



## Shame and Guilt in the Aftermath of Trauma: A Multiple Mediation Model

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### ABSTRACT

Trauma-related shame and guilt are important mechanisms underlying post-traumatic functioning and might have a deleterious impact on the development of PTSD symptoms. Even if conceptual differences have been addressed on a theoretical level, empirical evidence is still needed to clarify their combined or individual contribution to PTSD symptoms. This study aimed to examine the mediating effects of trauma-related shame and guilt cognitions on the relationship between cumulative exposure to trauma and PTSD symptoms. The sample was comprised of 705 individuals who have been exposed to at least one lifetime traumatic event. Structural Equation Modeling (SEM) analysis was performed and both direct and indirect effects were investigated. Both measurement and structural models fit the data adequately (RMSEA < .05, CFI > .90, SRMR < .04), and a significant indirect effect of trauma-related shame was found ( $\beta = .25, p < .05, 95\% CI$ ) but not of guilt cognitions. Understanding the mechanisms underlying psychopathology could assist theoretical and clinical settings, enhancing both prevention and intervention practices.

**Keywords:** *trauma-related shame, trauma-related guilt, Posttraumatic Stress Disorder, PTSD symptoms*

### 1. INTRODUCTION

Formerly, fear was considered the central emotion of Posttraumatic Stress Disorder (PTSD), but research also highlights the role of shame and guilt in the development of this disorder (Browne et al., 2012; Held et al., 2015). In DSM-5, shame and guilt are included in the diagnosis criteria by the lastly added cluster, which refers to alterations in cognition and mood. Also, the Complex Posttraumatic

Stress Disorder (C-PTSD) proposed by ICD-11 captures both aspects related to altered self-perception, with an emphasis on shame and guilt (Armour et al., 2017), or difficulties in emotional or relational regulation (Knefel et al., 2019).

There is a distinction between shame- and guilt-proneness and trauma-related shame and guilt. On one

hand, shame can be viewed as a painful emotion stemming from the perception that a person has certain personal characteristics associated with rejection (Gilbert, 1997), while guilt can show a disposition of reacting with self-blame or believing that one did not act correctly (Tangney & Dearing, 2002). Moreover, one of the ongoing debates in the literature on guilt, for example, is that it can be an adaptive, prosocial behavior, contributing to the motivation of correcting the behavior and not repeating the wrongdoings (Tilghman-Osborne et al., 2010). However, in the context of a traumatic event, experiencing both shame and/or guilt has negative consequences on psychological functioning, and their association with PTSD symptoms (Lowinger & Solomon, 2004), or other mental disorders (Kim et al., 2011; Thoresen et al., 2015) has become increasingly clear.

In a clinical model of trauma-related shame and guilt, Lee and colleagues (2001) emphasized that shame possess a threat to the self and is associated with loss of respect, appreciation of others, or social attractiveness, and the event is perceived even deeper if the assigned significance is congruent with pre-existing thinking patterns. On the other hand, the roots of post-traumatic guilt lie in the violation of conditional living norms designed to prevent the activation of maladaptive beliefs which, in turn, will be confirmed (Lee et al., 2001). Therefore, the activation of shame along with guilt leads to behaviors of withdrawal, avoidance, and concealment of perceived wrongdoing. The two concepts have been used interchangeably for a long time due to an unclear operationalization (Cunningham et al., 2018). They may not be experienced simultaneously, but sequentially, and in the aftermath of trauma, one can quickly move from shame to guilt and vice versa, which creates the impression that these emotions coexist (Kubany et al., 1996). However, even if the beliefs underlying shame and guilt coexist, they will not become emotions until they become conscious, accompanied by negative affect (Kubany & Manke, 1995; Kubany & Watson, 2003). If how one perceives an event is congruent with the maladaptive patterns, there is also an activation of the self, tinged with shame, so, guilt becomes maladaptive when combined with shame (Tangney et al., 2007).

