

Toni Metelerkamp

Bachelor of Psychology

The Impact of growth focused psychoeducation on posttraumatic growth in police officers

Doctor of Clinical and Health Psychology

School of Psychology

University of Newcastle

July 2013

Statement of Originality

This thesis contains no material, which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968

Acknowledgements

It would not have been possible to write this doctoral thesis without the help and support of the people around me. Above all, I would like to thank my husband Kenneth for his unwavering support, his enduring patience and his clarity of thought. My children, Alex and Kirsty, I thank you for your encouragement and belief in me.

This thesis would not have been possible without my supervisor, Rev Dr Martin P. Johnson. His knowledge of the coping literature and his understanding of the difficulties of writing a thesis were most helpful. The good advice, support and friendship from colleagues were invaluable both academically and personally. In particular, I am most grateful to my psychologist colleagues who collected data, Dr Trevor Moffiet for his enthusiasm and expert statistical knowledge and Dr Diane F Bull for her proof reading and support.

For any errors or inadequacies that may remain in this work, of course, the responsibility is entirely my own.

Abstract

Scope

Early theories and models of coping focused exclusively on the negative outcomes following adversity (e.g. Chodoff, Friedman & Hamberg, 1964). More recently, the focus has shifted to include positive outcomes (Schaefer & Moos, 1992). Stress related growth (SRG; Linley, Joseph, & Loumidis, 2005), or benefit finding, following adversity has been described in a range of adverse situations. The majority of studies have investigated civilian populations (Kleim & Westphal, 2001), but first responder/military populations have more chronic trauma exposure, so civilian SRG findings may not be generalisable to non-civilian populations.

Early trauma treatment developed for returning military personnel became known as Critical Stress Incident Debriefing (CISD; Watts, 1994), which included psychoeducation about the negative outcomes following adversity. Worse outcomes were documented when police officers (Carlier, Lamberts, Van Uchlen, Gersons et al., 1998) were provided with CISD. Raphael, Melrduim & McFarlane (1995) suggested priming about negative outcomes may have elicited more negative symptoms, which raises the question of whether priming police about SRG would elicit more growth related outcomes.

Purpose

This study hypothesised that SRG could be primed in police officers and that due to the concentration difficulties associated with PTSD (American Psychiatric Association; APA, 2000), both written and verbal priming would be associated with more growth than verbal priming alone. Based on the current SRG literature, the study also investigated whether social support, PTSD symptom severity, general psychological wellbeing, and non-work related trauma histories mediate SRG in police officers. Finally, demographic variables such as length of service and sex were investigated to determine the possible impact on SRG in

police officers.

Methodology

Fifty-nine police officers that presented to psychologists for trauma-focused therapy were randomly assigned to one of three conditions (TAU without SRG psychoeducation, TAU with verbal SRG psychoeducation and TAU with verbal plus written SRG psychoeducation). The SRG psychoeducation was provided at the initial session (Time 1). All officers completed a questionnaire booklet of self-report measures at Time 1, comprising measures of social support (Significant Others Scale; Power, Champion & Aris, 1988), symptom severity (PTSD Checklist-Civilian version; Blanchard, Jones Alexander, Buckley & Forneris, 1996; Weathers, Litz, Herman, Huska & Keane, 1993), general psychological well being (General Health Questionnaire-28; Goldberg & Hillier, 1979), work related trauma incidents (Police Life Events Schedule; Carlier & Gersons, 1992; Carlier et al., 1996) and non-work trauma (Traumatic Life Events Questionnaire; Kubany, Haynes, Leisen, Owens, Kaplan, et al, 2000). Twelve weeks later (Time 2), officers completed the SRG measure (Stress Related Growth Scale; Park, Cohen & Murch, 1996) telephonically.

Results

Officers who received verbal plus written SRG psychoeducation reported significantly higher SRG than did officers who received either verbal SRG psychoeducation, or no SRG psychoeducation. Stress related growth scores did not differ significantly between the verbal SRG psychoeducation or no SRG psychoeducation conditions. Contrary to expectations, none of the factors that appear to predict SRG in other populations (levels of satisfaction with social support, PTSD symptom severity, general psychological well-being, work and non-work related trauma) contributed to the model in this study. Length of service and sex did not contribute significantly to SRG in this study.

General Conclusions

Priming police officers with SRG psychoeducation can result in higher levels of SRG 12 weeks after priming, when priming is both verbal and written. Several factors that may mediate SRG in police (e.g. organisational culture, the medical discharge process and alcohol use) will need to be investigated to better explain the predictors of SRG predictors in police officers.

Implications

This study demonstrates that while police officers do report SRG following adversity, a brief, low cost intervention can elicit higher rates of SRG in police officers. The increased risk of developing PTSD and the chronicity of trauma exposure in police officers suggests that interventions aimed at eliciting positive sequelae following adversity would be prudent.

TABLE OF CONTENTS

Acknowledgements	3
Abstract	4
Literature Review	8
Hypotheses	35
Submitted Manuscript	37
Table 1 Distribution of Participants Across Psychologist and Condition	63
Table 2 Demographics Across Condition	63
Table 3 Pearson's Correlations Between Time 1 Test Subscale Scores	64
Table 4 Correlations Between SRGS Subscales	64
Table 5 Predictors of SRG by Condition, Demographics, PCL-C, PLES, TLEQ, SOS and GHQ-28	65
Extended Discussion	77
References	91
Appendix A Journal Scope- Sage Publications – Traumatology	112
Appendix B Standardised SRG Psychoeducation	117
Appendix C Sample Questionnaire Booklet	119
Appendix D Sample SRGS Questionnaire.....	129

The impact of growth focused psychoeducation on posttraumatic growth in police officers

Adverse life events are common and can result in negative outcomes such as depression, anxiety (Stewart & Salt, 1991), intrusive thoughts, ruminations (Horowitz, 1976) and in the most extreme cases, posttraumatic stress disorder (PTSD). However, most people cope with adversity without developing PTSD (Australian Centre for Posttraumatic Mental Health [ACPMH], 2009). The Australian Bureau of Statistics' 2007 National Survey of Mental Health and Wellbeing (SMHWB) found that 3.2 million Australians aged 16-85 experienced a mental disorder in the preceding 12 months. The biggest single group, 6.4% (1 million) had experienced PTSD with the next biggest group experiencing depression (4.1%).

Posttraumatic stress disorder is a significant mental health issue. Community-based rates for a lifetime prevalence of PTSD range between 1% and 14%. Different trauma types account for some rate variability with PTSD prevalence rates; however, following combat situations, natural disasters and criminal violence prevalence rates are as high as 58% (American Psychiatric Association; APA, 2000). Further variability in the prevalence rates has been ascribed to a dose response in high-risk groups because more exposure to adversity increases the risk of PTSD (Brewin, Andrews & Valentine, 2000).

The current *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association [APA], 2000) specifies 6 criteria for PTSD. Criterion A has both objective and subjective components. The objective component includes experiencing, witnessing, or confrontation “with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others” and the subjective component requires that one experience “intense fear, helplessness, or horror” (p. 467). The two criterion A requirements are controversial and have come to be known as the ‘The Criterion A problem’ (Weathers & Keane, 2007). Criteria B, C and D

respectively require re-experiencing the trauma, emotional/behavioural avoidance of reminders of the trauma and a state of hyperarousal. Criterion E requires that symptoms need to be present for at least one-month post exposure, and three months after exposure is defined as Chronic PTSD. The final criterion for a PTSD diagnosis requires “clinically significant distress or impairment in social, occupational, or other important areas of functioning” (p. 468).

The criterion A is a major controversy (Weathers & Keane, 2007) revolves around the definition of a stressor, which has varied across editions of the DSM thus making it difficult to make meaningful comparisons between studies using different definitions of PTSD. The DSM III criterion A for PTSD required “an event that is outside of the range of usual human experience and that would be markedly distressing to almost anyone” (p. 467). This definition was narrowed considerably in DSM-IV-TR where criterion A specified the types of events (experiencing, witnessing or being confronted with “an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others) and the subjective responses (intense fear, helplessness, or horror”) (p. 467). In recognition of the chronic trauma exposure that police officers and other first responders experience, the DSM-5 (APA, 2013) has included first responders in criterion A.

Using a community sample, Creamer, McFarlane and Burgess (2005) investigated changes to the PTSD definition between DSM III and DSM-IV-TR and found that the inclusion of both a subjective and objective aspects to criterion A (the class of trauma) increased PTSD prevalence rates. The proposed changes to PTSD criteria in DSM-5, planned for 2013 publication, may again influence PTSD prevalence rates. The criterion A problem has been addressed in the DSM-5 by removing the “intense fear, helplessness, or horror” (p. 467) requirement. The second major change is that criterion C, the avoidance cluster, is divided into two avoidance related criteria. The new criteria C requires avoidance of any

stimuli reminiscent of the trauma, including people, places activities etc. The new criterion D requires symptoms that have until now been referred to as the numbing symptoms, flattened affect, negative evaluations and inability to recall aspects of the trauma. An early study on the impact of these changes in veterans suggests that prevalence rates under the DSM-5 will be concordant with DSM-IV-TR prevalence rates (Miller et al., 2012).

The DSM-IV-TR describes military and first responder populations as “at risk individuals” with relatively higher rates of lifetime PTSD prevalence (3%-51%) compared with civilian populations (1%-14%). First responders include emergency services personnel and police as well as volunteer services, who, by the nature of their activities, paid or voluntary, face trauma as part of their work. One such first responder group is Australian police officers, which by nature of their occupation are a high-risk population for developing PTSD (APA, 2000). Australian police rates of PTSD vary between 95% (Rallings, 2000) for clinically significant PTSD symptomology, and 8.3% (Higgins, 2001) for PTSD diagnoses. Despite the considerable range of possible police PTSD rates, it has long been recognized that trauma is ubiquitous for police officers and increases the risk of developing PTSD (McEwen & Stellar, 1993). Toch (2002) described policing as “disproportionate contact with human nature at its worst and requires them to become inured in the predation and violence they encounter” (p. 41). A diagnosis of PTSD has both significant personal costs for police officers and their families, as well as a public cost in terms of workplace absenteeism (Hoge et al., 2007) if officer functioning is compromised as a result of PTSD.

Despite the high prevalence and incidence of PTSD in police, relatively little literature relates specifically to police. Most trauma research focuses on civilian populations. For example, following the USA September 2001 attack, studies focused on victims/civilians rather than first responders, and this is a common pattern in the trauma literature (Kleim & Westphal, 2001). Besides the research on civilian trauma, the next most researched

population is the Military. Whilst police are not military, the military literature provides a better understanding of PTSD in police than does the civilian literature, because police and other first responder populations share more characteristics with military populations than with civilian populations. Both military and first responder populations experience occupational trauma that is relatively more frequent and qualitatively different to the trauma experienced by civilians. Police and other first responder populations deal with violent death, mutilation, decay as well as frequent and high levels of aggression in ways that could best be described as chronic exposure to trauma. Civilian populations are more likely to experience single events such as a motor vehicle accident, interpersonal violence or rape, which could be described as acute exposure to trauma.

Despite the similarities between police and military populations, there may also be significant differences, but research has not described either the similarities or the differences. For example, it is unclear whether the stressors that police and military face are different (perhaps less interpersonal violence and less community based violence than military personnel?) and whether perhaps the temporal pattern of those stressors is different? If police trauma is different to military or civilian trauma, then it may also be that prevalence rates, development of PTSD and outcomes vary for police officers compared with military personnel. Research will need to compare police and military populations to explore both the similarities and the differences.

Notwithstanding the similarities and differences between military and police trauma exposure, the picture remains complex because prevalence rates for PTSD within the military vary considerably too. For example, an analysis of 19 studies (Sundin et al., 2010) found PTSD prevalence rates in military personnel deployed to Iraq varied between 1.4% and 31%. The authors suggest that despite the apparent heterogeneity of the studies, methodological differences made it difficult to compare PTSD prevalence across studies. In a comparison of

PTSD prevalence rates between recruits not seeking treatment (5% - 20%) and those seeking treatment (~50%), both groups returned considerably higher PTSD rates than the lifetime community prevalence of between 1% and 14% (Ramachand et al., 2010). If non-combatant recruits report higher rates of PTSD (4.1% - 7%) than community reports (Peterson et al., 2010), it is not surprising that approximately two thirds (64%) of returning US service personnel meet caseness for PTSD, depression and substance abuse (Baker et al 2009). However, the use of only brief screening tools to determine caseness make the results of this study difficult to compare with other studies that use clinical assessments and diagnoses to measure PTSD symptomology as per DSM-IV-TR criteria. It is the case that individuals join the military as a means to higher education and perhaps this is a factor that needs to be taken into account when investigating psychological sequelae. However, that variable is beyond the scope of this study, but it highlights the complexity of generalising results both within and between military and first responder populations.

Several studies have investigated outcomes following trauma where both civilian and first responder personnel were deployed. Following the USA September 2001 attack researchers investigated PTSD prevalence in first responder and disaster volunteer personnel who were accommodated on the US Comfort, a naval-based rest and relief vessel birthed in New York (Fullerton et al., 2006). A total of 410 surveys were distributed to disaster workers including medical personnel, police, fire fighters, search and rescue, and other disaster site workers. Of the 89 disaster workers who completed the survey two weeks post attack, 22% met DSM-IV-TR criteria for PTSD. However, the inclusion of medical personnel and non-specific disaster workers may have impacted the findings given the variability described across different populations exposed to trauma (e.g. Durham, McCammon & Allison, 1985). Two to Three years after the events of 2001 in the USA Perrin et al., (2007) found that 12.4 % of rescue and recovery workers from the World Trade Centre site met “probable” criteria

for PTSD. Probability was based on DSM-IV-TR criteria, total scores on the PCL-C (Blanchard, Jones, Alexander & Forneris, 1996) and a combination of both DSM criteria and PCL-C scores. Construction/engineering workers, sanitation workers, and unaffiliated volunteers reported the highest PTSD rates (21.2%) followed by fire fighters (17%) and police (6.2%). An inclusion criterion for participation in this study was at least 1 shift on site at the World Trade Centre. Given the disparity in disaster work training and the varying amount of time spent on site it is difficult to draw any conclusions about why police and fire fighters reported significantly lower PTSD rates. The distinction between chronic exposure to PTSD in police and fire fighters may explain the typically lower PTSD symptomology following single events, but higher PTSD prevalence across a lifetime given the dose effect?

Given that the rescue work is seen as routine police work and that seeking treatment is stigmatised in the police force (Lorber & Gracia, 2010), police may be less likely to report PTSD symptoms since they are expected to be “cool, collected, businesslike and dispassionate” (Toch, 2002 p 63) which requires that they suppress emotions. A clearer picture of police PTSD prevalence rates and the temporal pattern of PTSD in police officers probably requires a ten year follow up of medically discharged officers to investigate how many officers had either been medically discharged on the basis of their experiences of the September 2001 attack, or who cited the September 2001 attack as a major contributor to their PTSD symptomology.

On scene workers or first responders typically have higher rates of PTSD than secondary workers such as hospital staff (Durham, McCammon & Allison, 1985). In an Australian study of fire fighters, 75% met criteria for PTSD, with 7% categorised as severe and the remaining 68% as moderate levels of PTSD. Since DSM-IV-TR PTSD criteria does not delineate between moderate and severe PTSD, 75% of fire fighters met full diagnostic criteria for PTSD (Regehr, Hill & Glancy, 2000), which is approximately five times higher

than that high range community rates described in the DSM–IV–TR (APA, 2000). The work that fire fighters do is akin to the work police officers perform. Police officers are exposed to life threatening situations and often recover the dead and injured (Fullerton et al., 2006). Police also deliver death notifications to surviving family members, which Toch (2002) describes as a major stressor for police officers. In summary, PTSD rates in police officers are likely as high as the under-reported rates in the military (e.g. 64%; Baker, 2000), and other first responder populations, such as fire fighters (e.g. 75%; Regehr, Hill & Glancy, 2000), which means the risk of developing PTSD as a police officer carries at least a 10 fold risk compared to community prevalence rates for PTSD. Understandably, policing has been described as “the most dangerous job in the world emotionally” (p170: Fennell, 1981).

There has been a significant amount of research on coping with trauma. Early theories of coping (e.g. Horowitz, 1976; Silver, Boon & Stones, 1983; Tait & Silver, 1989) focused only on the negative outcomes following adversity (e.g. Chodoff, Friedman & Hamberg, 1964). As a result, early models, and measures, of coping focused almost exclusively on the negative outcomes (Hobfoll & Walfisch, 1986) following adversity. However, trauma includes more than only negative experiences.

More recently, research has focused on the positive outcomes following adversity, where for example as many as 50 per cent of individuals have reported positive outcomes (Schaefer & Moos, 1992), that are independent of the negative outcomes (Huppert & Whittington, 2003). For example, 70-80 per cent of individuals grieving the loss of a partner (Nolen-Hoeksma & Davis, 2002) and 83 per cent of females living with HIV-AIDS (Siegel & Schrimshaw, 2000) reported positive outcomes after adversity, despite significant levels of negative symptoms. These positive outcomes, or growth, have been described as a “value-added” (Ickovics & Park, 1998) approach, a “better-off-afterward” state (Carver, 1998), or a “bouncing forward” effect (Walsh, 2002) rather than simply “bouncing back” to pre-

adversity functioning. It appears that following adversity, an individual's levels of adaptation, psychological development and life awareness can undergo transformational change beyond pre-trauma levels. Stress related growth (SRG) has also been shown to follow vicarious exposure to adversity, for example, with trauma therapists (Linley, Joseph, & Loumidis, 2005) and ambulance personnel (Shakespeare-Finch, Smith, Gow, Embelton & Baird, 2003), reported benefit finding after witnessing someone else's adversity.

Stress related growth has been described in professions that have high occupational exposure to adverse events, such as funeral directors (Schnell & Zinger, 1985) as well as voluntary and professional disaster workers. Disaster workers, for example, reported that they discovered strengths and were motivated to be close to their loved ones following trauma (Dyregrov, Kristofferson, & Gjestad, 1996). It has been suggested that exposure to death facilitates more authentic living and personal growth (Linley, 2003), but this existential notion does not fully explain SRG, especially where death was not a factor. SRG appears to be a more a complex phenomenon.

Cognitive explanations for coping allow for greater understanding of the transactional interplay between environmental demands and personal resources and as a result cognitive models can explain both the positive and the negative outcomes following trauma. The cognitive theory of stress and coping model (Lazarus & Folkman, 1984) incorporates aspects of appraisal, coping, resolution and outcome as well as a meaning based process. The meaning-based process includes positive reappraisals, goal revision, spiritual beliefs and positive events that may facilitate positive emotions and sustain coping. The cognitive theory of stress and coping is a dynamic, transactional process between individual characteristics and environmental factors, which results in cognitive appraisals of one's ability and resources for coping, as well as appraisals about situational demands.

The conceptual model for positive outcomes of crises (Schaefer & Moos, 1992) is

another transactional model; but one that emphasizes the importance of factors prior to the crisis, as well as social support and community resources, for understanding positive outcomes. Interactions between environmental and personal factors are possible when, for example, health interacts with finances. Furthermore, coping is influenced by event severity, duration, focus (self or others), onset and predictability. Positive outcomes are possible when coping has an appraisal and benefit finding focus in relation to either the threat, the challenge or the harm/loss. The alternative is avoidance coping, which by definition does not include struggling to find a solution. However, the very struggle to solve a problem appears to be a precursor to SRG (Tedeschi & Calhoun, 1995).

A more recent model of coping that specifically explains SRG was developed from an earlier model (Tedeschi & Calhoun, 1995). According to Tedeschi and Calhoun (2004) SRG is entirely an outcome, and not a process. Adversity challenges higher-order goals and beliefs and one's ability to cope emotionally. The ensuing distress then triggers automatic ruminations aimed at identifying behaviours that can reduce the distress. If the behaviours are successful at reducing distress, then ruminations become more deliberate and it is this cognitive processing (analysing, meaning making and appraisal) that is thought to translate into SRG. This revised model of SRG is also transactional and includes four core components; improved relationships with others, openness to new possibilities, greater appreciation of life and enhanced spiritual development/personal strength.

The question has arisen whether SRG is merely an illusion or a reality. The Janus Face model of self perceived posttraumatic growth (Maercker & Zoellner, 2004) suggests that growth following trauma has two components. The first is "constructive, self transcending" as described by the posttraumatic growth concept (Tedeschi and Calhoun, 2004) as well as adversarial growth (Joseph and Lindley, 2005) and stress related growth (Park, 2006b). The second component is a "deceptive, illusionary" aspect, as described by

Taylor (1983), which suggest that although early growth may be illusory, as actual growth develops the illusory component decreases. Werdel and Wicks (2012) suggest that this difference (actual versus perceived growth) may be at the heart of discrepancies between the various SRG scales.

The current climate of positive psychology (Seligman & Csikszentmihalyi, 2002) and the suggestion that SRG is common (Janoff-Bulman & Berger, 2000) have contributed to the growing interest in SRG. Not surprisingly then, a number of researchers (Folkman & Moskowitz, 2000; Updegraff & Taylor, 2000) have encouraged a shift towards more comprehensive models of coping that include both positive and negative outcomes. Consequently, several tools have been developed to measure the growth that follows adversity. These include The Changes in Outlook Questionnaire (CiOQ: Joseph, Williams & Yule, 1993), The Posttraumatic Growth Inventory (PTGI: Tedeschi & Calhoun, 1996), the Stress Related Growth Scale (SRGS: Park, Cohen & Murch, 1996), the Perceived Benefits Scale (PBS: McMillen & Fisher, 1998), and the Thriving Scale (TS: Abraido-Lanza et al., 1998). It appears that subjective scores of SRG are corroborated with observer ratings of growth (e.g. Park et al., 1996; Weiss, 2004) and that subjective SRG scores do not correlate with social desirability (Salsman et al., 2009).

The growing interest in SRG has seen the publication of several texts for clinicians, for example the *Primer on Posttraumatic Growth: An Introduction and Guide* (Werdel & Wicks 2012) as well as books aimed at the general population (Ziegler, 2009; Joseph, 2012). A set of six “signposts” to SRG described in Joseph (2012) include five cognitive strategies aimed at facilitating constructive rumination and one strategy aimed at actioning the changes identified during the earlier strategies. The consequences of trauma clearly include suffering but, the consequences of trauma are wider than suffering alone.

For police officers in particular, the posttraumatic growth model (PTG: Calhoun,

Cann & Tedeschi, 2010) suggests that following a traumatic event officers initially experience intrusive ruminations which then become more deliberate, and this deliberate attention facilitates changes in the officers' existing schema to incorporate the traumatic experience. This would require sufficient time between incidents to engage in deliberate rumination and the "permission" or organisational culture to do so. Police officers typically:

find themselves careering uninterruptedly from one incident to the next. Beyond the frenetic pace this routine may entail, the officer may feel constrained in his work, knowing that as he deals with one incident, his services may be demanded at the next. (Toch, 2002, p. 51)

Police culture appears to discourage help seeking behaviour (Lorber & Gracia, 2010) and police officers are typically unwilling to share work related matters with family and significant others (Toch, 2002), which may mean officers have few, if any, opportunities to gain support and facilitate constructive rumination. Given the organisational factors of frenetic pace and an organisational culture that discourages help seeking, it is not clear whether the Calhoun, Cann & Tedeschi, (2010) model of growth applies to police officers and if it does, in what way officers are able to engage in constructive ruminating. The notion that growth develops not as a result of the trauma directly, but from the struggle to cope with the trauma (Tedeschi & Calhoun, 2004) may mean that officers struggle in ways that are different to civilian populations, since the research indicates that police officers typically see trauma as part of their job, don't process emotions and affect with loved ones and work in organisations where help seeking is discouraged (Toch, 2002) Although the mechanism for SRG is unclear, the high police PTSD prevalence rates make it tantamount that SRG be fostered in this high-risk group.

