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The Prevalence of Post-Traumatic Growth in Emergency Ambulance Personnel

Shakespeare-Finch, J.E.,¹ Smith, S.G., Gow, K.M.², Embelton, G. & Baird, L.

Departing from a deprivation approach to the study of trauma, a small body of literature has recently emerged that examines positive, rather than negative, post-trauma changes. Studies to date have focused on individuals' positive reactions to a personally endured traumatic event for example, as bereaved parents, living with HIV/AIDS, or surviving cancer. Negative symptoms following a traumatic event that is experienced during the course of fulfilling professional obligations (e.g., in ambulance, fire and police services), are reported to be akin to the negative post-trauma symptoms found in direct survivors of a traumatic event. In this study, we investigated the prevalence of self-reported positive changes (posttraumatic growth) in emergency ambulance personnel, a population that are readily exposed to potentially traumatic incidents. Results indicated that a large proportion of both seasoned ambulance personnel and new recruits to the service, perceived positive changes in themselves that they attributed to having experienced a traumatic event at work. A significant mean difference was also detected between personnel who had endured a personal trauma in addition to a work-related trauma (n = 281) and personnel who had endured trauma only in the course of their employment responsibilities (n = 217). The study supports theoretical and clinical expectations that the experience of occupational trauma can act as a catalyst for significant positive post-trauma changes.

The nature of human experience suggests that at some stage during the life span, most individuals will encounter a traumatic event. The event may vary greatly, for example, being the survivor of a crime, sexual assault, an accident, serious illness, or a natural disaster. Individual reactions to such situations also differ greatly. For some, reacting and adapting to a traumatic event may result in lasting impairment of pre-event psychological functioning such as, symptoms of depression, anxiety, or Post Traumatic Stress Disorder (PTSD) (e.g., Figley, 1995; Giller, 2000; Weiss, Marmar, Metzler, & Ronfeldt, 1995; Wilson, & Raphael, 1993). However, these negative consequences only represent one possibility in an array of post-trauma outcomes.

Lasting impairment in levels of pre-event functioning is far less common than resilience to traumatic events (Paton & Violanti, 1996). For example, PTSD reportedly affects between one and three percent of the general population (Everly, 1995), a figure that appears to be much lower than the prevalence of traumatic experiences per se. In other words, following an initial

¹ Dr. Jane Shakespeare-Finch, Centre for Accident Research and Road Safety-Queensland (CARRS-Q) School of Psychology and Counselling; QUT, Beams Road; Carseldine, Qld, 4034; Australia
j.Shakespeare-finch@qut.edu.au

² Dr. Kathryn Gow, School of Psychology and Counselling
QUT, Beams Road; Carseldine, Qld, 4034; Australia
Gow_Kathryn@hotmail.com

period of distress, levels of psychological well-being return to those of pre-event functioning for most individuals (McFarlane, & Yehuda, 1996; Paton & Violanti, 1996). For others, the experience of trauma can act as a catalyst for significant positive changes, such as changes in priorities, philosophy of life, improved relationships, or in perceptions of personal strengths (e.g., Folkman, & Tedlie Moskowitz, 2000a; MacLeod, 2000; Tedeschi & Calhoun, 1996; Tedeschi, Park, & Calhoun, 1998; Violanti, Paton, & Dunning, 2000).

Positive Post-Trauma Changes

The identification of positive changes following a traumatic event has attracted some scientific exploration in recent years with regard specifically to direct trauma survivors (e.g., Affleck & Tennen, 1996; Ickovics & Park, 1998; McMillan & Fisher, 1998; Tedeschi & Calhoun, 1996). Positive changes are referred to in a number of different ways including stress-related growth (Park, Cohen & Murch, 1996), perceived benefit (Affleck & Tennen, 1996; McMillan & Fisher, 1998), thriving (O'Leary & Ickovics, 1995), and posttraumatic growth (Tedeschi & Calhoun, 1996). While the terminology used denotes some conceptual differences, the concepts reflect a common construct. That is, growth is both a process and an outcome in which an individual attains, and maintains, at least one perceived positive change directly attributable to surviving the traumatic event (Siegal & Schrimshaw, 2000). It is asserted that perceiving positive meaning from a traumatic or stressful event is related to better adjustment to that situation (Crossley, 2000; Park & Folkman, 1997).

