



## Literature Reviews

# Posttraumatic Growth in the Aftermath of Trauma: A Literature Review About Related Factors and Application Contexts

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## Abstract

**Aim:** In the face of one traumatic event, individuals may perceive, along with the inherent negative responses, a number of positive changes, which reveal posttraumatic growth. This concept has increased its expression in literature over the years, and it has been recognized that people exposed to highly traumatic events, such as bereavement, war combat, disasters, disease or other stressful or life-threatening events, may perceive positive changes from the struggling with those events. Thus, this literature review aims at exploring the definition of posttraumatic growth, associated factors and application contexts. **Method and Results:** Electronic databases were used to search the relevant literature. Based on the analysis of empirical data, were found several studies that demonstrated a range of factors, such as distress, personality characteristics, self-disclosure, coping, social support, environmental characteristics, assumptive world, rumination, spirituality and optimism, that have contributed to the development of posttraumatic growth; however, some relationships remain inconclusive. **Conclusion:** Further research is required, to clarify the genesis and the development of posttraumatic growth, also, to extend the posttraumatic growth studies in health context, encompassing the patient as well as family and social network.

**Keywords:** posttraumatic growth, benefit finding, psychological trauma, literature review

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## Posttraumatic Growth in the Aftermath of Trauma

Highly stressful events or major life traumas (such as serious illness, road traffic accident, death of a relative or loved one, unemployment, divorce, etc.) can lead to a variety of behavioural, psychological and emotional negative outcomes to the disruptive and aversive conditions (Taku, Cann, Tedeschi, & Calhoun, 2009). The trauma might have a negative impact on individual adjustment to circumstances surrounding the event, such as psychological distress, depression, anxiety and even symptoms of posttraumatic stress disorder (PTSD), which are well described and documented in the literature (Bostock, Sheikh, & Barton, 2009; Calhoun & Tedeschi, 2001; Linley, Joseph, & Goodfellow, 2008). Moreover, there is a growing body of literature suggesting the existence of perceived positive outcomes in the aftermath of a traumatic event (Affleck & Tennen, 1996; Helgeson, Reynolds, & Tomich, 2006; Park, Cohen, & Murch, 1996; Tedeschi & Calhoun, 1996).

## Posttraumatic Growth: Definition and Characterization of the Concept

These positive changes have been characterized through several concepts in the literature, namely: posttraumatic growth, stress-related growth, benefit-finding, perceived benefits, thriving, positive by-products, stren conversion, positive psychological changes, flourishing, positive adjustment, and positive adaptation (Helgeson et al., 2006; Linley & Joseph, 2004; Tedeschi & Calhoun, 2004).

Posttraumatic growth (PTG) is the most used construct to describe the positive changes experienced as a result of the psychological and cognitive efforts made in order to deal with challenging circumstances (Calhoun & Tedeschi, 2001). As described by Tedeschi and Calhoun (2004), PTG “is the individual’s struggle with the new reality in the aftermath of trauma that is crucial in determining the extent to which posttraumatic growth occurs” (p. 5).

## Measurement of Posttraumatic Growth

Until now, five self-report measures to assess growth as a multidimensional construct have been developed and validated: Changes in Outlook Questionnaire (Joseph, Williams, & Yule, 1993 as cited in Joseph & Linley, 2008); Stress Related Growth Scale (Park et al., 1996); Perceived Benefit Scale (McMillen & Fisher, 1998); Thriving Scale (Abraído-Lanza, Guier, & Colón, 1998); and Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996), which has been the most used measure, a number of empirical studies that certify its factor structure have been published (see also Joseph & Linley, 2008).

Based on the factor analysis of the Posttraumatic Growth Inventory, Tedeschi and Calhoun (1996, 2004) described PTG as having 5 domains: “personal strength”, “new possibilities”, “relating to others”, “appreciation of life”, and “spiritual change”.

## Domains of Posttraumatic Growth

Considering the division of growth in five domains (Tedeschi & Calhoun, 1996, 2004) the characteristics and particularities of each dimension will be now described in more detail.

### Greater Appreciation of Life and Changed Sense of Priorities

As a result of the cognitive reconstruction due to the confrontation with trauma, the subject has a sense of individual vulnerability and understands that he cannot predict or control certain events (Calhoun & Tedeschi, 2001). In recognizing the volatility of life, he starts, frequently, changing the previous degree of importance ascribed to certain events. The subject begins, thus, to pay attention to small things that were previously considered insignificant or unimportant (Tedeschi & Calhoun, 2004), resulting in a change of life priorities and a greater appreciation of life (Lindstrom, Cann, Calhoun, & Tedeschi, 2013).