To facilitate SRG in this high-risk population, it will be important to understand the different factors, and how they impact the development of PTSD in police. Several

organizational factors have been found to impact the development of PTSD. For example, a mismatch between expectations about work and actual experience has been associated with increased rates of PTSD when military personnel were deployed in ways that did not match with subjective expectations (Rona et al., 2007). Given the high levels of stress associated with military and first responder work, the mismatch between expectations and actual experiences has not been accounted for in terms of the impact it may have on both the development of PTSD and on SRG. Routine difficulties in police work, such as faulty equipment, operational difficulties, role confusion; co-worker difficulties and discrimination are more highly correlated with PTSD symptoms (Maguen et al., 2009) than gender, ethnicity or trauma history prior to joining the police force. Whilst police are not alone in dealing with such difficulties, given the already high risk of PTSD prevalence, additional factors that negatively impact PTSD diagnosis need to be researched and better understood. Whilst Maguen et al. (2009) suggest that addressing the “routine” factors potentially mediates the development of work related PTSD, there is a paucity of studies focusing on these routine factors.

Using both longitudinal and qualitative methods, Toch (2002) gathered information from over 900 USA police officers and reported that the most difficult occasions of stress were jointly “injury or death of a child” and “being unfairly accused, unfairly dealt with when accused and being sued or complained against”. This suggests that officers typically do not see the organisation as necessarily supportive during the most difficult times of policing. Longitudinal studies will be required to determine if more supportive workplaces can mediate the development of PTSD.

Military personnel who reportedly felt that they were expected to operate beyond their experience and training or who felt the unit leadership was poor did not flag their concerns. Instead, alcohol consumption increased to risky levels and recruits remained operative rather

than seeking help (Browne et al., 2008). In military populations, stigma is a barrier to care (Britt et al., 2008) and where there is a stigma associated with seeking help, worse mental health outcomes are likely. Other typical barriers to help seeking in military and first responder populations include career concerns and poor previous experiences with treatment providers and a lack of confidence in treatment providers (Visco, 2009). Being viewed as weak by colleagues, privacy/confidentiality concerns and difficulty scheduling time for treatment, given the nature of first responder work (Pietrzak et al., 2009a), are also barriers to seeking support. Ongoing public and internal education campaigns that specifically de-stigmatize mental health problems are required (Fikretogul et al., 2008). Sections of the British military have implemented programs (e.g. Trauma Risk Management Training; Gould, Greenberg & Hetherton, 2007) aimed at de-stigmatising attitudes towards PTSD. Results indicate significantly improved attitudes towards diagnoses, stress generally and help seeking behaviours (Gould, Greenberg & Hetherton, 2007). Educating first responders, and specifically police officers about SRG might be the first step in de-stigmatising PTSD and encouraging help seeking behaviour.

Despite relatively higher prevalence rates of PTSD in first responders, mental health services are under utilised in this population. For example, in a combined group of active duty veterans and National Guard recruits, approximately 39% screened positive for mental health difficulties at 3 and 12 months post deployment. However, in spite of the screening intervention approximately 20% sought treatment (Kim et al., 2010). The avoidance cluster of PTSD symptoms may be part of the reason PTSD sufferers do not access mental health services, but the pervasive stigma associated with PTSD across USA, UK, Australia, New Zealand and Canada is considered to be a more significant barrier (Gould et al., 2010).

Kennedy and Moore (2008) rightly raise the issue of PTSD treatment by psychologists working within military (and first responder) organisations. Client

confidentiality is paramount as are the needs of the individual, but they have to be balanced with the needs of the organisation and this may be a barrier that prevents personnel from seeking help in rank based organisations. A review of ethical considerations for military psychologists identified two main areas of concern for those seeking help; confidentiality and role boundary violations (McCauley, Hughes & Liebling-Kalifani, 2008).

Exploring SRG is not best served by cross-sectional designs because of the possible interaction between outcomes and processes. Instead, longitudinal designs that explore antecedent factors (person variables such as satisfaction with social support) and the dynamic process of coping over time (Tennan, Affleck, Armeli & Carney, 2000) are better at distinguishing between processes and outcomes. For example, avoidant coping is positively correlated with the development of PTSD (Glass, Flory, Hankin, Kloos & Turecki, 2009), but in a cross sectional design, avoidant coping might look like a process or particular strategy that an individual employs (i.e. *a personality characteristic*), whereas in a longitudinal design, avoidant coping might be explained as an outcome that is mediated by individual resources and social support satisfaction. Although more recent studies have been longitudinal, findings are not yet generalizable because the focus has been on specific adversities such as cancer (Schwarzer, Luszczynska, Boehmer, Taubert & Knoll, 2006) or specific communities such as veterans (Laffaye, Cavella, Drescher & Rosen, 2008). However, it is clear that understanding SRG is best served by longitudinal studies.

Independent of study design, one consistent predictor of SRG is satisfaction with social support. Social support facilitates coping, reduces psychological distress and can have a positive impact on physical health (Cohen, 1988). Importantly, satisfaction with social support, rather than actual social support is associated with SRG (Cohen & Wills, 1985; Helgeson & Cohen, 1996; House, Landis & Umberson, 1988; Thoits, 1996). Again, it is possible to argue that processes are being confounded with outcomes because as Linley and

Joseph (2004) suggest, social support satisfaction and SRG are transactional and therefore influence one another. Early findings from longitudinal studies have also demonstrated that social resources and perceived control over the recovery process (Frazier, Tashiro, Berman, Steger & Long, 2004; Helgeson, Snyder & Seltman, 2004) predict SRG, making social support an important factor in SRG across cross-sectional and longitudinal studies.

Transactional models emphasize the dynamic interaction between individuals and their environments rather than a personal characteristic borne by certain individuals and their response to adversity. Calhoun and Tedeschi (2006) emphasize that it is “at least as important to build resources for resilience as it is to remove risk factors” (p. 39) when attempting to improve coping, highlighting the value of social support for coping. Further support for the idea of social support as a buffer (Cobb, 1974) comes from Shapiro and Kunkler (1990) who suggested that occupations that routinely experience adversity typically have social milieus and collegial support that facilitate coping. Whilst there is some support for the idea that first responders do have social milieus that foster optimal coping with adversity (Chan, Devery, & Doran, 2003; Dunning, 2003; Gist & Woodall, 2000; Haarr, 2005; Pennebaker, 2000), consensus has not been reached. Rather, Peters (2007) argues that many officers are dissatisfied with their organization support, and that this increases the risk of officers developing PTSD following adversity.

The buffer hypothesis (Rutter, 1987), which could potentially explain trauma responses in police, suggests exposure to adversity promotes resilience, but this is not a universally accepted. For example, the poor and socially disadvantaged typically experience more adversity (e.g. violence) and although they might appear to cope, because they continue to function, functioning is not necessarily coping. What appears to be functioning can be avoidant coping which has significant costs including compromised physical health, poor psychological well-being and poor social relations (Lepore & Evans, 1996) can all be

negatively impacted.

Several studies have demonstrated that PTSD is correlated with poorer outcomes such as lower general health ratings, workplace absenteeism, increased physical symptoms and higher somatic symptom severity (Hoge et al., 2007). A comprehensive longitudinal study between PTSD symptoms and a range of activities of daily living in Vietnam veterans demonstrated a positive correlation with PTSD symptoms and poorer family relationships, increased smoking and higher rates of no-specific health complaints at a 14 year follow up (Koenen et al., 2008). It has been suggested that a relationship exists between physical injury, and specifically injury severity and PTSD (Blanchard et al., 1995; Frommberger et al., 1998), but other studies have failed to reach the same conclusion (Bryant & Harvey, 1995; Ehlers, Mayou & Bryant, 1998). This raises the question of whether correlated issues are predictors or outcomes of PTSD, and whether the relationship is bidirectional. However, based on the growing number of negative issues correlated with PTSD, it is becoming increasingly important to facilitate growth if possible, given the extent of negative factors correlated with PTSD.

Several studies have identified alcohol related difficulties in both military and other first responder populations. In a cohort of UK Armed Services personnel (Iverson et al., 2007) alcohol abuse was associated with current service. Deployment is correlated with increased alcohol consumption and younger personnel are at highest risk of alcohol related difficulties (Jacobson et al., 2008). Problems at home during deployment also predict increased alcohol consumption (Browne et al., 2008). More recent alcohol abuse rates suggest that 50% of veterans diagnosed with PTSD or depression (often co-morbid with PTSD) met criteria for alcohol abuse and aggressive behaviour (Thomas et al., 2010). In a study of alcohol use amongst Australian police (O'Brien & Reznick, 1988) 37 per cent of officers consumed alcohol at harmful levels and 31 per cent engaged in binge drinking,

suggesting that, although officers continue to function, there is a significant cost. The Australian Bureau of Statistics' National Health Survey (1989-1990) indicated that 11 per cent of the population consume alcohol at harmful levels but rates of alcohol abuse in police officers were almost 4 times higher and there is a suggestion that these figures are an underestimation (McDonald, 2000). Underestimates are common in the general population too. Addressing alcohol abuse is the "mainstay" of the Employee Assistance Programs (EAP) provided to police officers in the USA (Toch, 2002) and alcohol is part of the organizational culture in the New South Wales Police (McDonald, 2000). Alcohol abuse is a serious condition in its own right, and for police officers that are at an increased risk of PTSD, alcohol abuse negatively impacts PTSD treatment (Foa, Keane & Friedman, 2000). Understanding SRG is essential for the psychological well being of this population who experience high rates of trauma exposure, high levels of alcohol abuse and an organizational culture that encourages the suppression of work-related emotional injuries (Reiser & Geiger, 1984).

The negative effects of PTSD and associated factors are not limited to those diagnosed with PTSD. It appears co-habiting family members are also affected when a partner has a PTSD diagnosis. A ground breaking study investigated the physiological distress of deployment of veterans, with or without PTSD, and found elevations on clinical scales beyond the 90th percentile for partners of veterans with PTSD. Partners, it seems, also show an elevation in symptoms when they perceive higher symptoms in their partners (Renshaw, Rodrigues & Jones, 2008). This has implications for operational police officers that return home daily in a distressed or withdrawn state. Fortunately, whilst partners appear to have similar rates of mental health difficulties as soldiers, Eaton et al. (2008) found that partners typically seek treatment more often and are less distressed about the stigma of mental health than soldiers. In recognition of the impact of PTSD on partners, factor analysis

of responses by 665 female partners of Australian Veterans (MacDonell et al., 2010) led to the development of the Partners of veterans Distress Scale. This is entirely appropriate given the most important predictor of anxiety/depression scores in children is the mother's anxiety (Al-Turkait and Ohaeri, 2008). If PTSD symptoms relate to less positive parenting, less parental involvement and more inconsistent discipline (Gewirtz et al., 2010), is important to recognise partner distress not only for the impact it has on the adult relationship, but also for the impact it has on the children in that family.

The knock on effect of PTSD for families is becoming clearer. Not surprisingly, there appears to be a bidirectional relationship between family functioning and trauma. Family functioning can mediate the effects of trauma exposure (Figley, 1993) and family functioning can predict PTSD symptoms at 6 months post treatment (Evans, Cowlshaw & Hopwood, 2009). More recent research has begun to describe the impact of PTSD on families of at risk populations, and again the initial focus has been on military families (e.g. Lowe et al., 2012). Given the apparent differences in PTSD prevalence and the difference in associated factors between military and police populations, research on police families is required if we are to better understand the difficulties that police families face when an officer is diagnosed with PTSD.

Suicide has been shown to correlate strongly with the re-experiencing cluster of PTSD symptoms (Bell & Nye, 2007). Rather than age and combat exposure, it appears that interpersonal traumas and experiencing 3 or more traumas predicts suicide in military personnel (Belik et al., 2007). Studies of suicidal behaviour typically focus on suicidal ideation or suicide attempts, but a large study of completed suicides based on National Health Interview Survey (NHIS) data (Kaplan et al., 2007) found that veterans were twice as likely to die from suicide than non-veteran populations. There are no equivalent studies for police officers. A review of 65 studies investigating the risk factors for suicidal thoughts and

behaviours found a strong relationship between PTSD and suicidal ideation and behaviours, independent of trauma type (Panagioti, Gooding & Tarrier, 2009). Military personnel are more likely to commit suicide than civilian personnel and although female military suicide rates are lower than their male counterparts, rates of female military suicide rates are higher than comparable civilian rates (McCarthy et al., 2009). Importantly, rates of suicide by firearm were found to be higher in military personnel than the civilian population, with the highest risk being younger (18-34 years) males (Kaplan, et al., 2009). Repeated exposure to trauma and violence, access to firearms and acute periods of high distress as well as insomnia and nightmares may contribute to suicide rates in veterans (Bryan et al., 2010). All of these factors that potentially contribute to suicide rates in military personnel are common to police. An investigation of mortality rates associated with PTSD showed that male veterans diagnosed with PTSD at baseline were three times more likely to be deceased at the 14 year follow up than the veterans who did not have PTSD at baseline (Boscarino, 2008). Eliciting SRG in high-risk populations potentially mediates the risk of suicide, but there are no specific police data available.

Another aspect of trauma that is not clear in police populations is what the predictors of SRG are for this specific population. Individual studies have found a relationship between acute stress response and later PTSD symptom severity (e.g. Denson et al., 2007), but a meta analysis of risk factors (Kleim, Ehlers & Glucksman, 2007) suggests that mental defeat, rumination and pre-existing anxiety or depression, as a combination, best predicted chronic PTSD. A longitudinal study of primarily male survivors of community violence (Denson et al., 2007) found that while demographics, trauma history, trauma characteristics and reactions to the traumatic events predicted PTSD severity at 12 months follow up, the strongest predicted was acute symptom severity at day 5, as per total scores on the PCL-C (Blanchard, Jones, Alexander & Forneris, 1996). Criterion A2 for Acute Stress Disorder (ASD), the

precursor to PTSD, stipulates intense physiological arousal involving intense fear, helplessness, or horror, making physiological arousal a core aspect of PTSD. More recently, elevated respiratory rates have also been linked to worse PTSD outcomes (Bryant et al., 2008). Again, these findings are not specific to police. In light of the training that police receive and the finding that police officers report lower PTSD symptoms post event (Perrin et al., 2007), compared with other first responder populations and community populations, more research is needed to better understand the relationship between acute stress and PTSD in police and associated factors such as length of service.

Other factors associated with worse PTSD outcomes include a trauma history and/or adverse life events throughout the life cycle (e.g. Solomon et al., 2008). While childhood trauma has been associated with PTSD, a longitudinal community study found a stronger association with anxiety and depression than that of PTSD (Copeland et al., 2007). Childhood trauma, and more specifically, two or more categories of childhood adversity, was a significant predictor of PTSD in soldiers deployed to Iraq (Cabrera et al., 2007), which does perhaps suggest a dose response, or a vulnerability given earlier experiences. Interestingly, Pole et al. (2007) investigated physiological reactivity in psychologically healthy police cadets and found that officers with a history of childhood adversity showed greater skin conductance and less positive emotion across all levels of the stimulus. The authors concluded that childhood trauma may have lasting effects in emotional and physiological reactivity, despite not currently meeting DSM–IV–TR criteria for any Axis I disorders.

More recent studies have begun to explore the possibility that a trauma history might have a positive impact on coping with trauma. Burke and Shakespeare-Finch (2011) assessed whether a prior trauma history facilitated positive emotional outcomes when police officers were later exposed to trauma as part of their profession. Using a longitudinal design, officer trauma history was assessed 10 weeks into training and posttraumatic growth was assessed 12

months into operational duties. The authors concluded that officers with a trauma history prior to joining the police reported more posttraumatic growth when faced with the challenges of the profession. After graduating from the academy, Australian police officers not only work as Probationary Constables during this time, but they also typically work closely with more experienced officers during this first 12 months on the job (see: <http://www.police.nsw.gov.au/recruitment/faq>). The first 12 months of operational duties may not be sufficient time to assess the impact of work related trauma. Both the organisational culture (Rona et al., 2007) and the effort that individuals invest in becoming police officers may result in cognitive dissonance (Festinger, 1957) that perhaps mediates the early effects of trauma. This may be the case if there is a trauma threshold, beyond which officers cope less and less well with ongoing trauma.

Some studies have found that SRG requires time to develop (e.g. Cordova et al., 2001; Evers et al., 2001; Park et al., 1996, Study 3, Time 1; Polatinsky & Esprey, 2000) whilst others have found that time since incident is not a factor in SRG (e.g. Fromm et al., 1996; Milam, Ritt-Olsen & Unger, 2009, Park et al., 1996, studies 1 and 2: Study 3 Time 1). The difficulty again is that these studies are across different populations (e.g. adolescents; Milam et al., 2004) and trauma contexts (e.g. bone marrow transplants; Milam et al., 1996).

There appears to be an interaction between sex and trauma history in some populations, but this finding is typically in civilian populations, as described by Tolin and Foa (2009). Females with a past interpersonal violence are more sensitive to future violence, even if the subsequent violence is not interpersonal, but this was not the case for males (Breslau & Anthony, 2007). The authors suggested that interpersonal violence not only elicits a PTSD response directly in females, but also sensitizes females to subsequent trauma of a lesser magnitude too, which makes sex an important consideration in the military. Interestingly, females deployed on Operation Iraqi Freedom sought treatment more often than

did their male counterparts (Felker et al., 2008), which is consistent with the general literature that females engage in help seeking behaviour more often than do males (Oliver, Pearson, Coe & Gunnell, 2005) and this may partially explain the discrepancy between male and female rates of PTSD. Findings on interaction between gender and PTSD will be skewed if males are less likely to present for assessment than females, but the data are not consistent.

During a rest and recuperation program during the same Operation Iraqi Freedom period, but in a different geographic area, personnel had lower overall help seeking behaviours (Riddle et al., 2008), compared with other military personnel. In an unpublished study of police staffing in Australia (Bull, 2005), funded by the New South Wales Police Force, female police officers attended significantly more domestic violence incidents and these incidents were typically reported as relatively high stress compared to other incidents. This highlights the importance of understanding the specific factors that may confound the sex differences both in the development of PTSD and in understanding, and facilitating, SRG in police.

In order to prime or facilitate SRG, biological and psychological predictors will need to be understood better. Early studies were hampered by limited data (e.g. Hoge, Austin & Pollack, 2007), but events such as the 9/11 terrorist attack provided an opportunity to investigate civilian trauma and Bonanno et al. (2007) found that age, sex, race, education level, level of trauma exposure, income change, social support, chronic disease and trauma history predicted resilience following the 9/11 attack. A growing body of research is helping to better understand the vulnerability factors and what can be done to facilitate growth in at risk populations.

Despite the recognition that SRG is possible, and likely, given certain factors (e.g. satisfaction with social support), almost all aspects of the process are still under investigation. Some remain unconvinced that SRG exists suggesting instead that a minimal response better

explains the phenomenon (Peterson, Park, Pole, D'Andrea & Seligman, 2008). On the contrary, SRG has been described following clinically significant levels of stress symptoms (Calhoun & Tedeschi, 2006; Lindley & Joseph, 2004) suggesting that SRG is not under-responsiveness to adversity as suggested by the minimal dose hypothesis. Furthermore, positive affect appears to co-exist with distress following adversity (Folkman & Moskowitz, 2000), which also suggests that SRG is not a minimal response. Others (e.g. Frazier, Tennen, Gavian, Park, Tomich & Tashiro, 2009) have suggested that perceived SRG and actual SRG may be different phenomenon since a study found only a small relationship between the two, but each was strongly related to either decreased distress (actual growth) or positive reinterpretation (perceived growth). These findings were based on adverse events within an eight-week period and it is not yet clear from the literature whether eight weeks is sufficient time to be able to process the trauma and for SRG to develop. For police officers, longitudinal studies will be needed to measure PTSD symptom severity, and later, SRG for a clearer picture of whether SRG in police follows a minimal response (i.e. low PTSD symptoms) or clinically significant PTSD, as measured by DSM-IV-TR (APA, 2000) PTSD caseness.

Just as early models of coping focused on negative outcomes, so too did early treatments. The first trauma interventions were developed to facilitate the return of soldiers to combat duties (Solomon & Benbenishty, 1986). The intervention became known as critical incident stress debriefing (CISD; Watts, 1994). CISD encouraged emotive trauma processing immediately post trauma. By 1993 CISD was common practice (Robinson & Mitchell, 1993) and it was provided to emergency workers (Ersland, Weisaeth, & Sund, 1989; Shapiro & Kunkler, 1990) despite no empirical evidence. One systematic review of the Cochrane database found no empirical support for CISD (Rose, Bisson, Churchill, 2002) and possibly worse outcomes following CISD (e.g. Bisson, Jenkins, Alexander, & Bannister, 1997),

especially when applied to police officers (Carlier, Lamberts, Van Uchlen, Gersons et al., 1998). Researchers have since suggested that encouraging emotional processing post trauma, a core component of CISD, may be too overwhelming for some. Instead, allowing time for personal reflection may be a more adaptive response (Ursano, Fullerton, Vance, & Wang, 2000). It also appears that the psychoeducation provided in CISD may heighten awareness of possible negative symptoms and thereby increase the likelihood of those symptoms developing (Raphael, Melrduim & McFarlane, 1995). Not only may debriefing be ineffective, but debriefing may also cause harm by eliciting PTSD symptomology (Cannon, McKenzie, & Sims, 2003).

It has also been suggested that CISD changes “heroes into patients” (Sijbrandij, et al., 2006) by priming individuals for the negative outcomes, those very outcome can be elicited (Bisson, et al., 1997). CISD is now contraindicated and most guidelines, for example The International Society for Traumatic Stress Studies (ISTSS) and the ACPMH.

CISD is based on the premise that the expression of thoughts and feelings following trauma will lessen the negative impact of a traumatic event. However, after the September 2001 terrorist attack, over 2000 people responded to a web based study where participants described their feelings following the trauma. The authors were surprised to find that worst outcomes were predicted by lengthy responses and best outcomes by participants who chose not to respond (Seery et al., 2008).

Following concerns about CISD, a brief alternate intervention was described in the form of simple symptom monitoring for two weeks, which was shown to be effective for Acute Stress Disorder, the precursor to PTSD (Ehlers, et al., 2003). After a fortnight of symptom monitoring 17 per cent of participants no longer meet diagnostic criteria for PTSD. These findings led to what the United Kingdom’s National Institute for Health and Clinical Excellence termed “watchful waiting”. “Watchful waiting” is indicated for acute trauma

responses (within the first month), especially if symptoms are mild and reducing. Thereafter, trauma focused cognitive behaviour therapy (TFCBT) is recommended if DSM-IV-TR criteria continue to be met.

Findings that CIST can be harmful have led to the development of another first line trauma treatment, Psychological First Aid (PFA). Psychological First Aid is an evidence based (ACPTMH, 2009), early intervention for trauma that assumes most people will recover spontaneously. The aim of PFA is to enhance coping by encouraging the use of existing resources. PFA achieves this by promoting feelings of safety, calmness, a sense of self, community-efficacy, and connectedness and by instilling hope for recovery. PFA emphasizes social support, aims to reduce initial distress and fosters short and long-term adaptive functioning. Despite the enthusiastic uptake of PFA for workers experiencing occupational trauma exposure (e.g. Bancroft & Cooper, 2008) to date no specific priming for SRG has been incorporated into PFA (Jackson, 2007), despite the lessons of the past where priming for negative symptoms elicited negative symptoms. One reason for this is the paucity of longitudinal research that better describes causation and the apparently contradictory and/or unexpected findings across different populations and settings.

Other brief, early interventions have demonstrated efficacy for reducing PTSD symptoms too. A video intervention shown before the forensic examination for female rape survivors found lower scores on measures of PTSD and depression in the group with a prior rape history compared with the scores in the control group (Resnick et al., 2007). At follow up, depression scores were also lower relative to the TAU condition. Importantly, women with a prior rape history in the video condition typically maintained the lowest level of PTSD and depression symptoms. A brief CBT based intervention aimed at mediating the risk of developing PTSD found that although recovery was accelerated when participants were given a self help book, there were no group differences in either PTSD symptoms or quality of life

measures, and the gains were not maintained at follow up (Sijbrandij et al., 2007). Several factors may have impacted this finding. Firstly, groups had a range of traumas, which may not provide a clear enough picture given that some traumas, for example, interpersonal traumas are more likely to result in PTSD than non-assaultive traumas (APA, 2000). It is also possible that at least some of the participants who received the booklet were not capable of reading the material at the time. Since PTSD is associated with concentration difficulties, as described by criterion D 3 in the DSM-IV-TR, interventions will need to be brief and where possible provided in both verbal and written modalities.