Tedeschi & Calhoun's (1996) model of Posttraumatic Growth (PTG) is a comprehensive approach to this area of study and the Posttraumatic Growth Inventory (PTGI) is reportedly a reliable and inclusive measure of PTG (McMillan, 1999; Tennen & Affleck, 1998; Smith, 2001). PTG theory dictates that an event must be upsetting enough to challenge the individual's goals, beliefs, and ability to manage distress, or produce changes in the individual's view of the world or self, in order for growth to occur. In other words, the event can be viewed as a 'psychological earthquake' that acts to destabilise an individual's psychological foundations (McMillan & Fisher, 1998; Tedeschi & Calhoun, 1996). There are other measures of positive post-trauma changes available, for example the Stress Related Growth Scale (SRGS, Park, Cohen & Murch, 1996), however they were not assessed as being as all encompassing a measure as the PTGI. That is, continuing with the SRGS example, the measure has 50 items that load onto one factor (Park, Cohen & Murch, 1996).

Systematic research investigating positive post-trauma changes is beginning to gather momentum. Siegal and Schrimshaw (2000) examined positive changes in women living with HIV/AIDS and found that more than 83% of the participants reported at least one positive change in their lives attributable to adjustments made because of their illness. McMillan (1999) reported the incidence of positive changes in childhood sexual assault survivors at around 45%, whereas PTG in cancer survivors was reported in approximately 90% of cases. Forms of growth range from new healthier life styles, changes in spiritual faith, improved relationships, changes in the value ascribed to one's life, changes in priorities and changes in the individual's concept of self (e.g., a new sense of strength, responsibility) (Siegal & Schrimshaw, 2000; Tedeschi & Calhoun, 1998).

A positive outcome following a traumatic event at an individual level may be positive for the family, an organisation, a community, and ultimately a society as a whole. Whilst there is an obvious need to recognise and attend to those who suffer in the aftermath of a traumatic event, it is important to convey the idea that through distress, a person can grow (Tedeschi, Park, & Calhoun, 1998). Demonstrating that self-perceived changes occur following a work-related traumatic incident, and exploring such findings, may lead to new ideas about including the concept of PTG in pre-event education, the normalisation of positive post-trauma responses, and attending to the signs of PTG in debriefing and counselling interventions.

Emergency Ambulance Personnel

It has been suggested that ambulance officers are unique within an emergency service and emergency medical context for a number of reasons including the rates of emergency calls attended, and the environments in which that attendance is given. Ambulance officers respond to more emergency calls than fire and police services combined (Clohessy & Ehlers, 1999; James & Wright, 1991) and consequently may suffer greater psychological distress than the other two groups (Marmar, Weiss, Metzler, Rondfelt, & Foreman, 1996). Rates of PTSD in this population may be used to demonstrate incidents of posttraumatic distress. For example, while estimates of the occurrence of PTSD range between one and three percent in the general population, research has found the incidence of PTSD in emergency service populations, to be between ten and twenty-one percent (Clohessy & Ehlers, 1999; Everly, 1995; McCammon, Durham, Allison & Williamson, 1988; Robinson, 1993).

The small body of researchers who have investigated notions of PTG, have done so by examining positive changes in direct trauma survivors, for example, individuals living with HIV/AIDS (Siegel & Schrimshaw, 2000), following coronary artery bypass graft surgery (Scheier, Matthews et al., 2000), and various traumatic experiences in student populations (Tedeschi & Calhoun, 1996). However, empirical evidence investigating posttraumatic growth in work-related populations is not yet apparent. In particular, emergency service groups (such as police, fire, and ambulance officers) have not been examined empirically to ascertain the presence, or the prevalence, of PTG.

The Present Study

Positive changes as a result of experiencing a traumatic event have been found in direct trauma survivors. Negative consequences of work-related trauma have been reported to produce negative symptoms akin to the symptoms found in direct trauma survivors. There is no reason to expect that these groups should differ on measures of positive post-trauma changes, rather than negative post-trauma changes. That is, trauma in the work place can result in psychopathology (e.g., PTSD), just as a traumatic event can manifest psychopathology in direct trauma survivors. Hence, the positive changes reported by direct trauma survivors are also expected to be found in a population that experiences work-related trauma. The Queensland Ambulance Service (QAS) is an organisation of emergency service personnel who are exposed to relatively high levels of

work-related incidents that have the potential to be traumatic for the attending officers. The term 'work-related' is used to denote traumatic experiences that QAS personnel endure in the course of their professional duties, rather than terms such as vicarious trauma, secondary trauma, or compassion fatigue (see Figley, 1995; Wilson & Raphael, 1993). The reason for this distinction is that ambulance officers not only come to the aid of trauma victims, but may also be directly victimised; for example, by assault or threat to their lives by persons who have a mental illness, or by persons who are under the influence of drugs. It is hypothesised that PTG will be reported by many Queensland Ambulance Officers following a work-related traumatic experience.

