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Protection against PTSD: Is Guilt the Key?

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Abstract

Emerging research on posttraumatic stress disorder (PTSD) examines factors that may protect one from developing symptoms of PTSD (PTSS) instead of factors that place one at risk. However, little is known about said protective factors. Research has shown there is a strong association between personality traits and the likelihood of experiencing PTSS (Contractor, Armour, Shea, Mota, & Pietrzak, 2016) Additionally, previous research found that personality traits may predict shame- and guilt- proneness and coping techniques which could also predict the likelihood of developing PTSS (Einstein & Lanning, 1998; Karanci et al., 2012; Stevanović, Frančišković, & Vermetten, 2016). This project aimed to understand how personality, coping, and guilt and shame mattered in terms of predicting PTSS and how each variable uniquely influenced PTSS. We expected to find that coping, guilt, and shame may more significantly predict PTSS when including personality factors, since personality may predispose an individual to shame- or guilt-proneness and lead them to cope in certain ways. We specifically looked at two of the FFM traits (conscientiousness and neuroticism) which were found in previous research to have strong correlations with PTSS. We hypothesized that guilt would act as a protective factor in regard to PTSS severity due to research suggesting that guilt encourages approach coping styles. A self-report survey was collected from young adults, ages 18-25, at the University of Missouri – Kansas City. Data analysis consisted of examining bivariate correlations and running a hierarchical linear regression. Frequency of exposure to distinct trauma types, neuroticism, and guilt were predictive of PTSS. Additionally, these results suggest that neuroticism and self-conscious affect, specifically guilt, are

more salient predictors of PTSD symptoms than other personality traits, coping

techniques, or other self-conscious affects.

Protection against PTSD: Is Guilt the Key?

In our world of ever-growing risk for trauma exposure, the threat of developing Post-Traumatic Stress Disorder (PTSD) is increasing. According to the U.S. Department of Veterans Affairs (2007), approximately 6 out of 10 men and 5 out of 10 women will experience at least one trauma in their life. A trauma is defined as "actual or threatened death, serious injury or sexual violence in one or more of four ways: (a) directly experiencing the event; (b) witnessing, in person, the event occurring to others; (c) learning that such an event happened to a close family member or friend; and (d) experiencing repeated or extreme exposure to aversive details of such events, such as with first responders" (American Psychiatric Association, 2013). Moreover, of the general population, about eight million adults have PTSD during a given year (U.S. Department of Veterans Affairs, 2007). This statistic makes up only a small portion of those who have been exposed to trauma and are suffering from PTSD. It does not consist of those suffering with PTSD who are undiagnosed or who have other mental health or life problems associated with trauma exposure. Recent research has turned toward protective factors for PTSD instead of solely focusing on post-diagnosis treatment options. However, little is known about these types of factors.

Research has shown there is a strong association between personality traits and the likelihood of experiencing symptoms of posttraumatic stress (PTSS) following exposure to trauma (Contractor et al., 2016; Karanci et al., 2012; Stevanović et al., 2016). PTSS includes hyperarousal, negative alterations in cognitions and mood, overly negative thoughts and assumptions about oneself or the world, reckless or destructive behavior, re-experiencing phenomenon, and avoidance of trauma triggers (American Psychiatric

Association, 2013). However, factors that explain this association are largely unknown. In terms of personality, we specifically looked at two of the five traits operationalized in the Five Factor Model (conscientiousness and neuroticism) which were found in previous research to have strong correlations with guilt, shame, and/or PTSS (shame and guilt are considered self-conscious affects). Research has found that personality traits predict the proneness of certain self-conscious affects which may, in part, help explain how personality is predictive of PTSS development and severity (Fayard, Roberts, Robins, & Watson, 2012). Self-conscious affects refer to shame, guilt, detachment, externalization, alpha pride, and beta pride (Tangney & Dearing, 2002). These emotions impact the regulation and motivation of our thoughts, behaviors, feelings, self-esteem, and more (StröMsten, Henningsson, Holm, & Sundbom, 2009). The two self-conscious affects most prominently seen in literature are shame and guilt. While often interchangeably used in our everyday language, the two emotions motivate an individual differently.

