent and debriefing forms included counseling resources. Participants completed self-report surveys in a group setting, with ample space between each person to ensure privacy. The university's Institutional Review Board approved all research content and procedures.

Materials

The Brief Betrayal Trauma Survey (BBTS; Goldberg & Freyd, 2006) asks participants whether they have experienced 11 specific categories of traumatic experiences (listed on Table 1) as well any other form of trauma not specifically queried. Items can be separated into traumas that involve relatively high degrees of betrayal (e.g., being made to have sexual contact by someone with whom the respondent was very close) and traumas that involve relatively low degrees of betrayal (e.g., natural disasters or victimization by

Table 1. Descriptive Statistics for Study Variables

Variable	n	%	M (SD)
Age			19.21 (1.74)
Sex			
Female	126	68	
Male	59	32	
Ethnicity			
Asian American	11	6	
Black/African American	4	2	
Hispanic/Latina/Latino/Chicana/Chicano	5	3	
Native American/American Indian	4	2	
White/European American	153	82	
Other	5	3	
Multiethnic	2	1	
Unspecified	1	1	
Trauma reported			
1. Experienced a major natural disaster	37	20	
2. Experienced a major vehicle or industrial accident	45	24	
3. Witnessed someone with whom you were very close being violently injured	32	17	
4. Witnessed someone with whom you were not close being violently injured	64	35	
5. Witnessed someone with whom you were very close deliberately attack another family member	36	20	
6. Deliberately severely attacked by someone with whom you were very close	34	18	
7. Deliberately severely attacked by someone with whom you were not close	19	10	
8. Forced sexual contact by someone with whom you were very close	35	19	
9. Forced sexual contact by someone with whom you were not close	30	16	
10. Emotionally or psychologically mistreated over a significant period of time by someone with whom you were very close	53	29	
11. Experienced the death of one of your own children	0	0	
12. Other seriously traumatic event	81	44	

someone with whom the respondent was not close). High betrayal (HB) trauma exposure was calculated by summing the number of traumas relatively high in betrayal to which the participant reported being exposed at least one time (possible scores range from 0 to 5); Low betrayal (LB) trauma exposure was calculated by summing the number of traumas with relatively low betrayal to which the participant reported exposure (possible scores range from 0 to 7). For this sample, α =.79.

The Trauma Symptom Checklist-40 (TSC-40; Elliott & Briere, 1992) measures a range of traumatic stress symptoms and has established validity. The scale has six subscales: depression, anxiety, dissociation, sexual abuse trauma, sleep disturbance, and sexual problems. Subscales are computed by summing the items that contribute to each subscale, and the total score is computed by summing all items. The present study implemented the anxiety, depression, and dissociation subscale scores as well as total TSC-40 scores in its analyses. For this sample's total TSC-40 scores, α =.92. Alphas for TSC-40 subscales used in the study were .74 for anxiety, .70 for depression, and .41 for dissociation.

The Toronto Alexithymia Scale (TAS-20; Parker, Bagby, Taylor, Endler, & Schmitz, 1993) is a commonly used measure of alexithymia. The measure includes 20 items with response scales that range from 1 (*strongly disagree*) to 5 (*strongly agree*); some items are reverse scored. Examples of items include, "I am often confused about what emotion I am feeling," and "I don't know what's going on inside me." Higher scores indicate greater degrees of alexithymia. For this sample, α =.84.

The Pennebaker Inventory of Limbic Languidness—time bound (PILL-*t*; Pennebaker, 1982), is a 54-item scale that assesses common physical symptoms and sensations over the past month. The PILL Total Score is calculated by summing participants' reports of the frequency of each of these problems using a Likert-type scale ranging from 0 (*almost never*) to 5 (*almost daily*). The PILL also asks participants the number of visits in the past month to doctors or other health care professionals (PILL Health Visits), the number of days respondents were sick in the past month (PILL Days Sick), and the number of days in the past month activity was restricted due to illness (PILL Restriction). For the current sample, α = .92.

Data Analysis

For the majority of measures, data appeared to be missing at random. Zero to 15 points of data were missing for each item on the TAS-20, TSC-40, BBTS, and PILL measures. However, 3 participants responded to fewer than half of the items on the PILL; therefore, those individuals were omitted from

analyses that included the PILL. For the TAS-20, TSC-40, and PILL scales, mean substitutions were used for missing data, with the exception of PILL questions regarding health visits, days sick, and restricted activity, for which pairwise deletions were used. For the BBTS, missing data for individual items were coded as "0" (no exposure). After descriptive and correlational analyses were conducted, simultaneous multiple regressions were used to examine the relative contributions of the LB and HB subscales for each outcome. Analyses were rerun using pairwise deletion for all missing data rather than the procedures described above, and compared to the original results. Correlation and regression analyses utilized SPSS 15.0.

