

# Coping, media exposure and terror: Forgiveness, mastery, and emotional distress following exposure to intense traumatic events through the media

Michael Weinberg<sup>1</sup>, Avi Besser<sup>2</sup>, Jasmin Bass<sup>1</sup> & Sharon Gil<sup>1</sup>

<sup>1</sup> University of Haifa, Israel

<sup>2</sup> Hadassah Academic College, Israel

received: 9. 5. 2022;

revised: 23. 1. 2024;

accepted: 10. 11. 2024

## Summary

**Background:** Video footage of terror attacks as distributed over social networks can cause significant emotional distress. Dealing with such stress requires attention to significant personal resources.

**Subjects and methods:** This study examined the relationship between forgiveness and mastery with PTSD symptoms and stress among 249 participants before (T1) and after watching a video clip of a series of terror attacks that were distributed over social networks (T2).

**Results:** The results demonstrated that higher levels of situational forgiveness and mastery at T1 were associated with lower levels of PTSD symptoms and stress at T1. Regarding T2, only PTSD symptoms at T1 were positively associated with both PTSD and stress at T2. Stress at T1 was only positively associated with stress at T2. Theoretical and clinical implications are discussed.

**Conclusions:** Among those exposed to traumatic social-media content, it is important to acknowledge previous PTSD symptoms and stress. In addition, attention should be given to gender, situational forgiveness and mastery when coping with the emotional distress following such exposure. Thus, awareness of different trajectories of the emotional distress is recommended allowing for theoretical, practical and clinical implications.

**Keywords:** stress, PTSD, media exposure, forgiveness, mastery

\* \* \* \* \*

## INTRODUCTION

Modern technology has made possible unprecedented opportunities for second-hand exposure to disasters and violence (Lubens & Holman, 2017; Slone & Shoshani, 2010). The 24-hour news cycle allows additional exposure to mass violence and natural disasters (Hopwood & Schutte, 2017; Neria & Sullivan, 2011). Traditionally, news reporters have been exposed to unedited video footage, which is processed to form a news story, and which may include disturbing violent images (Feinstein et al., 2014; Osman et al., 2021; Weidmann & Papsdorf, 2010). However, increased use of social media and the ready availability of smartphones, which can be used to capture live events and disseminate traumatic events globally, have arguably changed the face of traditional newsgathering (Johnston, 2016). Today, almost anyone with a cell phone can transmit shocking images of great violence in real time (Feinstein et al., 2014) through WhatsApp, Facebook, Instagram, and other platforms. This phenomenon, which has become common in recent years, allows sometimes even unwillingly, individuals to watch harsh, uncensored footage of traumatic events as they take place or soon afterwards.

Emotional distress following exposure to media coverage of a traumatic event has attracted increasing amounts of interest, especially since the September 11, 2001 attacks in the United States (Bodas et al., 2015; Neria & Sullivan, 2011). Numerous studies have found a relationship between traumatic media exposure and emotional distress (Ben-Zuret et al., 2012; Bodas et al., 2015; Feinstein et al., 2014; Holman et al., 2020). Notably, in the updated DSM-5 (American Psychiatric Association, 2013) as well as in the DSM 5-TR (APA, 2022), media exposure was excluded from Criteria A for a traumatic event.

Nevertheless, both DSM 5 (APA, 2013) and DSM 5-TR (APA, 2022) state that work-related exposure through electronic media could apply for PTSD. Thus, demonstrating the possible impact of media exposure. In addition, some studies suggest that the link between traumatic media exposure and psychopathology has not been well established (Ahern et al., 2002; Galea et al., 2003). Nevertheless, a recent meta-analysis demonstrated that a majority of studies suggest that media exposure to disasters and large-scale violence is followed by negative psychological outcomes similar to those experienced by the direct victims of trauma (Hopwood & Schutte, 2017).

Although studies have examined the relationship between internal resources and emotional distress following traumatic events (Besser & Priel, 2010; Besser et al., 2015; Gil & Weinberg, 2015), to date, little research has been conducted into how internal personal resources might help to protect against the emotional consequences of traumatic media exposure. The importance of this concept is underscored by the proliferation, popularity, and accessibility of the social-media networks over which violent traumatic videos are distributed. In order to bridge this gap, the present study examined the relationship between emotional distress following exposure to video footage of violent traumatic terror attacks that were distributed over social networks and the internal resources of forgiveness and mastery. Previous research has demonstrated positive associations between those resources, on the one hand, and a better emotional state among trauma survivors, on the other (Gil & Weinberg, 2015, Weinberg et al., 2014).

Theoretical and empirical work suggests that forgiveness requires cognitive, emotional, and behavioral manifestations in response to a transgression (Enright & The Human Development Study Group, 1991; Fincham & Kashdan, 2004). Through the process of forgiveness, the individual transforms cognition and negative emotions into neutral or positive emotions (Akhtar & Barlow, 2018; Enright & Zell, 1989; Thompson et al., 2005; Worthington & Wade, 1999).