There is an empirical consensus regarding the contribution of shame to PTSD symptoms, while the exclusive contribution of guilt is still under debate. Many of the studies that identified significant associations between guilt and PTSD symptoms did not control the effect of shame (Beckham et al., 1998; Crisford et al., 2008; Held et al., 2011; Street et al., 2005), and studies in which guilt is not a significant predictor, shame seems to largely explain the severity of symptoms (Beck et al., 2011; Lowinger & Solomon, 2004). Therefore, it is problematic to describe the relationship between guilt and PTSD symptoms if the presence of shame is not taken into account (Aakvaag et al.,

2016). Accordingly, extant results showed that negative beliefs about oneself are a stronger predictor of PTSD symptoms compared to cognitions about the world or self-blame (Brown et al., 2019). Guilt is associated with self-blame beliefs that describe perceived wrongdoing and a sense of over-responsibility, which, in turn, are associated with PTSD symptoms (Foa & Rothbaum, 2001). Guilt-related cognitions have a greater impact on PTSD symptoms compared to global guilt or distress guilt (Beck et al., 2011), but shame still seems to be a significant PTSD marker and a potential central component of the pathology (see López-Castro et al., 2019 for a meta-analysis). There are several methodological limitations of extant research which are related to conceptualization and measurement (Bannister et al., 2019). Using assessment tools that do not clearly distinguish between shame and guilt can result in erroneously obtaining negligible correlations with the variable of interest because their effects cancel each other out (Øktedalen et al., 2014). Similarly, if shame and guilt are assessed by presenting hypothetical life situations (Tangney et al., 2007), may not capture real post-event reactions. Other research highlighted significant associations between internalized shame, distress, and cognitions associated with guilt and PTSD symptoms (Dodson & Beck, 2017), but also conceptualizations of these constructs closer to the context of a traumatic event, namely the shame and guilt associated with trauma (Aakvaag et al., 2016; Held et al., 2015). Using validated instruments that assess shame and guilt in the context of a traumatic event could be helpful in capturing critical clinical aspects of these emotions.

### **The present study**

The main objective of the present study was to examine mechanisms underlying the development of PTSD symptoms in adults who have been exposed to lifetime traumatic events. Accordingly, this study aimed to investigate the mediator roles of trauma-related shame and guilt cognitions on the relationship between exposure to trauma and PTSD symptoms. We hypothesized that cumulative exposure will positively predict trauma-related shame which, in turn, will positively predict PTSD symptoms. Also, we expect to find a significant indirect effect of exposure through shame, but not through guilt on PTSD symptoms.

### **Ethics**

The study protocol was approved by the Ethics Committee of the University of Bucharest (CEC no. 37/22.02.2019).

## 2. METHODOLOGY

### Participants and procedure

The sample of the present study consists of 705 participants aged between 18 and 46 years old ( $M = 20.68$ ,  $SD = 4.26$ ), of which 605 women (85,82%) and 100 men (14,18%), and the background is predominantly urban (82.47%). Also, 98% of the participants are students of the Faculty of Psychology and Educational Sciences at the University of Bucharest who agreed to participate in the study after completing the informed consent and were subsequently rewarded with bonus points for one of the courses.

To investigate the influence of trauma exposure, the study included individuals who had experienced at least one traumatic event in their lifetime according to PTSD Criterion A (DSM-5; APA, 2013). The events reported by the participants were relatively homogeneous, the most frequently reported event being the death of a close person (13.40%), followed by serious physical injuries (9.61%) or threat of physical injury (9.58%), major accidents (8.27%), natural disasters (8.23%), life-threatening illness (7.95%), death threat (7.83%), sexual assault (6.92%) or threat of sexual assault (6.33%), fire (6.73%) and medical accident (6.71 %), and in the last categories, there are events such as detention, war, kidnapping, and torture (3.54%). Thus, a percentage of 43.85% of interpersonal traumas, and aggressions are committed intentionally by another person. Participants were asked to complete questionnaires to measure shame, guilt, and PTSD symptoms with the most stressful event in mind.