Some research suggests that shame- and guilt- proneness may influence coping techniques (Einstein & Lanning, 1998). Other research has shown that while guilt feels unpleasant, it elicits positive motivations (e.g., taking reparative action) and encourages approach coping strategies, whereas shame is believed to elicit negative motivations (e.g., fight or flight) and have several negative "downstream" implications for mental health and predict the use of avoidant coping strategies (Tangney & Dearing, 2004). For example, neuroticism, a trait characterized by moodiness and emotional instability, is associated with shame-proneness and shame-proneness with coping techniques such as denial (Einstein & Lanning, 1998; Hambrick & McCord, 2010). While conscientiousness, a trait characterized by mindfulness, is linked to guilt-proneness and, in turn, more

adaptive, approach styles of coping (Held, Owens, Schumm, Chard, & Hansel, 2011; Watson & Hubbard, 1996). In short, those who score high in neuroticism are more shame-prone while those who score high in conscientiousness are more guilt-prone (Fayard et al., 2012). In general, coping is associated with the overall mental health of an individual and, thus, suggests that the way shame- and guilt- proneness may affect coping techniques will predict the development and severity of PTSS (Cramer et al., 2016). Finally, these findings and data suggest that certain personality traits, due to their influence on other factors, may be protective against PTSS development due to their impact on self-conscious affects and coping techniques.

In an effort to reduce the negative outcomes of trauma exposure, studies have looked at a variety of influencing factors which may help us predict and prevent the development of PTSS. Much like the medical field uses DNA to predict diseases an individual is at risk for, researchers have been applying the theory of personality traits to this idea of a "psychological DNA" which, in this case, could elucidate who is at a higher risk for PTSS. The known association between personality traits and PTSS development is thought to exist because of the influence personality has, alongside coping techniques, on PTSS development (Contractor et al., 2016; Cramer et al., 2016). For example, extraversion is linked to active coping (Connor-Smith & Flachsbart, 2007), conscientiousness is linked to active and engaged coping (Hambrick & McCord, 2010) and neuroticism, passive/disengaged coping (Cramer et al., 2016). Also, research suggests that only certain traits (i.e. neuroticism, conscientiousness, and extraversion) are clearly linked to coping (Connor-Smith & Flachsbart, 2007). The combination of the above research suggests that only certain personality traits are important in the prediction

of PTSS development and severity and that some traits are inherently stronger than others. Moreover, it's suggestive that these stronger personality traits are important in PTSS prediction because of their relationship with certain coping techniques. This, along with the relationship between personality and self-conscious affects, could help better predict PTSS development and severity.

People have looked extensively at how each variable – personality, self-conscious affects, and coping – influence PTSS development, but, ultimately, we were interested in understanding the unique power of each variable in predicting PTSS when controlling for the other factors. Considering this, our broad aim was to understand how conscientiousness, neuroticism, guilt, shame, and active coping jointly mattered in terms of predicting PTSS and how each variable uniquely influenced PTSS. We expected to find evidence to suggest that guilt, shame, and active coping would be associated with, and might be more likely to significantly predict, PTSS when including personality factors since personality may predispose an individual to shame- or guilt- proneness which, then, would influence their coping techniques. Moreover, we thought that personality would no longer remain significant when guilt, shame and active coping were added into the model. For this study, it was important to find which variables mattered most in terms of PTSS severity and development. Additionally, due to research suggesting that guilt encourages one to engage in approach-oriented behaviors which leads the individual to make amends in a situation (Griffin et al., 2016), we suspected this variable would act as a protectant against PTSS development following trauma exposure.

Method

Participants

Undergraduate students from the University of Missouri – Kansas City were recruited through Psych Pool. Psych Pool is a UMKC-based online research participant recruitment system where researchers can post their studies for their students to enroll in. Only students enrolled in courses that provide students with course credit or extra credit for participating in studies listed on Psych Pool can participate. Students could complete this study as one potential way to fulfill research requirements and/or to receive extra credit in their psychology and allied social science courses. The study was available from August 2017 until October 2017. Data from 149 students were collected; however, participants ages 26 and older were excluded to restrict the sample to a young adult sample (n=128). In addition, participants who denied exposure to a potentially traumatic event were also excluded ($n = 106$). Furthermore, listwise deletion was used to manage missing data, and 14.2% of the 106 participants who had scores of 1 or greater on the Trauma History Questionnaire (THQ) did not complete the active coping subscale of the Brief COPE in its entirety or enough of it to derive the active coping score. Due to missingness being greater than 5% for a key predictor variable, multiple imputation was not considered a viable data management option. Final n=91.