Further, it has been claimed that the nature a traumatic event is insufficient to explain variances in post-trauma deprivation scores (McFarlane, 1989). However, it has also been suggested that the experience of trauma in an individual's personal life may elicit higher levels of negative post-trauma symptoms than experiences of work-related trauma might (Bryant & Harvey, 1996). Those who endure personal experiences of trauma may register higher levels of negative affect than those who care for the victim (McFarland & Alvaro, 2000). In testing this notion with a focus on positive post-trauma outcomes, it is predicted that mean levels of growth will be higher in ambulance officers who have endured a personal trauma during the same period as attending work-related traumatic events, in contrast to those officers who have not experienced a personal trauma during the same period as a work-related traumatic event.

Method

Cross-sectional data. There were two sets of data used in testing the hypotheses posed. The first was a group of seasoned officers and the second was a group of recruits new to the service. Although there are limitations with cross-sectional research (e.g., potential cohort effects), it is an ideal method for describing a broad picture - a picture that is desirable when conducting such exploratory research relative to the population of interest. Essentially, the second group is used as a comparison group in order to add to confidence in the salience of results found.

Participants-Group One. Five hundred and twenty-six ambulance officers with patient contact comprised the first group. Four hundred and twenty-three (80.4%) participants were male and 103 (19.6%) were female, which is proportionately reflective of the distribution of male and female officers in the QAS. The participants ranged in age from 21 years to 63 years, with a mean age of 39.84 years ($SD = 9.41$). Four hundred and eighteen officers were in permanent relationships (i.e., married or de facto), 56 were single, 47 were divorced, and 2 were widowed. Three hundred and seven (58%) participants indicated they had dependent children at the time of data collection, 216 (41%) indicated that they had no dependent children, and 3 participants failed to indicate if they did, or did not, have dependent children. The number of children living at home ranged from 1 to 7, with a mean number of 1.41 ($SD = 0.49$).

The selection criteria required participants to be operational ambulance personnel; that is, officers were required to occupy work roles in which patient contact was part of the position. Four job types were identified. There were 39 honorary officers (unpaid paramedics in

predominantly rural areas), 16 patient transport officers (essentially non-urgent transportation cases), 332 on-road officers (now collectively referred to as paramedics), and 117 classified officers (ranked personnel who also contractually maintain regular patient contact), which again, is reflective of the distribution of rank within the service. Twenty-two participants failed to indicate the particulars of their role with the QAS. All participants in the analysis of PTG ($n = 498$) had experienced traumatic incidents during the course of their professional responsibilities. That is, given the DSM IV definition of trauma (1994), all participants included in the analyses identified having experienced a work-related traumatic event, including many (81.3%) who had attended a 'code one' (potentially traumatic incident) in the previous month.

Their length of service ranged from 1 year to 43 years, with a mean of 11.58 years ($SD = 8.17$). Three hundred and fifty-nine officers indicated they had joined the ambulance with no previous job related trauma, whereas 129 officers had previously been employed in positions where there was a risk of exposure to job related trauma, for example, in nursing or allied emergency service positions in other states or countries. Levels of education varied from non-completion of high school to postgraduate studies (e.g., honours and masters degrees).

Procedure - Group One. Queensland Ambulance Service personnel records were accessed to obtain home addresses for all staff. An invitation to participate, letter of consent, the questionnaire, and a reply paid envelope, were mailed to all staff with patient contact. On receipt of the completed questionnaires, consent forms were separated from the data and locked in a different location to adhere to confidentiality commitments. Data was analysed and reported only at an aggregate level.

Response Rate

Although 1,914 questionnaires were mailed out to all QAS personnel with patient contact, out-dated personnel records precluded every potential participant from being sampled. For example, 197 unopened questionnaire packages were returned to the sender after failing to reach the intended recipients. Assuming all other personnel received an opportunity to participate (which is unlikely given the quantity of returned mail), the response rate was 31%. While the response rate is conservative, it is typical in terms of mail-out questionnaire returns (Neuman, 1997).