### Instruments

*Life Event Checklist for DSM-5* (LEC-5; Weathers et al., 2013) is a self-report tool used to assess lifetime potential traumatic events according to DSM-5 criteria. It assesses 16 possible traumatic events (e.g., "fire or explosion"), and the respondents can indicate whether they experienced it directly (e.g., "happened to me" / "witnessed it"), or indirectly ("learned about it" / "part of my job"). LEC-5 has good psychometric properties, especially when assessing the consistency of events that were experienced by the participants (Gray et al., 2004). Furthermore, PTSD symptoms were assessed using Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5; Weathers et al., 2013), a self-report measure containing 20 items that can be rated on a five-point Likert scale (from 0 = Not at all to 4 = Extremely; possible range 0 - 80). Participants were instructed to previously think about the most stressful event they indicated within LEC-5 and to complete PCL-5 items accordingly. This instrument has very good psychometric properties in several assessment settings (Blevins et al., 2015). In the present study, both LEC-5 and PCL-5 demonstrated adequate internal consistency as measured

by Cronbach alpha ( $\alpha = .91$  and  $\alpha = .92$ , respectively). The subscales of PCL-5 also demonstrated good internal consistency (re-experiencing,  $\alpha = .90$ , avoidance,  $\alpha = .96$ , negative alterations in cognition and mood,  $\alpha = .89$ , and arousal,  $\alpha = .91$ ).

*Trauma-Related Guilt Inventory* (TRGI; Kubany et al., 1996) is a self-report questionnaire that includes 32 items with answers scored on a Likert scale from 0 (never/not at all true) to 4 (always/extremely true) and includes three scales: global guilt (4 items; e.g., "I feel intense guilt about what happened"), guilt-related distress (6 items; e.g., "I'm still grieving for what it happened") and guilt cognitions (22 items; e.g., "I could have prevented this event"). The guilt cognitions scale is comprised of three subscales: hindsight bias/responsibility, wrongdoing, and lack of justification. The questionnaire has very good psychometric properties, with internal consistency indices from .89 to .91 for the three subscales and moderate correlations with PTSD symptoms (Kubany et al., 1996). In the present sample, the global index of internal consistency for the guilt cognitions scale is high ( $\alpha = .93$ ), as well as for all subscales: hindsight bias/responsibility ( $\alpha = .93$ ), wrongdoing ( $\alpha = .90$ ) and lack of justification ( $\alpha = .89$ ).

*Trauma-related Shame* was assessed using the Trauma-Related Shame Inventory (TRSI; Økstedalen et al., 2014), which includes 24 items whose responses range from "not at all true for me" to "completely true for me." Participants are instructed to refer to a particularly traumatic event, and the questionnaire includes two subscales that distinguish internalized shame (e.g. "I am ashamed of myself because of what happened to me") from external (e.g., "If others knew what happened to me, they would be disgusted with me"). It has good psychometric properties, especially in terms of convergent and constructs validity; it also has a strong discriminatory validity with the subscription of cognition associated with guilt in the TRGI questionnaire (Økstedalen et al., 2014). For the current study, the overall index of internal consistency obtained is high ( $\alpha = .97$ ), as well as on subscales: internalized shame ( $\alpha = .93$ ) and external ( $\alpha = .94$ ).

### Research design and data analyses

The mediating effect of shame and guilt on the relationship between trauma exposure and PTSD symptoms was tested, as well as the moderating role of the type of trauma (interpersonal and impersonal) on all effects in the mediation model. We investigated these relationships between variables through structural equation modeling (SEM) procedures performed in Rstudio (R Core Team, 2021), using the lavaan package (Rosseel, 2012). Shame and guilt are related constructs but differ from each other at the same time, and SEM analysis is recommended for these situations. Moreover, SEM analysis is recommended for testing mediation relationships, as it is possible to control the

estimation bias due to measurement errors (Kenny et al., 1998).

Both the direct and indirect effects of the variables and the effects of the interactions between the variables on PTSD symptoms were analyzed. The maximum likelihood estimation method was used to determine indicators such as

Chi-square ( $\chi^2$ ), CFI, RMSEA, and SRMR. Based on the conventional recommendations, the following reference values of the indicators were considered:  $\chi^2$  insignificant, CFI > .90, RMSEA < .08, and SRMR < .08 (Bentler & Bonett, 1980).

### 3. RESULTS

#### Descriptive statistics and preliminary analyses

An a priori power analysis was conducted to detect a minimum sample size based on RMSEA fit indices (Preacher & Coffman, 2006). First, poor fit RMSEA indicators were selected (e.g., > .08), as well as alpha value, and the desired power. Second, a good fit of the model was considered if RMSEA < .08, the alpha value was fixed at .05, while the power was set at .80. For our hypothesized model (df = 121), the minimum sample size needed to increase the chance to reject the null hypothesis was 750 participants.