The age range was 18-25; the age mean was 19.78 with a standard deviation of 1.82. Approximately 82% of the participants were female and approximately 18% were male. Our sample consisted of 51 individuals who identified as white/Caucasian, 13 Black or African American, 12 Asian, 13 Hispanic or Latino, 1 American Indian or Alaska Native, and 1 biracial.

Measures

The measures used in this study were a subset of a larger battery of measures collected in an effort to learn about predictors of PTSS in young adults with histories of trauma. Each measure used in the current analysis is described below. These measures were ordered to prime the participant to answer the first half of the survey without the participant's past trauma on their mind and to answer the last half while thinking of it. Demographic information like the occupation of the participant's parents/stepparents and the educational history of the family was collected. We also collected information regarding whether the student had received mental health therapy in the past or was receiving it currently.

The M5-50 (McCord, 2002) is a 50-item personality inventory derived from the M5-336 which is a self-report instrument that produces scores on the five primary domains of the Five Factor Model (FFM) (i.e. neuroticism, conscientiousness, extraversion, agreeableness, and openness) and their subdomains. On the M5-50, ten items are dedicated to measuring each trait. The participant read through different scenarios (e.g. "Have a vivid imagination") and reported their response on a Likert-type scale (0= Inaccurate to 4= Accurate). The reliability found with Cronbach's alphas for our study were $\alpha = .75$, $\alpha = .85$, $\alpha = .67$, $\alpha = .84$, $\alpha = .83$ for openness, neuroticism, agreeableness, conscientiousness, and extraversion respectively. In a previously conducted confirmatory factor analysis report of this measure, the Cronbach's alphas were $\alpha = .79$ for openness, $\alpha = .86$ for neuroticism, $\alpha = .76$ for agreeableness, $\alpha = .85$ for conscientiousness, and $\alpha = .86$ for extraversion (Socha, Cooper, & McCord, 2010).

The Test of Self-Conscious Affect version 3 (TOSCA-3) (Tangney, Dearing, Wagner, & Gramzow, 2000) is a scenario based inventory which measures shame, guilt,

detachment, externalization, alpha pride, and beta pride. In another study which used this measure, the Cronbach's alphas were α = .76 for shame and α = .73 for guilt (Gao, Qin, Qian, & Liu, 2013). In this study, the Cronbach's alphas were α = .82 was found for shame and α = .80 was found for guilt. In this measure, the participant is presented with common day-to-day situations (e.g. "You make plans to meet a friend for lunch. At 5 o'clock, you realize you stood your friend up"). The scenario is then followed by responses the participant could have (e.g. "You would think 'I'm inconsiderate'.") and a scale (1-5) where the participant will rate the likelihood of having that response. Each response represents a different self-conscious affect. For example, the response, "You would think 'I'm inconsiderate'", would represent shame.

The Trauma History Questionnaire (THQ) (Hooper, Stockton, Krupnick, & Green, 2011) is a self-report measure that examines events with trauma exposure potential using a yes/no format (α = .59). In a previous study, the Cronbach's alpha was found to be α =.67 (Sullivan, Contractor, Gerber, & Neumann, 2017). Some of these events include but are not limited to disasters, sexual and physical assault, and combat. For each event where the participant answered "yes", they were asked to specify the age the event first occurred and the frequency of the event.

The Post-Traumatic Stress Disorder – Checklist version 5 (PCL-5) is a 20-item self-report measure which assesses the symptom severity of PTSD per the DSM-5 (Weathers et al., 2013). In this study, the PCL-5 was on a 5-point Likert-type scale (0= Not at all to 4= Extremely). We used this measure to specifically assess each participant's PTSD symptom severity in relation to their specified "most traumatic event" which they briefly told us about in an open-ended answer. Good reliability was found within our

study as shown by a Cronbach's alpha of α = .96. The original PCL version has a test-retest reliability of r = .96 and the Cronbach's alpha found in a previous study was α = .91 (Wortmann et al., 2016).