Within the concept of forgiveness, there are two types of forgiveness that are commonly addressed which include state or trait forgiveness (Cerci & Colucci, 2018). State forgiveness refers to a certain and specific event in which the process of forgiveness is directly related to (Enright & The Human Development Study Group, 1991). Trait or dispositional forgiveness, refers to forgiveness as part of one's nature that is stable in various situations and times. Accordingly, forgiveness is related and inclined to different events in life rather than a specific one (Thompson et al., 2005). Research studies have demonstrated that higher levels of both state and trait forgiveness are associated with lower levels of negative affect, anxiety, depressive symptoms, worry, and moodiness and higher levels of optimism, confidence, and life satisfaction, as well as better mental and physical health (Berry et al., 2005; Bono et al., 2008; Stein et al., 2008; Long et al., 2020; Thompson et al., 2005; Toussaint & Webb, 2005). Forgiveness skills can help deal with feeling of stress, hurt, pain, revenge, resentment and so on (Abid & Sultan, 2015). Forgiveness has the ability to mitigate the negative feelings involved with stress (Orcutt, 2006) and is associated with resilience (Soni, 2016). Hence, research studies demonstrated its significant relationship and its buffering

mechanism with PTSD following trauma (Cerci & Colucci, 2017; Kararmak & Güloğlu, 2014).

As the concept of forgiveness has been explored, additional aspects of forgiveness have been examined including self-forgiveness, forgiving the other, and forgiving the situation (Thompson et al. 2005). In the realm of trauma survivors, trait forgiveness has been associated with lower levels of stress and lower levels of PTSD symptoms (Hamama-Raz, et al 2008; Snyder & Heinze, 2005); whereas situational forgiveness has been associated only with lower levels of PTSD symptoms (Weinberg, 2013; Weinberg et al., 2017). Moreover, the magnitude and impact of trait forgiveness has also been found as an important factor for coping with various types of stress. For example, in a study conducted among nursing students' higher levels of trait forgiveness, especially forgiveness of situations, were negatively associated with psychological distress (Li et al., 2020). In addition, among working young adults, higher levels of trait forgiveness were positively correlated with life satisfaction (Bintamur, 2020). Among university students' forgiveness was also found associated with subjective well-being (Yalc, & Malkoc, 2015). Accordingly, we aimed to examine the significance of trait forgiveness while coping with the emotional distress following exposure to unedited and uncensored footage of terror events.

Mastery is another internal resource that has attracted attention in the context of dealing with trauma and is also linked to forgiveness. Mastery refers to the extent to which one regards life events as being under one's own control, as opposed to a fatalistic outlook (Pearlin & Schooler, 1978). It is also defined as inner feelings of strength and as the capacity to cope with and overcome obstacles by relying on one's own efforts (Hobfoll et al., 2002). The emotional state of mastery is associated with improved psychological well-being, stress and quality of life (McKinley et al., 2012; O'Kearney et al., 2020; Weinberg et al., 2021). Research literature has demonstrated that mastery is associated with lower levels of anger and depressive mood (Ennis et al., 2000), lower levels of negative affect, and higher levels of positive affect (Ben-Zur, 2002). Within the realm of trauma exposure, higher levels of mastery are associated with lower levels of PTSD symptoms (Ben-Zur, 2008; Gil & Weinberg, 2015).

In accordance with the conservation of resources (COR) theory, which posits that fit of personal, social, economic, and environmental resources with external demands determines the direction of stress responses and resultant outcomes (Hobfoll, 2001). In the realm of trauma, the conservation of resources theory posits that severe trauma responses occur when personal, social or material resources, which are key to the self, survival and

social attachments, are lost severely and rapidly (Hobfoll, 2014). Thus, the present study aimed to examine the relationship between the personal resources tendency to forgive and mastery, on the one hand, and emotional state, on the other, following external traumatic media exposure. In order to capture the effects of these internal resources on a wide array of emotional-state factors, traumatic symptoms and perceived stress were both examined in association with forgiveness and mastery. Specifically, the aim of the study was to examine if higher levels of forgiveness (toward one's self, others, and situations) and higher levels of mastery would be associated with lower levels of traumatic symptoms and perceived stress at T1 (before traumatic media exposure) and at T2 (after traumatic media exposure). In addition, the study also aimed to examine if higher levels of traumatic symptoms and perceived stress at T1 (before traumatic media exposure) would be associated with higher levels of traumatic symptoms and perceived stress at T2 (after traumatic media exposure).

## SUBJECTS AND METHODS

The sample consisted of 249 participants ( $N = 249$ ) living in Israel. Ninety-one participants (36.5%) were male and 158 (63.5%) were female. The participants had an average of 13.97 years of education ( $SD = 2.32$ ). One hundred and thirty-seven participants (55%) reported that they had not experienced any type of trauma in the past and 112 participants (45%) reported that they had experienced trauma in the past. Among those who had survived a traumatic event, those events included car accidents (18.5%), sexual assault (6.4%), exposure to war and combat (5.6%), terrorist attacks (6.4%), and natural disasters (.4%). With regard to their finances, 109 (43.8%) reported a good financial status, 125 (50.2%) reported an average financial status, and 15 (6%) reported a low financial status.

**Tendency to forgive.** Tendency to forgive was examined using the Heartland Forgiveness Scale (HFS; Thompson et al., 2005). This questionnaire includes 18 items rated on a 7-point Likert scale ranging from 1 (*almost always false for me*) to 7 (*almost always true for me*), including three subscales that examine trait forgiveness of self, others, and situations. Tendency to forgive was measured by the average overall score for the items. Higher scores represent a stronger tendency to forgive. The Cronbach's alpha internal consistency coefficient for the total scale was .83 (with Cronbach's alpha for the tendency to forgive the self was .71, for the tendency to

forgive others was .76, and for the tendency to forgive situations was .82).

**Mastery.** Mastery was examined using the measure developed by Pearlin and Schooler (1978). This measure contains seven items rated on a scale of 1 to 7 (1 = *not appropriate*, 7 = *very appropriate*) with a high score indicating a low level of mastery. The Cronbach's alpha internal consistency coefficient for the total scale was .70.