Participants – Group Two - Phase One. The second data set comprised participants who were new recruits to the QAS. The criterion for inclusion in the study was that the new officers had not been previously exposed to work-related trauma. That is, they had not come from allied industries such as nursing or active military service, and had reported not having previously experienced trauma in the work place. Following their first 18 months of service, these individuals were contacted again. Thirteen males and 10 females participated in the follow-up phase, and this represented 64% of the original new recruit group.

Procedure – Group Two - Phase One. New members of the Queensland Ambulance Service (QAS) were accessed during their first week of training at the Queensland Ambulance Service Education Centre (QASEC). Reflecting the incremental stages of recruitment in the QAS, data was collected over a period of five months, on three separate occasions. A questionnaire was administered on the second day of in-service training (prior to exposure to traumatic events, or training in trauma and coping). On each of these three occasions, the chief researcher addressed the new recruit groups, providing a brief description regarding the nature of the project. That is, the new officers were advised that we were interested in their experiences of trauma and that they would be asked to continue participation in the project during their second year of service.

Procedure – Group Two - Phase Two. New QAS officers who had participated in Phase One of the data collection were contacted by telephone, and invited to continue their participation in the project to assess rates of exposure to work-related trauma and the impact of traumatic events attended. Following their initial training, many new recruits had changed location for various reasons, and some were posted to remote and rural regions throughout the state. Hence, rather than personally administering follow-up questionnaires, the surveys were mailed out to the new recruit group with a covering letter thanking them for continued participation, and a reply-paid envelope to return completed forms. The mail-out was staggered over time to reflect the incremental process of data collection in Phase One.

Instruments

This study formed part of a larger project and therefore the questionnaire contained a range of instruments and socio-demographic variables. In this, the foundation study for the project, the interest was in determining the presence and prevalence of PTG in the QAS and assurances that PTG can occur following a work-related, as distinct from a personal, experience of trauma. The Posttraumatic growth Inventory (PTGI) (Tedeschi & Calhoun, 1996) was used to measure the positive legacy of experiencing a work-related traumatic event.

Posttraumatic Growth Inventory.

The Posttraumatic Growth Inventory (PTGI) is designed to measure the positive legacy of trauma (Tedeschi & Calhoun, 1995, 1996). The scale has 21 items that assess perceptions of growth in (1) relating to others, (2) new possibilities, (3) personal strength, (4) spiritual changes, and (5) appreciation of life (Tedeschi & Calhoun, 1996, p. 466). Questions are asked with respect of the extent to which a change has been perceived to occur as a result of a traumatic event and include items such as, 'I discovered that I'm stronger than I thought I was', 'I have a new appreciation for the value of my own life', and, 'I'm able to do better things with my life'. Participants record their responses on a six-point likert-type scale ranging from 0 (*change not experienced at all*) to 5 (*change occurred to a very great degree*).

Although the instrument is in its infancy in research terms, early results have been very encouraging in terms of reliability. For example, during construction of the scale, the developers' results yielded an internal reliability coefficient of 0.93 for the total scale of 21 items (Tedeschi & Calhoun, 1996). Further, recent research examining the PTGI (Smith, 2001) has found the inventory to be a reliable and valid measure of the positive legacy one may glean from a traumatic experience.

Results

Data Screening and Assumption Testing.

Following the input of data, attention was paid to missing values and the ranges of scores were checked. Missing data occurred randomly, and the frequency of missing data was relatively low (i.e., not more than 1% of the total questionnaire). In cases where a pattern of missing data was evident, the case was excluded from the analysis. Analyses were performed using the Statistical Package for the Social Sciences (SPSS, version 10). The data sets were evaluated for linearity, normality, and homogeneity of variance assumptions. No breaches of assumptions were detected.

Scale Reliability.

The internal reliability of a scale refers to the level of consistency in measurement (Gregory, 1996). Using the cross-sectional sample of seasoned ambulance officers, the 21 items of the PTGI yielded a Cronbach's alpha co-efficient of 0.93, demonstrating strong internal reliability. Table 1 shows alpha co-efficients for the total PTGI and for the inventory's five factors.

Table 1.
Scale Reliability for the total PTGI and the original five-factor solution.