Structural equation modeling was used to explore traumatic stress symptoms and alexithymia as mediators between betrayal trauma and physical health symptoms, and was estimated and analyzed using AMOS 17.0. The model focused on two relatively independent two-stage regressions. The first regression model investigated the prediction that HB trauma predicted TAS scores, which in turn led to PILL scale total scores. The second regression model examined the hypothesis that HB trauma led to traumatic stress, which then led to PILL scale total scores. For this model, traumatic stress reflected TSC total scores, but the construct was evaluated as a latent variable that included observable measures of anxiety, depression, and dissociation TSC subscale scores.

The structural model was estimated and fit was evaluated. If poor fit was found, the model was slightly modified to achieve a better fit. Finally, constraints were placed on the model to ensure that reasonable parameter estimates were produced. The overall model fit was based on the relative chi-square (ratio of the chi-square to the degrees of freedom) rather than the *p* value. Consistent with the literature, a relative chi-square of less than 2.0 was presumed to constitute an adequate model fit (Arbuckle & Wothke, 1999; Byrne, 1989; Wheaton, Muthen, Alwin, & Summers, 1977). Because the initial model did not produce an optimal fit, standardized residuals and modification indices were used to improve model fit. These modifications introduced correlated error into this model, which was probably due to the fact that the study measures used a self-report methodology that introduced method variance into the structural model.

Results

At least one of the 11 specific types of trauma queried was reported by 151 participants (82%); the mean number of traumas reported was 2.08 (*SD* = 1.94). At least 1 HB trauma was reported by 96 participants (51.9%), and at least 1 LB trauma was reported by 121 participants (65.4%). Table 1 provides

descriptive statistics regarding the number and percentage of participants who reported each type of trauma queried. Participants who reported at least 1 HB trauma had a mean of 4.34 days sick in the past month, whereas participants who did not report HB trauma averaged 2.76 days sick, $t(178) = -2.10$, $p < .05$. There were no significant differences in the number of days sick between individuals who reported LB trauma and those who did not, $t(180) = -.73$, $p = .47$.

Table 2 provides descriptive statistics and intercorrelations for study variables and includes the anxiety, depression, and dissociation subscales of the TSC. Male and female were coded as 0 and 1 respectively. TSC total scores and TAS total scores were significantly correlated ($r = 54$, $p < .001$).

Multiple regressions were conducted to analyze the relative contributions of the number of LB and HB traumas to the psychological and physical health measures (TSC-40 subscales of depression, anxiety, and dissociation, TAS scores, PILL total scores, as well as PILL Health Visits, Days Sick, and Restriction). Regressions were conducted separately for each psychological and physical health outcome, and each regression analysis contained both LB traumas and HB traumas as predictors. Table 3 demonstrates that the number of HB traumas to which participants were exposed significantly predicted all psychological outcomes, whereas the number of LB traumas did not. HB trauma also predicted PILL total scores and the number of PILL Days Sick, whereas LB trauma did not. Significant relations remained when pairwise deletion for missing data was implemented in place of the procedures for missing data described above.

Structural equation modeling was used to test the prediction that both TSC and TAS total scores would be independent mediators between HB trauma and PILL scale total scores. The model was modified according to the procedures above. The final model (Figure 1) fits the data quite well. The relative χ^2 for the final model was 1.12 (χ^2 (df = 5, N = 182) = 5.61, $p = .35$), considerably less than the 2.0 that was our criterion for adequate model fit. The root mean squared error of approximation was .03, lower than the ideal level of below .05, which demonstrated excellent fit. The indirect effects of the primary study variables were examined to assess the extent to which traumatic stress and TAS scores mediated the relationships between HB trauma and PILL scores. Significant indirect effects were noted for the impacts of HB trauma on TAS scores ($\beta = .27$, $p < .001$) and traumatic stress ($\beta = .26$, $p < .001$), and for the effects of both TAS and traumatic stress on PILL scores ($\beta = .16$, $p < .05$, and $\beta = .47$, $p < .001$, respectively). These indirect paths demonstrated that both TAS scores and traumatic stress mediated the association between HB trauma and PILL scores.