**PTSD symptoms.** PTSD symptoms were evaluated using the PTSD Symptom Levels (PSL) questionnaire compiled by Gil, Weinberg, Or-Chen, and Harel (2015). In the present study, PTSD was not examined as a pathology diagnosis which would require cutting points and a clinical interview, rather PTSD was examined as symptomatology of symptoms. Accordingly, the PSL is a 20-item, self-report questionnaire aimed at assessing levels of PTSD symptoms experienced over the preceding week. Each item corresponds to one of the 20 *DSM-5* diagnostic criteria for PTSD. The severity of each item is rated on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*severely*). The items are divided into four clusters: intrusion, avoidance, negative alterations, and alterations in arousal. The total severity score is calculated as the mean of the respondent's ratings of the 20 items. The participants were asked to relate to their traumatic symptoms following general exposure to traumatic terror events that have occurred in Israel. The scale had high Cronbach's alpha internal consistency coefficients of .93 at Time 1 (prior to traumatic media exposure) and .94 at Time 2 (after traumatic media exposure).

**Stress.** Stress was assessed using the Perceived Stress Scale (PSS; Cohen et al. 1994). The PSS is a 10-item, self-report questionnaire aimed at assessing levels of perceived stress over the past month. Each item related to situations in an individual's life that are considered stressful. The severity of each item is rated on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). Perceived stress was measured in terms of the average overall score for the items. Higher scores represent higher stress levels. The Cronbach's alpha internal consistency for perceived stress at Time 1 (before traumatic media exposure) was .78 and the coefficient at Time 2 (after the traumatic media exposure) was .70.

Following the approval of the University's ethics committee, research assistants who were trained for the current study approached participants to take part in the study through various social-media groups such as Facebook and WhatsApp along with explanations of the importance and goal of the study. Those who agreed to take part in the study were contacted by the research assistants. After providing informed consent, the participants filled out the questionnaires in two stages. The data collection

of the study took place during 2017-2018. At Time 1, they completed a demographic questionnaire, as well as measures of the internal resources tendency-to-forgive and mastery, PTSD symptoms, and stress. This allowed for these measures to reflect the individual's internal resources and general emotional state without being affected by a specific emotional reaction to the contents of the video. An hour after filling out those questionnaires, the participants were asked to watch a 3-minute video clip of a series of terror attacks that was distributed over social networks. The participants were told that the video footage had mostly been filmed by bystanders with smartphones and surveillance cameras in the public area and that, therefore, although this footage had been distributed over the social media, it might contain difficult images that could cause emotional reactions. All participants viewed the same video clip. After watching the video clip, the participants filled out the PTSD-symptom and perceived-stress questionnaires once again (Time 2).

## RESULTS

To examine the study hypotheses, data analyses were performed in two stages. The first stage of the findings examined means, standard deviations, and correlations of the research variables (Table 1). As shown in Table 1 the levels of PTSD symptoms and stress increased significantly following the exposure to the media footage of the terror events. Paired-sample *t*-tests indicated that PTSD symptoms before exposure to the traumatic video footage (T1) were significantly lower than PTSD symptoms following that exposure (at T2;  $t(243) = -4.45, p < .001$ ). In addition, perceived stress before exposure to the traumatic media content (T1) was also significantly lower than

perceived stress following that exposure (at T2;  $t(246) = -3.09, p < .001$ ).

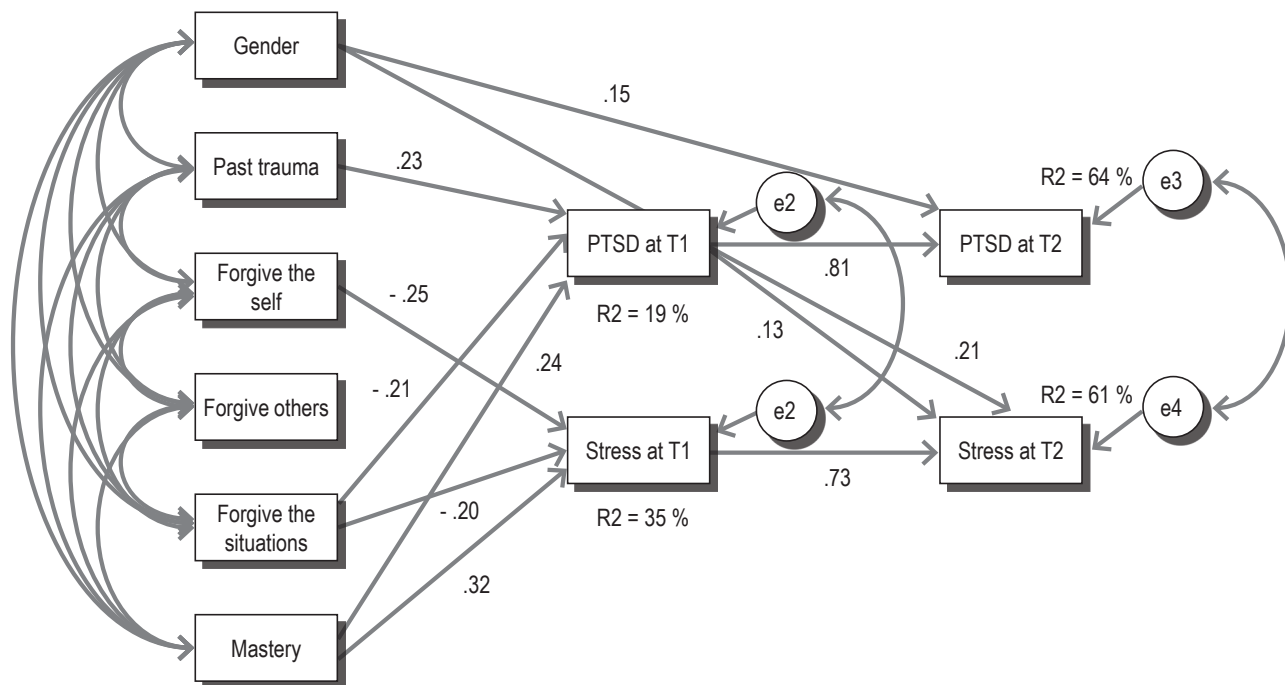
Regarding the Pearson product-correlation coefficients between PTSD symptoms and perceived stress at T1, a negative correlation was found between tendency to forgive one's self and PTSD symptoms ( $r = -.29; p < .001$ ), as well as between tendency to forgive one's self and stress ( $r = -.46; p < .001$ ). In addition, tendency to forgive the situation was negatively correlated with PTSD symptoms ( $r = -.30; p < .001$ ) and with stress ( $r = -.42; p < .01$ ). However, tendency to forgive others was only negatively correlated with stress ( $r = -.16; p < .05$ ). Examination of the correlations between mastery and PTSD symptoms and stress revealed a positive correlation between mastery and PTSD symptoms ( $r = .33; p < .001$ ), as well as between mastery and stress ( $r = .48; p < .001$ ). Mastery was also negatively correlated with tendency to forgive the self ( $r = -.34; p < .001$ ), others ( $r = -.15; p < .05$ ), and the situation ( $r = -.36; p < .001$ ). In addition, PTSD symptoms were positively correlated with stress ( $r = .43; p < .001$ ).