Descriptive statistics (means and standard deviations) and Pearson correlation indicators are presented in Table 1. As can be observed, the correlation between trauma-related shame and guilt cognitions is strong ( $r = .71$ ), which indicates that 49% of the variances in the variables are explained by their relationship ( $r^2 = .49$ ). The remaining 51% can be due to other factors that were not accounted for in the analysis, so, this could be a potential preliminary indicator of the fact that trauma-related shame and guilt cognitions are different constructs.

Table 1. Descriptive results and correlations between the observed variables

Variables	M (SD)	1	2	3	4
1. Exposure	11.5 (14.6)	-			
2. Trauma-related shame	34.1 (14.3)	.31***	-		
3. Guilt cognitions	1.1 (0.66)	.17***	.71***	-	
4. PTSD symptoms	26.8 (17.19)	.58***	.61***	.58***	-
5. Age	20.68 (4.26)	-	-	-	-

Note. \*\*\*p < .001; M = mean; SD = standard deviation

#### Structural Equation Modeling

To test the hypothesis that the association between exposure to trauma and PTSD symptoms is mediated by shame and guilt cognitions, structural equation modeling (SEM) analyses were performed. First, we examined the measurement model to analyze the relationships among the sets of observed and underlying latent variables. Trauma-related shame, as measured by TRSI, has two latent constructs, internal and external shame, while the Guilt Cognition scale is comprised of hindsight bias/responsibility, wrongdoing, and lack of justification subscales. Accordingly, the dependent variable from the model, PTSD symptoms, as measured with the PCL-5, has four latent variables, corresponding to the diagnostic criteria from the DSM-5: intrusions, avoidance, negative alterations in cognitions and mood (NACM), and hyperarousal. The measurement model fit the data adequately ( $\chi^2 = 188.76$ ,  $p > .05$ , RMSEA = .08, CFI = .89, TLI = .91, SRMR = .04).

Second, the structural model was investigated by successively entering the mediation paths in the model. The first path (a) describes the direct effects of exposure to trauma on trauma-related shame and guilt cognitions, and

the second path (b) added to the model the effects of the mediators on PTSD symptoms, the dependent variable. Moreover, indirect pathways were also investigated, and bootstrapping with 5,000 resamples was used. Bootstrapping implies a repeated sampling of the data to create multiple subsamples and estimate the indirect effects of each one (Hayes, 2009). The parameters of the structural equation model were estimated through the Maximum likelihood (ML) estimation, and the NLMINB optimization method was used, which implies a repeated update of the parameter to maximize the likelihood of the observed data (Kline, 2016). Furthermore, after 92 iterations, the full model reached acceptable indices of fit ( $\chi^2 = 7.74$  (3),  $p = .05$ , CFI = .99, TLI = .98, RMSEA = .05, SRMR = .02). As expected, exposure to trauma reached a significant direct effect on PTSD symptoms ( $\beta = .16$ ,  $p < .05$ ), as well as on trauma-related shame ( $\beta = .08$ ,  $p < .05$ ) but not on guilt cognitions ( $\beta = .01$ ,  $p > .05$ ). The analysis of the second path, namely the direct effects of mediators on the dependent variable showed that trauma-related shame had a significant effect on PTSD symptoms ( $\beta = .51$ ,  $p < .05$ ), and, interestingly, so

did trauma-related guilt cognitions ( $\beta = .08, p < .05$ ), although it was weaker. The indirect effect of exposure to trauma through shame reached statistical significance ( $\beta =$

$.25, p < .05$ ), while the indirect effect through guilt cognitions did not ( $\beta = .02, p > .05$ ).