	Number of Items	Chronbach's alpha
Posttraumatic Growth Inventory (PTGI)	21	0.93
Factor 1: Changes in Relating to Others	7	0.88
Factor 2: Perceptions of New Possibilities	5	0.84
Factor 3: Changes in Sense of Personal Strength	4	0.77
Factor 4: Spiritual & Religious Changes	2	0.83
Factor 5: New Appreciation for Life	3	0.80

The data from both seasoned officers and new recruits to the service were utilised in the analysis. The seasoned officer group elicited a mean for positive changes of 49.08 ($SD = 21.53$, range = 0-100), while a mean of 42.45 ($SD = 26.05$, range = 0-84) was detected in the new recruit sample after their first 18 months of service. Table 2 presents means, standard deviations and ranges for the five-factors of the PTGI in both the seasoned officer and new recruit groups. Most (98.5%) of the seasoned officer sample reported that they had experienced at least one positive change as a result of experiencing a work-related traumatic event. The majority (95.5%) of the longitudinal sample reported perceiving a work-related incident as a traumatic event within the first 18 months of their service. All of those newly recruited officers recorded at least a small positive change. The scores of both samples were divided into three groups of low, medium, and high, in order to delineate levels of positive post-trauma outcome. Most of the seasoned officer sample corresponded with the medium growth group (low = 24.4%, medium = 52.2%, and high = 23.4%). The longitudinal sample recorded slightly different levels of PTG, with 41% of the new recruits comprising the low change group, 32% in the medium group, and 27% in the high group. Proportionate to each factor's potential range in this sample, spiritual and religious changes were endorsed at the lowest level and changes in perceptions of one's sense of personal strength were endorsed at the highest level (although still in the 'moderate' level of change range).

Table 2.

Means, Standard Deviations and Ranges for the Five Factors of the PTGI in Both Seasoned Officer and New Recruit Groups.

	Group	Range	Mean	SD
Factor 1: Changes in Relating to Others	Seasoned Officers	0-35	16.85	8.30
	New Recruits	0-28	14.73	8.88
Factor 2: New Possibilities	Seasoned Officers	0-25	9.64	6.08
	New Recruits	0-22	8.32	6.68
Factor 3: Changes in Personal Strength	Seasoned Officers	0-20	11.04	4.57
	New Recruits	0-19	9.95	5.60
Factor 4: Spiritual & Religious Changes	Seasoned Officers	0-10	2.59	3.04
	New Recruits	0-10	2.09	3.25
Factor 5: New Appreciation for Life	Seasoned Officers	0-15	8.93	3.97
	New Recruits	0-15	7.36	4.77

A t-test was conducted between two groups of ambulance officers on the basis of their experiences of trauma. All seasoned officer participants had experienced work-related traumatic incidents; however, many officers had also experienced a personal trauma in the same period. The two groups in the analysis represented (1) officers who had experienced work-related traumatic events and (2) officers who had experienced traumatic events in both work and personal environments. Two hundred and eighty-one officers who had experienced trauma in their personal lives and at work within the same period, reported a mean level of PTG of 51.50 ($SD = 21.70$), whereas the 217 officers, who had not experienced a personal trauma in addition to work-related incidents, recorded a mean level of PTG of 46.15 ($SD = 21.70$). There was a significant mean difference between these groups ($t(2,496) = .216$ $p = 0.006$), with those officers experiencing personal trauma in addition to work-related trauma, scoring more highly on the PTGI than officers who had not endured a personal trauma during their time with the QAS.

Discussion

Results supported the hypotheses posed. Whilst a few officers (1.4%) reported no positive changes as a result of work-related traumatic experiences, others felt that they had changed to a 'very great degree'. The vast majority of participants (98.6%) perceived that they had experienced at least one positive change following the experience of a work-related traumatic event. The mean for positive changes in the QAS signified the average level of growth to be in the moderate range. That is, officers reported that they had experienced a moderate amount of positive changes, across a number of areas, following work-related traumatic incidents. The largest reported positive changes occurred in an officer's perception of his or her own personal strength, in a renewed appreciation for life and in relationships with others. The smallest changes were detected in religious and spiritual changes and in the discovering of new possibilities.

By separating the sample into three groups representing high, medium, and low levels of PTG, it was found that more than half of the seasoned officer group experienced 'moderate' levels of growth, and nearly one quarter of the group reported changes to 'a great' or 'a very great' degree. The mean for PTG in the QAS samples was significantly lower than the mean found with the direct trauma survivors studied by Tedeschi and Calhoun (1996) when developing the PTGI. The results may reflect complexities associated with the nature of the trauma experienced, or may be due to differences in the cultural expression of positive changes between the American and Australian populations. For example, Tedeschi and Calhoun (1995, 1996) examined PTG levels in direct trauma survivors, whereas our study focused on PTG as a result of work-related traumatic experiences. Further research needs to be conducted, comparing similar groups across cultures, before reasons for the differences detected can be ascertained. This finding also supports the work of researchers such as James (1988) and Robinson (1993), who assert that ambulance officers are generally positive about their role.