The Brief-COPE is a list of 28 questions that addresses 14 coping styles which are as follows: self-distraction, active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame (Carver, 1997). This measure was given to assess the coping styles of the participants. The participants were presented with a coping scenario (e.g. "I've been turning to work or other activities to take my mind off things") and would respond on a Likert-type scale (0= I haven't been doing this at all to 4= I do this lot, and 5= N/A) in relation to their specified "most traumatic event". The reliability for the subscale of the Brief COPE we used in our study (active coping) was α = .77. A previous study which utilized the Brief COPE measure found a Cronbach's alpha of α = .67 for the active coping subscale (Hagan et al., 2017).

Procedure

This study was approved by the University of Missouri – Kansas City Institutional Review Board (IRB). Participants completed the study through an online survey system (Qualtrics). Prior to consenting, participants were informed that this study would ask them to report their history of potentially traumatic experiences and their reactions to these experiences. They were also informed that participation was anonymous, as researchers would not request access to any identifying information, such as names or IP addresses. Even though the survey was deemed to be of minimal risk, due to the content of the survey and the possibility of distress occurring, information for counselling

services was provided to all participants should they wish to speak with someone

following study completion.

Data Analysis

First, we created the variables which make up the M5-50, the TOSCA-3, and

Brief COPE to be used in our analyses. Each variable within the M5-50 has ten questions

which are then averaged together to produce each one of the five factors

(conscientiousness, neuroticism, extraversion, openness, and agreeableness). Only

conscientiousness and neuroticism were used in our analyses. Each subscale in the

TOSCA-3 is made up of a total score of 16 responses to given scenarios. Each participant

rates how they would react to a given scenario. Each scenario has five types of reactions

which are linked to shame, guilt, detachment, externalization, alpha pride, or beta pride

and the participants rate, on a Likert scale, how likely they are to respond in these

different ways. These ratings were then added together and a total score of each was used

to create the subscales of the TOSCA-3. Only shame and guilt were used in our analyses.

Lastly, the Brief COPE has 14 subscales of which only the active coping subscale was

used. Each subscale of the Brief COPE was comprised of two questions. The ratings

given for each question was added together to create each variable. Additionally, the total

scores for the THQ and PCL-5 were used in our analyses.

After creating the above variables, we examined the normality of the distribution

of each. Only guilt was skewed. Due to this, we used a log transformation to normalize

the distribution. We then looked at descriptives for each variable used in our analyses:

gender ($M = .82$, $SD = 1.82$), PTSD symptom total ($M = 26.46$, $SD = 20.29$), trauma

history total ($M = 4.12$, $SD = 2.557$), shame ($M = 34.26$, $SD = 10.77$), guilt ($M = 48.41$,

SD = 9.00), neuroticism (M = 1.97, SD = .81), conscientiousness (M = 2.65, SD = .73),

and active coping (M = 3.34, SD = 2.11). These descriptives can also be found in Table

1. Next, we looked at the bivariate correlations between the same variables which can be

found in Table 2. Lastly, we ran a hierarchical linear regression which can be found in

Table 3.

Results

For the PCL-5, a score of 0-80 can be obtained. A cut-point score of 33 is

suggested to be reasonable when attempting to preliminarily determine if an individual

meets symptom criteria for PTSD. Of our sample, 35 of our 91 participants reported a

score higher than this cut-point. The minimum score of these 35 participants when

selecting cases that scored a 33 or higher was 34 with a maximum score of 75 (M =

48.34, SD = 11.31).

Our bivariate correlations supported our initial hypothesis that we would find

significant associations between PTSS, personality, and shame. There was a significant,

positive correlation between PTSS and Neuroticism r(91) = .49, p < .01, and PTSS and

shame r(91) = .29, p < .01 suggesting that as neuroticism and/or shame increase in an

individual, there is a higher likelihood they will experience more PTSS. Moreover, there

was a strong, positive correlation between Neuroticism and shame r(91) = .47, p < .01.

There was a significant, negative correlation between PTSS and conscientiousness r(91)

= -.24, p < .05 suggesting that individuals who score high in this trait are likely to

experience less PTSS. Interestingly, we found no significant correlations between PTSS

and guilt, nor was there a significant correlation found between PTSS and active coping,

which seems to contradict some of the literature that points to coping techniques being

associated with the mental health of an individual.