### Warmer, More Intimate Relationships With Others

In the aftermath of the crisis, the subject will have to understand the traumatic situation and to deal with stress and loss. Therefore, he might look for help and support from his family and friends (Tedeschi & Calhoun, 1996). As a result of increased self-disclosure about personal negative experiences, the individual may perceive a higher emotional connection with others, as well as a feeling of closeness and intimacy in interpersonal relationships (Tedeschi & Calhoun, 1996, 2004). Subsequently, the subject begins to better accept the help given by others

and make better use of already existing social networks or invest in new ones (Calhoun & Tedeschi, 2001). In fact, it may occur a reflexive thinking about relationships, thus, some relations may become more meaningful while others may be weakened or even end (Tedeschi & Calhoun, 2004).

### **A Greater Sense of Personal Strength**

The perception of greater individual strength is related with the recognition of more capabilities to deal with future challenges and adversities, and even to change situations that need to be changed. The subject clearly distinguishes that after the event he/she is a person with more skills and strengths, compared to the self before the trauma occurred (Lindstrom et al., 2013). However, this greater sense of personal strength is accompanied by the perception of individual vulnerability, and by a clear understanding of the negative impact of traumatic events in one's life (Tedeschi & Calhoun, 2004).

### **Spiritual Development**

As a result of individual strength in confrontation with the stressful conditions, the trauma survivors' experiences are, in some way, an opening to religious questions or a perception of growth regarding religious or spiritual matters (Lindstrom et al., 2013). The faith in a higher religious entity may increase after trauma and also contribute as a coping mechanism in the cognitive process of finding meaning (Calhoun & Tedeschi, 2001). Nevertheless, nonreligious people may experience some growth in the spiritual domain, which is not exclusive to who already has a strong spiritual or religious connection (Tedeschi & Calhoun, 2004).

The experience with spiritual growth is variable among trauma survivors and it depends on the previous relationship and commitment to religiosity and spirituality, as well as on the causal attribution to the event (i.e., if the subject has the sense of security or, conversely, feelings of anger and injustice with the higher religious power) (Pargament, Desai, & McConnell, 2006).

### **New Possibilities**

During the process of struggling with adversity, the survivor discovers new options for his life, in several domains (Lindstrom et al., 2013). The creation of a new life path is related with a perception of a new philosophy of life that changes the past assumptions and core beliefs leading to new possibilities and opportunities that did not exist before the trauma (Tedeschi & Calhoun, 1996, 2004).

## **The Conceptual Model of Posttraumatic Growth**

Some theorists have explained PTG as a self-regulation mechanism connected to the innate biological tendency to protect oneself from the distress caused by adverse conditions. As the individual perceives growth after coping with stress and trauma, he/she also sees himself/herself as a strong person that has exceeded the difficulties and suffering (Ford, Tennen, & Albert, 2008). In this sense, the veracity of PTG self-reports has been questioned, since PTG is an outcome from coping with adversity and, therefore, growth can be viewed as an additional feature to the coping processes that might occur successfully, with or without a perception of positive changes (Helgeson et al., 2006; Zoellner, Rabe, Karl, & Maercker, 2008).

To explain this duality of PTG conceptualization, Zoellner and Maercker (2006) suggested, with the "Janus-Face Model", two ways of conceiving PTG: illusory and constructive side. The authors propose, in line with Tedeschi and Calhoun (2004), that the constructive component represents growth as a successful outcome from coping

with adverse circumstances, which is related with significant changes in personal cognitive schemas, positive adjustment to trauma and identity change. On the other hand, the illusory side, suggested by [Taylor, Kemeny, Reed, Bower, and Gruenewald \(2000\)](#) represents not the real PTG perceptions, but rather distorted, positive illusions about growth that does not actually exist but have the function of defending the subject from distress and loss, and to avoid the cognitive processing of the situation. In this sense, the illusory perception of growth is helpful to the process of trying to maintain the individual's psychological equilibrium, and to avoid changing the assumptive world ([Affleck & Tennen, 1996](#)). This perception of growth occurs in trauma survivors manifesting stress symptoms ([Zoellner et al., 2008](#)). Thus, during the process of coping, a reduction of stress symptoms as well as a decrease of the illusory PTG, and an increase in the awareness of the constructive PTG, are expected ([Zoellner & Maercker, 2006](#)).