The first systematic reviews of treatment studies for first responders (Haugen, Eyces & Weiss, 2012) concluded that whilst random controlled trials (RCTs) showed significant treatment effects ($d = 1.37$; $h = 0.92$), there is not yet sufficient literature for evidence-based recommendations for first responders. Not only do many of the studies differ in terms of environmental contexts, but they also differ in clinical assessments, treatments and not surprisingly then, outcomes. However, several early intervention programs targeting resilience, rather than growth, have had encouraging results. One strengths based approach is the Resourceful Adolescent Program (RAP; Shochet et al., 2001), which aims to reduce depression in schoolchildren. Based on RAP an adult version, the Promoting Adult Resilience program, was developed to address risk and protective factors in work and home life (PAR; Loissis et al., 2009; Millea et al., 2008). Adhering to both evidence based practice and the Community-based participatory research protocol (e.g. Ahmed & Palermo, 2010; Isreal et al, 2005), the PAR was adapted specifically for police to become the Promoting Resilient Officers program (PRO; Shochet et al., 2011). Whilst the PRO is seen as a resilience-promoting program it specifically includes a module on growth following trauma. The authors reported that officers were highly engaged in the 7 x 2-hr weekly program. It will be important for future researchers to follow these officers and describe the impact the PRO

has had on trauma symptoms at a later date.

There are a number of reasons why providing information about SRG is appropriate. Firstly, treatment needs to “plant a helpful seed” (Litz, 2009) and if psychoeducation about negative outcomes increased the risk of negative outcomes (Bisson, Jenkins, Alexander & Bannister, 1997) then perhaps providing psychoeducation about SRG can elicit positive outcomes. Secondly, Psychoeducation on SRG can easily be incorporated into PFA or TBCBT because it is relatively brief and fits well with the philosophy of providing relevant information. Facilitating SRG also constitutes strength building, which is fundamental to the therapeutic process (Seligman & Csikszentmihalyi, 2002). Finally, four issues that should be considered when developing effective interventions include cost effectiveness, tolerance of treatment, ease of implementation and access to care (Sonis, Palmieri, Lauterbach, King & King, 2008). Psychoeducation about SRG fits well with all of these considerations. Early interventions that are brief, cost effective and part of routine treatment may be the optimal approach for psychoeducation about stress related growth.

The area of SRG is in its infancy, but there is now growing evidence that growth is possible across different populations, including first responder populations (e.g. Shakespear-Finch, Smith & Gow et al., 2003), who are at higher risk of developing PTSD (APA, 2000). Police and other first responders appear to experience several difficulties associated with PTSD including alcohol abuse (e.g. O’Brien & Resnick, 1988), spousal distress (e.g. Eaton et al. (2008), CVD (e.g. Kubzansky et al., 2007). Police also appear to experience higher suicide (e.g. Bryan et al., 2010) and higher mortality rates (e.g. Boscarino, 2008) than the general population, making it vitally important that research be focused on this at risk population. In particular, the predictors of growth need to be fully explored in police officers if treatments are to elicit growth rather than the negative symptoms only of PTSD. Rather than a minimal response to trauma, SRG appears to develop following clinically significant symptoms

(Calhoun & Tedeschi, 2006)). Whilst the predictors of growth are not yet clear, social support is the most commonly cited predictor (e.g. Helgeson, Snyder & Seltman, 2004). It is not clear whether a trauma history prior to joining the police positively (e.g. Burke & Shakespear-Finch, 2011) or negatively (e.g. Solomon et al., 2008) impacts SRG. Current treatments for PTSD specifically exclude CISM, which has been found to elicit higher levels of PTSD symptomology (Raphael, Meldrum & McFarlane, 1995). As a result, more recent treatments have shifted away from focusing on negative symptomology and recent police training modules have included a growth related module (Sochet, Shakespear-Finch, Craig et al., 2001), with a view to improving PTSD outcomes in police officers. Growth education following trauma is about *possibility*, and clinicians are responsible for describing that possibility and encouraging clients to develop a narrative that includes growth (Werdel & Wicks, 2012).

The aim of this study is to demonstrate that SRG can be elicited in police officers through the use of a brief intervention that primed officers about SRG and the potential benefit of social support following trauma.

Firstly, it is hypothesised that officers primed about SRG will report higher levels of growth, as per the SRGS (Park, Cohen & Murch, 1996), than officers who are not primed about SRG. Secondly, officers who are primed with verbal and written information will report higher levels of SRG than officers receiving verbal priming only. The third hypothesis is that officers who receive the level of social support they expect, or more, will report higher levels of SRG, as per the SOS (Power, Champion & Aris, 1988), compared with officers who receive less social support than expected. The fourth hypothesis is that officers who report higher levels of trauma distress, as measured by the PCL-C (Blanchard, Jones, Alexander & Forneris, 1996) will report higher levels of SRG, compared to officers who report lower levels of trauma distress. SRG will be impacted by the trauma history that officers report

prior to joining the police, as per the TLEQ (Kubany, Haynes, Liesen, Owens, Kaplan et al., 2000) is hypothesis five. The sixth hypothesis is that officers who report higher levels of trauma distress, as per the PCL-C (Blanchard, Jones, Alexander & Forneris, 1996), will also report lower levels of general well-being, as per the GHQ-28 (Goldberg & Hillier, 1979). The seventh hypothesis is officers with longer service histories or more workplace trauma (PLES: Carlier & Gersons, 1992) will report more trauma distress, as per the PCL-C (Blanchard, Jones, Alexander & Forneris, 1996), and higher levels of SRG, as per the SRGS (Park, Cohen & Murch, 1996). Finally, it is hypothesised that sex may impact SRG.

Submitted Manuscript

Abstract

This study investigated whether stress related growth (SRG) could be primed in traumatised police officers, and explored the predictors of SRG in police officers using the predictors documented in non-police populations. Fifty-nine officers completed self-report questionnaires and randomly received either no priming, verbal or verbal plus written SRG priming. Twelve weeks later SRG was measured. Results indicated higher SRG following verbal plus written priming, $F(2, 56) = 12.61, p < .001$, with no significant difference between verbal and no priming, $p = .101$. Contrary to expectations, none of the factors typically predictive of SRG contributed to the SRG reported by these police officers. This study demonstrates a brief, low cost intervention can prime SRG in police officers and highlights the importance of police specific studies.

Keywords

Posttraumatic Stress, police, stress related growth, coping

The Impact of Growth Focused Psychoeducation on Posttraumatic Growth in Police Officers

Posttraumatic stress disorder is a significant mental health issue with community-based rates for lifetime prevalence ranging between 1% and 14%. Different trauma types possibly account for some, but not all, prevalence variability. For example, following combat situations, natural disasters and criminal violence prevalence rates are as high as 58% (American Psychological Association; APA, 2000). Further variability in the prevalence rates has been ascribed to a dose response in high-risk groups because more exposure to adversity increases the risk of PTSD (Brewin, Andrews & Valentine, 2000).

The DSM–IV–TR describes military and first responder populations as “at risk individuals” with relatively higher rates of lifetime PTSD prevalence (3%-51%) compared with civilian populations (1%-14%). First responders include emergency services personnel, police and volunteer services that face trauma as part of their occupation. Australian police rates of PTSD vary between 95% (Rallings, 2000) for clinically significant PTSD symptomology, and 8.3% (Higgins, 2001) for PTSD diagnoses. Trauma is ubiquitous for police officers and increases the risk of developing PTSD (McEwen & Stellar, 1993; Toch, 2002). A diagnosis of PTSD has both significant personal costs for police officers and their families, as well as a public cost in terms of workplace absenteeism (Hoge et al., 2007) following PTSD.

Despite the high police PTSD prevalence and incidence, relatively little literature is police specific. Most trauma research focuses on civilian populations. For example, following the USA September 2001 attacks, studies focused on victims/civilians rather than first responders, as is common in the trauma literature (Kleim & Westphal, 2011). Besides the

research on civilian trauma, the next most researched population is the Military. The military literature may provide a better understanding of PTSD in police than does the civilian literature, because like Military, police and other first responders experience chronic trauma as part of their occupation. The military and first responder populations experience occupational trauma and trauma that is more frequent and qualitatively different to the trauma experienced by civilians.

Notwithstanding the similarities between military and police trauma exposure, the picture remains complex because prevalence rates for PTSD within the military vary considerably too. For example, a meta-analysis of 19 studies (Sundin et al., 2010) found PTSD prevalence rates in military personnel deployed to Iraq varied between 1.4% and 31%. The authors suggest that despite the apparent heterogeneity of the studies, methodological differences made it difficult to compare PTSD prevalence across studies. In a comparison of PTSD prevalence rates between recruits not seeking treatment (5% - 20%) and those seeking treatment (~50%), both groups returned considerably higher PTSD rates than the lifetime community prevalence of between 1% and 14% (Ramachand et al., 2010).

Posttraumatic Stress Disorder rates vary within first responder populations too. For example, on scene first responders typically have higher rates of PTSD than secondary workers such as hospital staff (Durham, McCammon & Allison, 1985). In an Australian study of fire fighters, 75% met criteria for PTSD, with 7% categorised as severe and the remaining 68% as moderate levels of PTSD. Since DSM-IV-TR PTSD criteria does not delineate between moderate and severe PTSD, 75% of fire fighters met diagnostic criteria for PTSD (Regehr, Hill & Glancy, 2000), which is approximately five times higher than the high range community rates described in the DSM-IV-TR (APA, 2000). It could be argued that police work is akin to the work fire fighters perform, and therefore that PTSD rates may be comparable. Police officers are exposed to life threatening situations and often recover the

dead and injured (Fullerton et al., 2006) Police also deliver death notifications to surviving family members, which Toch (2002) describes as a major stressor for police officers. In summary, PTSD rates in police officers are likely as high as the under-reported rates in the military (e.g. 30% Schlenger et al., 1992) and other first responder populations, such as fire fighters (e.g. 75%; Regehr, Hill & Glancy, 2000), which means the risk of developing PTSD as a police officer carries at least a 10 fold risk compared to community risk of PTSD.

Early theories of coping (e.g. Horowitz, 1976; Silver, Boon & Stones, 1983; Tait & Silver, 1989) focused only on the negative outcomes (e.g. Chodoff, Friedman & Hamberg, 1964), but more recent research has shifted to the positive outcomes following adversity. As many as 50 per cent of individuals have reported positive outcomes (Schaefer & Moos, 1992), that are independent of the negative outcomes (Huppert & Whittington, 2003). These positive outcomes have been described as a “value-added” (Ickovics & Park, 1998), “better-off-afterward” (Carver, 1998), or “bouncing forward” (Walsh, 2002) rather than simply returning to pre-adversity functioning. It appears that following adversity, an individual’s levels of adaptation, psychological development and life awareness can undergo transformational change beyond pre-trauma levels.

Cognitive explanations for coping describe the transactional interplay between environmental demands and personal resources and can explain both the positive and negative outcomes following trauma. The cognitive theory of stress and coping (Lazarus & Folkman, 1984) incorporates appraisal, coping, resolution and outcome as well as a meaning based process. Thus providing a dynamic, transactional process between individual characteristics and environmental factors, which results in cognitive appraisals of one’s ability and resources for coping, as well as appraisals about situational demands.

The conceptual model for positive outcomes of crises (Schaefer & Moos, 1992), another transactional model, emphasizes the importance of factors prior to the crisis, as well

as social support and community resources, for understanding positive outcomes.

Furthermore, coping is influenced by event severity, duration, focus (self or others), onset and predictability. Positive outcomes are possible when coping has an appraisal and benefit finding focus regarding the threat, challenge or harm/loss. The very struggle to solve a problem appears to be a precursor to SRG (Tedeschi & Calhoun, 1995).

According to Tedeschi and Calhoun (2004) SRG is entirely an outcome, and not a process. Adversity challenges higher-order goals and beliefs and one's ability to cope emotionally. The ensuing distress then triggers automatic ruminations aimed at identifying behaviours that can reduce the distress. If the behaviours successfully reduce stress, then ruminations become more deliberate and it is this cognitive processing (analysing, meaning making and appraisal) that is thought to translate into SRG.

The question has arisen whether SRG is merely an illusion or a reality. The Janus Face model of self perceived posttraumatic growth (Maercker & Zoellner, 2004) suggests that growth following trauma has two components. The first is "constructive, self transcending" as described by the posttraumatic growth concept (Tedeschi and Calhoun, 2004) as well as adversarial growth (Joseph and Lindley, 2005) and stress related growth (Park, 2005b). The second component is a "deceptive, illusionary" aspect, as described by Taylor (1983), which suggest that although early growth may be illusionary, as actual growth develops the illusionary component decreases. Werdel and Wicks (2012) suggest that this difference (actual versus perceived growth) may be at the heart of discrepancies between the various SRG scales. It appears that subjective SRG scores corroborates with observer ratings of growth (e.g. Park, Cohen & Murch, 1996; Weiss, 2004) and subjective SRG does not correlate with social desirability (Salsman et al., 2009), suggesting that SRG is a discrete, measurable construct independent of a desirability bias.

If the posttraumatic growth model (PTG: Calhoun, Cann & Tedeschi, 2010) were

applied to police officers it would suggest that after a traumatic event officers initially experience intrusive ruminations, which then become more deliberate, and this deliberate attention facilitates changes in the officers' existing schema to incorporate the traumatic experience. If the PTG model explains SRG in police officers, there would need to be sufficient time between incidents to engage in deliberate rumination. This may not be possible if "officers typically career uninterruptedly from one incident to the next" (Toch, 2002). Additionally, police cultures typically discourage help seeking behaviour (Lorber & Gracia, 2010), within the organisation, and officers are often unwilling to share work related matters with family and significant others (Toch, 2002). A frenetic pace and little or no engagement with others about incidents may limit the opportunities to engage in processing and deliberate rumination. If the Calhoun, Cann & Tedeschi, (2010) growth model applies to police officers, it is not clear whether or how police officers engage in constructive ruminating that is different to non-police populations. The notion that growth develops not as a result of the trauma directly, but from the struggle to cope with the trauma (Tedeschi & Calhoun, 2004) may mean that officers struggle in ways that are different to civilian populations, so police specific studies are essential for describing the processes that officers engage in. The increased risk of developing PTSD for police officers means an increased risk of experiencing the negative consequences of trauma. If as the research indicates, growth is possible following trauma, then facilitating growth in police officers increases the likelihood that officers will experience positive outcomes following trauma, including improved relationships with others, openness to new possibilities, greater appreciation of life and enhanced spiritual development/personal strength (Tedeschi & Calhoun, 1995).

Several organizational factors have been found to impact the development of PTSD, and may therefore impact SRG. For example, a mismatch between expectations about work and actual experience has been associated with increased rates of PTSD when military

personnel were deployed in ways that did not match subjective expectations (Rona et al., 2007). Given the high levels of stress associated with military and first responder work, the mismatch between expectations and experiences has not been accounted for in the development of PTSD or SRG. Routine difficulties in police work, such as faulty equipment, operational difficulties, role confusion, co-worker difficulties and discrimination are highly correlated with PTSD symptoms (Maguen et al., 2009). Perhaps if these additional factors negatively impact PTSD there may also be an impact on SRG, but the picture for police officers remains unclear.

Using both longitudinal and qualitative methods, Toch (2002) gathered information from over 900 USA police officers and reported that the most difficult occasions of stress were jointly “injury or death of a child” and “being unfairly accused, unfairly dealt with when accused and being sued or complained against”. If officers typically do not see the organisation as supportive, especially during the most difficult times of policing, these organisational factors may impact SRG.

Despite relatively higher PTSD prevalence rates in military and first responders, mental health services are under utilised in these populations. For example, in a combined group of active military personnel, approximately 39% screened positive for mental health difficulties at 3 and 12 months post deployment. Following the screening intervention only half (20%) sought treatment (Kim et al., 2010). The avoidance cluster of PTSD symptoms may be part of the reason PTSD sufferers do not access mental health services, but the pervasive stigma associated with PTSD across USA, UK, Australia, New Zealand and Canada is considered a more significant barrier (Gould et al., 2010).

Kennedy and Moore (2008) raised the issue of PTSD treatment by psychologists working within military (and first responder) organisations. Client confidentiality is paramount as are the needs of the individual, but they have to be balanced with the needs of

the organisation and this may be a barrier that prevents personnel from seeking help in rank based organisations. A review of ethical considerations for military psychologists identified two main areas of concern for those seeking help; confidentiality and role boundary violations (McCauley, Hughes & Liebling-Kalifani, 2008).

Exploring SRG is not best served by cross-sectional designs because of the possible interaction between outcomes and processes. Instead, longitudinal designs that explore antecedent, person variables and the dynamic process of coping over time (Tennan, Affleck, Armeli & Carney, 2000) are better at distinguishing between processes and outcomes.

Independent of study design, one consistent predictor of SRG is satisfaction with social support. Social support facilitates coping, reduces psychological distress and can have a positive impact on physical health (Cohen, 1988). Importantly, satisfaction with social support, rather than actual social support, is associated with SRG (Cohen & Wills, 1985; Helgeson & Cohen, 1996; House, Landis & Umberson, 1988; Thoits, 1996). Again, it is possible to argue that processes are being confounded with outcomes because as Linley and Joseph (2004) suggest, social support satisfaction and SRG are transactional and therefore influence one another.

Further support for the idea of social support as a buffer (Cobb, 1974) comes from Shapiro and Kunkler (1990) who suggested that occupations that routinely experience adversity typically have social milieus and collegial support that facilitate coping. Whilst there is some support for the idea that first responders work in environments that foster optimal coping (Chan, Devery, & Doran, 2003; Dunning, 2003; Gist & Woodall, 2000; Haarr, 2005; Pennebaker, 2000), consensus has not been reached. Rather, Peters (2007) argues that many police officers are dissatisfied with their organization support, and this increases the risk of developing PTSD following adversity.

The buffer hypothesis (Rutter, 1987), which could potentially explain trauma

responses in police, suggests exposure to adversity promotes resilience, but this is not universally accepted. For example, a coping style based on avoidance may, at least initially, appear to be adaptive, but it can lead to negative outcomes rather than providing protection against future traumas. For example, Lepore and Evans (1996) suggest avoidant coping can have significant costs including compromised physical health, poor psychological well being and poor social relations.

Other factors associated with worse PTSD outcomes include a trauma history and/or adverse life events (e.g. Solomon et al., 2008). While childhood trauma has been associated with PTSD, a longitudinal community study found a stronger association with anxiety and depression than with PTSD (Copeland et al., 2007).

More recent studies have begun to explore the possibility that a trauma history might have a positive impact on coping with trauma. Burke and Shakespeare-Finch (2011) assessed whether a prior trauma history facilitated positive emotional outcomes when police officers were later exposed to trauma as part of their profession. Using a longitudinal design, officer trauma history was assessed 10 weeks into training and posttraumatic growth was assessed 12 months into operational duties. The authors concluded that officers with a trauma history, prior to joining the police, reported more SRG when faced with the challenges of the profession. However, after graduation from the academy, Australian police officers work as Probationary Constables for roughly 12 months where, they work closely supervised by more experienced officers (see: <http://www.police.nsw.gov.au/recruitment/faq>). The probationary period may not be sufficient time, or sufficient trauma exposure to elicit a trauma response in probationary officers. Both the organisational culture (Rona et al., 2007) and the effort that individuals invest in becoming police officers may result in cognitive dissonance (Festinger, 1957) that perhaps mediates the early effects of trauma. This may be the case if there is a trauma threshold, beyond which, officers cope less well with ongoing trauma.

Some studies have found that SRG requires time to develop (e.g. Cordova et al., 2001; Evers et al., 2001; Park et al., 1996, Study 3, Time 1; Polatinsky & Esprey, 2000) whilst others have found that time since incident is not a factor in SRG (e.g. Fromm et al., 1996; Milam et al., 2004, Park et al., 1996, studies 1 and 2: Study 3 Time 1). The difficulty again is studies focus on specific populations (e.g. adolescents; Milam et al., 2004), so that findings are not generalisable.

Despite the recognition that SRG is possible, some remain unconvinced that SRG exists suggesting instead that a minimal response better explains the phenomenon (Peterson et al., 2008). However, SRG has been described following clinically significant levels of stress symptoms (Calhoun & Tedeschi, 2004; Lindley & Joseph, 2004) suggesting that SRG is not under-responsiveness as suggested by the minimal dose hypothesis, but rather an improved state following adversity. Furthermore, positive affect appears to co-exist with distress following adversity (Folkman & Moskowitz, 2000), which also suggests that SRG is not a minimal response.

Just as early models of coping focused on negative outcomes, so too did early treatments. The first trauma interventions were developed to facilitate the return of soldiers from combat duties (Solomon & Benbenishty, 1986). The intervention became known as critical incident stress debriefing (CISD; Watts, 1994) and encouraged emotive trauma processing immediately post trauma. By 1993 CISD was common practice (Robinson & Mitchell, 1993) and it was provided to emergency workers (Ersland, Weisaeth, & Sund, 1989; Shapiro & Kunkler, 1990) despite no empirical evidence. One systematic review of the Cochrane database found no empirical support (Rose, Bisson, Churchill, 2002) and possibly worse outcomes following CISD (e.g. Bisson, Jenkins, Alexander, & Bannister, 1997), especially when applied to police officers (Carlier, Lamberts, Van Uchlen, Gersons, 1998). It appears that the psychoeducation provided in CISD possibly heightened awareness of the

negative symptoms and thereby increased the likelihood of those symptoms developing (Raphael, Meldrum & McFarlane, 1995). Not only may debriefing be ineffective, but debriefing may also cause harm by eliciting PTSD symptomology (Cannon, McKenzie, & Sims, 2003). CISM is now contraindicated in current practice guidelines such as ACPMH Practitioner Guidelines for ASD and PTSD. Instead, the focus is on watchful waiting in the first 4 weeks following trauma, and beyond that a stepped approach, tailored to the individual's needs, if DSM-5 PTSD criteria are met.

The first systematic reviews of treatment studies for first responders (Haugen, Eyces & Weiss, 2012) concluded that whilst random controlled trials showed significant treatment effects, there is not yet sufficient literature for evidence-based recommendations for first responders. Not only do many of the studies differ in terms of environmental contexts, but they also differ in clinical assessments, treatments and outcomes.

However, one early intervention program targeting resilience, rather than growth, has now been developed; The Promoting Resilient Officers program (PRO; Shochet et al., 2011), developed in collaboration with the Queensland Police Service, includes a SRG module. Although outcomes are not yet published, based on officer engagement and feedback on acceptability, the authors suggest the program provides a “promising and sustainable resilience intervention” (p. 50).

There are a number of reasons why providing information about SRG is appropriate. Firstly, treatment needs to “plant a helpful seed” (Litz, 2009, p.504) and if psychoeducation about negative outcomes increased the risk of negative outcomes (Bisson, Jenkins, Alexander & Bannister, 1997) then perhaps providing psychoeducation about SRG can elicit positive outcomes. Critical Incident Stress Debriefing, the intervention that included descriptions of the possible negative symptoms following trauma, appeared to elicit those symptoms (Raphael, Meldrum & McFarlane, 1995), possibly by priming. For this reason, priming for

SRG could consist of a list of positive symptoms that may follow trauma. For the purposes of this study the SRG psychoeducation will therefore list the ways in which life could change, for the better, following trauma (see Appendix B page 118). Secondly, SRG psychoeducation can easily be incorporated into early interventions because it is relatively brief and fits well with the philosophy of providing relevant information. Early interventions that are brief, cost effective and part of routine treatment may be the optimal approach for psychoeducation about SRG.

The aim of this study is to demonstrate that SRG can be elicited in police officers through the use of a brief intervention that primed officers about SRG.

Firstly, it is hypothesised that officers primed about SRG will report higher levels of growth than officers who are not primed about SRG. Secondly, officers who are primed with verbal and written information will report higher levels of SRG than officers receiving verbal priming only. The third hypothesis is that officers who receive the level of social support they expect, or more, will report higher levels of SRG compared with officers who receive less social support than expected. The fourth hypothesis is that officers who report higher levels of trauma distress will report higher levels of SRG, compared to officers who report lower levels of trauma distress. SRG will be impacted by the trauma history that officers report prior to joining the police is hypothesis five. The sixth hypothesis is that officers who report higher levels of trauma will report lower levels of general well being. The seventh hypothesis is officers with longer service histories will report more trauma distress and higher levels of SRG than officers with shorter service histories. Finally, it is hypothesised that sex may impact SRG.