Then, a hierarchical linear regression was conducted to predict PTSS severity

from the following variables: gender, Trauma History Questionnaire total,

conscientiousness subscale of M5-50, neuroticism subscale of M5-50, shame subscale of

TOSCA, guilt subscale of the TOSCA, and the active coping subscale of the Brief COPE.

The total N for this sample was 91. Standard multiple regression was then performed.

Our hierarchical linear regression showed us that in total, the variables predicted a

significant amount of variance in PTSS severity $R^2 = .37$, $F(7, 83) = 7.03$, $p < .001$.

Neuroticism and trauma history still significantly predicted and explained a significant

proportion of variance in PTSS as seen in Table 3. The nature of the predictive relation of

neuroticism and trauma history were as expected; the analysis showed that higher scores

on neuroticism and trauma history predicted higher scores on PTSS. The predictive

relation of guilt was also as predicted; higher scores on guilt predicted lower scores on

PTSS. The other variables showed no significant prediction of PTSS. Interestingly, the

significance found with guilt in the prediction of PTSS provides a unique contribution to

explaining the variance in PTSS while still controlling for personality variables. This

analysis suggests that guilt matters more than coping and further supports our hypothesis

that guilt would act as a protective factor.

Discussion

The purpose of this study was to examine the interplay and predictive power of

personality traits (conscientiousness and neuroticism), self-conscious affects (shame and

guilt) and coping techniques (active coping) on the development of PTSS. Participants were given an anonymous online survey to complete. We hypothesized that personality, self-conscious affect, and coping all matter in terms of PTSS development. Additionally and more specifically, we hypothesized that guilt would act as a protective factor in regard to PTSS severity due to research suggesting that guilt encourages approach coping styles (Held et al., 2011), such as active coping. We expected this variable would act as a protectant factor against PTSS development following trauma exposure because approach coping styles are generally adaptive. Guilt as a protective factor, while seemingly counterintuitive, has been shown in past literature to positively motivate an individual toward reparative actions rather than withdrawal like with shame (Tangney & Dearing, 2002), which could, in part, be the reason it acts as a protective factor.

Analysis of our correlational data revealed that neuroticism, conscientiousness, and shame were strongly associated with PTSS as seen in Table 2. This partially supported our first hypothesis. Interestingly, we did not see significant correlations between guilt, active coping, and PTSS. Our findings suggest that only some variables have strong relationships with PTSS.

However, these associations did not remain when controlling for relevant covariates within our hierarchical linear regression. Instead, frequency of exposure to distinct trauma types, neuroticism, and guilt were predictive of PTSS. Despite current literature showing conscientiousness to be a strong personality trait which leads a person to being careful and organized leading them to better cope with stress (Watson & Hubbard, 1996), neuroticism continually overpowered conscientiousness in our regression analysis. Results suggest that neuroticism and self-conscious affects,

specifically guilt, are more salient predictors of PTSD symptoms than conscientiousness.

Moreover, this supports our second hypothesis that guilt would act as a protective factor.

These results have both theoretical and practical significance. Theoretically, the results suggest that guilt is an important factor in predicting and protecting against PTSS. Despite the known strength of neuroticism as a PTSS predictor, the fact that guilt remained significant in the regression analysis suggests that it is also a strong variable and should be further studied in terms of PTSS development. Practically, these results can help professionals better understand predictive and protective factors of PTSS. Since our results suggest that guilt protects against PTSS, clinicians could use this knowledge to better shape therapies for individuals in an effort to help them appreciate that guilt can, in fact, have positive associations and motivations instead of being so quick to dismiss guilt altogether.

Limitations

It is important to note that the current study had the following limitations. The first limitation of this study is the use of self-report measures. Self-report measures, while cheap, convenient, and an easy way to allow for total anonymity, allows for biases such as social desirability. Additionally, when evaluating these variables in the context of PTSS development, there are several other factors which should be considered and controlled for in future studies. The first of these is the timing of trauma exposure (i.e. when the trauma was first experienced). Early childhood trauma is highly predictive of later development of PTSS due to its ability to impair developmental processes like emotion regulation, interpersonal behaviors, attachment formation, and autobiographical

memory development (Hagenaars, Fisch, & van Minnen, 2011; Ogle, Rubin, & Siegler, 2013).