## Similarities and Distinctions Between Posttraumatic Growth and Resilience

Resilience represents a dynamic process that encompasses an efficient adaptation in aversive circumstances ([Bonanno, 2004](#)). As a transformative process, resilience is characterized by three distinct but interconnected dimensions: recovery, resistance and reconfiguration ([Lepore & Revenson, 2006](#)).

PTG is defined as an outcome of the reconfiguration process, however, PTG is distinguished from resilience, as it is related only to the positive changes, and not to both the positive and negative outcomes ([Lepore & Revenson, 2006](#)). This distinction has been the object of some controversy. [Calhoun and Tedeschi \(2004\)](#) underline that the level of adversity experienced by traumatic survivors who develop PTG is higher than that of resilient individuals; therefore, PTG is only present in extremely stressful situations, being associated with a transformative process that will enable a clear distinction between before and after the traumatic event.

Nevertheless, the relation between resilience, PTG and PTSD remains contradictory, with some inconclusive results. Resilience was found to be negatively associated with PTSD and with growth ([Levine, Laufer, Stein, Hamama-Raz, & Solomon, 2009](#)), however, in another study, [Bensimon \(2012\)](#) suggests that resilience is related positively with growth but negatively with PTSD symptoms.

## Developmental Process of Posttraumatic Growth

PTG is defined as a complex and dynamic construct that arises from a development process, which is presented by its authors ([Calhoun & Tedeschi, 1998, 2004](#)). In this PTG development model, the individual's growth is understood exclusively as a result of the individual confrontation with trauma, being influenced by several factors such as environmental (level of distress from the trauma, social support, sociocultural influences) and individual characteristics (personality characteristics, stress management, coping style, emotional self-disclosure) ([Calhoun & Tedeschi, 2006](#)).

Considering the individual characteristics, the perception resulting from the subjective experience of the traumatic event is what mainly influences the development of PTG ([Linley & Joseph, 2004](#)). The event is traumatic only if it shatters the assumptive world and disrupts the cognitive mechanisms to understand the world. To reconstruct a disruptive narrative, the individual has to engage in cognitive processing, which, in turn, precedes the PTG ([Calhoun & Tedeschi, 2006](#)).

Besides the presence of highly stressful circumstances in the most traumatic events, it is not guaranteed that PTG arises in all trauma situations (Calhoun & Tedeschi, 2006). Thus, adversarial growth does not occur in everyone who experiences stressful circumstances, and some individuals may not experience positive changes as a result of the trauma (Linley & Joseph, 2004). This can be explained due to the PTG's distinct domains and levels, which are variable among trauma survivors (Calhoun & Tedeschi, 1998).

## Factors Associated With PTG Process

PTG has been increasingly more recognized in the literature, nevertheless, the study on factors that predict or that result from this process is still inconclusive and contradictory (Lindstrom et al., 2013). In this sense, the factors, described in the literature as positively or negatively associated with the emergence and development of PTG, are detailed below (Bostock et al., 2009; Schaefer & Moos, 1998).

### Distress

The traumatic experience implies a range of negative circumstances that may lead to distress, a sense of vulnerability, unpredictability and a lack of control over one's life. Despite this, the individual may have, simultaneously, a perception of benefits as an outcome from the struggling with the adverse trauma (Calhoun & Tedeschi, 2006; Tedeschi & Calhoun, 2004).

Some studies suggested a negative relation between distress and PTG, which means that if the survivor develops a higher level of PTG he should be able to overcome the cognitive disruption and, thus, the distress levels should also decrease (Cadell, Regehr, & Hemsworth, 2003; Tomich & Helgeson, 2004).

A study by Linley et al. (2008) confirms that, in response to a traumatic event, positive changes predict less PTSD symptoms and a decrease in the levels of depression and anxiety. However, it should be noted that some people who perceive growth after the trauma may not report a decrease in distress levels. According to recent data, these apparently antagonist constructs are, in fact, mixed and coexistent concepts (Calhoun & Tedeschi, 2006; Dekel, Ein-Dor, & Solomon, 2012). Supporting this, some studies suggested that higher levels of distress (Solomon & Dekel, 2007) and PTSD symptoms (Dekel et al., 2012; see also Helgeson et al., 2006) were associated with higher PTG scores.