Regarding the Pearson product-correlation coefficients between PTSD symptoms and perceived stress at T2, as shown in Table 1, a negative correlation was found between tendency to forgive one's self and PTSD symptoms ( $r = -.19; p < .001$ ), as well as between tendency to forgive one's self and stress ( $r = -.32; p < .001$ ). In addition, tendency to forgive the situation was also negatively correlated with PTSD symptoms ( $r = -.29; p < .001$ ) and with stress ( $r = -.36; p < .01$ ). Examination of the correlations between mastery and PTSD symptoms and stress revealed a positive correlation between mastery and PTSD symptoms ( $r = .25; p < .001$ ), as well as between mastery and stress ( $r = .39; p < .001$ ). The level of PTSD symptoms was positively correlated with stress ( $r = .47; p < .001$ ). In addition, the level of PTSD symptoms at T1 was

**Table 1:** Means, Standard Deviations, and Correlations Between Tendency to Forgive One's Self, Others, and the Situation; Mastery; PTSD Symptoms at T1; Stress at T1; PTSD Symptoms at T2, and Stress at T2

	Mean (SD)	Forgive other	Forgive situation	Mastery	PTSD T1	Stress T1	PTSD T2	Stress T2
Forgive self	4.76 (.97)	.25**	.41**	-.34**	-.29**	-.46**	-.19**	-.32**
Forgive other	4.73 (.98)		.36**	-.15*	-.12	-.16*	-.09	-.07
Forgive situation	4.79 (1.05)			-.36**	-.30**	-.42**	-.29**	-.36**
Mastery	2.93 (.83)				.33**	.48**	.25**	.39**
PTSD T1	.48 (.49)					.43**	.79**	.40
Stress T1	1.89 (.56)						.33**	.75**
PTSD T2	.57 (.54)							.47**
Stress T2	1.97 (.55)							

Note. \*  $p < .05$ . \*\*  $p < .01$ .



**Figure 1.** The association between tendency to forgive one’s self, others, and situations; mastery; PTSD symptoms at T1; stress at T1; PTSD symptoms at T2; and stress at T2.

positively correlated with the level of PTSD symptoms at T2 ( $r = .79; p < .001$ ) and stress at T1 was positively correlated with stress at T2 ( $r = .75; p < .001$ ).

Given the strong correlations observed among some of the study variables, variance inflation factor (VIF) values were examined to assess possible multicollinearity problems. Statistical significance was set at  $p < .05$ . The highest VIF value was 2.96 (PTSD at T1), therefore, we conclude that multicollinearity was not a problem (Cohen et al., 2003).

In the second stage of our analysis, structural equation model analyses were conducted with AMOS (version 18; Arbuckle, 2009), which allowed us to examine the research variables and their association with both PTSD symptoms and stress at T1 and at T2. In order to control for gender and for past trauma, the research model included those variables as well as the following research variables: tendency to forgive the self, others, and situations; mastery; PTSD symptoms at T1; stress at T1; PTSD symptoms at T2; and stress at T2. At first, the entire research model included all possible paths between the study variables. However, this type of model does not allow for degrees of freedom and therefore fit of the model to the empirical data could not be estimated. Therefore, to obtain the most parsimonious model and estimate how well that model fit the empirical data, nonsignificant paths were removed (Figure 1). In addition to the overall  $\chi^2$  test of exact fit, the following fit indices were used to

evaluate the proposed models: (a) the  $\chi^2/df$  ratio, (b) the root mean square error of approximation (RMSEA), (c) the comparative fit index (CFI), and (d) the nonnormed fit index (NNFI). A model in which  $\chi^2 / df$  was  $\leq 2$ , the CFI and NNFI were greater than 0.90, and the RMSEA index was between 0.00 and 0.08 (Hu & Bentler 1999) was deemed acceptable. This model fit the observed data very ( $\chi^2 [20] = 19.06, p = .52, \chi^2/df = .95, NNFI = 0.99, CFI = 1.00, RMSEA = 0.00$ ).