Moreover, adverse childhood experiences (ACE's) have been shown to initiate a change in one's neurobiology (Ogle et al., 2013; Thomason et al., 2015; Tottenham et al., 2010; Weems, Klabunde, Russells, Reiss, & Carrión, 2015). For example, an ACE can cause increased sensitization of the neuroendocrine stress response which may cause an individual to be vulnerable to later psychopathology (Hagenaars et al., 2011; Heim & Nemeroff, 2001). In their study, Ogle and colleagues (2013) found that adults who reported experiencing traumas in childhood reported greater PTSS symptom severity as opposed to those who experienced traumas after childhood. This suggests that, while PTSS development can occur after trauma and regardless of timing of trauma, those who were exposed to trauma in childhood are at a higher risk for PTSS development in adulthood.

Frequency of trauma is also indicative of PTSS development and should be a considered factor in future studies. Earlier studies have found there to be distinct differences between single and multiple traumas and those who have experienced multiple traumas – two or more – are at a higher risk for developing PTSS (Hagenaars et al., 2011). For example, research done by Dale and colleagues (2009) found that individuals who reported a greater number of traumas also reported using dysfunctional coping methods. Additionally, Allen and Lauterbach (2007) found there to be differences in self-confidence between the two groups. Victims of multiple traumas have been found to experience more guilt and shame and have a higher tendency to dissociate despite timing of trauma (Hagenaars et al., 2011; Ogle et al., 2013). While frequency of trauma

was controlled for through the THQ questionnaire, future studies should be conducted with a more intentional approach to considering the effects of both trauma-timing and frequency of trauma to better predict which individuals are at an increased risk for developing PTSS following trauma exposure.

Finally, the number of people who did not complete the Brief COPE significantly limited our analytical power. There may be several reasons for this lack of completion, including testing fatigue and/or participant assumption that the measure was not relevant to their current functioning. The Brief COPE was the final measure in the survey which could indicate fatigue or people not feeling as if they're currently coping with their trauma – especially since they had just completed a measure asking them to report on how they had previously coped with the trauma. Nonetheless, there is potentially systematic bias in the data set due to this phenomenon.

Despite these limitations, the current research provides important and interesting information into which variables may impact PTSS development and which are strongly correlated with it. Further research is needed to replicate these findings in other trauma-exposed populations. Overall, this research provides a platform for better understanding how personality, self-conscious affects, and coping techniques all interplay and predict the development and severity of PTSS and helps direct further research as to which areas should be more closely examined.

Tables

Table 1.

Descriptives

	N	Mean	Std. Deviation
Gender	91	.82	.38
PTSD Symptom Checklist Total	91	26.46	20.29
Trauma History Questionnaire Total	91	4.12	2.56
Shame Subscale of TOSCA	91	34.26	10.77
LogGuiltTotalTOSCA	91	48.41	9.00
Neuroticism Subscale of M550	91	1.97	.81
Conscientiousness Subscale of M550	91	2.65	.73
Active Coping Subscale of COPENow	91	3.34	20.29

Table 2.

Bivariate Correlations

	Gender	PTSD Symptom Total	Trauma History Total	Shame	Guilt	Neuroticism	Conscientiousness	Active Coping
Gender	-							
PTSD Symptom Checklist Total	-.03	-						
Trauma History Questionnaire Total	.00	.37**	-					
Shame Subscale of TOSCA	.03	.29**	.20	-				
LogGuiltTotalTOSCA	.10	-.13	.18	.46**	-			
Neuroticism Subscale of M550	.19	.49**	.26*	.47**	.05	-		
Conscientiousness Subscale of M550	.00	-.24*	-.15	-.20*	.13	-.36**	-	
Active Coping Subscale of COPENow	.13	.20	.21*	.03	.02	.11	-.02	-

Note(s). **Correlation is significant at the .01 level (two-tailed); *Correlation is significant at the .05 level (two-tailed)

Table 3.