This study employed a longitudinal experimental design; one control condition (no priming) and two experimental conditions (verbal priming and verbal plus written priming). All groups completed a self-report questionnaire booklet at Time 1 (face-to-face) and at

three-month follow up participants completed a questionnaire by telephone interview. A three-month follow up period was chosen for several reasons. Firstly follow up periods vary considerably with some including participants within two months of trauma (Caserta, Lund, Utz, & de Vries, 2010) and others between one to two years (Timman, Roos et al., 2004) post trauma. The Tedchi and Calhoun (1995, 2004) model however emphasises the need for sufficient time for rumination, in order to change schema, as a crucial aspect of change. Since all participating police officers were actively involved in weekly therapy, it was decided that a three-month follow up would allow sufficient time for rumination. All groups received treatment as usual (TAU), as per the guidelines set out by the ACPMH. The Time 2 follow up was made possible using telephone numbers participants provided on the back page of the Time 1 assessment booklet. After Time 2 data was collected, and attached to the Time 1 measure, the section of the back page containing name and contact details were torn from the page and shredded, thereby de-identifying the data sets.

Seven registered psychologists who routinely treat police officers collected data for this study. Psychologists randomly assigned successive officers to conditions 1, 2 or 3. Two psychologists treated 19 and 21 officers respectively while the remaining 5 psychologists treated a total of 19 officers between them (see table 1). To facilitate meaningful comparisons of SRG across conditions, a decision was made to collapse the participants from the 5 psychologists who treated the least number of participants into a single group of 19 participants. A one-way Analysis of variance (ANOVA) conducted on SRG scores for the 3 different psychologist groups indicated that psychologist did not unduly influence SRG scores, $F(2, 56) = 1.31, p = .279$.

The outcome variable was SRG. There were five predictor variables: (1) satisfaction with social support (2) general psychological and health well being (3) prior trauma history (4) workplace trauma (5) trauma response symptoms.

Method

Participants

New South Wales police officers who presented to one of the seven treating psychologists were invited to participate in the study. Fifty-nine officers provided informed consent and met the inclusion criteria of current employment with the New South Wales Police Force and a doctor's referral citing either PTSD or trauma related work stress. A total of 65 officers were invited to participate. Three officers declined consent, 2 due to excessive distress and 1 due to privacy concerns. Three other officers were not included in the study (one did not complete the questionnaire booklet and 2 others were not contactable at the three-month follow up).

Demographic variables are presented in Table 2. The sample was predominantly male (64%). Officer age ranged between 24 and 54 years ($x = 39.75$, $SD = 0.94$). Mean number of months since the last traumatic incident was 8.83 ($SD = 5.01$) and mean length of service was 6.11 years ($SD = .08$).

Measures

A nine page, self-report questionnaire booklet was administered at Time 1, including:

The Significant Others Scale (SOS; Power, Champion & Aris, 1988) a seven point Likert scale measuring the actual amount of support received (quantity) from up to seven significant others, as well as the ideal amount of support they would have liked to receive (quality). Positive scores indicate satisfaction with received support and negative scores indicate dissatisfaction with received support across both emotional and practical subscales. Test-retest reliability is between 0.73 and 0.83 across 6 months and correlations from combined actual and ideal support scores returned Pearson r between .42 and .76 (Power, Champion & Aris, 1988).

The General Health Questionnaire (GHQ-28; Goldberg, 1978) a 28-item screening

measures that assess general psychological well being. Four subscales (Somatic Symptoms, Anxiety/Insomnia, Social Dysfunction and Severe Depression) sum to a total score between 0 and 28. Scores above 5 indicate caseness for a psychiatric disorder. The GHQ-28 construct validity has been favourably compared with The Hopkins Symptom Checklist where internal reliability = .09 (Goldberg, 1978). Reliability coefficients vary between 0.78 and 0.95 across studies (Jackson, 2007), but the most commonly cited Cronbach's $\alpha = 0.911$ (Makowska, Merecz, Mościcka & Kolasa, 2002).

The PTSD Checklist-Civilian version (PCL-C; Blanchard, Jones, Alexander, Buckley & Forneris, 1996; Weathers et al., 1993) a 17 item self-report measure that maps directly onto the 17 PTSD DSM-IV-TR criteria (APA, 2000). Statements are rated on a 5-point Likert scale across three subscales. The Internal consistency Cronbach's α varies between .94 (Blanchard et al, 1996) and .97 (Weathers et al., 1993). Test-retest reliability over two to three days = .96 and over one week = .88 (Blanchard et al., 1996; Ruggiero et al., 2003).

The Police Life Events Schedule (PLES; Carlier & Gersons, 1992) a standardized list of the 40 traumas that police typically experience with an option to add additional experiences that are not listed. Two subscales: Sad incidents (for example, finding a corpse or being confronted with severely mutilated victims) and Violent incidents (for example, shootings or escalating riot situations). Officers indicate whether they have experienced each incident (yes/ no) and if they have, the number of times and when these experiences occurred. The total score reliability coefficient is .87 (Carlier and Gersons 1992).

The Traumatic Life Events Questionnaire (TLEQ; Kubany et al., 2000) a 23-item scale on which respondents report whether, and how often, 21 different trauma events have been experienced. When compared with the Traumatic Life Events Inventory (TLEI; Kubany, 2000) the convergent validity correlation coefficient is .80. Temporal stability of the

TLEQ has been shown to have an average Kappa of .63 and an average overall test–retest hit rate of 86% (Kubany et al., 2000).

The Stress Related Growth Scale (SRGS; Park, Cohen & Murch, 1996) a 50 item, nine point Likert scale questionnaire measuring both negative and positive outcomes following adversity, with higher scores indicating more growth. Cronbach's $\alpha = .94$ and test-retest reliability over two weeks = .81 (Park, Cohen & Murch, 1996). Higher SRGS scores are associated with comparable scores on tests measuring similar constructs such as the Impact of Events Scale (Horowitz, Wilner, & Alvarez, 1979), which has a correlation coefficient of .31. Importantly, social desirability does not appear to confound response, $r = .00$ (Park, Cohen & Murch, 1996). Subscales are: Religious/Spiritual Growth, Affective/Emotional Growth and Rational/Mature Thinking.

Procedure

Participating officers completed the questionnaire booklet and provided demographic information at the back of the booklet at Time 1. The sequence of the five measures in the questionnaire booklet attempted to match the typical order of assessment in therapy. All officers received treatment as usual (TAU) based on the guidelines published by the Australian Centre for Posttraumatic Mental Health. Officers who received the verbal and or written information did so at the end of the first appointment.

At Time 2, twelve weeks after completing the questionnaire booklet, participants were completed the SRGS (Park, Cohen & Murch, 1996) via telephone interview.

Results

Correlations were derived for the subscales of the predictor variables to determine whether correlation coefficients were sufficiently strong to use total scores or whether subscale scores should be used separately (see Table 3). The TLEQ (Kubany et al., 2000) is not included in the table since a total score only, (total number of traumatic events) was used

in this study. Based on sufficiently strong correlations for all predictor variable subscales (see Table 4), total scores were used in the analysis rather than subscale scores. The outcome measure (SRGS; Park, Cohen & Murch, 1996) subscale correlations were also derived to determine whether correlations were sufficiently strong to use total scores or whether subscale scores better described the data. Correlations for the SRGS (Park, Cohen & Murch, 1996) subscale scores are presented in Table 4. As a result of strong correlations (Pearson r based on normally distributed data), varying between .58 and .65, a total SRG score was used in the analysis.

In order to examine the impact of priming on SRG, a linear regression was conducted. Stepwise backwards selection (set at $p < .05$) was applied to examine the contributions of condition, (no priming, verbal priming, verbal and written priming) and the predictor variables (level of trauma symptoms, work related trauma, non-work related trauma, social support, general psychological wellbeing) as well as the demographic variables (age, sex, length of service and months since the last incident), on stress related growth. Cases for the variables in each model is shown in Table 5. Based on theoretical considerations, measures of trauma symptomology were entered first since research indicates that stress related growth is contingent on high levels of trauma symptomology (Calhoun & Tedeschi, 2004; Lindley & Joseph, 2004). PTSD scores (PCL-C) were added first followed by total work related trauma (PLES) scores and total trauma scores for events outside of work (TLEQ). Next the total level of social support, relative to the expected level of social support was added. Several studies have identified social support as a predictor of SRG (Frazier et al., 2004). General psychological wellbeing (GHQ-28) was added next followed by demographic variables (age, years of service, months since incident, gender and psychologist). The only significant variable was condition. ANOVA results showed a main effect of condition on SRG, $F(2, 56) = 12.61, p < .001$. Post hoc comparisons using Tukey's procedures were used

to determine which of the three condition means differed. Results indicate that officers receiving verbal and written priming ($M = 57.89$, $SD = 1.68$) reported significantly higher SRG ($p < .0001$) than officers receiving either verbal priming ($M = 50.86$, $SD = 1.60$), or no priming ($M = 82.80$, $SD = 1.9$). Stress related growth scores did not differ significantly between the verbal priming or no priming conditions, $p = .101$.

The model met assumptions of normality, homogeneity of variance and independence. Normality testing was carried out on the residuals of the model. Goodness of fit was assessed using Shapiro-Wilks, which indicated that SRG scores were normally distributed in both the overall model ($p = .3416$) and across conditions 1 ($p = .4483$), 2 ($p = .8813$) and 3 ($p = .3642$). Testing for homogeneity of variance was carried out on the residuals of the model using Levene, which provided support for both equal variance and similar distributions across conditions, $p = .2129$. The independence assumption was met since participants were randomly assigned to conditions and participants presented randomly to treating psychologist, making all participants independent of all other participants.

Discussion

This longitudinal study examined the possibility that SRG could be primed SRG in police officers. Several factors that the literature suggests might impact SRG were measured at baseline, including social support, general psychological well being, PTSD symptoms, exposure to work related trauma and non-work related trauma.

Time 1 measures revealed no differences between the three groups (control group and two experimental groups) in social support, general psychological wellbeing, PTSD symptoms, exposure to work related trauma and non-work related trauma. There were also no significant differences between groups in demographics such as age, years of service, months since incident and sex. Although seven different psychologists collected data, SRG scores were not related to psychologist. Assumptions of normality, independence and identical

distribution were met, suggesting that the results speak directly to the experimental manipulation.

The results indicate that, as predicted, police officers primed with written and verbal SRG psychoeducation reported higher levels of SRG at 3 month follow up compared with officers receiving verbal priming or no priming. There was no difference in the SRG scores of officers who received verbal priming or no priming. It appears that the provision of SRG psychoeducation needs to be both verbal and written in order to prime police officers for SRG.

However, higher levels of SRG were not associated with greater satisfaction with social support; nor did officers with more PTSD symptoms report higher levels of SRG, compared to officers with lower levels of PTSD symptomology. Stress related growth was not impacted by the trauma history that officers reported prior to joining the police force. Officers reporting higher levels of trauma distress did not report significantly lower levels of general psychological wellbeing. Officers with longer service histories or more workplace trauma did not report higher levels of PTSD distress and did not report higher levels of SRG. And finally, sex differences did not significantly impact SRG. The findings of this study suggest the variables typically predictive of SRG in non-police populations may not be predictive of SRG in police populations.

Since all three groups of police officers in this study reported positive scores on the SRGS (Park, Cohen & Murch, 1996), the results of this study provide support for the concept of benefit finding, or growth, following workplace related trauma in police officers. In summary, the results demonstrate that SRG can be primed in police officers and many of the factors typically associated with SRG do not appear to influence SRG in police officers.

This study provides further support for the growing body of SRG research, and in particular, the theoretical construct of SRG as a “better-off-afterward” state (Carver, 1998),

or a “bouncing forward” effect (Walsh, 2002), as evidenced by the positive SRG scores in all three groups. More importantly, this study specifically adds to that body of work by demonstrating SRG in police officers. All officers in this study presented with referrals citing PTSD, and met DSM-IV-TR criteria for PTSD based on clinical judgment and the PCL-C (Blanchard, et al., 1996). The chronicity of trauma exposure, and the resultant PTSD diagnoses of the participants in this study supports the theory that SRG follows significant adversity (Calhoun & Tedeschi, 2004; Lindley & Joseph, 2004), and is not an under-responsiveness to adversity as suggested by the minimal dose hypothesis (Peterson, Park, Pole, D’Andrea & Seligman, 2008).

Since all officers reported clinically significant levels of PTSD symptomology, the findings support the theory that both negative and positive trauma symptoms co-exist following trauma (e.g. Huppert & Whittington, 2003), and demonstrate this co-existence in police officers. Furthermore, PTSD symptoms scores in this study provide further support for the theory that significant distress may be necessary for SRG to occur (Calhoun & Tedeschi, 2004; Lindley & Joseph, 2004).

The notion that a trauma history positively impacts SRG, (e.g. Burke & Shakespeare-Finch, 2011) either by acting as a buffer promoting resilience (Rutter, 1987) or as a facilitator of positive emotional outcomes, when exposed to further trauma, was not supported by the findings in this study. Neither work nor non-work related trauma histories predicted SRG in these police officers. Given the chronicity of trauma exposure in police work, the Yerkes Dodson curve (1908) may provide a better explanation, where perhaps the chronicity of trauma exposure in police work is beyond the benefit phase of the curve. The finding that police officers with a trauma history and 12 months’ work experience had more positive outcomes than officers without trauma histories (Burke & Shakespeare-Finch, 2011) was limited to probationary police officers with relatively little operational experience. In the

current study, the average length of service was approximately 13.5 times longer, and whilst length of service did not predict SRG in the current study, perhaps the benefits afforded by a trauma history are negated by a 13-fold trauma exposure.

Based on the results of this study, it appears that no single model of SRG fully explains police SRG. The cognitive theory of stress and coping model (Lazarus & Folkman, 1984) focuses on cognitive appraisals of one's ability and resources for coping, as well as appraisals about situational demands. The current study did not measure cognitive appraisals, but Toch (2002) and others (e.g. Lorber & Gracia, 2010) suggest police organisational cultures typically discourage help seeking behaviours and officers frequently report feeling unsupported, which is unlikely to result in positive appraisals. Future police studies may need to include a measure of cognitive appraisals to better understand police SRG according to the cognitive theory of stress and coping model (Lazarus & Folkman, 1984).

The Conceptual Model for Positive Outcomes of Crisis (Schaefer & Moos, 1992) cannot fully explain the results of this study since SRG was not associated with satisfaction with social support. Officers deal with difficult and distressing situations and the apparent reticence to share trauma related information with others, both at work or outside of work (Toch, 2002), may influence not only the level of social support that police officers experience, but more importantly, satisfaction with social support. Perhaps these limited opportunities to share information, with significant others and colleagues, means that social support has limited utility for police officers and therefore does not predict SRG.

The Posttraumatic Growth model (Tedeschi & Calhoun, 2004) emphasises social support and deliberate rumination. In this study, social support was not associated with SRG. Limited time for rumination (Toch, 2002) and an organisational culture that discourages help seeking (Lorber & Gracia, 2010) suggest police face several barriers to the constructive, deliberate rumination described in the Tedeschi & Calhoun (2004) model. If police officers

have high levels of avoidance symptomology, which typically results in disengagement from intrusive thoughts, it is unclear how much deliberate rumination is possible, and therefore whether rumination contributed to the SRG these officers reported. Intrusive ruminations are a core PTSD symptom (APA, 2000; APA, 2013) and may prevent deliberate rumination (Cann et al., 2011), the prerequisite for schema change according to the posttraumatic growth model. A PTSD diagnosis, especially where avoidance coping is prominent (e.g. Pineles et al., 2011), limits opportunities to engage in deliberate rumination.

However, it is possible, that the opportunity to learn about SRG and the time to discuss the topic with a therapist allowed for a degree of deliberate rumination, or even encouraged deliberate rumination that officers may not ordinarily engage in. Perhaps therapy is by its very nature provides a processing of narratives that allows for schema change, in which case the Tedeschi and Calhoun (2004) model may explain the SRG reported by police officers in this study.

Limitations

This study is limited by the use of self-report measures, common in SRG research, that do not provide objective measures of constructs. Concentration difficulties associated with PTSD may have resulted in participants not understanding or internalising the SRG information, especially given the brevity of the intervention at Time 1. Also, the intervention was provided in the initial session, when individuals are most anxious about seeing a psychologist for the first time and when PTSD symptoms are usually elevated. Perhaps the brevity, and timing, of the SRG psychoeducation inadvertently impacted the concentration difficulties common in PTSD. Future research could explore whether SRG psychoeducation delivered at a subsequent session, rather than the first, alleviates anxiety and/or impacts SRG. Furthermore, future research could investigate whether SRG is impacted by repeating the psychoeducation again at a later point in therapy.

Informal feedback from participants at follow up indicated that completing the questionnaire booklet was exceedingly taxing. Future research could spread the Time 1 assessment across 2 or 3 sessions to assist with concentration difficulties. This may need to be the approach if additional information regarding cognitive appraisals and organisational factors are included in the Time 1 assessment.

The findings of this study are limited to officers who presented for help and it is unclear as to whether this is a point at which SRG was more, or less, likely. The relatively low participant numbers in this study limits the generalizability of the findings. Recruitment was hampered by legislative changes to the New South Wales Police Force Death and Disability Scheme announced in November 2011. Following the announcement, there was a sudden drop in police officers presenting for treatment.

Posttraumatic Stress Disorder is a pervasive, debilitating condition and police officers are at an increased risk of developing PTSD (APA, 2000). Posttraumatic Stress Disorder is associated with poorer outcomes including lower general health ratings, workplace absenteeism, increased physical symptoms and higher somatic symptom severity (Hoge et al., 2007). Poorer family relationships, increased smoking and higher rates of non-specific health complaints have also been associated with PTSD (Koenen et al., 2008). Police officers consume alcohol at harmful levels (O'Brien & Reznick, 1988). The knock on effect of PTSD for families is becoming clearer with recent research focusing on the impact of PTSD on families of at risk populations. Finally, Suicide has been shown to correlate strongly with the re-experiencing cluster of PTSD symptoms (Bell & Nye, 2007) and repeated exposure to trauma and violence, access to firearms and acute periods of high distress as well as insomnia and nightmares have been linked to suicide rates in veterans (Bryan et al., 2010). If it is evident that SRG can follow adversity, and that SRG can be facilitated, then it is prudent to

facilitate SRG in police officers given the increased risk of experiencing the pervasive and debilitating issues associated with PTSD.

These findings form part of the emerging picture of police SRG. The paucity of research on first responders generally, and police officers more specifically, suggests that future research will need to investigate police specifically to improve understanding on the predictors of SRG in this high risk population. Military and other first responder studies have limited utility in explaining the mechanisms and predictors of SRG in police officers.

Clinical Implications

This study demonstrates that police officers can and do experience SRG following chronic trauma exposure. The study describes the factors that influence SRG in police officers presenting for treatment, and demonstrates a brief, cost effective intervention that primes SRG. Eliciting SRG is especially prudent in a population who are at an increased risk of PTSD as a consequence of their employment. Furthermore, there is the possibility that this intervention could be incorporated into telephone or Internet based therapy, which potentially increases the likelihood of SRG whilst also maintaining the cost effectiveness of the intervention. This is especially the case given the significantly lower rates of missed appointments in telepsychiatry compared with face-to-face psychiatry (Leigh, Cruz & Mallios, 2009). Whilst disseminating SRG psychoeducation may not directly address the stigma associated with mental health issues, and PTSD specifically in the police force, the notion of benefit finding as a result of the disorder is potentially encouraging for those diagnosed with PTSD.

Although SRG was reported in all three groups it is not clear from this study whether, or how, SRG was impacted by therapy itself, or TAU. Written and verbal priming significantly facilitated SRG in this study, but since all three groups reported some growth, it would be informative to better understand if or how therapy influences SRG.

Future studies will need to be longitudinal, with longer follow up intervals, if the temporal pattern of police SRG is to be better understood. Research on the efficacy of SRG psychoeducation in training (e.g. Shochet et al., 2011) and whilst fully deployed, but prior to a PTSD diagnosis, would be helpful in describing the optimal periods at which SRG psychoeducation is effective. Bureaucratic aspects that affect police officers such as the Workers Compensation process, the medical discharge processes as well as the organisational factors (e.g. Toch, 2002) need to be included if a police specific model of SRG is to be developed. Alcohol use, which is typically high in police officers (McDonald, 2000) may need to be measured in future research to explore whether alcohol use impacts SRG, and more specifically whether alcohol use diminishes capacity to engage in deliberate rumination. However, despite a well-documented history of alcohol misuse in Australian police officers (e.g. McNeill, 1996), more recent organisational changes have attempted to reduce officer reliance on alcohol (Williams, Ciarrochi, & Deane, 2010).

The findings of this study are valuable in that they demonstrate a possible means of eliciting SRG in police officers, a population at high risk of developing PTSD and associated difficulties (e.g. depression, anxiety, alcohol abuse, family strain). This study highlights the need for police specific research in order to better understand the predictors and mechanisms of the positive consequence of trauma in a vulnerable population.

Tables

Table 1

Distribution of Participants Across Psychologist and Condition

Psychologist	Condition 1	Condition 2	Condition 3	Group	N, % of total
1	7	7	7	1	(N = 21, 36%)
2	1	1	0		
3	2	5	2		(N = 19, 32%)
4	1	1	1	2	
5	0	1	1		
6	1	1	1		
7	7	5	7	3	(N = 19, 32%)

Note. Condition 1: TAU without SRG priming; Condition 2: TAU with verbal SRG priming; Condition 3: TAU with verbal plus written SRG priming

Table 2

Demographics Across Condition

	Condition 1	Condition 2	Condition 3	N (%)
Sample Size	19	21	19	59
Sex				
Male	13	12	13	38 (64%)
Female	6	9	6	21 (36%)
Age				
Mean (SD)	37.15 (6.74)	40.44 (7.58)	41.87 (6.62)	39.75 (7.21)
Months since incident				
Mean (SD)	7.84 (2.61)	9.48 (4.45)	9.00 (7.71)	8.83 (5.01)
Length of service (yrs)				
Mean (SD)	11.89 (5.3)	14.12(6.77)	14.47 (5.87)	13.49 (6.11)

Table 3

Pearson's Correlations for Subscale Scores of Time 1 Measures

Measure	Subscale			
	1	2	3	4
<i>SOS</i>				
1. Practical	-	.75*		
2. Emotional	-	-		
<i>GHQ-28</i>				
1. Somatic Symptoms	-	.42*	.40*	.22*
2. Anxiety/ Insomnia	-	-	.39*	.20*
3. Social Dysfunction	-	-	-	.37*
4. Severe Depression	-	-	-	-
<i>PCL-C</i>				
1. Re-experiencing	-	.27*	.31*	
2. Avoidance/Numbing	-	-	.29*	
3. Hypervigilance	-	-	-	
<i>PLES</i>				
1. Sad	-	.31*		
2. Violent	-	-		

Note. $N = 59$

* $p < .01$. ** $p < .001$.

Table 4

Correlations Between SRGS Subscales

Subscale	1	2	3
1. Religious/Spiritual Growth	-	.65*	.64*
2. Rational/Mature thinking	-	-	.58*
3. Affective/Emotional Growth	-	-	-

Note. $N = 59$

* $p < .01$. ** $p < .001$.