As can be seen in Figure 1, gender was positively associated with PTSD symptoms at T2 ( $\beta = .15, p < .001$ ) and with stress at T2 ( $\beta = .21, p < .001$ ). That is, females were inclined to report higher levels of PTSD symptoms and stress following traumatic media exposure. In addition, previous exposure to trauma was positively associated with PTSD symptoms at T1 ( $\beta = .23, p < .001$ ). Regarding the association of forgiveness and mastery with PTSD symptoms and stress, tendency to forgive the self was negatively associated with stress levels at T1 ( $\beta = -.25, p < .001$ ); whereas tendency to forgive the situation was negatively associated with both PTSD symptoms at T1 ( $\beta = -.21, p < .001$ ) and stress levels at T1 ( $\beta = -.20, p < .001$ ). Mastery was positively associated with both PTSD symptoms at T1 ( $\beta = .24, p < .001$ ) and stress levels at T1 ( $\beta = .32, p < .001$ ), thus lower levels of mastery were related with higher levels of PTSD symptoms and stress. A positive relationship was also found between PTSD symptoms at T1 and stress at T1 ( $r = .25, p < .001$ ).

In addition, PTSD symptoms at T1 were positively associated with both PTSD symptoms at T2 ( $\beta = .81, p < .001$ ) and stress at T2 ( $\beta = .13, p = .002$ ). However, stress at T1 was only positively associated with stress at T2 ( $\beta = .73, p < .001$ ). A positive relationship was also found between PTSD symptoms at T2 and stress at T2 ( $r = .36, p < .001$ ). The study model (Figure 1) significantly explained 19% of the variance in Time 1 PTSD and 64% of the variance in PTSD symptoms following traumatic media exposure, and 35% of the variance in Time 1 stress and 61% of the variance in stress following traumatic media exposure.

## DISCUSSION

The overarching goal of this study was to examine the relationship between tendency to forgive and mastery, on the one hand, and PTSD symptoms and stress, on the other, following exposure to traumatic video footage of terror attacks as distributed over social networks, while considering the emotional state prior to the exposure to that footage.

In accordance with previous research that demonstrated the importance of tendency to forgive when dealing with traumatic events (Hamama-Raz et al., 2008, Weinberg et al., 2014), this study found that the emotional distress reflecting the daily conduct of living in a society exposed to traumatic events was related to tendency to forgive and to mastery. As demonstrated in the study model (Figure 1), higher levels of tendency toward self-forgiveness was associated with lower levels of stress at T1 and higher levels of tendency to forgive the situation was associated with lower levels of PTSD symptoms at T1, as well as lower levels of stress at T1. These findings further demonstrate the importance of the notion of forgiveness as reflecting three dimensions that might interact differently while coping with emotional state (Thompson et al., 2005; Weinberg et al., 2017). More specifically, following COR theory (Hobfoll, 2001, 2014), tendency to forgive one's self and the situation are important internal resources that, if used properly, can significantly assist individuals as they attempt to cope with stressful situations, such as living in an environment in which they are exposed to terrorism.

Interestingly, of the three dimensions of forgiveness, tendency to forgive the situation, was associated with reduced stress levels and PTSD symptoms; whereas, contrary to the study hypothesis, tendency to forgive the other had no significant effect at all and tendency to forgive the self was related only to reduced stress levels. This discrepancy might be due to the unique nature of terrorist attacks. Terrorist attacks are often aimed at civilians. By carrying out terrorist attacks, the perpetrators make themselves the

enemies of all mankind (Ganor, 2002) and use violence against civilians, with the intention of creating fear or terror, and the intention to force specific belief systems upon others (Fahmy, 2017). Accordingly, civilians exposed to terrorist attacks, either through social media or directly, tend to perceive the attacks more as situational circumstances and less as a personal act and transgression aimed specifically at them (Weinberg, 2013). This notion might suggest that personality traits related to situational circumstances are most important as a buffering mechanism following the emotional distress of terrorism. Therefore, forgiving the other is less relevant as the terror situation is not related to a specific other or offender. In addition, on the other hand it is also possible that when civilians are exposed to terror attacks through media exposure they are often able to see the actual perpetrator conducting the attack. These circumstances might make it difficult to relate to the "other" within the context of forgiveness and transforming negative cognition and emotion, especially when the terror attack and its consequences are so vividly seen and perceived.

Following this concept, mastery, which reflects inner feelings of strength and the capacity to cope with and overcome obstacles by relying on one's own efforts (Hobfoll, et al., 2002), was found to be a prominent internal resource related to lower PTSD symptoms, as well as lower stress levels. This finding emphasizes the magnitude and effect of a personal sense of control in chaotic and unpredictable life situations.

Furthermore, PTSD symptoms and perceived stress were positively correlated with each other. Nevertheless, that relatively low correlation, as well as the different associations between the study variables and PTSD symptoms and between the study variables and perceived stress further demonstrate the importance of acknowledging a wide spectrum of emotional-distress responses following terrorism. In addition, the discrepancy between these two emotional states of PTSD symptoms and stress could also be demonstrated through the relationship between gender and past trauma, on the one hand, and PTSD symptoms and stress, on the other. Previous studies have suggested that women are more vulnerable to emotional distress following exposure to a traumatic event (Breslau, 2009; Winstok & Weinberg, 2018) and similar patterns can be seen in our research findings. However, in this study, previous trauma was only associated with higher levels of PTSD symptoms. In accordance with previous research demonstrating the harmful effect of traumatic media exposure (Hopwood & Schutte, 2017), this study also found that traumatic media exposure was related to elevated levels of PTSD symptoms and stress.