Linear Regression Coefficients

	Standardized Coefficients		
	β	t	Sig.
(Constant)		2.142	.035
Gender	-.093	-1.028	.307
Trauma History Questionnaire Total	.265	2.805	.006
Conscientiousness Subscale of M550	-.011	-.113	.910
Neuroticism Subscale of M550	.327	2.916	.005
Shame Subscale of TOSCA	.187	1.630	.107
LogGuiltTotalTOSCA	-.237	-2.273	.026
Active Coping Subscale of COPENow	.117	1.302	.196

Note(s). Dependent Variable: PTSD Symptom Checklist Total

References

Allen, B., & Lauterbach, D. (2007). Personality characteristics of adult survivors of

    childhood trauma. *Journal of Traumatic Stress, 20*(4), 587–595.

    https://doi.org/10.1002/jts.20195

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental

    disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.

Connor-Smith, J. K., & Flachsbart, C. (2007). Relations between personality and coping:

    A meta-analysis. *Journal of Personality and Social Psychology*, *93*(6), 1080–

    1107. https://doi.org/10.1037/0022-3514.93.6.1080

Contractor, A. A., Armour, C., Shea, M. T., Mota, N., & Pietrzak, R. H. (2016). Latent

    profiles of DSM-5 PTSD symptoms and the "Big Five" personality traits. *Journal*

    of Anxiety Disorders, *37*, 10–20. https://doi.org/10.1016/j.janxdis.2015.10.005

Cramer, R. J., Johnson, J. C., Crosby, J. W., Henderson, C. E., La Guardia, A. C., &

    Stroud, C. H. (2016). Personality, coping and mental health among lesbian, gay,

    and bisexual community members. *Personality and Individual Differences*, *96*,

    272–278. https://doi.org/10.1016/j.paid.2015.10.025

Einstein, D., & Lanning, K. (1998). Shame, guilt, ego development and the five-factor

    model of personality. *Journal of Personality*, *66*(4), 555–582.

Fayard, J. V., Roberts, B. W., Robins, R. W., & Watson, D. (2012). Uncovering the

    affective core of conscientiousness: The role of self-conscious emotions. *Journal*

    of Personality, *80*(1), 1–32. https://doi.org/10.1111/j.1467-6494.2011.00720.x

Gao, J., Qin, M., Qian, M., & Liu, X. (2013). Validation of the TOSCA-3 among chinese

young sdults. *Social Behavior and Personality: An International Journal*, *41*(7),

1209–1218. https://doi.org/10.2224/sbp.2013.41.7.1209

Griffin, B. J., Moloney, J. M., Green, J. D., Worthington, Jr., E. L., Cork, B., Tangney, J.

P., … Hook, J. N. (2016). Perpetrators' reactions to perceived interpersonal

wrongdoing: The associations of guilt and shame with forgiving, punishing, and

excusing oneself. *Self and Identity*, *15*(6), 650–661.

https://doi.org/10.1080/15298868.2016.1187669

Hagan, T. L., Fishbein, J. N., Nipp, R. D., Jacobs, J. M., Traeger, L., Irwin, K. E., …

Temel, J. S. (2017). Coping in patients with incurable lung and gastrointestinal

cancers: A validation study of the Brief COPE. *Journal of Pain and Symptom

Management*, *53*(1), 131–138. https://doi.org/10.1016/j.jpainsymman.2016.06.005

Hagenaars, M. A., Fisch, I., & van Minnen, A. (2011). The effect of trauma onset and

frequency on PTSD-associated symptoms. *Journal of Affective Disorders*, *132*(1–

2), 192–199. https://doi.org/10.1016/j.jad.2011.02.017

Hambrick, E. P., & McCord, D. M. (2010). Proactive coping and its relation to the Five-

Factor Model of personality. *Individual Differences Research*, *8*(2), 67–77.

Heim, C., & Nemeroff, C. B. (2001). The role of childhood trauma in the neurobiology of

mood and anxiety disorders: Preclinical and clinical studies. *Biological

Psychiatry*, *49*(12), 1023–1039.

Held, P., Owens, G. P., Schumm, J. A., Chard, K. M., & Hansel, J. E. (2011).