Although the nature of the event was not specifically tested in this study, notions of intensity, duration, and frequency of exposure to trauma have often been proposed as determining factors of post-trauma outcomes (e.g., Figley, 1995; Grevin, 1996; Paton & Violanti, 1996). As the Posttraumatic Growth Inventory (PTGI) had not previously been used in an emergency service population, a distinction was made between the experience of work-related trauma and the experience of a personal trauma. A significant mean difference between QAS personnel who had endured a personal trauma in addition to work-related trauma was found, whereby higher scores on the PTGI were demonstrated in this group when compared to officers who had not endured a personal trauma during their time with the QAS.

This result indicated that personal proximity to a traumatic experience had a differential impact on levels of PTG. The nature of the event beyond this distinction has not been examined at this stage in relation to PTG in emergency service workers. As accounts of positive post-trauma changes have been found to differ between survivor groups (e.g., 45% of childhood sexual assault survivors and 90% of cancer survivors {McMillan, 1999}), further research that addresses the potential of different types of work-related trauma to impact on levels of PTG, may provide advantageous information for intervention strategies in the QAS.

Accepting that there are some methodological limitations in the present study due both to the studying of emergency service personnel in the field and the use of a cross-sectional survey design (e.g., causality cannot be inferred) there are some practical applications of the results from this study. The most immediate of these applications may be an issue of normalisation. There is an obvious need to discuss and teach QAS officers (both pre- and post-trauma) about the likely process of adjusting to the trauma experienced. Current education includes an awareness of relatively common reactions to work-related trauma or stress; for example, intrusive thoughts, dreams, numbing, avoidance, hyperarousal, and the timing of such symptoms. The timing refers to the expected duration of symptoms in 'normal' cases, and where and when to seek further advice (i.e., if symptoms persist). Therefore, QAS officers are aware that negative reactions to trauma are expected and are 'normal' in the process of adjustment to the experience of a traumatic event. However, the study supports the proposal that for many QAS officers, the advent of attending a work-related traumatic incident can subsequently have a positive impact on the individual. Hence, there is a need to 'normalise' the positive legacy of trauma in the same way that negative reactions in the short term are regarded as 'normal'.

Having established that PTG does occur for many QAS officers following a work-related traumatic event, there are some exciting areas for future research. Firstly, it is important to remember that the presence of PTG does not negate the presence of negative post-trauma outcomes. Although this paper has only examined the positive side of post-trauma responses, the use of two data sets comprised of personnel who experienced work-related trauma in very recent times (i.e., new recruits) and other officers (i.e., seasoned officers) whose traumatic experience may have occurred many years before hand, provides support for the idea that negative reactions are not simply being temporarily held at bay. However, in an effort not to mirror the potentially

narrow paradigms about reactions to trauma already apparent in the literature, future research may wish to include negative post-trauma investigations, in addition to examining positive post-trauma outcomes, thus obtaining a broader view of an officer's post-trauma psychological well being.

Other research endeavours could examine correlates and predictors of PTG in emergency service workers, and the dimensions of PTG in such populations. For example, Tedeschi and Calhoun (1996) found that the personality dimensions of extraversion, openness to experience, agreeableness, and conscientiousness, were significantly positively related to total scores on the PTGI, whereas others have found support for a predictive relationship between variables like hope and optimism (Affleck & Tennen, 1996) with perceptions of positive changes. There has also been a suggestion that personality dimensions are related to PTG indirectly, mediated by levels of coping (Tedeschi, Park & Calhoun, 1998). That is, personality dimensions relate to coping levels that, in turn, may account for differences in levels of PTG.

PTG does not occur in all individuals following a traumatic event; however this study has demonstrated that the vast majority of ambulance personnel participating have experienced positive post-trauma changes to some degree, that they attribute to the experience of attending to work-related traumatic events. Those personnel who had also endured a traumatic incident in their personal lives as well as a work place trauma, reported higher levels of PTG on average than their colleagues who had endured no personal trauma whilst in the work place. The use of two data sets to test our hypotheses added confidence in the results obtained and provided a foundation from which to explore correlates, predictors and dimensions of PTG in emergency service workers.

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