Table 2. Means, Standard Deviations, and Intercorrelations for Study Variables (N = 185)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Sex	—	—										
2. LB trauma	1.05	1.01	0.15*									
3. HB trauma	1.03	1.32	−0.13	0.38***								
4. TAS total score	45.58	10.74	0.06	0.16*	0.29***							
5. TSC anxiety	4.91	3.71	−0.19**	0.08	0.33***	0.43***						
6. TSC depression	6.45	3.51	−0.07	0.14	0.32***	0.52***	0.77***					
7. TSC dissociation	2.59	1.93	−0.21**	0.20**	0.34***	0.32***	0.68***	0.56***				
8. PILL total score	66.83	23.37	−0.07	0.19**	0.23**	0.38***	0.51***	0.65***	0.40***			
9. PILL health visits	0.61	1.34	0.01	−0.07	0.11	−0.05	0.21**	0.22**	0.19*	0.20**		
10. PILL days sick	3.64	5.13	−0.14	0.04	0.20**	.08	0.30***	0.30***	0.23**	0.22**	0.50***	
11. PILL restriction	2.22	5.33	−0.09	0.09	−0.01	−0.09	0.10	0.19*	0.10	0.17*	0.67***	0.56***

Note: Sex was coded as 0 = *Female* and 1= *Male*. Correlations that used sex were explored using point biserial correlations. For correlations with PILL total scores, $n = 182$; for correlations with PILL health visits, $n = 179$; for PILL days sick and PILL restriction $n = 177$.
*$p < .05$. **$p < .01$. ***$p < .001$.

556

Table 3. Simultaneous Regressions Results of Low Betrayal Traumas and High Betrayal Traumas as Predictors of Psychological and Physical Symptoms ($N = 185$, $df = 2, 182$)

Dependent Measure	Adjusted R^2	F	Predictors	B	SE (B)	β	t	p
TAS-20	.08	8.74***	LB	0.62	0.82	0.06	0.76	0.45
			HB	2.19	0.63	0.27	3.51**	0.001
TSC-40 anxiety	.10	11.70***	LB	−0.20	0.28	−0.06	−0.73	0.46
			HB	1.00	0.21	0.36	4.70***	<0.001
TSC-40 depression	.09	10.53***	LB	0.09	0.27	0.02	0.32	0.75
			HB	0.83	0.20	0.31	4.10***	<0.001
TSC-40 dissociation	.11	12.36***	LB	0.16	0.14	0.09	1.13	0.26
			HB	0.45	0.11	0.30	4.04***	<0.001
PILL total score	.05	6.15**	LB	2.80	1.84	0.12	1.52	0.13
			HB	3.20	1.39	0.18	2.30*	0.02
PILL health visits	.002	1.21	LB	0.05	0.11	0.04	.45	0.65
			HB	0.10	0.08	0.10	1.21	0.23
PILL days sick	.03	3.45*	LB	−0.19	0.42	−0.04	−0.45	0.65
			HB	0.80	0.31	0.21	2.57*	0.009
PILL restriction	−0.001	0.91	LB	0.59	0.44	0.10	1.35	0.18
			HB	−0.20	0.33	−0.05	−0.61	0.54

Note: For the regression analysis predicting PILL total scores, $n = 181$, $df(2, 179)$. For the regression predicting health visits, $n = 178$, $df(2, 176)$. For regressions predicting the number of days sick in the past month and the number of days of restricted activity due to illness, $n = 176$, $df(2, 174)$.
*$p < .05$. **$p < .01$. ***$p < .001$.

Discussion

In this study the number of HB traumas to which young adults were exposed predicted their self-reported levels of alexithymia, anxiety, depression, dissociation, physical health complaints, and the number of days that they reported having been sick in the past month, even after controlling for LB
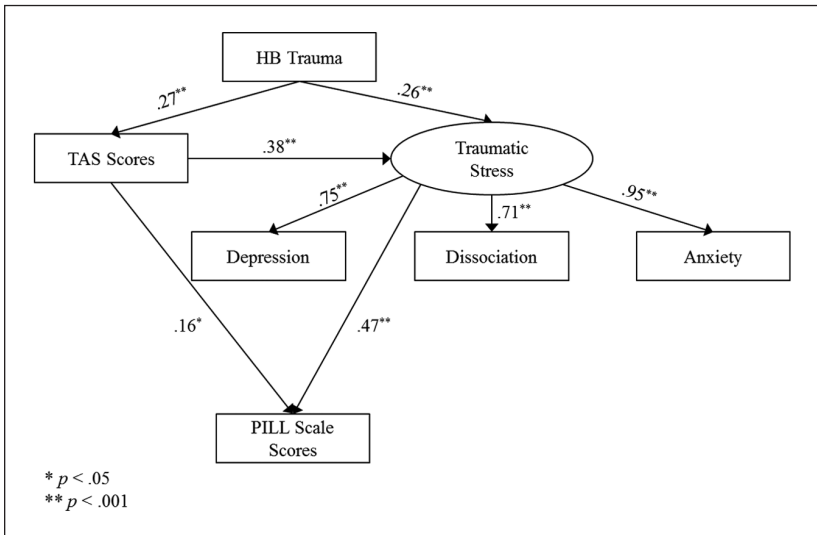
Figure 1. Structural equation model for study variables

trauma. LB trauma was not a significant predictor for any psychological or physical health outcomes after controlling for HB trauma. The finding that HB trauma is more closely associated with psychological and physical symptoms than is LB trauma extends previous research (Atlas & Ingram, 1998; Freyd et al., 2005; Leahy et al., 2004; Lucenko et al., 2000) to a nonclinical sample and highlights the dimension of betrayal as an important aspect of traumatic experiences and reactions.