Disengagement coping as a mediator between trauma-related guilt and PTSD

severity. *Journal of Traumatic Stress*, *24*(6), 708–715.

https://doi.org/10.1002/jts.20689

Hooper, L. M., Stockton, P., Krupnick, J. L., & Green, B. L. (2011). Development, use,

and psychometric properties of the Trauma History Questionnaire. *Journal of*

Loss and Trauma, *16*(3), 258–283.

https://doi.org/10.1080/15325024.2011.572035

Karanci, A. N., Işıklı, S., Aker, A. T., Gül, E. İ., Erkan, B. B., Özkol, H., & Güzel, H. Y.

(2012). Personality, posttraumatic stress and trauma type: Factors contributing to

posttraumatic growth and its domains in a Turkish community sample. *European*

Journal of Psychotraumatology, *3*(1), 17303.

https://doi.org/10.3402/ejpt.v3i0.17303

Ogle, C. M., Rubin, D. C., & Siegler, I. C. (2013). The impact of the developmental

timing of trauma exposure on PTSD symptoms and psychosocial functioning

among older adults. *Developmental Psychology*, *49*(11), 2191–2200.

https://doi.org/10.1037/a0031985

Socha, A., Cooper, C. A., & McCord, D. M. (2010). Confirmatory factor analysis of the

M5-50: An implementation of the International Personality Item Pool item set.

Psychological Assessment, *22*(1), 43. https://doi.org/10.1037/a0017371

Stevanović, A., Frančišković, T., & Vermetten, E. (2016). Relationship of early-life

trauma, war-related trauma, personality traits, and PTSD symptom severity: A

retrospective study on female civilian victims of war. *European Journal of*

Psychotraumatology, *7*(1), 30964. https://doi.org/10.3402/ejpt.v7.30964.

StröMsten, L. M. J., Henningsson, M., Holm, U., & Sundbom, E. (2009). Assessment of

   self-conscious emotions: A Swedish psychometric and structure evaluation of the

   Test of Self-Conscious Affect (TOSCA). *Scandinavian Journal of Psychology*,

   50(1), 71–77. https://doi.org/10.1111/j.1467-9450.2008.00674.x

Sullivan, E., Contractor, A. A., Gerber, M. M., & Neumann, C. (2017). Examination of

   polytrauma typologies: A latent class analysis approach. *Psychiatry Research*,

   255, 111–118. https://doi.org/10.1016/j.psychres.2017.05.026

Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. The Guilford Press.

Tangney, J. P., Dearing, R. L., Wagner, & Gramzow. (2000). Measures of shame and

   guilt. In *Shame and guilt* (pp. 207–214). The Guilford Press.

Thomason, M. E., Marusak, H. A., Tocco, M. A., Vila, A. M., McGarragle, O., &

   Rosenberg, D. R. (2015). Altered amygdala connectivity in urban youth exposed

   to trauma. *Social Cognitive and Affective Neuroscience*, *10*(11), 1460–1468.

   https://doi.org/10.1093/scan/nsv030

Tottenham, N., Hare, T. A., Quinn, B. T., McCarry, T. W., Nurse, M., Gilhooly, T., …

   Casey, B. J. (2010). Prolonged institutional rearing is associated with atypically

   large amygdala volume and difficulties in emotion regulation: Previous

   institutionalization. *Developmental Science*, *13*(1), 46–61.

   https://doi.org/10.1111/j.1467-7687.2009.00852.x

Watson, D., & Hubbard, B. (1996). Adaptational style and dispositional structure: Coping

   in the context of the Five-Factor Model. *Journal of Personality*, *64*, 737–774.

Weems, C. F., Klabunde, M., Russell, J. D., Reiss, A. L., & Carrión, V. G. (2015). Post-

   traumatic stress and age variation in amygdala volumes among youth exposed to

trauma. *Social Cognitive and Affective Neuroscience*, *10*(12), 1661–1667.

https://doi.org/10.1093/scan/nsv053

Wortmann, J. H., Jordan, A. H., Weathers, F. W., Resick, P. A., Dondanville, K. A., Hall-

Clark, B., … Litz, B. T. (2016). Psychometric analysis of the PTSD Checklist-5

(PCL-5) among treatment-seeking military service members. *Psychological

Assessment*, *28*(11), 1392–1403. https://doi.org/10.1037/pas0000260