Interestingly and most importantly, Pearson product correlations showed that tendency to forgive others,

tendency to forgive situations, and mastery each correlated with lower levels PTSD symptoms at T2 and stress at T2. However, contrary to the study hypothesis, these direct relationships disappeared when we controlled for PTSD symptoms and stress levels at T1, as shown in the research model (Figure 1). Moreover, as hypothesized in the second research hypothesis, PTSD symptoms at T1 and stress at T1 were positively associated with PTSD symptoms and stress at T2. The level of PTSD symptoms at T1 was positively associated with stress at T2.

It is possible that these findings express the uniqueness of a general sense of emotional distress related to ongoing terror attacks as opposed to specific emotional distress due to immediate exposure to various traumatic events. In other words, in daily life, personal traits such as forgiveness and mastery may act as resources that might assist in coping with distress. However, when an extreme and unplanned traumatic event occurs, such as exposure to horrifying traumatic content, the most significant factor affecting an increase or decrease in one's emotional distress is the emotional state that preceded the event. This does not mean that these personality traits do not relate to the present state of stress due to the extreme and sudden traumatic exposure, but rather that these personality traits may be mediated through their influence on the general emotional state before the specific extreme event took place.

It is, therefore, important to distinguish between therapeutic interventions in the context of normal everyday life, even when everyday life may include the threat of terror attacks, and interventions in the context of extreme circumstances of unpredictable direct exposure. In the context of everyday life, we suggest that practitioners should focus on personality traits and their buffering relationship with emotional distress. Whereas in relation to a specific direct traumatic exposure, we suggest that there should be a focus on regulating the emotional distress of traumatic symptoms and stress, as well as their relationship with the emotional state prior to the exposure. Indeed, at a later stage, it is also possible to combine various personal resources to alleviate PTSD symptoms and stress.

## CONCLUSION

Taken together, the study findings illustrate an additional aspect of the emotional stress experienced following exposure to traumatic social-media. Those findings also have practical and clinical implications for addressing the emotional state of those exposed to shocking images of great violence through popular social-media

platforms. Therefore, awareness to the consequences of exposure to terror attacks through media exposure should be given, as such exposure could lead to emotional distress. In this context, it is important to acknowledge previous PTSD symptoms and stress. In addition, attention should be given to gender, situational forgiveness and mastery when coping with the emotional distress following exposure to intense traumatic events through the media. Thus, awareness of different trajectories of the emotional distress is recommended.

Several potential limitations of this study should be noted. First, this study examined social-media exposure through the use of a video footage of terror attacks that had been distributed over the social media. However, in their daily lives, not all individuals will view such content and some people often prefer to avoid it. Second, although the personality traits were examined at T1 prior to the exposure to the video, those traits were examined only once, limiting our ability to determine that trait levels are generally constant. Third, the research sample is part of a population that is constantly exposed to continuous terrorist attacks. These circumstances could increase the vulnerability of the sample. Therefore, any generalization of the study findings should be done with caution. Despite these limitations, this study makes an important contribution to our understanding of tendency to forgive, mastery, PTSD symptoms, and stress among those exposed to traumatic social-media content.

**Ethical Considerations:** Does this study include human subjects? YES

Authors confirmed the compliance with all relevant ethical regulations.

**Conflict of interest:** There are no conflicts of interest for all authors.

**Funding sources:** The authors received no funding from an external source

**Authors Contribution:** Dr. Michael Weinberg: Study conceptualization, data collection, data preparation, data analysis, and report writing. The order of authors reflects the involvement in these stages. Prof. Avi Besser: Study conceptualization, data collection, data preparation, data analysis, and report writing. The order of authors reflects the involvement in these stages. Ms. Jasmin Jasmin Bass: Study conceptualization, data collection, data preparation, data analysis, and report writing. The order of authors reflects the involvement in these stages. Dr. Sharon Gil: study conceptualization, data collection, data preparation, data analysis, and report writing. The order of authors reflects the involvement in these stages. Also involved in running and coordination.