### Personality Characteristics

Some personality characteristics may influence the development of PTG. Empirical studies suggested that the BIG Five characteristics "extraversion", "openness to experience", "agreeableness" and "conscientiousness" have a positive relation with PTG, while "neuroticism" appears to be negatively associated with growth (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004).

### Emotional Disclosure

The disclosure of emotional responses to the trauma facilitates cognitive processing, because when describing the event so that could be understandable to others, the individual is willing to accept other opinions, as these will facilitate the cognitive elaboration of the traumatic experiences (Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004).

Recent studies have shown that emotional disclosure of circumstances related to major stressful events influences the level of growth reported by the survivor (Taku et al., 2009). Moreover, the benefits of self-disclosure are de-

scribed in the literature and its effects have been associated with an increased physical functioning, reduced distress and enhanced immune system functioning (Lepore et al., 2004; Pennebaker, Zech, & Rim, 2001).

### Coping Strategies

The type of coping style used immediately after the trauma is associated with cognitive processing that is adopted, and determines the level of growth that will be reported. In fact, problem and emotional focused coping are both positively associated with PTG. In turn, a coping style characterized by denial, repression and emotion suppression is associated with worse health outcomes (Linley & Joseph, 2004).

### Social Support

Social support influences the coping process and the successful adjustment to traumatic experiences becoming, then, a predictor for PTG (Nolen-Hoeksema & Davis, 1999). Alternatively, the perception of positive changes in several domains of the survivor's life may create the opportunity for closest relationships, more compassionate behaviours, and new contacts and friendships, which turn social support into an outcome (Prati & Pietrantonio, 2009).

The relation between satisfaction with social support and PTG is established as a bidirectional process; however, there are not enough studies to determine if social support enhances PTG, or if the results from perceived growth are what improve satisfaction with social relationships (Schaefer & Moos, 1998; Tedeschi & Calhoun, 2004).

### Environmental Characteristics

Three environmental factors that have been associated with perceived growth: gender, age and educational level. The empirical literature suggests that women, younger people and people with higher educational levels are generally more likely to report growth or benefit findings (Linley & Joseph, 2004; Tedeschi & Calhoun, 2004).

### Assumptive World

As mentioned above, a life-threatening event necessarily disrupts the previous ways of thinking and the cognitive assumptions (Calhoun & Tedeschi, 1998). When faced with the traumatic circumstances, the individual finds himself/herself in need of engaging in cognitive processing in order to understand the overwhelming situation (Calhoun, Tedeschi, Cann, & McMillan, 2000). Highly stressful life events that challenge one's assumptive world (Janoff-Bulman, 2004) tend to trigger the cognitive engagement but, in some cases, even less traumatic conditions might produce benefit findings (Cann et al., 2010).

Janoff-Bulman (2004) presents the concept of assumptive world to describe a set of basic beliefs that help the individuals to perceive the world, the others and the future. A major stressful event may shatter that framework for understanding the world, therefore leading to a cognitive restructuring of core beliefs (Joseph & Linley, 2008), which, in turn, might have an overpowering effect in the reconstruction of the personal narrative (Cann et al., 2010). After reconstructing the disrupted cognitive framework, with the information learned when struggling with the trauma, the perception of individual struggles and new possibilities, which might be a pathway to the emergence of PTG and perception of positive benefits, are revealed (Cann et al., 2011; Janoff-Bulman, 2006).

### Rumination Style

In the aftermath of trauma, survivors are disturbed by intrusive and mostly negative thoughts about the event that invade the cognitive processing without permission or intentionality (Calhoun et al., 2000; Nolen-Hoeksema &



Davis, 1999). This type of thinking occurs without the person wanting, and is, usually, associated with higher levels of distress (Lindstrom et al., 2013). Within cognitive process another form of rumination may occur – deliberate rumination, which, contrary to the intrusive, implies that the individual willingly thinks about the trauma with the clear objective of trying to understand the event, the changes it brought and the implications for the future (Cann et al., 2011).