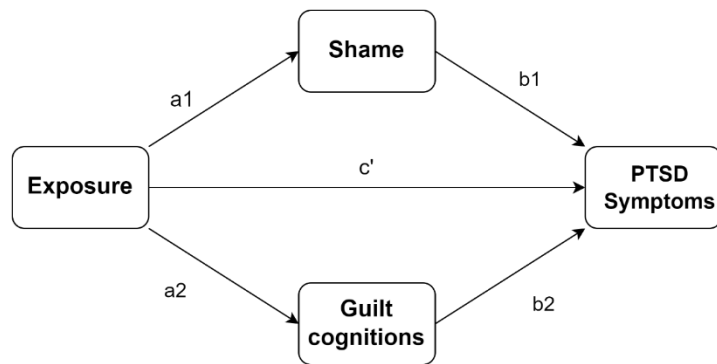


Figure 1  
Conceptual model

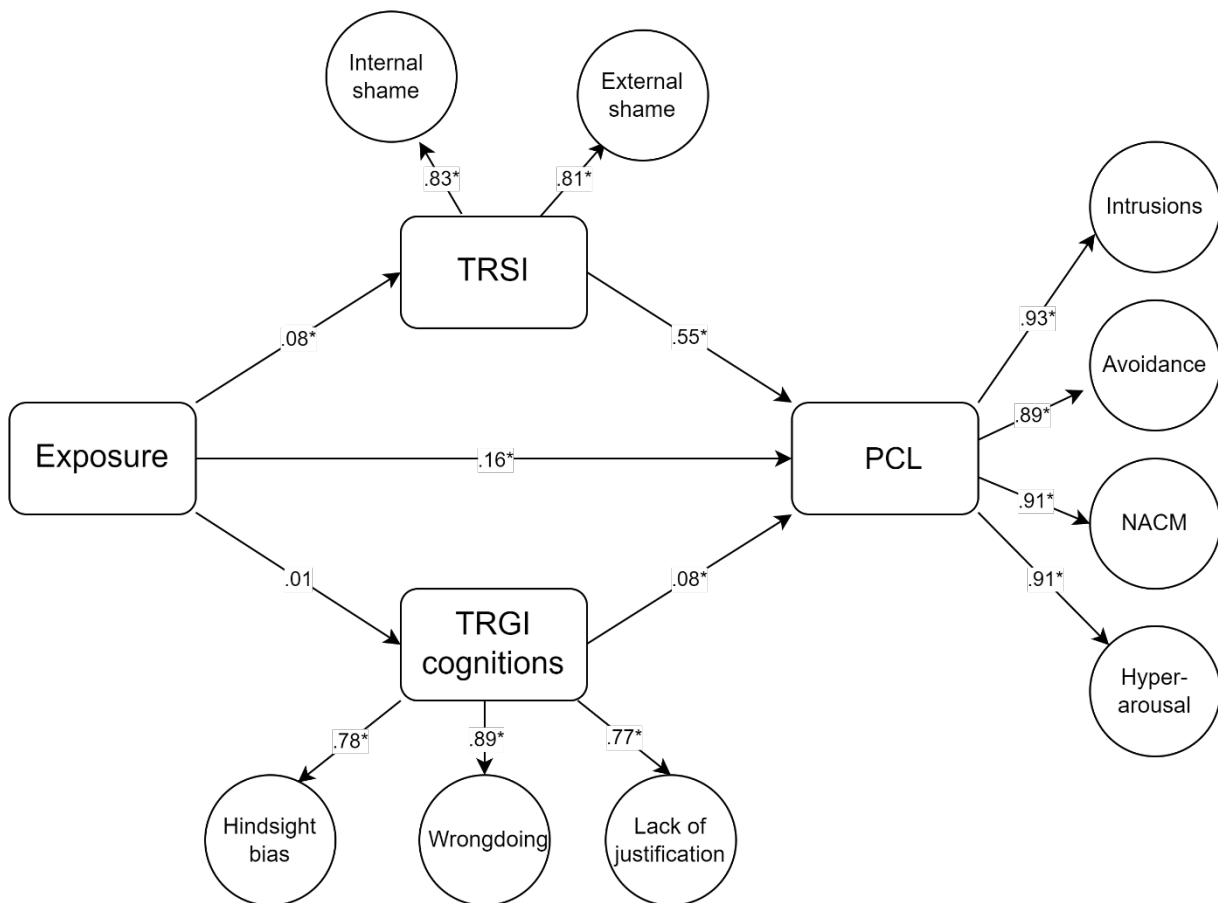


Figure 2

Structural model of the multiple mediations on the relationship between exposure to trauma and PTSD symptoms; Standardized beta coefficients are presented; \* $p < .05$ ; TRSI = Trauma-related Shame Inventory; TRGI = Trauma-related Guilt Inventory; PCL = Posttraumatic Stress Disorder Checklist; NACM = Negative Alterations in Cognitions and Mood