Table 5

Prediction of SRG by Condition, Demographics, PCL-C, PLES, TLEQ, SOS, and GHQ-28

Model (Variable/s)	R ²	F	p	R ² Change	b (coefficient)	Significant
1 (Cond only)	0.31	12.61	<.0001		Categorical Variable	Yes
2 (Cond + PCL-C)	0.31	12.41	<.0001	0.82	-0.040018	No
3 (Cond + PLES)	0.32	12.87	<.0001	0.37	0.006970	No
4 (Cond + TLEQ)	0.31	11.97	<.0001	0.70	0.030026	No
5 (Cond + SOS)	0.32	12.17	<.0001	0.48	-1.111163	No
6 (Cond + GHQ-28)	0.32	11.50	<.0001	0.53	0.071637	No
7 (Cond + Age/yr)	0.33	11.85	<.0001	0.26	-0.164423	No
8 (Cond + YOS)	0.31	12.00	<.0001	0.61	-0.082333	No
9 (Cond + MSI)	0.33	12.82	<.0001	0.26	0.216651	No
10 (Cond + Sex)	0.32	12.70	<.0001		Categorical Variable	No
11 (Cond +Psych x 3)	0.35	12.93	<.0001		Categorical Variable	No

Note. YOS = Years of service; MSI = Months since incident*Significant at p < .05*

References

- American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders*, (4th ed., text revision). Washington, DC: American Psychiatric Association.
- Bell, J.B. & Nye, E.C. (2007). Specific symptoms predict suicidal ideation in Vietnam combat veterans with chronic post-traumatic stress disorder. *Military Medicine*, 172(11), 1144–1147.
- Bisson, J. I., Jenkins, P. L., Alexander, J., & Bannister, C. (1997). Randomized controlled trial of psychological debriefing for victims of acute burn trauma. *British Journal of Psychiatry*, 171, 78–81.
- Blanchard, E. B., Jones Alexander., J., Buckley, T. C., & Forneris, C. A. (1996). Psychometric properties of the PTSD Checklist (PCL). *Behaviour Research and Therapy*, 34, 669-673.
- Brewin, C.R., Andrews, B. & Valentine, J.D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, 68, 748–766.
- Bryan, C. J., Kanzler, K. E., Durham, T. L., West, C. L., & Greene, E. (2010). Challenges and considerations for managing suicide risk in combat zones. *Military Medicine*, 175(10), 713–718.
- Burke, K., & Shakespeare-Finch, J. (2011). Markers of resilience in new police officers: Appraisal of potentially traumatising events. *Traumatology*, 17 (4), 52–60.
- Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2010). The posttraumatic growth model: Socio-cultural considerations. In T. Weiss & R. Berger (Eds.), *Posttraumatic Growth and Culturally Competent Practice* (pp.1-14). Hoboken, NJ: Wiley & Sons Inc.
- Calhoun, L. G., Cann, & Tedeschi, R. G. (2004). *Handbook of posttraumatic growth*. Mahwah, N.J.:Lawrence Erlbaum Associates.

- Cann, A., Calhoun, L., Tedeschi, R., Triplett, K., Vishnevsky, T., & Lindstrom, C. (2011). Assessing posttraumatic cognitive processes: The Event Related Ruminating Inventory. *Anxiety, Stress & Coping*, 24(2), 137–156. doi10.1080/10615806.2012.529901
- Cannon, McKenzie, & Sims, (2003). The New School Psychology Bulletin Volume 3, No. 2, 2005 Critical Incident Stress Debriefing (CISD): Efficacy in Question. Retrieved July, 2012, from <http://www.nspb.net/index.php/nspb/article/view/33/30>
- Carlier, I. V. E., & Gersons, B. P. R. (1992). Development of a scale for traumatic incidents in police work. *Psychiatria Fennica Supplement*, 23, 59–70.
- Carlier, I.V.E., Lamberts, R.G., van Uchlen, A.J. & Gersons, B.P.R (1998). Disaster Related Post Traumatic Stress in Police Officers: A field study of the impact of debriefing. *Stress Medicine*. 14. 143–148.
- Carver, C. S. (1998). Resilience and thriving: issues, models, and linkages. *Journal of Social Issues*, 54, 245–266.
- Chan, J., Devery, C., & Doran, S. (2003). *Fair cop - Learning the art of policing*. Toronto, Ontario, Canada: University of Toronto.
- Chodoff, P., Friedman, P. B., & Hamberg, D. A. (1964). Stress, defenses and coping behaviour: Observations in parents of children with malignant disease. *American Journal of Psychiatry*, 120, 743–749.
- Cobb, S. (1974). Social support as a moderator of life stress. *Psychosomatic Medicine*, 38, 300–314.
- Cohen, S. (1988). Psychosocial models of social support in the etiology of physical disease. *Health Psychology*, 7, 269–297.
- Cohen, S., & Wills, T. A. (1985). Stress, social support and the buffering hypothesis. *Psychological Bulletin*, 2, 310–357.
- Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry*, 64(5), 577–584.

- Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry*, 64(5), 577–584.
- Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski, M. (2001). Posttraumatic growth following breast cancer: A controlled comparison study. *Health Psychology*, 20, 176–185.
- Dunning, C. (2003). Sense of coherence in managing trauma workers. In D. Paton, J. M. Violanti, & L. M. Smith (Eds.), *Promoting capabilities to manage posttraumatic stress: Perspectives on resilience* (pp. 119–135). Springfield, IL: Charles C Thomas.
- Durham, T.W., McCammon, S., & Allison, E.J., Jr. (1985). The psychological impact of disaster on rescue personnel. *Annals of Emergency Medicine*, 14(7), 664–668.
- Ersland, S., Weisaeth, L., & Sund, A. (1989). The stress upon rescuers involved in an oilrig disaster. *Psychiatria Scandinavica. Supplementum*. Retrieved September 29, 2012, from http://www.researchgate.net/publication/20532349_The_stress_upon_rescuers_involved_in_an_oil_rig_disaster._Alexander_L._Kielland_1980
- Evers, A. W. M., Kraaimaat, F. W., van Lankveld, W., Jongen, P. J. H., Jacobs, J. W. G., & Bijlsma, J. W. (2001). Beyond unfavourable thinking: The illness Cognition Questionnaire for chronic diseases. *Journal of Consulting and Clinical Psychology*, 69, 1026–1036.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- Folkman, S. & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55(6), 647–654.
- Frazier, P., Tashiro, T., Berman, M., Steger, M., & Long, J. (2004). Correlates of levels and patterns of posttraumatic growth among sexual assault survivors. *Journal of Consulting and Clinical Psychology*, 72, 19–30.

- Fromm, K., Andrykowski, M. A., & Hunt, J. (1996). Positive and negative psychosocial sequelae of bone marrow transplantation: Implications for Quality of Life assessment. *Journal of Behavioral Medicine, 19*, 221–240.
- Fullerton, C. S., Ursano, R. J., Reeves, J., Shigemura, J., & Grieger, T. (2006). Perceived safety in disaster workers following 9/11. *Journal of Nervous and Mental Disease 194*, 61–63
- Gist, R., & Woodall, S. J. (2000). There are no simple solutions to complex problems. In J. M. Violanti, D. Paton, & C. Dunning (Eds.), *Posttraumatic stress intervention: Challenges, issues and perspectives* (pp. 81–96). Springfield, IL: Charles C. Thomas.
- Goldberg, D. (1978). *Manual of the General Health Questionnaire*. Windsor, England: NFER Publishing.
- Gould, M., Adler, A., Zamorski, M., Castro, C., Hanily, N., Steele, N., et al. (2010). Do stigma and other perceived barriers to mental health care differ across Armed Forces? *Journal of Royal Society of Medicine, 103*(4), 148–156.
- Haarr, R. N. (2005). Factors affecting the decision of police recruits to drop out of police work. *Police Quarterly, 8*, 431–453.
- Haugen, P., T., Eyces, M., & Weiss, D. S. (2012). Treating posttraumatic stress disorder in first responders: A systematic review. *Clinical Psychology Review, 32* (5), 370–380.
- Helgeson, V. S., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology, 15*, 135–148.
- Higgins, J. (2001). Traumatic stress reactions. Presented at the Australian Capital territory Division of General Practice Evening Seminar (28.11.2001). Retrieved July 27, 2012 from [http://www.higginspsych.com.au/publications/GPs_Traumatic%2520Stress.pdf+Higgins+PTSD+\"1+in+12\"&hl=en&gl=au](http://www.higginspsych.com.au/publications/GPs_Traumatic%2520Stress.pdf+Higgins+PTSD+\)

- Koenen, K. C., Stellman, S. D., Sommer, J. E., & Stellman, J. M. (2008). Persisting posttraumatic stress disorder symptoms and their relationship to functioning in Vietnam veterans: A 14-year follow-up. *Journal of Traumatic Stress, 21*(1), 49–57.
- Hoge, C. W., Terhakopian, A., Castro, C. A., Messer, S. C., & Engel, C. C. (2007). Association of posttraumatic stress disorder with somatic symptoms, health care visits, and absenteeism among Iraq war veterans. *American Journal of Psychiatry, 164*(1), 150–153.
- Horowitz, M. J. (1976). *Stress response syndromes*. New York: Jason Aronson.
- Horowitz, M.J., Wilner, M. & Alvarez, W. (1979). Impact of Events Scale: A measure of subjective stress. *Psychosomatic Medicine, 41*(3), 209–218.
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science, 241*, 540–545.
- Huppert, F.A. & Whittington, J.E. (2003). Evidence for the independence of positive and negative well-being: implications for quality of life assessment. *British Journal of Health Psychology, 8*, 107–122.
- Ickovics, J. R., & Park, C. L. (1998). Paradigm shift: Why a focus on health is important. *Journal of Social Issues, 54*(2), 237–244.
- Jackson, C. (2007). The General Health Questionnaire. *Occupational Medicine, 57* (1): 79.doi:10.1093/occmed/kql169
- Joseph, S. & Linley, P. A. (2005). Positive adjustment to threatening events: An organismic theory of growth through adversity. *Review of General Psychology, 9*, 262–280.
- Kennedy, C. H., & Moore, B. A. (2008). Evolution of clinical military psychology ethics. *Military Psychology, 20*(1), 1-6.
- Kim, P. Y., Thomas, J. L., Wilk, J. E., Castro, C. A., & Hoge, C. W. (2010). Stigma, barriers to care, and use of mental health services among active duty and National Guard soldiers after combat. *Psychiatric Services, 61*(6), 582–588.

- Kleim, B., & Westphal, M. (2011). Cognitive restructuring in post-traumatic stress disorder. *The Encyclopedia of Trauma*, C. Figley (Ed.). London: Sage.
- Kubany, E.S., Haynes, S.N., Leisen, M.B., Owens, J.A., Kaplan, A.S., Watson, S.B., and Burns, K. (2000). Development and preliminary validation of a brief broad-spectrum measure of trauma exposure: The Traumatic Life Events Questionnaire. *Psychological Assessment*, 12, 210–224.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Leigh, H., Cruz, H., & Mallios, R. (2009). Telepsychiatry appointments in a continuing care setting: kept, cancelled and no-shows. *Journal of Telemedicine and Telecare*, 15(6), 286–289.
- Lepore, S. J., & Evans, G. W. (1996) Coping with multiple stressors in the environment. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: theory, research, application* (pp. 350–377). New York: Wiley.
- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress*, 17, 11–21.
- Litz, B, T. (2009). Early intervention for trauma: Where are we and where do we need to go? A commentary. *Journal of Traumatic Stress*, 21(6), 503–506.
- Lorber, W., & Garcia, H. A. (2010). Not supposed to feel this: Traditional masculinity in psychotherapy with male veterans returning from Afghanistan and Iraq. *Psychotherapy*, 47(3), 296–305.
- McCauley, M., Hughes, J. H., & Liebling-Kalifani, H. (2008). Ethical considerations for military clinical psychologists: A review of selected literature. *Military Psychology*, 20(1), 7–20.
- McDonald, R. (2000). Never trust a cop that doesn't drink: A critical study of the challenges and opportunities for reducing high levels of alcohol consumption within occupational culture. Digital Theses Program, University of Western Sydney. Retrieved September 25, 2012 from <http://www.research.nla.gov.au/main/results?subject=police+in+Australia>

- McEwen, B.S., Stellar, E. (1993). Stress and the Individual: Mechanism Leading to disease. *Archives of Internal Medicine*, 153 (18), 2093–2101.
- Maercker, A., & Zoellner, T. (2004). The janus face of self-perceived growth: Toward a two-component model of posttraumatic growth. *Psychological Injury*, 15, 41–48.
- Maguen, S., Metzler, T. J., McCaslin, S. E., Inslicht, S. S., Henn-Haase, C., Neylan, T. C., et al. (2009). Routine work environment stress and PTSD symptoms in police officers. *Journal of Nervous and Mental Disease*, 197:754–760.
- Makowska, Z., Merecz, D., Mościcka, A., & Kolasa, W. (2002). The validity of general health questionnaires, ghq-12 and ghq-28, in mental health studies of working people. *International Journal of Occupational Medicine and Environmental Health*, 15, (4), 353–362.
- Milam, J. E., Ritt-Olsen, A. & Unger, J. B. (2004). Posttraumatic growth amongst adolescents. *Journal of Adolescent Research*, 19, 192–204.
- O'Brien L. & Reznick, R. (1988). *The prevalence of self-reported risk factors for ischaemic heart disease, problem drinking and emotional stress among NSW police: Summary of findings*. Sydney, NSW: Royal Prince Alfred Hospital.
- Park, C. L. (2005b). Religion and meaning. In R. Paloutzain & C. L. Park (Eds.), *Handbook of psychology and religion* (pp. 295–313). New York: Guilford Press.
- Park, C. L., Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress related growth. *Journal of Personality*, 64, 71–105.
- Pennebaker, J. W. (2000). The effects of traumatic disclosure on physical and mental health: The values of writing and talking about upsetting events. In J. M. Violanti, D. Paton, & C. Dunning (Eds.), *Posttraumatic stress intervention: Challenges, issues and perspectives* (pp. 97–114). Springfield, IL: Charles C. Thomas.
- Peters, R. F. (2007). *Police under pressure: Donkey on the edge*. HEAS Publications. Retrieved September 29, 2012 from http://www.heas.com.au/publications_books.htm#

- Peterson, C., Park, N., Pole, N., D'Andrea, W., & Seligman, M. (2008). Strengths of character and posttraumatic growth. *Journal of Traumatic Stress, 21*(2), 214–217.
- Pineles, S. L., Mostoufi, S. M., Ready, C. B., Street, A. E., Griffin, M. G., Resick, P. A. (2011). Trauma reactivity, avoidant coping, and PTSD symptoms: A moderating relationship? *Journal of Abnormal Psychology, 20*(1), 240–246.
- Polatinsky, S., & Esprey, Y. (2000). A assessment of gender differences in the perception of benefit resulting from the loss of a child. *Journal of Traumatic Stress, 13*, 709–718.
- Power, M. J., Champion, L. A., & Aris, S. J. (1988). The development of a measure of social support: The significant others scale (SOS). *British Journal of Clinical Psychology, 27*, 349–358.
- Rallings, M. (2000). *Police and Trauma: A prospective examination of the psychological effects of occupational exposure to traumatic events* PhD Thesis, Department of Psychiatry, University of Queensland. Retrieved September 28, 2012 from <http://www.espace.library.uq.edu.au/view/UQ:157917>
- Ramchand, R., Schell, T. L., Karney, B. R., Osilla, K. C., Burns, R. M., & Caldarone, L. B. (2010). Disparate prevalence estimates of PTSD among service members who served in Iraq and Afghanistan: Possible explanations. *Journal of Traumatic Stress, 23*(1), 59–68.
- Raphael, B., Meldrum, L., & McFarlane, A.C. (1995). Does debriefing after psychological trauma work? *British Medical Journal, 310*, 1479–1481.
- Regehr, C., Hill, J., & Glancy, G. (2000). Individual predictors of traumatic reactions in firefighters. *Journal of Nervous and Mental Disorders, 188*(6), 333–339.
- Robinson R, Mitchell, J, T. (1993). Evaluation of psychological debriefings. *Journal of Traumatic Stress, 6*(3), 367–382.

- Rona, R. J., Fear, N. T., Hull, L., & Wessely, S. (2007). Women in novel occupational roles: mental health trends in the UK Armed Forces. *International Journal of Epidemiology*, 36(2), 319–326.
- Rose, S., Bisson, J., Churchill, R., Wessely, S. (2002). Psychological debriefing for preventing post traumatic stress disorder (PTSD). Cochrane database of systematic reviews (Online). Retrieved 23.10.2011. Retrieved September 24, 2012 from https://www.researchgate.net/publication/11299377_Psychological_debriefing_for_preventing
- Ruggiero, K. J., Del Ben, K., Scotti, J. R., & Rabalais, A. E. (2003). Psychometric Properties of the PTSD Checklist--Civilian Version. *Journal of Traumatic Stress*, 16, 495–502.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316–331.
- Salsman, M., Segerstrom, S. C., Brechting, E. H., Carlson, C. R., & Andrykowski, M. A. (2009). Posttraumatic growth and PTSD symptomology among colorectal cancer survivors: A 3-month longitudinal examination of cognitive processing. *Psych-Oncology*, 18, 30–41.
- Schaefer, J. A. & Moos, R. H. (1992). Life crises and personal growth. In B. N. Carpenter, *Personal coping theory, research and application* (pp. 149–170). Westport, CT: Praeger.
- Schlenger, W. E., Kulka, R. A., Fairbank, J. A., Hough, R. L., Jordan, B. K., Marmar, C. R., et al. (1992). The prevalence of post-traumatic stress disorder in the Vietnam generation: A multimethod, multisource assessment of psychiatric disorder. *Journal of Traumatic Stress*, 5, 333-363.
- Shapiro, D. & Kunkler, J. (1990). *Psychological support for hospital staff initiated by clinical psychologist in the aftermath of the Hillsborough Disaster*. Sheffield: Sheffield Health Authority Mental Health Services Unit.

- Shochet, I., M., Shakespeare-Finch, J. E., Craig, C., Roos, C., Wurfl, A., Hoge, R., et al. (2011) The development and implementation of the Promoting Resilient Officers (PRO) Program. *Traumatology*, 17(4), pp. 43-51.
- Silver, R. L., Boon, C., & Stones, M. H. (1983). Searching for meaning in misfortune: making sense of incest. *Journal of Social issues*, 39, 81–102.
- Solomon, Z., & Benbenishty, R. (1986). The role of proximity, immediacy, and expectations in frontline treatment of combat stress reaction among Israelis in the Lebanon war. *The American Journal of Psychiatry*, 143(5), 613–617.
- Solomon, Z., Zur-Noah, S., Horesh, D., Zerach, G., & Keinan, G. (2008). The contribution of stressful life events throughout the life cycle to combat-induced psychopathology. *Journal of Trauma Stress*, 21(3), 318–325.
- Sundin, J., Fear, N. T., Iversen, A., Rona, R. J., & Wessely, S. (2010). PTSD after deployment to Iraq: conflicting rates, conflicting claims. *Psychological Medicine*, 40, 367–382.
- Tait, R., & Silver, R. C. (1989). Coming to terms with major negative life events. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 351-382). New York: Guilford Press.
- Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, 38, 1161–1173.
- Tedeschi, R.G., & Calhoun, L.G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Tedeschi, R.G., & Calhoun, L.G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15, 1–15.
- Tennan, H., Affleck, G., Armeli, S., & Carney, M. A. (2000). A daily process approach to coping: Linking theory, research and practice. *American Psychologist*, 55(6), 626–636.
- Thoits, P. A. (1996). Managing the Emotions of Others. *Symbolic Interaction*, 19(2), 85–109
- Toch, H. (2002). *Stress in policing*. Washington, DC: American psychological Association.

- Walsh, F. (2002). Bouncing forward: Resilience in the aftermath of September 11. *Family Processes, 41*, 34–36.
- Watts, R. (1994). The efficacy of critical incident stress debriefing for personnel. *Bulletin of the Australian Psychological Society, 16*, 6–7.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993). *The PTSD Checklist (PLC): Reliability, validity and diagnostic validity*. Paper presented at the 9th Annual Conference of the ISTSS, San Antonio, Texas.
- Weiss, T. (2004). Correlates of posttraumatic growth in husbands of breast cancer survivors. *Psycho-oncology, 13*, 260–268.
- Werdel, M. B., & Wicks, R. J. (2012). *Primer on posttraumatic growth: An introduction and guide*. Hoboken, New Jersey: John Wiley & sons.
- Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology, 18*, 459–482.

Extended Discussion

This longitudinal study examined the possibility that police officers could be provided with psychoeducation that would elicit SRG. Several factors that the literature suggests might impact SRG were measured at baseline, including social support, general psychological well being, PTSD symptoms, exposure to work related trauma and non-work related trauma.

Social support can facilitate coping, reduce psychological distress and have a positive impact on physical health (Cohen, 1988). In particular, satisfaction with social support, rather than actual social support, has been associated with SRG (Cohen & Wills, 1985; Helgeson & Cohen, 1996; House, Landis & Umberson, 1988; Thoits, 1996), making social support a contributor to SRG in non-police populations. Shapiro and Kunkler (1990) suggest that occupations routinely experiencing adversity have social milieus and collegial support that facilitates coping, and although the evidence is strong for social support as a buffer against adversity (Chan, Devery, & Doran, 2003; Dunning, 2003; Gist & Woodall, 2000; Haarr, 2005; Pennebaker, 2000), it remains unclear as to whether social support mediates or moderates SRG in police officers. Police specific research suggests many officers are dissatisfied with the organization support they receive and this not only increases the risk of developing PTSD following adversity, but also fails to provide the satisfaction with social support that may facilitate coping (Peters, 2007). This study measured satisfaction with social support in police officers to better understand whether satisfaction with social support predicted SRG in police officers.

Psychological wellbeing was measured to control for psychological factors that might impact SRG in police officers, and specifically whether level psychological wellbeing predicts SRG in police officers. Posttraumatic Stress Disorder symptoms were measured to better understand whether SRG in police officers is a minimal response, as described by Peterson, Park, Pole, D'Andrea & Seligman, 2008, or whether SRG followed significant

levels of negative symptoms (e.g. Siegel & Schrimshaw, 2000), which would suggest growth rather than a minimal response. Non-work related trauma histories were assessed to better understand whether a trauma history prior to joining the Police Force impacted SRG by acting as a “marker of resilience” (e.g. Burke & Shakespear-Finch, 2011), mediating work related trauma and increasing SRG following subsequent work related trauma. Work trauma histories were also assessed to determine whether SRG in police officers is best explained by the minimal response hypothesis (Peterson, Park, Pole, D’Andrea & Seligman, 2008), where fewer or less traumatic work related incidents resulted in higher levels of SRG, or whether SRG in police officers follows significant levels of trauma exposure as it has in other populations (e.g. Siegel & Schrimshaw, 2000).

Time 1 measures revealed no differences between the three groups (control group and two experimental groups) in social support, general psychological wellbeing, PTSD symptoms, exposure to work related trauma and non-work related trauma. There were also no significant differences between groups in demographics such as age, years of service, months since incident and sex. Although seven different psychologists collected data, SRG scores were not related to psychologist. Assumptions of normality, independence and identical distribution were met, suggesting that the results speak directly to the experimental manipulation.

The results indicate that as predicted, police officers primed with written and verbal SRG psychoeducation reported higher levels of SRG at 3 month follow up compared with officers receiving verbal priming or no priming. There was no difference in the SRG scores of officers who received verbal priming and officers who did not receive any priming. It appears that the provision of SRG psychoeducation needs to be both verbal and written in order to prime police officers for SRG.

However, higher levels of SRG were not associated with higher levels of satisfaction with social support; nor did officers reporting higher levels of PTSD symptomology report higher levels of SRG, compared to officers who report lower levels of PTSD symptomology. Stress related growth was not impacted by the trauma history that officers report prior to joining the police. Officers reporting higher levels of trauma distress did not report significantly lower levels of general psychological wellbeing. Officers with longer service histories or more workplace trauma did not report higher levels of PTSD distress and did not report higher levels of SRG. And finally, sex differences did not significantly impact SRG. Since all three groups of police officers in this study reported positive scores on the SRGS (Park, Cohen & Murch, 1996), the results of this study provide support for the concept of benefit finding, or growth, following workplace related trauma in police officers. In summary, the results demonstrate that SRG can be primed in police officers and many of the factors typically associated with SRG do not appear to influence SRG in police officers.

This study provides further support for the growing body of SRG research, and in particular, the theoretical construct of SRG as a “better-off-afterward” state (Carver, 1998), or a “bouncing forward” effect (Walsh, 2002), as evidenced by the positive SRG scores in all three groups. More importantly, this study specifically adds to that body of work by demonstrating SRG in police officers. All officers in this study presented with referrals citing PTSD, and met DSM-IV-TR criteria for PTSD using clinical judgment and the PCL-C (Blanchard, Jones, Alexander, Buckley & Forneris, 1996). The chronicity of trauma exposure, and the resultant PTSD diagnoses of the participants in this study supports the theory that SRG follows significant adversity (Calhoun & Tedeschi, 2006; Lindley & Joseph, 2004), and is not an under-responsiveness to adversity as suggested by the minimal dose hypothesis (Peterson, Park, Pole, D’Andrea & Seligman, 2008).