Both types of rumination might coexist during the cognitive process of understanding the trauma, although some theorists suggest that intrusive thinking is more prevalent immediately after trauma and deliberate rumination predominately occurs later (Calhoun & Tedeschi, 2004). There are contradictory findings related to the association between PTG and rumination. Some studies suggest that reflexive thinking is more associated with growth (Calhoun et al., 2000). In their meta-analysis, Helgeson et al. (2006) elucidated a relation between benefit finding and intrusive thoughts. Taku et al. (2009) revealed, in turn, that both forms of rumination were positively associated with the development of PTG, although the deliberate rumination was strongly related with greater growth.

### **Spirituality / Religiosity**

Spiritual beliefs and religious participation have been recognized as an important factor that contributes to the perception of growth (Calhoun et al., 2000). The struggle with adversity may result in a better connection with religiousness and a better understanding of spirituality issues (Park et al., 1996). In fact, some empirical studies have suggested positive relations between religiousness/spirituality, cognitive processes and perceived growth (Calhoun et al., 2000; Prati & Pietrantonio, 2009). However, spirituality is a very complex concept, which may not only facilitate the PTG, but also to promote its decline (Pargament et al., 2006).

### **Optimism**

According to some empirical data, optimism seems to be related to the PTG process (Zoellner & Maercker, 2006). The use of adaptive coping, a positive understanding of threatening situations, expression of positive feelings and seeking for social support are characteristics that are often present in an optimistic person, and that may facilitate the perception of positive changes following trauma (Prati & Pietrantonio, 2009). In their meta-analysis Bostock et al. (2009) show that optimism seems to promote PTG, however the relation between these two distinct and independent constructs is not yet well established.

## **Application Contexts of Posttraumatic Growth**

There is a growing body of literature that has asserted the perceived positive benefits that have been reported as a result of highly challenging life events (Lindstrom et al., 2013; Linley & Joseph, 2004; Linley et al., 2008; Tedeschi & Calhoun, 1996, 2004), including, combat (Maguen, Vogt, King, King, & Litz, 2006); natural disasters (Cryder, Kilmer, Tedeschi, & Calhoun, 2006); accidents (Snape, 1997); rape (Burt & Katz, 1987); sexual assault (Frazier, Tashino, Berman, Steger, & Long, 2004); bereavement (Calhoun & Tedeschi, 1989-90); HIV infection (Milam, 2006); myocardial infarction (Senol-Durak & Ayvasik, 2010); bone marrow transplantation (Andrykowski, Brady, & Hunt, 1993); chronic illness (Abraido-Lanza, Guier, & Colón, 1998); and cancer (cf. Stanton, Bower, & Low, 2006).

## Psychotherapy and Posttraumatic Growth

In the context of clinical psychotherapy, the adjustment to trauma can be through a number of cognitive and behavioural strategies, which are implemented in order to facilitate the process of giving meaning to the traumatic event, but also, to facilitate the development of PTG (Calhoun & Tedeschi, 2004).

A semi-structured therapy, which relies in the establishment of a therapeutic relation, based on active listening, securing and management of acute stress is employed. The PTG is only evidenced after being recognized by the client, i.e., the therapist does not induce or force the perception of PTG, but rather reinforces the perception and understanding of the positive changes after trauma (Calhoun & Tedeschi, 1999; Stanton et al., 2006).

It is important to highlight the beneficial effects of psychotherapeutic groups, in managing the stress and loss, and in the adaptation to traumatic circumstances, thus, the number of studies that include group interventions to facilitate PTG, in different pathologies and using a variety of theoretical models, has increased (Calhoun & Tedeschi, 1999).

## Conclusions and Recommendations for Future Studies

The emergence of the perception of positive changes after trauma has increased in the literature. There is a growing body of empirical studies which reinforce that some factors can, effectively, predict PTG, namely: self-disclosure, satisfaction with the social support network, personality characteristics, adaptive coping strategies, shattering the assumptive world, spirituality, optimism, distress, and deliberate rumination. However, the relations between some factors are contradictory, and it is necessary to extend the study of factors associated with PTG, including new relations between the factors, in order to clarify the genesis and development of PTG.

Quantitative methods have been widely replicated but, in spite of their objectivity, it would be important to implement qualitative or mixed methods to evaluate the individuals' subjective reports on the perception of growth after trauma. More studies about the presence of the illusory side in the PTG self-reports, namely in psychotherapy and clinical practice, may promote a better understanding of the function of growth in the psychological adjustment to trauma conditions.

The description of PTG had been expanded to several application contexts; furthermore, it is useful to increase the awareness in several health areas and to extend the understanding of PTG to survivors' family and social network.

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