## References

- Abid, M., & Sultan, S. (2015). Dispositional forgiveness as a predictor of psychological resilience among women: a sign of mental health. *Journal on Educational Psychology*, 9, 1-7.
- Ahern, J., Galea, S., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov, D. (2002). Television images and psychological symptoms after the September 11 terrorist attacks. *Psychiatry: Interpersonal and Biological Processes*, 65, 289-300.
- Akhtar, S., & Barlow, J. (2018). Forgiveness therapy for the promotion of mental well-being: a systematic review and meta-analysis. *Trauma, Violence, & Abuse*, 19, 107-122.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). American Psychiatric Association Publishing.
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., DSM-5-TR). American Psychiatric Association Publishing.
- Arbuckle, J. L. (2009). *AMOS: A structural equation modeling program*. SmallWaters.
- Ben-Zur, H. (2002). Coping, affect and aging: the roles of mastery and self-esteem. *Personality and Individual Differences*, 32, 357-372.
- Ben-Zur, H. (2008). Personal resources of mastery-optimism and communal support beliefs as predictors of posttraumatic stress in uprooted Israelis. *Anxiety, Stress, & Coping*, 21, 295-307.
- Ben-Zur, H., Gil, S., & Shamshins, Y. (2012). The relationship between exposure to terror through the media, coping strategies and resources, and distress and secondary traumatization. *International Journal of Stress Management*, 19, 132-150. <https://doi.org/10.1037/a0027864>
- Berry, J. W., Worthington, E. L., O'Connor, L. E., Parrott, L., & Wade, N. G. (2005). Forgiveness, vengeful rumination, and affective traits. *Journal of Personality*, 73, 183-226.
- Besser, A., & Priel, B. (2010). Personality vulnerability, low social support, and maladaptive cognitive emotion regulation under ongoing exposure to terrorist attacks. *Journal of Social and Clinical Psychology*, 29, 166-201.
- Besser, A., Zeigler-Hill, V., Weinberg, M., Pincus, A. L., & Neria, Y. (2015). Intrapersonal resilience moderates the association between exposure-severity and PTSD symptoms among civilians exposed to the 2014 Israel-Gaza conflict. *Self and Identity*, 14, 1-15.
- Bintamur, D. (2020). The association between forgiveness and life satisfaction. In *Proceedings of the 1st International Conference on Psychology* (pp. 174-180).
- Bodas, M., Siman-Tov, M., Peleg, K., & Solomon, Z. (2015). Anxiety-inducing media: the effect of constant news broadcasting on the well-being of Israeli television viewers. *Psychiatry: Interpersonal and Biological Processes*, 78, 265-276.
- Bono, G., McCullough, M. E., & Root, L. M. (2008). Forgiveness, feeling connected to others, and well-being: two longitudinal studies. *Personality and Social Psychology Bulletin*, 34, 182-195.
- Breslau, N. (2009). The epidemiology of trauma, PTSD, and other posttrauma disorders. *Trauma, Violence, & Abuse*, 10, 198-210.
- Cerci, D., & Colucci, E. (2018). Forgiveness in PTSD after man-made traumatic events: a systematic review. *Traumatology*, 24, 47-54.
- Cohen, P., Cohen, J., West, S., & Aiken, L. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Erlbaum.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. In *Measuring stress: A guide for health and social scientists*.
- Ennis, N. E., Hobfoll, S. E., & Schröder, K. E. (2000). Money doesn't talk, it swears: how economic stress and resistance resources impact inner-city women's depressive mood. *American Journal of Community Psychology*, 28, 149-173.
- Enright, R. D., & The Human Development Study Group. (1991). Five points on the construct of forgiveness within psychotherapy. *Psychotherapy*, 28, 493-496.
- Enright, R. D., & Zell, R. L. (1989). Problems encountered when we forgive one another. *Journal of Psychology and Christianity*, 8, 52-60.
- Fahmy, S. S. (2017). Media, terrorism, and society: perspectives and trends in the digital age. *Mass Communication & Society*, 20, 735-739.
- Feinstein, A., Audet, B., & Waknine, E. (2014). Witnessing images of extreme violence: a psychological study of journalists in the newsroom. *JRSM Open*, 5, 1-7.
- Fincham, F. D., & Kashdan, T. B. (2004). Facilitating forgiveness: developing group and community interventions. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 617-637). John Wiley & Sons.
- Galea, S., Vlahov, D., Resnick, H., Ahern, J., Susser, E., Gold, J., et al. (2003). Trends of probable post-traumatic stress disorder in New York City after the September 11 terrorist attacks. *American Journal of Epidemiology*, 158, 514-524.
- Ganor, B. (2002). Defining terrorism: is one man's terrorist another man's freedom fighter? *Police Practice and Research*, 3, 287-304.
- Gil, S., & Weinberg, M. (2015). Coping strategies and internal resources of dispositional optimism and mastery as predictors of traumatic exposure and of PTSD symptoms: a prospective study. *Psychological Trauma: Theory, Research, Practice, and Policy*, 7, 405-411.
- Gil, S., Weinberg, M., Or-Chen, K., & Harel, H. (2015). Risk factors for DSM 5 PTSD symptoms in Israeli civilians during the Gaza war. *Brain and Behavior*, 5, e00316. <https://doi.org/10.1002/brb3.316>
- Hamama-Raz, Y., Solomon, Z., Cohen, A., & Laufer, A. (2008). PTSD symptoms, forgiveness, and revenge among Israeli Palestinian and Jewish adolescents. *Journal of Traumatic Stress*, 21, 521-529.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: advancing conservation of resources theory. *Applied Psychology: An International Review*, 50, 337-421.
- Hobfoll, S. E. (2014). Resource caravans and resource caravan passageways: a new paradigm for trauma responding. *Intervention*, 12, 21-32.
- Hobfoll, S. E., Jackson, A., Hobfoll, I., Pierce, C. A., & Young, S. (2002). The impact of communal-mastery versus self-mastery on emotional outcomes during stressful conditions: a