Since all officers reported clinically significant levels of PTSD symptomology, the findings support the theory that both negative and positive trauma symptoms co-exist following trauma (e.g. Huppert & Whittington, 2003), and demonstrate this co-existence in police officers. Furthermore, PTSD symptoms scores in this study provide further support for the theory that significant distress may be necessary for SRG to occur (Calhoun & Tedeschi, 2006; Lindley & Joseph, 2004).

The notions that past trauma exposure can positively impact SRG, either as a buffer that promotes resilience (Rutter, 1987), or as a facilitator of positive emotional outcomes, with subsequent exposure to trauma (Burke & Shakespeare-Finch, 2011) was not supported by the findings in this study. Neither work nor non-work related trauma histories predicted SRG in these police officers. The buffer hypothesis may explain resilience in civilian populations but does not take account of the chronicity of trauma exposure in police work. It may be that the frequency and intensity of trauma exposure in police work negates any potential benefits of exposure. Given the chronicity of trauma exposure in police work, the Yerkes Dodson curve (1908) may provide a better explanation, where perhaps the chronicity of trauma exposure in police work is beyond the benefit phase of the curve. With regards the finding that at 12 month follow up police officers with a trauma history had more positive outcomes than officers without trauma histories (Burke & Shakespeare-Finch, 2011), this finding was limited to probationary police officers with 12 months of policing experience. In the current study, the average length of service was approximately 13.5 times longer, and whilst length of service did not predict SRG in the current study, perhaps the benefits afforded by a trauma history are negated by a 13-fold trauma exposure. This difference between probationary and non-probationary police is perhaps not entirely unexpected given the differences that have been described in other studies comparing military settings. For example, an analysis of 19 studies found that PTSD prevalence rates in personnel deployed to

Iraq varied between 1.4% and 31% (Sundin et al., 2010). Whilst the authors ascribed the differences to methodological difference it may also be that particular duties, particular deployments and particular organisational factors resulted in different PTSD prevalence rates. If it is the case that SRG rates vary dramatically within apparently homogenous populations and between different populations, SRG studies will need to be specific and will need to account for the various factors that may impact SRG in specific populations.

Based on the results of this study, it appears that no single model of SRG fully explains SRG in police officers. Firstly, the cognitive theory of stress and coping model (Lazarus & Folkman, 1984) with a dynamic, transactional process between individual characteristics and environmental factors, focuses on cognitive appraisals of one's ability and resources for coping, as well as appraisals about situational demands. The current study did not measure cognitive appraisals, but given the qualitative and quantitative study of police culture describing the typical organisational factors impacting police coping (Toch, 2002), there appear to be factors that may negatively impact police officer appraisals. These factors include an organisation that discourages help seeking behaviour and frequent reports of officers feeling unsupported when being sued or having complaints made against them (Toch, 2002). If these factors result in fewer positive appraisals, or more negative appraisals, SRG in police officers may not be fully described using the cognitive theory of stress and coping model (Lazarus & Folkman, 1984). Future police studies may need to include a measure of cognitive appraisals to better understand SRG in police according to the cognitive theory of stress and coping model (Lazarus & Folkman, 1984).

The Conceptual Model for Positive Outcomes of Crisis (Schaefer & Moos, 1992), which emphasises social support and community resources as crucial for SRG cannot fully explain the results of this study since SRG was not associated with satisfaction with social support. Officers deal with difficult and distressing situations and the apparent reticence to

share trauma related information with significant others and fellow officers (Toch, 2002) may influence not only the level of social support that police officers experience, but more importantly, satisfaction with social support. Perhaps these limited opportunities to share information, with significant others and colleagues, means that social support has limited utility for police officers and therefore does not predict SRG.

The Tedeschi and Calhoun (2004) model of Posttraumatic Growth emphasises cognitive processing through which narratives are crafted and schemas are changed by social support and self-disclosure. Again, social support, and specifically satisfaction with social support, was not associated with SRG in this study. Given that police organisational cultures typically do not encourage help seeking behaviours (e.g. Toch, 2002, Lorber & Gracia, 2010) or allow time for rumination (Toch, 2002), and that officers typically do not discuss work events with significant others or colleagues (Toch, 2002), it is not clear whether the Tedeschi and Calhoun (2004) model explains the SRG reported in by the police officers in this study. Additionally, this transactional model emphasises deliberate rumination, but if police officers have high levels of avoidance symptomology, which typically results in disengagement from intrusive thoughts, it is unclear how much deliberate rumination is possible, and therefore whether the SRG these officers reported resulted from rumination. The DSM IV-TR PTSD diagnostic criteria (APA, 2000) requires clinically significant levels of intrusive ruminations and it is these intrusive ruminations that may prevent deliberate ruminating (Cann et al., 2011), the prerequisite for schema change according to the posttraumatic growth model. It would seem then that a PTSD diagnosis, especially where avoidance coping is prominent (e.g. Pineles et al., 2011), limits opportunities to engage in deliberate rumination.

However, it is possible, that the opportunity to learn about SRG and the time to discuss the topic with a therapist allowed for a degree of deliberate rumination, or even encouraged deliberate rumination that officers may not ordinarily engage in. Perhaps therapy

is by its very nature a processing of narratives that allows for schema change, in which case the Tedeschi and Calhoun (2004) model may explain the SRG reported by police officers in this study.

The final model against which these results can be interpreted is the Janus Face model (Maercker & Zoellner, 2004). This study did not collect objective measure of SRG, such as reports from significant others, which makes it difficult to determine whether the growth reported at Time 2 was illusory or actual.

This research provides police specific data that can be compared with earlier research. Having a trauma history prior to joining the police force did not negatively impact SRG or PTSD, as has been found with military personnel who experienced two or more categories of childhood adversity (Cabrera, et al., 2007). Neither did a prior history of trauma result in higher levels of SRG, as described in police officers that were provided SRG information during training and assessed for SRG 12 months into their careers as police officers (Burke & Shakespeare-Finch, 2011). It is not clear why a trauma history had no effect on SRG, but one explanation is that the 12 week follow up did not allow sufficient time for the a more complete picture of SRG in police officers to emerge.

Contrary to the notion of a dose response, that more adversity increases the risk of PTSD (Brewin, Andrews & Valentine, 2000), levels of workplace trauma did not predict PTSD symptom severity in this study. The level of trauma that police officers face may mean that all officers report such elevated levels of trauma that the impact of dose is no longer discernable, essentially a ceiling effect.

Research suggests the temporal pattern for SRG is unclear. Several studies have found that time since adversity is a factor in the development of SRG (e.g. Cordova et al., 2001; Evers et al., 2001; Park et al., 1996, Study 3, Time 1; Polatinsky & Esprey, 2000), whilst others have found that time since incident is not a factor in SRG (e.g. Fromm et al.,

1996; Milam et al., Park et al., 1996, studies 1 and 2: Study 3 Time 1). In the current study only one measure of SRG was taken, at 12 weeks and perhaps this was insufficient time for SRG to develop and be measured in police officers. However, the wide ranging event types and populations in the studies that deemed time since incident as relevant, or irrelevant to the development of SRG, are too diverse to make meaningful comparisons with the findings from the current study with police officers. Additionally, the chronicity of police trauma may mean that measuring time since incident has limited value unless the traumatic response can be unequivocally tied to a single event, which is seldom the case with police trauma.

The contradiction between police officers reporting fewer PTSD symptoms 2-3 years after the USA 9/11 attack (Perrin et al., 2007) and police as a group being at an increased risk of developing (APS, 2000) points to the complexity of this population and the necessity for police specific research, rather than relying on either military or other first responder population studies.

Contrary to findings in civilian trauma research (e.g. Breslau & Anthony, 2007) interpersonal violence not appear to elicit a PTSD response females any more than it did in males because PTSD symptoms and levels of trauma were similar in both male and female police officers. Furthermore, female officers did not appear to be sensitised to subsequent trauma of a lesser magnitude as evidenced by similar PTSD symptoms and number of trauma events. There were also no sex differences in SRG. The lack of sex differences in PTSD may be at least in part explained by police organisations having a stereotypically masculine overtone (Lorber & Gracia, 2010), within which female officers work hard at being “one of the boys” (McNiell, 1996). There were also no sex differences in trauma exposure, prior to joining the Police Force, indicating that male and female officers in this study experienced similar trauma histories prior to working as police officers.

This study used self-report measures, which are commonly used in SRG research, but objective measures are more widely accepted in the scientific community. The nature of PTSD, and specifically the concentration difficulties, may have resulted in participants not being able to understand or internalise the SRG information, and this is especially the case given the relatively brief intervention at Time 1 in this study. Furthermore, the intervention was provided in the initial session, a time when individuals are typically anxious about seeing a psychologist for the first time and when PTSD symptoms are elevated, if not at their worst. Whilst the psychoeducation was purposefully brief, to accommodate the concentration difficulties typically found in PTSD (APA, 2000), it is not clear whether perhaps the intervention was too brief. The brevity, and timing, of the SRG psychoeducation may have inadvertently and negatively impacted by the concentration difficulties associated with PTSD. Future research could explore whether SRG psychoeducation delivered at a second or third session, rather than the first, alleviates anxiety and/or impacts SRG. Furthermore, future research could investigate whether repeating the SRG information at later point during therapy influenced SRG.

Informal feedback from participants at follow up indicated that completing the questionnaire booklet was exceedingly taxing. Again, this possibly relates to the concentration difficulties that PTSD sufferers typically experience and the probable anxiety that clients feel at the initial session with a psychologist. Future research could spread the questionnaire across 2 or 3 sessions to assist with concentration difficulties and the sheer volume of information that needs to be collected if the factors that impact SRG are to be investigated fully.

The findings of this study are limited to officers who presented for help and it unclear as to whether this is a point at which SRG was more, or less, likely. All officers in this study had seen a medical doctor who either diagnosed PTSD, or flagged a possible PTSD

diagnosis. It is not clear if, or how, having a label impacts SRG. Perhaps officers who have a label are more able to engage in recovery than officers who are unwell, but who have not yet sought help. It would be interesting to see if the same levels and patterns of SRG were repeated in a sample where officers self reported “workplace stress” rather than having a formal diagnosis/label from a medical doctor.

The relatively low participant numbers in this study is a limitation. Recruitment was initially proceeding well until November 2011 when legislative changes to the New South Wales Police Force Death and Disability Scheme were announced. As a result of the announcement, fewer police officers lodged Worker’s Compensation claims while they waited to see the ramifications of the changes. The sudden drop in police officers presenting for treatment hampered recruitment considerably. The time limits imposed by having to write a thesis made it necessary to use the data that had been collected rather than wait for more officers to present for treatment.

The current study did not assess whether officers had been exposed to SRG information prior to the intervention and future research could perhaps control for prior knowledge, although this is difficult to do without providing the prior knowledge. This study was not able to assess the benefits of SRG psychoeducation prior to a diagnosis, or suspicion of PTSD, given that all participants already had either a PTSD diagnosis or were flagged at probably meeting DSM-IV TR criteria for a PTSD diagnosis.

Police officers are at an increased risk of developing PTSD (APA, 2000) and PTSD is associated with poorer outcomes including lower general health ratings, workplace absenteeism, increased physical symptoms and higher somatic symptom severity (Hoge et al., 2007). Poorer family relationships, increased smoking and higher rates of non-specific health complaints have also been associated with PTSD (Koenen et al., 2008). Thirty seven per cent of Australian police officers consume alcohol at harmful levels and 31 per cent engage in

binge drinking (O'Brien & Reznick, 1988). Co-habiting family members are also affected when a partner has a PTSD diagnosis, with partners showing elevated symptoms when they perceive higher symptoms in their partners (Renshaw, Rodrigues & Jones, 2008). The knock on effect of PTSD for families is becoming clearer with recent research focusing on the impact of PTSD on families of at risk populations, but again the initial focus has been on military families (e.g. Lowe et al., 2012). Finally, Suicide has been shown to correlate strongly with the re-experiencing cluster of PTSD symptoms (Bell & Nye, 2007) and repeated exposure to trauma and violence, access to firearms and acute periods of high distress as well as insomnia and nightmares have been linked to suicide rates in veterans (Bryan et al., 2010). Clearly PTSD is a pervasive, debilitating condition. If it is evident that SRG can follow adversity, and that SRG can be facilitated, then it is prudent to facilitate SRG in police officers given the increased risk of experiencing the pervasive and debilitating issues associated with PTSD.

These findings form part of the emerging picture of SRG in police officers. Data on PTSD in Australian police personnel is limited, so this study contributes to a greater understanding of SRG in police officers. The study demonstrates that police officers can and do experience SRG following workplace adversity. The study describes the factors that influence SRG in police officers presenting for treatment, and demonstrates a brief, cost effective intervention that primes SRG. Eliciting SRG is especially prudent in a population who are at an increased risk of PTSD as a consequence of their employment. Furthermore, there is the possibility that this intervention could be incorporated into telephone or Internet based therapy, which potentially increases the likelihood of SRG whilst also maintaining the cost effectiveness of the intervention. This is especially the case given the significantly lower rates of missed appointments in telepsychiatry compared with face-to-face psychiatry (Leigh, Cruz & Mallios, 2009). Whilst disseminating SRG psychoeducation may not directly address

the stigma associated with mental health issues, and PTSD specifically in the police force, the notion of benefit finding as a result of the disorder is potentially encouraging for those diagnosed PTSD.

This intervention highlights the efficacy of treatment external to the organisation to minimise perceived confidentiality issues (Kennedy & Moore, 2008) and avoid the traditional masculine cultures synonymous with first responder organisations (Lorber & Gracia, 2010).

The paucity of research on first responders generally, and police officers more specifically, suggests that future research will need to investigate police specifically to improve understanding on the development of SRG in this high risk population. Military and other first responder studies have only limited utility in explaining the mechanisms and predictors of SRG in police officers.

Whilst SRG was reported in all three groups it is not clear from this study whether, or how, the reported SRG was impacted by therapy itself, or TAU. Written and verbal priming significantly facilitated SRG in this study, but since all three groups reported some growth, it would be informative to better understand if or how therapy influences SRG. Future studies may investigate the impact of therapy by having a no therapy, or treatment condition, perhaps including police officers who chose not to access therapy or who cease therapy.

Future studies will need to be longitudinal if the temporal pattern of SRG is to be understood, especially in police officers where exposure to trauma is chronic. Research on the efficacy of SRG psychoeducation in training (e.g. Sochet, Shakespear-Finch, Craig et al., 2001) and whilst fully deployed, but prior to a PTSD diagnosis would be helpful in describing the optimal periods at which SRG psychoeducation is effective. Longer follow up periods would illuminate the temporal pattern of SRG in police officers. Aspects that affect police officers such as the Workers Compensation and medical discharge processes may need to be investigated too before a model that explains SRG in police officers becomes evident.

If as it appears from the literature on police, levels of organisational support and other organisational factors impact SRG (Toch, 2002), future research should explore the impact of organisational factors on SRG. Alcohol use, which is typically high in police officers (McDonald, 2000) may need to be measured in future research to explore whether alcohol use impacts SRG, and specifically whether alcohol use diminishes capacity to engage in deliberate rumination.

These findings of this study are valuable in that they demonstrate a possible means of eliciting SRG in police officers, a population at high risk of developing PTSD and associated difficulties (e.g. depression, anxiety, alcohol abuse, family strain). This study highlights the need for police specific research in order to better understand the predictors and mechanisms of the positive consequence of trauma in a vulnerable population.

References

- Abraído-Lanza, A. F., Guier, C., & Colón, R. M. (1998). Psychological thriving among Latinas with chronic illness. *Journal of Social Issues, 54*, 405–424.
- Al-Turkait, F. A., & Ohaeri, J. U. (2008). Psychopathological status, behavior problems, and family adjustment of Kuwaiti children whose fathers were involved in the first gulf war. *Child Adolescent Psychiatry Mental Health, 2*(1), 12.
- Ahmed, S. M., & Palermo, A. S. (2010). Community Engagement in Research: Frameworks for education and peer review. *American Journal of Public Health, 100* (8), 1380–1387. doi: 10.2105/AJPH.2009.178137
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders*, (4th ed., text revision). Washington, DC: American Psychiatric Association.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*, (5th ed., text revision). Washington, DC: American Psychiatric Association.
- Australian Bureau of Statistics (2007). Retrieved June 24, 2012, from <http://www.abs.gov.au/ausstats/ABS@.nsf/Latestproducts/4326.0MainFeatures32007?>
- Australian Centre for Posttraumatic Mental Health (ACPMH). (2009). Retrieved August 23, 2012, from <http://www.acpmh.unimelb.edu.au/resources/resources-guidelines.html>
- Baker, D. G., Heppner, P., Afari, N., Nunnink, S., Kilmer, M., Simmons, A., et al. (2009). Trauma exposure, branch of service, and physical injury in relation to mental health among U.S. veterans returning from Iraq and Afghanistan. *Military Medicine, 174*(8), 773–778.
- Bancroft, H., & Cooper, D. (2008). M.A.N.E.R.S.- A model of psychological first aid for paramedics and managers. *Journal of Emergency Primary Health Care, 6*(3). Retrieved August 23, 2012, from http://www.jephc.com/Vol6Issue3/ACAPAbstracts%202008_990297.pdf
- Bell, J.B. & Nye, E.C. (2007). Specific symptoms predict suicidal ideation in Vietnam combat veterans with chronic post-traumatic stress disorder. *Military Medicine, 172*(11), 1144–1147.

- Belik, S. L., Cox, B. J., Stein, M. B., Asmundson, G. J. G., & Sareen, J. (2007). Traumatic events and suicidal behavior - Results from a national mental health survey. *Journal of Nervous and Mental Disease, 195*(4), 342–349.
- Bisson, J. I., Jenkins, P. L., Alexander, J., & Bannister, C. (1997). Randomized controlled trial of psychological debriefing for victims of acute burn trauma. *British Journal of Psychiatry, 171*, 78–81.
- Blanchard, E. B., Jones Alexander, J., Buckley, T. C., & Forneris, C. A. (1996). Psychometric properties of the PTSD Checklist (PCL). *Behaviour Research and Therapy, 34*, 669-673.
- Blanchard, E. B., Hickling, E. J., Mitnick, N., Taylor, A. E., Loos, W. R., & Buckley, T. C. (1995). The impact of severity of physical injury and perception of life threat in the development of posttraumatic stress disorder in motor vehicle accident victims. *Behaviour Research and Therapy, 33*(5), 529–534.
- Bonanno, G. A., Galea, S., Bucciarelli, A., & Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting Clinical Psychology, 75*(5), 671–682.
- Boscarino, J. A. (2008). Psychobiologic predictors of disease mortality after psychological trauma - Implications for research and clinical surveillance. *Journal of Nervous and Mental Disease, 196*(2), 100–107.
- Breslau, N., & Anthony, J. C. (2007). Gender differences in the sensitivity to posttraumatic stress disorder: An epidemiological study of urban young adults. *Journal of Abnormal Psychology, 116*(3), 607–611.
- Brewin, C.R., Andrews, B. & Valentine, J.D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*, 748–766.

- Britt, T. W., Greene-Shortridge, T. M., Brink, S., Nguyen, Q. B., Rath, J., Cox, A. L., et al. (2008). Perceived stigma and barriers to care for psychological treatment: Implications for reactions to stressors in different contexts. *Journal of Social and Clinical Psychology, 27*(4), 317–335.
- Browne, T., Iversen, A., Hull, L., Workman, L., Barker, C., Horn, O., et al. (2008). How do experiences in Iraq affect alcohol use among male UK armed forces personnel? *Occupational and Environmental Medicine, 65*(9), 628–633.
- Bryan, C. J., Kanzler, K. E., Durham, T. L., West, C. L., & Greene, E. (2010). Challenges and considerations for managing suicide risk in combat zones. *Military Medicine, 175*(10), 713–718.
- Bryant, R. A., Creamer, M., O'Donnell, M., Silove, D., & McFarlane, A. C. (2008). A multisite study of initial respiration rate and heart rate as predictors of posttraumatic stress disorder. *The Journal of Clinical Psychiatry, 69*(11), 1694–1701.
- Bryant, R. A., & Harvey, A. G. (1995). Avoidant coping style and post-traumatic stress following motor vehicle accidents. *Behaviour Research and Therapy, 33*(6), 631–635.
- Bull, D. F. (2005). Police service staffing formulae for high growth high crime locations within the Central Coast (NSW) policing area. Unpublished manuscript.
- Burke, K., & Shakespeare-Finch, J. (2011). Markers of Resilience in New Police Officers: Appraisal of Potentially Traumatizing Events. *Traumatology, 17*(4), 52–60.
- Cabrera, O. A., Hoge, C. W., Bliese, P. D., Castro, C. A., & Messer, S. C. (2007). Childhood adversity and combat as predictors of depression and post-traumatic stress in deployed troops. *American Journal of Preventative Medicine, 33*(2), 77–82.
- Calhoun, L. G., Cann, A. G., & Tedeschi, R. G. (2010). The posttraumatic growth model: Sociocultural considerations. *Journal of Traumatic Stress, 13*, 521–527.

- Calhoun, L. G., & Tedeschi, R. G. (2006). *Handbook of posttraumatic growth*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Cann, A., Calhoun, L. G., Tedeschi, R. G., Solomon, D. T. (2010). Posttraumatic growth and depreciation as independent predictors of well-being. *Journal of Loss Trauma, 15*, 151–166.
- Cannon, McKenzie, & Sims, (2003). The New School Psychology Bulletin Volume 3, No. 2, 2005 Critical Incident Stress Debriefing (CISD): Efficacy in Question. Retrieved July 2012, from <http://www.nspb.net/index.php/nspb/article/view/33/30>
- Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events and posttraumatic stress in childhood. *Archives of General Psychiatry, 64*(5), 577–584.
- Carlier, I.V.E., Lamberts, R.G., van Uchlen, A.J. & Gersons, B.P.R (1998). Disaster Related Post Traumatic Stress in Police Officers: A field study of the impact of debriefing. *Stress Medicine. 14*. 143–148.
- Carlier, I. V. E., & Gersons, B. P. R. (1992). Development of a scale for traumatic incidents in police work. *Psychiatria Fennica Supplement, 23*, 59–70.
- Carver, C. S. (1998). Resilience and thriving: issues, models, and linkages. *Journal of Social Issues, 54*, 245–266.
- Chan, J., Devery, C., & Doran, S. (2003). *Fair cop - Learning the art of policing*. Toronto, Ontario, Canada: University of Toronto.
- Chodoff, P., Friedman, P. B., & Hamberg, D. A. (1964). Stress, defenses and coping behaviour: Observations in parents of children with malignant disease. *American Journal of Psychiatry, 120*, 743–749.
- Cobb, S. (1974). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*, 300–314.
- Cohen, S. (1988). Psychosocial models of social support in the etiology of physical disease. *Health Psychology, 7*, 269–297.
- Cohen, S., & Wills, T. A. (1985). Stress, social support and the buffering hypothesis.

Psychological Bulletin, 2, 310–357.

- Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski, M. (2001). Posttraumatic growth following breast cancer: A controlled comparison study. *Health Psychology*, 20, 176–185.
- Creamer, M., McFarlane, A. C., & Burgess, P. (2005). Psychopathology following trauma: the role of subjective experience. *Affective Disorder*, 86(2-3), 175–182.
- Denson, T. F., Marshall, G. N., Schell, T. L., & Jaycox, L. H. (2007). Predictors of posttraumatic distress 1 year after exposure to community violence: The importance of acute symptom severity. *Journal of Consulting Clinical Psychology*, 75(5), 683–692.
- Dunning, C. (2003). Sense of coherence in managing trauma workers. In D. Paton, J. M. Violanti, & L. M. Smith (Eds.), *Promoting capabilities to manage posttraumatic stress: Perspectives on resilience* (pp. 119–135). Springfield, IL: Charles C Thomas.
- Durham, T.W., McCammon, S., & Allison, E.J., Jr. (1985). The psychological impact of disaster on rescue personnel. *Annals of Emergency Medicine*, 14(7), 664–668.
- Dyregrov, A, Kristofferson, J. I., & Gjestad, R. (1996). Voluntary and professional disaster-workers: Similarities and differences in reactions. *Journal of Traumatic Stress*, 9, 541–555.
- Eaton, K. M., Hoge, C. W., Messer, S. C., Whitt, A. A., Cabrera, O. A., McGurk, D., et al. (2008). Prevalence of mental health problems, treatment need, and barriers to care among primary care-seeking spouses of military service members involved in Iraq and Afghanistan deployments. *Military Medicine*, 173(11), 1051–1056.
- Ehlers, A., Clark, D. M., Hackmann, A., McManus, F., Fennell, M., Herbert, C. & Mayou, R. (2003). A randomized controlled trial of cognitive therapy, a self-help booklet, and repeated assessments as early interventions for posttraumatic stress disorder. *Archives of General Psychiatry*, 60(10), 1024–32.