The present study demonstrated that traumatic stress symptoms such as anxiety, depression, and dissociation influence the relation between HB trauma and physical health problems in young adults. Traumatic stress symptoms mediated the relation between HB trauma and physical health complaints, consistent with Lang et al.'s (2006) findings among female veterans. Alexithymia also mediated the association between HB trauma and physical health complaints, and was positively associated with traumatic stress symptoms. These results are consistent with prior research that indicates alexithymia's mediating role between HB trauma and a wide range of health problems (Grabe et al., 2010; Polusny, Dickinson, Murdoch, & Thuras, 2008; Tolmunen, Lehto, Heliste, Kurl, & Kauhanen, 2010), and extend previous research in this area to a nonclinical sample of young adults. However, additional research is necessary to clarify how HB trauma leads to alexithymia

and traumatic stress symptoms, and to elucidate the ways that these experiences then impact physical health complaints.

Future studies should clarify psychological mediators between HB trauma and health outcomes, and examine additional pathways. For example, biological mechanisms such as the dysregulation of stress systems and long-term neurological alterations related to betrayal trauma (Cicchetti, 2002; De Bellis, 2001; Kaufman & Charney, 2001) may contribute to greater stress reactivity, difficulties in noticing, interpreting, and processing physical and emotional stimuli, and chronic medical conditions (Boscarino, 2004; Kendall-Tackett, 2000; Leserman & Drossman, 2007; Ryan, Kuhl, & Deci, 1997). Behavioral mechanisms such as the use of alcohol, nicotine, and other drugs, obesity and eating disorders, high-risk sexual behavior, sleep difficulties, and poor exercise habits are each linked with HB trauma and with adverse health outcomes (e.g., Kendall-Tackett, 2002; Lisak & Miller, 2003; Mazzeo & Espelage, 2002; Rodgers et al., 2004). Finally, problems with relationships, social support, revictimization, and homelessness are each associated both with HB trauma and with deleterious health consequences (Kendall-Tackett, 2002).

The current findings inform health professionals about the diverse range of symptoms associated with betrayal trauma. Young adults exposed to betrayal trauma may have difficulty noticing, reporting, and understanding their own emotional states, which may impede health assessment. The results also demonstrate the importance of assessing not only trauma exposure generally (Diaz et al., 2002; Halpern-Felsher et al., 2000) but also the type of exposure specifically, including relational aspects of victimization. These data highlight the need for health professionals to ask about the number of traumas to which patients have been exposed. Health professionals should be aware of connections among betrayal trauma, psychological difficulties, and physical health complaints to make appropriate assessments and referrals. The result that alexithymia is associated with HB trauma and with physical health problems suggests that interventions that incorporate emotional awareness and regulation techniques, trauma processing, and attention to physical health status may be helpful for individuals with HB trauma exposure (Linehan, 1993; Polusny et al., 2008).

Limitations of the present study included homogeneity with respect to participants' ages and ethnocultural backgrounds. Relations among trauma experiences, psychological symptoms, and health problems may operate differently across the life span and among different cultural groups (e.g., Kenny & McEachern, 2000), and among young adults who are not college students. A larger sample could provide more specific data regarding different physical health complaints, as data indicate that different pathways may exist

between betrayal trauma and medical outcomes for different diseases (Romans, Belaise, Martin, Morris, & Raffi, 2002). The current study's cross-sectional design raises questions regarding accuracy in retrospective reporting and mood-congruent biases; however, research indicates that adults are generally accurate reporters of factual childhood details and that mood-congruent reporting does not present a substantial obstacle (Brewin, Andrews, & Gotlib, 1993). Some data were missing, an occurrence that constitutes a common problem for investigations that use self-report scales. In addition, the cross-sectional design requires that the study's meditational findings be interpreted cautiously in terms of causal implications. The present results, however, do suggest that longitudinal research should be conducted to test the causal role that psychological difficulties may play in the development of health problems. Finally, the study did not include additional variables related to young adults' prior trauma experiences and current coping, such as the number of episodes of each type of trauma, the age at which the trauma occurred, and additional psychosocial stressors. Such variables may comprise important aspects of future research in this area. Despite these limitations, the present study supports betrayal trauma theory by documenting its strong associations with psychological difficulties and physical health complaints in young adults, even when controlling for other forms of trauma. The study also highlights traumatic stress symptoms and alexithymia as potential mediators between HB trauma exposure and physical health difficulties. Finally, the current data underscore the importance of assessing betrayal trauma and associated psychological symptoms in health care professionals' assessments and interventions.

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Bios

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