- prospective study of Native American women. *American Journal of Community Psychology*, 30, 853–871.
- Holman, E. A., Garfin, D. R., Lubens, P., & Silver, R. C. (2020). Media exposure to collective trauma, mental health, and functioning: does it matter what you see? *Clinical Psychological Science*, 8, 111–124.
- Hopwood, T. L., & Schutte, N. S. (2017). Psychological outcomes in reaction to media exposure to disasters and large-scale violence: a meta-analysis. *Psychology of Violence*, 7, 316–327.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Johnston, C. B. (2016). *Screened out: How the media control us and what we can do about it*. Routledge.
- Karairmak, Ö., & Güloğlu, B. (2014). Forgiveness and PTSD among veterans: the mediating role of anger and negative affect. *Psychiatry Research*, 219, 536–542.
- Long, K. N., Worthington, E. L., VanderWeele, T. J., & Chen, Y. (2020). Forgiveness of others and subsequent health and well-being in mid-life: a longitudinal study on female nurses. *BMC Psychology*, 8, 1–11.
- Li, L., Yao, C., Zhang, Y., & Chen, G. (2020). Trait forgiveness moderated the relationship between work stress and psychological distress among final-year nursing students: a pilot study. *Frontiers in Psychology*, 11, 1–10.
- Lubens, P., & Holman, E. A. (2017). The unintended consequences of disaster-related media coverage. In R. J. Ursano, C. S. Fullerton, L. Weisaeth, & B. Raphael (Eds.), *Textbook of disaster psychiatry*. Cambridge University Press.
- McKinley, B. D., Brown, E., & Caldwell, C. H. (2012). Personal mastery and psychological well-being among young grandmothers. *Journal of Women & Aging*, 24, 177–193.
- Neria, Y., & Sullivan, G. M. (2011). Understanding the mental health effects of indirect exposure to mass trauma through the media. *JAMA*, 306, 1374–1375.
- O’Kearney, E. L., Brown, C. R., Jelinek, G. A., Neate, S. L., Taylor, K. T., Bevans, W., ... & Weiland, T. J. (2020). Mastery is associated with greater physical and mental health-related quality of life in two international cohorts of people with multiple sclerosis. *Multiple Sclerosis and Related Disorders*, 38, 1–10.
- Orcutt, H. K. (2006). The prospective relationship of interpersonal forgiveness and psychological distress symptoms among college women. *Journal of Counseling Psychology*, 53, 350–361.
- Osmann, J., Dvorkin, J., Inbar, Y., Page-Gould, E., & Feinstein, A. (2021). The emotional well-being of journalists exposed to traumatic events: a mapping review. *Media, War & Conflict*, 14, 476–502.
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, 19, 2–21.
- Slone, M., & Shoshani, A. (2010). Prevention rather than cure?: primary or secondary intervention for dealing with media exposure to terrorism. *Journal of Counseling & Development*, 88, 440–448.
- Snyder, C. R., & Heinze, L. S. (2005). Forgiveness as a mediator of the relationship between PTSD and hostility in survivors of childhood abuse. *Cognition & Emotion*, 19, 413–431.
- Soni, P. (2016). A study on the relationship between resilience and forgiveness. *Indian Journal of Mental Health*, 3, 57–61.
- Stein, D. J., Seedat, S., Kaminer, D., Moomal, H., Herman, A., Sonnega, J., & Williams, D. R. (2008). The impact of the Truth and Reconciliation Commission on psychological distress and forgiveness in South Africa. *Social Psychiatry and Psychiatric Epidemiology*, 43, 462–468.
- Thompson, L. Y., Snyder, C. R., Hoffman, L., Michael, S. T., Rasmussen, H. N., Billings, L. S., et al. (2005). Dispositional forgiveness of self, others, and situations. *Journal of Personality*, 73, 313–360.
- Toussaint, L., & Webb, J. R. (2005). Theoretical and empirical connections between forgiveness, mental health, and well-being. In E. L. Worthington Jr. (Ed.), *Handbook of forgiveness* (pp. 349–362). Routledge.
- Weidmann, A., & Papsdorf, J. (2010). Witnessing trauma in the newsroom: posttraumatic symptoms in television journalists exposed to violent news clips. *Journal of Nervous and Mental Disease*, 198, 264–271.
- Weinberg, M. (2013). The bi-directional dyadic association between tendency to forgive, self-esteem, social support and PTSD symptoms among terror victims and their spouses. *Journal of Traumatic Stress*, 26, 744–752.
- Weinberg, M., Gil, S., & Gilbar, O. (2014). Forgiveness, coping, and terrorism: do tendency to forgive and coping strategies associate with the level of posttraumatic symptoms of injured victims of terror attacks? *Journal of Clinical Psychology*, 70, 693–703.
- Weinberg, M., Gueta, N., Weinberg, J., Much, M. A., Akawi, A., Sharkia, R., & Mahajnah, M. (2021). The relationship between parental stress and mastery, forgiveness, and social support among parents of children with autism. *Research in Autism Spectrum Disorders*, 81, 1–8.
- Weinberg, M., Harel, H., Shamani, M., Or-Chen, K., Ron, P., & Gil, S. (2017). War and well-being: the association between forgiveness, social support, posttraumatic stress disorder, and well-being during and after war. *Social Work*, 62, 341–348.
- Winstok, Z., & Weinberg, M. (2018). From posttrauma to gender and back: a gender motivation theory-explanation of gender differences in trauma exposure, symptoms, diagnosis, and implications. *Journal of Aggression, Maltreatment & Trauma*, 27, 959–982.
- Worthington, E. L., & Wade, N. G. (1999). The social psychology of unforgiveness and forgiveness and implications for clinical practice. *Journal of Social and Clinical Psychology*, 18, 385–418.
- Yalçın, İ., & Malkoç, A. (2015). The relationship between meaning in life and subjective well-being: forgiveness and hope as mediators. *Journal of Happiness Studies*, 16, 915–929.

*Correspondence:*

Michael Weinberg

School of Social Work, University of Haifa, 199 Abba Khoushy Ave., Mount Carmel, Haifa 3498838, Israel.  
michaelweinberg10@gmail.com / 972-4-8249543

Published under 

<https://creativecommons.org/licenses/by-nc-nd/4.0/>