- Ehlers, A., Mayou, R. A., & Bryant, B. (1998). Psychological predictors of chronic posttraumatic stress disorder after motor vehicle accidents. *Journal of Abnormal Psychology, 107*(3), 508–519.
- Evans, L., Cowlishaw, S., & Hopwood, M. (2009). Family functioning predicts outcomes for veterans in treatment for chronic posttraumatic stress disorder. *Journal of Family Psychology, 23*(4), 531–539.
- Ersland, S., Weisaeth, L., & Sund, A. (1989). The stress upon rescuers involved in an oilrig disaster. *Psychiatria Scandinavica. Supplementum*. Retrieved September 29, 2012, from http://www.researchgate.net/publication/20532349_The_stress_upon_rescuers_involved_in_an_oil_rig_disaster._Alexander_L._Kielland_1980
- Evers, A. W. M., Kraaimaat, F. W., van Lankveld, W., Jongen, P. J. H., Jacobs, J. W. G., & Bijlsma, J. W. (2001). Beyond unfavourable thinking: The illness Cognition Questionnaire for chronic diseases. *Journal of Consulting and Clinical Psychology, 69*, 1026–1036.
- Felker, B., Hawkins, E., Dobie, D., Gutierrez, J., & McFall, M. (2008). Characteristics of deployed Operation Iraqi Freedom military personnel who seek mental healthcare. *Military Medicine, 173*(2), 155–158.
- Fennell, J. Y. (1981). Psychological stress and the peace officer, or stress- a cop killer. In G. Henderson (Ed.). *Police human relations* (pp. 170-179). Springfield, Illinois: Charles C Thomas.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- Figley, C. R. (1993). Coping with stressors on the home front. *Journal of Social Issues, 49*(4), 51–71.
- Fikretoglu, D., Guay, S., Pedlar, D., & Brunet, A. (2008). Twelve month use of mental health services in a nationally representative, active military sample. *Medical Care, 46*(2), 217–223.

- Foa, E., Keane, T. M., & Friedman, M. J. (2000). Effective treatments for PTSD. *Practice Guidelines from the International Society for Traumatic Stress Studies*. New York: Guildford Press.
- Folkman, S. & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist*, 55(6), 647–654.
- Frazier, P., Tashiro, T., Berman, M., Steger, M., & Long, J. (2004). Correlates of levels and patterns of posttraumatic growth among sexual assault survivors. *Journal of Consulting and Clinical Psychology*, 72, 19–30.
- Frazier, P., Tennen, H., Gavian, M., Park, C., Tomich, P., & Tashiro, T. (2009). Does self-reported post-traumatic growth reflect genuine positive change? *Psychological Science*, 20, 912–919.
- Fromm, K., Andrykowski, M. A., & Hunt, J. (1996). Positive and negative psychosocial sequelae of bone marrow transplantation: Implications for Quality of Life assessment. *Journal of Behavioral Medicine*, 19, 221–240.
- Frommberger, U. H., Stieglitz, R. D., Nyberg, E., Schlickewei, W., Kuner, E., & Berger, M. (1998). Prediction of posttraumatic stress disorder by immediate reactions to trauma: A prospective study in road traffic accident victims. *European Archives of Psychiatry and Clinical Neuroscience*, 248(6), 316–321.
- Fullerton, C. S., Ursano, R. J., Reeves, J., Shigemura, J., & Grieger, T. (2006). Perceived safety in disaster workers following 9/11. *Journal of Nervous and Mental Disease* 194, 61–63
- Gewirtz, A. H., Erbes, C. R., Polusny, M. A. Forgatch, M. S., & DeGarmo, D. S. (2010). Helping military families through the deployment process: strategies to support parenting. *Professional Psychology: Research and Practice*, 42(1), 56–62.
- Gist, R., & Woodall, S. J. (2000). There are no simple solutions to complex problems. In J. M. Violanti, D. Paton, & C. Dunning (Eds.), *Posttraumatic stress intervention: Challenges, issues and perspectives* (pp. 81–96). Springfield, IL: Charles C. Thomas.

- Glass, K., Flory, K., Hankin, B. L., Kloos, B., & Turecki, G. (2009). Are coping strategies, social support, and hope associated with psychological distress among hurricane Katrina survivors? *Journal of Social and Clinical Psychology, 28*(6), 779–795.
- Goldberg, D. P. (1978). *Manual of the General Health Questionnaire*. Windsor, England: NFER Publishing.
- Goldberg, D. P., Hillier VF. A Scaled Version of the General Health Questionnaire. *Psychological Med* 1979; 9: 139-145.
- Gould, M., Adler, A., Zamorski, M., Castro, C., Hanily, N., Steele, N., et al. (2010). Do stigma and other perceived barriers to mental health care differ across Armed Forces? *Journal of Royal Society of Medicine, 103*(4), 148–156.
- Gould, M., Greenberg, N., & Hetherington, J. (2007). Stigma and the military: Evaluation of a PTSD psychoeducational program. *Journal of Trauma Stress, 20*(4), 505–515.
- Haarr, R. N. (2005). Factors affecting the decision of police recruits to drop out of police work. *Police Quarterly, 8*, 431–453.
- Haugen, P., T., Eycles, M., & Weiss, D. S. (2012). Treating posttraumatic stress disorder in first responders: A systematic review. *Clinical Psychology Review, 32* (5), 370–380.
- Helgeson, V. S., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology, 15*, 135–148.
- Helgeson, V. S., Snyder, P. R., & Seltman, H. (2004). Psychological and physical adjustment to breast cancer over 4 years: Identifying distinct trajectories of change. *Health Psychology, 23*, 3–15.
- Higgins, J. (2001). Traumatic stress reactions. Presented at the Australian Capital territory Division of General Practice Evening Seminar (28.11.2001). Retrieved July 27, 2012 from [http://www.higginspsych.com.au/publications/GPs_Traumatic%2520Stress.pdf+Higgins+PTSD+\"1+in+12\"&hl=en&gl=au](http://www.higginspsych.com.au/publications/GPs_Traumatic%2520Stress.pdf+Higgins+PTSD+\)

- Hobfoll, S. E., & Walfisch, S. (1986). Coping with a threat to life: A longitudinal study of self-concept, social support, and psychological distress. *American Journal of Community Psychology, 12*, 87–100.
- Hoge, C. W., Terhakopian, A., Castro, C. A., Messer, S. C., & Engel, C. C. (2007). Association of posttraumatic stress disorder with somatic symptoms, health care visits, and absenteeism among Iraq war veterans. *American Journal of Psychiatry, 164*(1), 150–153.
- Hoge, E. A., Austin, E. D., & Pollack, M. H. (2007). Resilience: Research evidence and conceptual considerations for posttraumatic stress disorder. *Depression and Anxiety, 24*(2), 139–152.
- House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science, 241*, 540–545.
- Horowitz, M. J. (1976). *Stress response syndromes*. New York: Jason Aronson.
- Horowitz, M.J., Wilner, M. & Alvarez, W. (1979). Impact of Events Scale: A measure of subjective stress. *Psychosomatic Medicine, 41*(3), 209–218.
- Huppert, F.A. & Whittington, J.E. (2003). Evidence for the independence of positive and negative well-being: implications for quality of life assessment. *British Journal of Health Psychology, 8*, 107–122.
- Ickovics, J. R., & Park, C. L. (1998). Paradigm shift: Why a focus on health is important. *Journal of Social Issues, 54*(2), 237–244.
- Israel, B. A., Eng, E., Schultz, A., & Parker, E. A. (2005). *Methods in community based participatory research for health*. San Francisco, CA: John Wiley.
- Iversen, A., Waterdrinker, A., Fear, N., Greenberg, N., Barker, C., Hotopf, M., et al. (2007). Factors associated with heavy alcohol consumption in the U.K. armed forces: data from a health survey of Gulf, Bosnia, and era veterans. *Military Medicine, 172*(9), 956–961.

- Jackson, C. A. (2007). Posttraumatic growth: Is there evidence for changing our practice? *The Australian Journal of Disaster Studies*, 1. Retrieved August 23, 2012, from <http://www.trauma.massey.ac.nz/issues/2007-1/jackson.htm>
- Jackson, C. (2007). The General Health Questionnaire. *Occupational Medicine*, 57 (1): 79.doi:10.1093/occmed/kql169
- Jacobson, I. G., Ryan, M. A. K., Hooper, T. I., Smith, T. C., Amoroso, P. J., Boyko, E. J., et al. (2008). Alcohol use and alcohol-related problems before and after military combat deployment. *Jamaican Journal of the American Medical Association*, 300(6), 663–675.
- Janoff-Bulman, R., & Berger, A. R. (2000). The other side of trauma: Towards a psychology of appreciation. In J. H. Harvey & E. D. Miller (Eds.), *Loss and trauma: general and close relationship perspectives*. Philadelphia: Bruner-Routledge.
- Joseph, S. (2012). What doesn't kill us: The new psychology of posttraumatic growth. Great Britain: Piatkus.
- Joseph, S. & Linley, P. A. (2005). Positive adjustment to threatening events: An organismic theory of growth through adversity. *Review of General Psychology*, 9, 262–280.
- Joseph, S. Williams, R., & Yule, W. (1993). Changes in outlook following disaster: The preliminary development of a measure to assess the positive and negative responses. *Journal of Traumatic Stress*, 6(2), 217–279.
- Kaplan, M. S., McFarland, B. H., & Huguet, N. (2009). Firearm Suicide Among Veterans in the General Population: Findings From the National Violent Death Reporting System. *Journal of Trauma Injury Infection and Critical Care*, 67(3), 503–507.
- Kaplan, M. S., Huguet, N., McFarland, B. H., & Newsom, J. T. (2007). Suicide among male veterans: a prospective population based study. *Journal of Epidemiology and Community Health*, 61(7), 619–624.

- Kennedy, C. H., & Moore, B. A. (2008). Evolution of clinical military psychology ethics. *Military Psychology, 20*(1), 1–6. doi:10.1080/08995600701753037
- Kim, P. Y., Thomas, J. L., Wilk, J. E., Castro, C. A., & Hoge, C. W. (2010). Stigma, barriers to care, and use of mental health services among active duty and National Guard soldiers after combat. *Psychiatric Services, 61*(6), 582–588.
- Kleim, B., Ehlers, A., & Glucksman, E. (2007). Early predictors of chronic post-traumatic stress disorder in assault survivors. *Psychological Medicine, 37*(10), 1457–1467.
- Kleim, B., & Westphal, M. (2011). Cognitive restructuring in post-traumatic stress disorder. *The Encyclopedia of Trauma*, C. Figley (Ed.). London: Sage.
- Koenen, K. C., Stellman, S. D., Sommer, J. E., & Stellman, J. M. (2008). Persisting posttraumatic stress disorder symptoms and their relationship to functioning in Vietnam veterans: A 14-year follow-up. *Journal of Traumatic Stress, 21*(1), 49–57.
- Kubzansky, L. D., Koenen, K. C., Spiro, A., Vokonas, P. S., & Sparrow, D. (2007). Prospective study of posttraumatic stress disorder symptoms and coronary heart disease in the normative aging study. *Archives of General Psychiatry, 64*(1), 109–116.
- Kubany, E.S., Haynes, S.N., Leisen, M.B., Owens, J.A., Kaplan, A.S., Watson, S.B., and Burns, K. (2000). Development and preliminary validation of a brief broad-spectrum measure of trauma exposure: The Traumatic Life Events Questionnaire. *Psychological Assessment, 12*, 210–224.
- Laffaye, C., Cavella, S., Drescher, K., & Rosen, C. (2008). Relationships among PTSD symptoms, social support, and support source in Veterans with chronic PTSD. *Journal of Traumatic Stress, 21*(4), 394–401.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Leigh, H., Cruz, H., & Mallios, R. (2009). Telepsychiatry appointments in a continuing care setting: kept, cancelled and no-shows. *Journal of Telemedicine and Telecare, 15*(6), 286–289.

- Lepore, S. J., & Evans, G. W. (1996) Coping with multiple stressors in the environment. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: theory, research, application* (pp. 350–377). New York: Wiley.
- Linley, R. (2003). Positive adaptation to trauma: wisdom as both process and outcome. *Journal of Traumatic Stress, 16*, 601–610.
- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress, 17*, 11–21.
- Linley, P.A., Joseph, S., & Loumidis, K. (2005). Trauma work, sense of coherence, and positive and negative changes in therapists. *Psychotherapy and Psychosomatics, 74*, 185–188.
- Litz, B, T. (2009). Early intervention for trauma: Where are we and where do we need to go? A commentary. *Journal of Traumatic Stress, 21(6)*, 503–506.
- Loissis, P., Shochet, I., Millear, P., & Biggs, H. (2009). The promoting adult resilience (PAR) program: The effectiveness of the second shorter pilot of a workplace prevention program. *Behaviour Change, 26(2)*, 97–112.
- Lorber, W., & Garcia, H. A. (2010). Not supposed to feel this: Traditional masculinity in psychotherapy with male veterans returning from Afghanistan and Iraq. *Psychotherapy, 47(3)*, 296–305.
- Lowe, S. (2012). Major issues of marriage and family for first responder families. Retrieved September 24, 2012 from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2059275#
- McCarthy, J. F., Valenstein, M., Kim, H. M., Ilgen, M., Zivin, K., & Blow, F.C. (2009). Suicide Mortality Among Patients Receiving Care in the Veterans Health Administration Health System. *American Journal Of Epidemiology, 169(8)*, 1033–1038.
- McCauley, M., Hughes, J. H., & Liebling-Kalifani, H. (2008). Ethical considerations for military clinical psychologists: A review of selected literature. *Military Psychology, 20(1)*, 7–20.

- McDonald, R. (2000). Never trust a cop that doesn't drink: A critical study of the challenges and opportunities for reducing high levels of alcohol consumption within occupational culture. Digital Theses Program, University of Western Sydney. Retrieved September 25, 2012 from <http://www.research.nla.gov.au/main/results?subject=polic+in+Australia>
- McEwen, B.S., Stellar, E. (1993). Stress and the Individual: Mechanism Leading to disease. *Archives of Internal Medicine*, 153 (18), 2093–2101.
- McMillen, J. C., & Fisher, R. H. (1998). The Perceived Benefits Scales: Measuring perceived positive life change after negative events. *Social Work Research*, (22(3), 173–187.
- McNeill, M. (1996, July, 29–31). Drinking to belong -The influence of the process of defeminisation on the alcohol consumption of female police officers. Paper presented at the Australian Institute of Criminology Conference First Australasian Women Police Conference. Sydney, Australia. Retrieved from http://www.aic.gov.au/media_library/conferences/policewomen/mcneill.pdf
- Maercker, A., & Zoellner, T. (2004). The janus face of self-perceived growth: Toward a two-component model of posttraumatic growth. *Psychological Injury*, 15, 41–48.
- Maguen, S., Metzler, T. J., McCaslin, S. E., Inslicht, S. S., Henn-Haase, C., Neylan, T. C., et al. (2009). Routine work environment stress and PTSD symptoms in police officers. *Journal of Nervous and Mental Disease*, 197:754–760.
- Makowska, Z., Merecz, D., Mościcka, A., & Kolasa, W. (2002). The validity of general health questionnaires, ghq-12 and ghq-28, in mental health studies of working people. *International Journal of Occupational Medicine and Environmental Health*, 15, (4), 353–362.
- Milam, J. E., Ritt-Olsen, A. & Unger, J. B. (2004). Posttraumatic growth amongst adolescents. *Journal of Adolescent Research*, 19, 192–204.

- Millar, P., Liossis, P., Shochet, I. M., Biggs, H., & Donald, M. (2008). Being on PAR: Outcomes of a pilot trial to improve mental health and well-being in the workplace with the Promoting Adult resilience (PAR) program. *Behaviour Change*, 25, 215–228.
- Miller, M. W., Wolf, E. J., Kilpatrick, D. G., Resnick, H. S., Marx, B. P., et al. (2012). The prevalence and latent structure of proposed DSM-5 posttraumatic stress disorder symptoms in U.S. national and veteran samples. *Psychological Trauma: Theory, Research, Practice, and Policy*. Retrieved September 27, 2012 from <http://www.ptsd.va.gov/professional/articles/article-pdf/id39382>
- Nolen-Hoeksema, S., & Davis, C. G. (2002). Positive responses to loss. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology*. New York: Oxford University Press.
- O'Brien L., & Reznick, R. (1988). *The prevalence of self-reported risk factors for ischaemic heart disease, problem drinking and emotional stress among NSW police: Summary of findings*. Sydney, NSW: Royal Prince Alfred Hospital.
- Oliver, I. O., Pearson, N., Coe, N., & Gunnell, D. (2005). Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. *The British Journal of The Psychiatry*, 186, 297–301 doi:10.1192/bjp.186.4.297
- Panagioti, M., Gooding, P., & Tarrier, N. (2009). Post-traumatic stress disorder and suicidal behavior: A narrative review. [Review]. *Clinical Psychology Review*, 29(6), 471–482.
- Park, C. L. (2005b). Religion and meaning. In R. Paloutzain & C. L. Park (Eds.), *Handbook of psychology and religion* (pp. 295–313). New York: Guilford Press.
- Park, C. L., Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress related growth. *Journal of Personality*, 64, 71–105.
- Pennebaker, J. W. (2000). The effects of traumatic disclosure on physical and mental health: The values of writing and talking about upsetting events. In J. M. Violanti, D. Paton, & C.

- Dunning (Eds.), *Posttraumatic stress intervention: Challenges, issues and perspectives* (pp. 97–114). Springfield, IL: Charles C. Thomas.
- Perrin, M. A., Digrande, L., Wheeler, K., Thorpe, L., Farfel, M., & Brackbill, R. (2007). Differences in PTSD Prevalence and Associated Risk Factors among World Trade Center disaster Rescue and recovery workers. *American Journal of Psychiatry*, *164*(9), 1385–1394.
- Peters, R. F. (2007). Police under pressure: Donkey on the edge. HEAS Publications. Retrieved September 29, 2012 from http://www.heas.com.au/publications_books.htm#
- Peterson, A. L., Wong, V., Haynes, M. F., Bush, A. C., & Schillerstrom, J. E. (2010). Documented combat-related mental health problems in military noncombatants. *Journal of Traumatic Stress*, *23* (6), 674–681.
- Peterson, C., Park, N., Pole, N., D'Andrea, W., & Seligman, M. (2008). Strengths of character and posttraumatic growth. *Journal of Traumatic Stress*, *21*(2), 214–217.
- Pietrzak, R. H., Johnson, D. C., Goldstein, M. B., Malley, J. C., & Southwick, S. M. (2009a). Perceived Stigma and Barriers to Mental Health Care Utilization Among OEF-OIF Veterans. *Psychiatric Services*, *60*(8), 1118–1122.
- Pineles, S. L., Mostoufi, S. M., Ready, C. B., Street, A. E., Griffin, M. G., Resick, P. A. (2011). Trauma reactivity, avoidant coping, and PTSD symptoms: A moderating relationship? *Journal of Abnormal Psychology*, *20*(1), 240–246.
- Pole, N., Neylan, T. C., Otte, C., Metzler, T. J., Best, S. R., Henn-Haase, C., et al. (2007). Associations between childhood trauma and emotion-modulated psychophysiological responses to startling sounds: A study of police cadets. *Journal of Abnormal Psychology*, *116*(2), 352–361.
- Polatinsky, S., & Esprey, Y. (2000). A assessment of gender differences in the perception of benefit resulting from the loss of a child. *Journal of Traumatic Stress*, *13*, 709–718.

- Power, M. J., Champion, L. A., & Aris, S. J. (1988). The development of a measure of social support: The significant others scale (SOS). *British Journal of Clinical Psychology*, 27, 349–358.
- Rallings, M. (2000). *Police and Trauma: A prospective examination of the psychological effects of occupational exposure to traumatic events* PhD Thesis, Department of Psychiatry, University of Queensland. Retrieved September 28, 2012 from <http://www.espace.library.uq.edu.au/view/UQ:157917>
- Ramchand, R., Schell, T. L., Karney, B. R., Osilla, K. C., Burns, R. M., & Caldarone, L. B. (2010). Disparate prevalence estimates of PTSD among service members who served in Iraq and Afghanistan: Possible explanations. *Journal of Traumatic Stress*, 23(1), 59–68.
- Raphael, B., Meldrum, L., & McFarlane, A.C. (1995). Does debriefing after psychological trauma work? *British Medical Journal*, 310, 1479–1481.
- Regehr, C., Hill, J., & Glancy, G. (2000). Individual predictors of traumatic reactions in firefighters. *Journal of Nervous and Mental Disorders*, 188(6), 333–339.
- Reiser, M. & Gieger, S. P. (1984). Police officer as victim. *Professional Psychology: Research & Practice*, 15, 315–323.
- Renshaw, K. D., Rodrigues, C. S., & Jones, D. H. (2008). Psychological symptoms and marital satisfaction in spouses of operation Iraqi freedom veterans: Relationships with spouses' perceptions of veterans' experiences and symptoms. *Journal of Family Psychology*, 22(4), 586–594.
- Resnick, H., Acierno, R., Waldrop, A. E., King, L., King, D., Danielson, C., et al. (2007). Randomized controlled evaluation of an early intervention to prevent post-rape psychopathology. *Behavioral Research and Therapy*, 45(10), 2432–2447.

- Riddle, M. S., Sanders, J. W., Jones, J. J., & Webb, S. C. (2008). Self-reported combat stress indicators among troops deployed to Iraq and Afghanistan: an epidemiological study. *Comprehensive Psychiatry*, 49(4), 340–345.
- Robinson R, Mitchell, J, T. (1993). Evaluation of psychological debriefings. *Journal of Traumatic Stress*, 6(3), 367–382.
- Rona, R. J., Fear, N. T., Hull, L., & Wessely, S. (2007). Women in novel occupational roles: mental health trends in the UK Armed Forces. *International Journal of Epidemiology*, 36(2), 319–326.
- Rose, S., Bisson, J., Churchill, R., Wessely, S. (2002). Psychological debriefing for preventing posttraumatic stress disorder (PTSD). Cochrane database of systematic reviews (Online). Retrieved 23.10.2011. Retrieved September 24, 2012 from https://www.researchgate.net/publication/11299377_Psychological_debriefing_for_preventing
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316–331.
- Salsman, M., Segerstrom, S. C., Brechting, E. H., Carlson, C. R., & Andrykowski, M. A. (2009). Posttraumatic growth and PTSD symptomology among colorectal cancer survivors: A 3-month longitudinal examination of cognitive processing. *Psych-Oncology*, 18, 30–41.
- stress disorder in a large community sample. *Psychosomatic Medicine*, 69(3), 242–248.
- Schaefer, J. A. & Moos, R. H. (1992). Life crises and personal growth. In B. N. Carpenter, *Personal coping theory, research and application* (pp. 149–170). Westport, CT: Praeger.
- Schnell, B. H., & Zinger, J. T. (1985). An investigation of self-actualization, job satisfaction and job commitment for Ontario funeral directors. *Psychological Reports*, 57, 455–464.