#### **4. DISCUSSION**

The objective of this study was to investigate the mediating roles of trauma-related shame and guilt cognitions on the relationship between cumulative exposure to traumatic events and PTSD symptoms. Previous studies analyzed shame and guilt as traits concerning PTSD symptoms (Bockers et al., 2016; Shin et al., 2012), but the results are limited because they do not capture manifestations of these emotions in the context of a traumatic event. One of the strengths of this study resides in using event-related assessment tools, which could enhance the validity and reliability of the findings.

The results are consistent with extant research regarding a significant positive relationship between cumulative exposure to traumatic events over the life course and PTSD symptoms. Also, this relationship is mediated by trauma-related shame, but not guilt cognitions. This finding is supported by previous studies that highlight shame as leading to posttraumatic symptoms to a greater extent than guilt cognitions (Beck et al., 2011b; Leskela et al., 2002). Additionally, both shame and guilt cognitions have a significant effect on PTSD symptoms. Other research showed that when shame and guilt are investigated independently, both are significantly associated with PTSD symptoms, but when introduced into the same model, the prevalence of shame in relation is higher compared to guilt (Leskela et al., 2002; Street et al., 2005). One possible explanation for this result is that the participants reported an important amount of interpersonal events, and shame has been consistently linked with interpersonal trauma (Plante et al., 2022). Also, it is noteworthy that human-caused events such as physical violence (Street et al., 2005), sexual violence (Aakvaag et al., 2016), or war experiences (Murphy et al., 2017) have a tremendous impact on the development of psychopathology.

Moreover, findings are suggesting that the effect of guilt disappears when shame is kept under control, with shame having a stronger effect (Fontaine et al., 2001). Bannister and colleagues (2019) investigated the contribution of both shame and guilt to the severity of the symptoms, both within the same model and separately, to clarify if guilt can exist without shame activation. Their results revealed that the participants who experienced guilt also experienced shame, suggesting that a concept such as shame-free guilt is not realistic and that intervention should be oriented towards shame to reduce symptoms. Since the results regarding this issue are still scarce, further research should take into account the testing of alternative models to investigate more clearly what is the effect of one emotion in the absence of the other.

#### **Limitations and Future Directions**

The presented results have several limitations. First, the data are cross-sectional and do not imply causal relationships. Future studies could follow shame and guilt longitudinally to determine their causal effect and clarify their order in the relationship between exposure and posttraumatic symptomatology. Thus, a clearer perspective on guilt without shame activation can be outlined and whether this construct is a risk factor for trauma-affected individuals. Another limitation of the study is the use of self-report instruments, which can be a source of error in symptom reporting. Considering that the symptoms were evaluated in this way and participants were asked to refer to the most stressful event, we cannot know exactly which event they had in mind when reporting symptoms. Also, the passage of time between the event and time of assessment may affect participants' recollection of the event and their reported experience. These results could be replicated in future research using clinical interviews to increase the validity of symptom measurement. Future studies could also investigate the relationship between trauma-related shame and guilt in a multilevel design and especially determine whether guilt-related cognitions and shame-related internalized cognitions cancel each other out. Additionally, a convenience sampling method was used (i.e., participants were recruited based on their availability), which may introduce bias and limit the generalizability of the findings to a broader population. To increase the external validity of the study, it would be more recommended to employ random sampling methods instead, as they are more robust for making statistical inferences.

#### **Conclusions**

The results outlined in this study have several implications for understanding the mechanisms underlying the development of PTSD symptoms. Identifying potential vulnerabilities that could account for PTSD symptoms severity could guide prevention settings and could also uphold clinicians' efforts of treating trauma-exposed individuals. Moreover, by knowing the populations at risk and the vulnerability factors, clinicians can guide intervention to considerably reduce the chances of exposure to traumatic events. Further investigations are needed to outline the contribution of both trauma-related shame and guilt to the onset of PTSD symptoms.

#### **Data Availability Statement**

The data used in this study can be retrieved from the author upon request.

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