- Schwarzer, R., Luszczynska, A., Boehmer, S., Taubert, S., & Knoll, N. (2006). Changes in finding benefit after cancer surgery and the prediction of well being one year later. *Social Science and Medicine*, 63, 1614–1624.
- Seery, M. D., Silver, R. C., Holman, E. A., Ence, W. A., & Chu, T. Q. (2008). Expressing thoughts and feelings following a collective trauma: Immediate responses to 9/11 predict negative outcomes in a national sample. *Journal of Consulting and Clinical Psychology*, 76(4), 657–667.
- Seligman, M., & Csikszentmihalyi, M. (Eds.). (2002). Positive psychology (Special Issue). *American Psychologist*, 55(1), 5–8.
- Shakespeare-Finch, J. E., Smith, S.G., Gow, K.M., Embelton, G., & Baird, L. (2003). The prevalence of post-traumatic growth in emergency ambulance personnel. *Traumatology*, 9, 58–60.
- Shapiro, D. & Kunkler, J. (1990). *Psychological support for hospital staff initiated by clinical psychologist in the aftermath of the Hillsborough Disaster*. Sheffield: Sheffield Health Authority Mental Health Services Unit.
- Shochet, I., Holland, D., & White, K. (2001). The Resourceful Adolescents Programme: Group Leader's Manual. Queensland, Griffith University.
- Siegal, K., & Schrimshaw, E. W. (2000). Perceiving benefits in adversity: Stress related growth in women living with HIV/AIDS. *Social Sciences and Medicine*, 51, 1543–1554.
- Sijbrandij, M., Olff, M., Reitsma, J. B., Carlier, I. V. E., & Gersons, B. P. R. (2006). Emotional or educational debriefing after psychological trauma. *British Journal of Psychiatry*, 189, 150–155.
- Sijbrandij, M., Olff, M., Reitsma, J. B., Carlier, I. V. E., de Vries, M. H., & Gersons, B. P. R. (2007). Treatment of acute posttraumatic stress disorder with brief cognitive behavioral therapy: A randomized controlled trial. *American Journal of Psychiatry*, 164(1), 82–90.

- Silver, R. L., Boon, C., & Stones, M. H. (1983). Searching for meaning in misfortune: making sense of incest. *Journal of Social issues*, 39, 81–102.
- Solomon, Z., & Benbenishty, R. (1986). The role of proximity, immediacy, and expectations in frontline treatment of combat stress reaction among Israelis in the Lebanon war. *The American Journal of Psychiatry*, 143(5), 613–617.
- Solomon, Z., Zur-Noah, S., Horesh, D., Zerach, G., & Keinan, G. (2008). The contribution of stressful life events throughout the life cycle to combat-induced psychopathology. *Journal of Trauma Stress*, 21(3), 318–325.
- Sonis, J., Palmieri, P. A., Lauterbach, D., King, L. A., & King, D. W. (2008). Innovations in trauma research methods. *Journal of Traumatic Stress*, 21(5), 431–432.
- Stewart, A. J., & Salt, P. (1991). Life stress, life-styles, depression, and illness in women. *Journal of Personality and Social Psychology*, 40, 1063–1069.
- Sundin, J., Fear, N. T., Iversen, A., Rona, R. J., & Wessely, S. (2010). PTSD after deployment to Iraq: conflicting rates, conflicting claims. *Psychological Medicine*, 40, 367–382.
- Tait, R., & Silver, R. C. (1989). Coming to terms with major negative life events. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 351–382). New York: Guilford Press.
- Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, 38, 1161–1173.
- Tedeschi, R.G., & Calhoun, L.G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Tedeschi, R.G., & Calhoun, L.G. (1996). Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9(3), 455–471.
- Tedeschi, R.G., & Calhoun, L.G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15, 1–15.

- Tennan, H., Affleck, G., Armeli, S., & Carney, M. A. (2000). A daily process approach to coping: Linking theory, research and practice. *American Psychologist*, 55(6), 626–636.
- Thoits, P. A. (1996). Managing the Emotions of Others. *Symbolic Interaction*, 19(2), 85–109
- Thomas, J. L., Wilk, J. E., Riviere, L. A., McGurk, D., Castro, C. A., & Hoge, C. W. (2010). Prevalence of mental health problems and functional impairment among active component and National Guard soldiers 3 and 12 months following combat in Iraq. *Archives of General Psychiatry*, 67(6), 614–623.
- Toch, H. (2002). *Stress in policing*. Washington, DC: American psychological Association.
- Tolin, D. F., & Foa, E. B. (2006). Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research. *Psychological Bulletin*, 132(6), 959–992.
- Updegraff, J.A., & Taylor, S.E. (2000). From vulnerability to growth: Positive and negative effects of stressful life events. In J. Harvey & E. Miller (Eds.), *Handbook of Loss and Trauma*. New York: Brunner/Mazel.
- Ursano, R. J., Fullerton, C. S., Vance, K., & Wang, L. (2000). Debriefing: its role in the spectrum of prevention and acute management of psychological trauma. In B. Raphael & J. P. Wilson (Eds.), *Psychological debriefing. Theory, practice and evidence*. Cambridge: Cambridge University Press.
- Visco, R. (2009). Post deployment, self-reporting of mental health problems, and barriers to care. *Perspectives in Psychiatric Care*, 45(4), 240–253.
- Walsh, F. (2002). Bouncing forward: Resilience in the aftermath of September 11. *Family Processes*, 41, 34–36.
- Watts, R. (1994). The efficacy of critical incident stress debriefing for personnel. *Bulletin of the Australian Psychological Society*, 16, 6–7.

- Weathers, F. W., & Keane, T. M. (2007). The criterion a problem revisited: Controversies and challenges in defining and measuring psychological trauma. *Journal of Traumatic Stress, 20*(2), 107–121.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993). *The PTSD Checklist (PLC): Reliability, validity and diagnostic validity*. Paper presented at the 9th Annual Conference of the ISTSS, San Antonio, Texas.
- Werdel, M. B., & Wicks, R. J. (2012). *Primer on posttraumatic growth: An introduction and guide*. Hoboken, New Jersey: John Wiley & sons.
- Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology, 18*, 459–482.
- Ziegler, D. (2009). *Beyond healing: The path to personal contentment after trauma*. Phoenix, Arizona: Acacia Publishing.

Appendix A

Scope and General instructions for Submissions to Traumatology

Traumatology Scope and Notes for Contributors

Traumatology, an international journal is a primary online only reference for professionals all over the world who study and treat people exposed to highly stressful and traumatic events, such as terrorist bombings, war disasters, fires, accidents, criminal and familial abuse, hostage-taking, hospitalization, major illness, abandonment, and sudden unemployment.

Whether you are a psychologist, medical or nursing professional, aid worker, social worker, or other disaster/trauma professional, *Traumatology* will help you better understand how to work with disaster victims and their families, as well as other caregivers.

Each unique issue offers original articles, reviews, field reports, brief reports, commentary, and media reviews on trauma research, treatment, prevention, education, training, medical, legal, policy and theoretical concerns. Among the topics covered in recent issues include:

- Adaptive Coping in Adolescent Trauma Survivors
- Emotional Release Technique: A New Desensitization Method
- Gender Differences and Acute Stress Reactions Among Rescue Personnel
- Helpful Interventions on the Mississippi Gulf Coast
- Neurological Basis for the Observed Peripheral Sensory Modulation of Emotional Responses
- Post-traumatic Growth and HIV Bereavement
- Post-traumatic Growth Following a Cancer Diagnosis
- Post-traumatic Stress in Youth Experiencing Illnesses and Injuries
- Post-Tsunami Training of Helpers in Thailand, Phuket 2005
- Psychological Growth From a Close Brush with Death
- Sarin Gas Attack on the Tokyo Subway System

- Stockholm Effects and Psychological Responses to Captivity in Hostages Held by Suicide Terrorists
- The Counting Method: Applying the Rule of Parsimony to the Treatment of Posttraumatic Stress Disorder
- Vicarious Witnessing in European Concentration Camps: Imagining the Trauma of Another

This journal is a member of the Committee on Publication Ethics (COPE).

Editor: Brian E. Bride *University of Georgia School of Social Work*

Published in Association with *Green Cross Academy of Traumatology* Published in Association with *Green Cross Foundation*

Instructions for Authors

Aims and Scopes

Traumatology welcomes submissions of original articles that focus on innovations in understanding and helping the traumatized. The Journal intends to bring fresh new ideas about the challenges and the opportunities of traumatic events for individuals, groups, families, communities, and cultures. Submissions may be in the form of research reports, reports from the field, innovations in assessment, treatment, or prevention. Reviews of various media are by invitation only.

General Instructions

All submissions should be sent to <http://mc.manuscriptcentral.com/tmt>. No submissions are accepted by mail or fax. Please prepare manuscripts using the style and standards outlined in the Publication Manual of the American Psychological Association (APA), 5th edition.

Title Page

The title should be brief and meaningful. The authors' first and last names and affiliations should follow the title. The corresponding author should list his or her institutional affiliation, current address, contact information including telephone number, fax number, and if the manuscript was orally presented at a meeting, the name of the organization, place, and date it was read. Each additional author should supply email or phone number.

Abstract

An abstract of approximately 125 words should be provided on a separate sheet of paper.

This abstract should be factual and should present the reason for the study, the main findings, and the principal conclusions. The abstract should be followed by 6 to 8 key words relating to the article.

Text

Pages should be numbered consecutively. All abbreviations should be spelled out at first mention. Subheads should be inserted at suitable levels. Style should conform to that adopted by the American Psychological Association.

Artwork Submissions

Artwork includes charts and graphs, maps, photographs, line art, and tables with 17 or more columns. For electronic art acceptable file formats include the following: TIFF, EPS, JPEG, and PDF. Microsoft application files are acceptable for vector art (line art). For all scanned images line art (black and white) images should be scanned as a bitmap at 900ppi and photos should be scanned as grayscale or CMYK at 300ppi.

Permissions

Submit with the manuscript written permissions to use nonoriginal materials (quotations of over 100 words in length, or any table or figure), from both the author and publisher of the original. Credit the source in the text or as a footnote in a figure legend. Any photographs of identifiable persons should be accompanied by signed releases that show informed consent.

References

Authors are responsible for correctness and completeness of references. References should be typed double-spaced on a separate sheet of paper. They must be listed sequentially in alphabetical order according to the last name of the first author. References should not include any unpublished observations or personal communications. References should be typed in the style adopted by the American Psychological Association.

Copyright

A transfer of copyright agreement will be sent to the corresponding author. A completed transfer of copyright agreement signed by all authors must be returned prior to article publication.

Conflict of Interest

Authors are requested to disclose any commercial or financial association that might pose a conflict of interest in connection with their submitted article. All funding sources supporting the work should be acknowledged on the title page. Questions regarding conflict of interest should be directed to the Editor, Brian E. Bride at bbride@uga.edu.

Appendix B

Standardised SRG Psychoeducation: Provided Either Verbally or as a Handout

New Findings on the Possible Consequences of Traumatic Experiences

Research has shown that personal growth can occur as a result of stressful situations like the one you are experiencing now. Some individuals report positive benefits after a period of struggle.

These positive benefits can occur in many aspects of your life. Here are some ways in which research has shown you can grow as a result of adversity.

For example:

- Relationships with loved ones can become closer and more meaningful. This may be the result of much valued support from others, or it may be the realisation of how important they are to you. It could also be the result of communication, discussion and talking to significant others.
- Being faced with stressful situations can deepen your spiritual beliefs as you struggle to make sense of your experiences.
- Working through difficulties can help you recognise positive things about yourself that you might not otherwise have known.
- Dealing with challenges can give you a new perspective on life, and lead you to value life more.
- Working through adversity can provide the opportunity for reassessing your career goals.
- Increased awareness of self-care can lead to more positive health choices.

Appendix C
Sample Questionnaire Booklet

The Impact of Growth Focused Psycho-education on Post Traumatic Growth in Police Officers

Study under the supervision of Rev Dr Martin Johnson

Researcher:
Ms Toni Metelerkamp

Thank you for your decision to participate in this study.

In this booklet are a number of questionnaires. Please read each question or statement carefully and provide your response as indicated.

All responses will be kept strictly confidential and your identity will remain unknown to anyone outside of the research team.

For more information please email:

Toni.Metelerkamp@uon.edu.au

Complaints about this research

This project has been approved by the University's Human Research Ethics Committee, Approval No. H-2010-1162. Should you have concerns about your rights as a participant in this research, or you have a complaint about the manner in which the research is conducted, it may be given to the researcher, or, if an independent person is preferred, to the Human Research Ethics Officer, Research Office, The Chancellery, The University of Newcastle, University Drive, Callaghan NSW 2308, Australia, telephone (02) 49216333, email Human-Ethics@newcastle.edu.au

This questionnaire is about people who provide you with help or support. Please list below up to seven people who are important in your life. Typical relationships include partner, mother, father, child, sibling, and close friends. For each named person please circle **one** number from 1 to 7 to show how well he or she provides the type of help that is listed ranging between 1 = Never, 4 = sometimes, 7 = Always.

The second part of each question asks you to rate how you would like things to be if they were exactly as you hoped for. As before, please put a circle around **one** number between 1 and 7 to show what your rating is: 1 = Never, 4 = sometimes, 7 = Always

		Never	Almost never	Seldom	Sometimes	Often	Almost always	Always
Person 1's relationship: (please specify)								
1a	Can you trust, talk to frankly and share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give you practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							
Person 2's relationship: (please specify)								
1a	Can you trust, talk to frankly and share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give you practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							
Person 3's relationship: (please specify)								
1a	Can you trust, talk to frankly and share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give you practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							

		Never	Almost never	Seldom	Sometimes	Often	Almost always	Always
--	--	-------	-----------------	--------	-----------	-------	------------------	--------

Person 4's relationship: (please specify)

1a	Can you trust, talk to frankly & share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give you practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							

Person 5's relationship: (please specify)

1a	Can you trust, talk to frankly and share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give you practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							

Person 6's relationship: (please specify)

1a	Can you trust, talk to frankly and share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							

Person 7's relationship: (please specify)

1a	Can you trust, talk to frankly and share your feelings with this person?							
b	What rating would your ideal be?							
2a	Can you lean on and turn to this person in times of difficulty?							
b	What rating would your ideal be?							
3a	Does he/she give practical help?							
b	What rating would your ideal be?							
4a	Can you spend time with him/her socially?							
b	What rating would your ideal be?							

Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, put an "X" in the box that indicates how much you have been bothered by that problem *in the last month*.

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1 Repeated, disturbing <i>memories, thoughts, or images</i> of a stressful experience from the past?					
2 Repeated, disturbing <i>dreams</i> of a stressful experience from the past?					
3 Suddenly <i>acting or feeling</i> as if a stressful experience <i>were happening again</i> (as if you were reliving it)?					
4 Feeling <i>very upset</i> when <i>something reminded</i> you of a stressful experience from the past?					
5 Having <i>physical reactions</i> (e.g. heart pounding/ trouble breathing/sweating) when <i>something reminded</i> you of a past stressful experience?					
6 Avoid <i>thinking about</i> or <i>talking about</i> a stressful experience from the past or avoid <i>having feelings</i> related to it?					
7 Avoid <i>activities</i> or <i>situations</i> because <i>they remind you</i> of a past stressful experience?					
8 Trouble <i>remembering important parts</i> of a stressful experience from the past?					
9 Loss of <i>interest in things you used to enjoy</i> ?					
10 Feeling <i>distant</i> or <i>cut off</i> from other people?					
11 Feeling <i>emotionally numb</i> or being unable to have loving feelings for those close to you?					
12 Feeling as if your <i>future</i> will somehow be <i>cut short</i> ?					
13 Trouble <i>falling</i> or <i>staying asleep</i> ?					
14 Feeling <i>irritable</i> or having <i>angry outbursts</i> ?					
15 Having <i>difficulty concentrating</i> ?					
16 Being " <i>super alert</i> " or watchful on guard?					
17 Feeling <i>jumpy</i> or easily startled?					

This section is about any medical complaints and how your health has been in general, over *the past few weeks*. Please answer by placing a cross in the box which most applies to you. Remember that we want to know about present and recent complaints, not those that you had in the past.

Have you recently		Better than usual	Same as usual	Worse than usual	Much worse than usual
A1	been feeling perfectly well & in good health?				
A2	been feeling in need of a good tonic				
A3	been feeling run down and out of sorts				
A4	felt that you are ill?				
A5	been getting any pains in your head?				
A6	been getting a feeling of tightness or pressure in your head?				
A7	been having hot or cold spells?				
B1	lost much sleep over worry?				
B2	had difficulty in staying asleep once your are off?				
B3	felt constantly under strain?				
B4	been getting edgy and bad-tempered?				
B5	been getting scared or panicky for no good reason				
B6	found everything getting on top of you?				
B7	been feeling nervous and strung-up all the time				
C1	been managing to keep yourself busy & occupied?				
C2	been taking longer over the things you do?				
C3	felt on the whole you were doing things well?				
C4	been satisfied with the way you've carried out your task?				
C4	felt that you are playing a useful part in things?				
C6	felt capable of making decisions about things?				
C7	been able to enjoy your normal day-to-day activities?				
D1	been thinking of yourself as worthless?				
D2	felt that life is entirely hopeless?				
D3	felt that life isn't worth living?				
D4	thought of the possibility that you might make away with yourself?				
D5	found at times you couldn't do anything because your nerves were too bad?				
D6	found yourself wishing you were dead and away from it all?				
D7	found that the idea of taking your own life				

kept coming into your mind?				
-----------------------------	--	--	--	--

INSTRUCTIONS: Think back and recall which of the listed events you have experienced **in your police work**. You indicate this by circling either "yes" or "no". If you circle "yes", you then fill in the number of times you have experienced it and the date (month & year) on which it occurred (estimate if necessary).

An example: For the event "personal involvement in a shooting incident" you first indicate whether or not you have ever experienced it. You do this by circling either "yes" or "no". If you have experienced it, you fill in how many times and when. For example, if you had been involved in a shooting on two occasions, you may write:

	Number (#) of times	Date(s) Month and Year
Personal involvement in a shooting incident YES/NO	2	15 th May 1995 2 nd October 2009

For events you have NEVER experienced, you only mark NO

Violent incidents:			# of times	Month & Year
1	Violent death of a friend in the course of work	Yes/No		
2	Violent death of a colleague in the course of work	Yes/No		
3	You were wounded in violent incident (shooting)	Yes/No		
4	You were wounded in a violent incident (non-shooting incident, e.g. riot control)	Yes/No		
5	You were injured in an accident	Yes/No		
6	A colleague was wounded in a violent incident	Yes/No		
7	Suicide of a colleague you were friendly with	Yes/No		
8	Suicide of a colleague	Yes/No		
9	You killed someone in the course of your work	Yes/No		
10	You shot at someone in the course of your work	Yes/No		
11	You pursued an armed suspect	Yes/No		
12	Riot/crowd control: made baton charges in which people were injured, you pulled your gun, or you were under serious threat	Yes/No		
13	Took part in a raid involving an armed and dangerous suspect	Yes/No		
14	Took part in a raid/arrest/eviction accompanied by violence or injury	Yes/No		
15	Personal involvement in a shooting incident	Yes/No		
16	Colleague was involved in a shooting incident	Yes/No		
17	Confrontation with violence, for example being threatened with a knife or a drug user's needle	Yes/No		
18	You were threatened by someone with a gun	Yes/No		

19	Taken hostage	Yes/No		
Confrontation with sad incidents:			# of times	month/year
20	Police action in a situation where a child was killed by a violent act	Yes/No		
21	Police action at a fatal accident involving a child	Yes/No		
22	Involvement in a traffic accident in which a child was seriously injured	Yes/No		
23	The first police intervention in a situation of sexual or physical abuse of a child	Yes/No		
24	Encounter with a mentally disturbed individual who threatened you	Yes/No		
25	The first police intervention in a case of sexual or physical abuse of an adult	Yes/No		
26	Police action at the scene of a fatal accident involving an adult	Yes/No		
27	Police action at the scene of a traffic accident in which an adult was injured	Yes/No		
28	Traffic accident in which someone was run over by a streetcar or a train	Yes/No		
29	Large fire involving deaths and/or injuries	Yes/No		
30	Finding the corpse of a murder victim	Yes/No		
31	Finding the corpse of a suicide victim	Yes/No		
32	Finding the corpse of someone who died a natural Death	Yes/No		
33	Dredging up a corpse	Yes/No		
34	Arriving too late to help at a drowning or other accident	Yes/No		
35	Police action in sad social circumstances such as the deportation of refugees or foreigners	Yes/No		
36	Trying to resuscitate a victim but failing	Yes/No		
37	Police action against aggressive dogs	Yes/No		
38	Being charged with a criminal offence	Yes/No		
39	Accident with a police car in which someone was killed or seriously injured	Yes/No		
40	Charges were pressed against a colleague after a shooting incident	Yes/No		
41	Assistance in disaster relief, other than the abovementioned	Yes/No		
42	Other incident, specifically:			

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event mark with a cross whether it has happened to you personally, you witnessed it happen to someone else, you learned about it happening to someone else, you're not sure it applies to you or if it doesn't apply to you. Be sure to consider your *entire life* (growing up as well as adulthood) as you go through the list of events and not to include any experiences that were part of your work as a police officer.

Event		Happened to me personally	Witnessed it happen to someone else	Learned about it happening to someone close to me	Not sure if it applies to me	Doesn't apply to me
1	Natural disaster (e.g. flood, hurricane, tornado, earthquake)					
2	Fire or explosion					
3	Transportation accident (e.g. car accident, boat accident, train wreck, plane crash)					
4	Serious accident at work, home, or during recreational activity					
5	Exposure to toxic substance (e.g. dangerous chemicals, radiation)					
6	Physical assault (e.g. being attacked, hit, slapped, kicked, beaten up)					
7	Assault with a weapon (e.g. being shot, stabbed, threatened with a knife, gun, bomb)					
8	Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9	Other unwanted or uncomfortable sexual experience					
10	Combat or exposure to a war-zone (in the military or as a civilian)					
11	Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12	Life-threatening illness or injury					
13	Severe human suffering					
14	Sudden, violent death (e.g. homicide, suicide)					
15	Sudden, unexpected death of someone close to you					
16	Serious injury, harm, or death you caused to someone else					
17	Any other very stressful event or Experience? Describe:					

Demographic Information

Please provide the following information as part of the background information for this study

Sex: Male / Female **Date of birth:** ____/____/____

Job title: _____ **Length of service:** _____yrs

Number of months since the critical incident: _____

Psychologist to complete:

Psychologist's code (last 4 numbers of mobile number plus last letter of name) _____

Condition: _____

Please provide your name and telephone contact so that you can be contacted for the follow up interview. Once you have been contacted this section will be removed from the page and destroyed. The remainder of the page will be stored securely at the University of Newcastle.

Name: _____

Telephone contact number: _____

This marks the end of the questionnaire booklet. Thank you for your participation

Appendix D

Sample Stress Related Growth Scale

Please think about the event/s that brought you into treatment and then listen to each of the statements below and decide how much each statement is true of you since the event/s.

		Not at all	Somewhat	A great deal
1	I developed new relationships with helpful others			
2	I gained new knowledge about the world			
3	I learned that I was stronger than I thought I was			
4	I became more accepting of others			
5	I realized I have a lot to offer other people			
6	I learned to respect others' feelings and belief			
7	I learned to be nicer to others			
8	I rethought how I want to live my life			
9	I learned that I want to accomplish more in life			
10	My life now has more meaning and satisfaction			
11	I learned to look at things in a more positive way			
12	I learned better ways to express my feelings			
13	I learned that there is a reason for everything			
14	I developed/increased my faith in God			
15	I learned not to let hassles bother me the way they used to			
16	I learned to take more responsibility for what I do			
17	I learned to live for today, because you never know what will happen tomorrow			
18	I don't take most things for granted anymore			
19	I developed/increased my trust in God			
20	I feel freer to make my own decisions			
21	I learned that I have something of value to teach others about life			
22	I understand better how God allows things to happen			
23	I learned to appreciate the strength of others who have had a difficult life			
24	I learned not to "freak out" when a bad thing happens			

		Not at all	Somewhat	A great deal
26	I learned to get less angry about things			
27	I learned to be a more optimistic person			
28	I learned to approach life more calmly			
29	I learned to be myself and not try to be what others want me to be			
30	I learned to accept myself as less than perfect			
31	I learned to take life more seriously			
32	I learned to work through problems and not just give up			
33	I learned to find more meaning in life			
34	I changed my life goals for the better			
35	I learned how to reach out and help others			
36	I learned to be a more confident person			
37	I learned not to take my physical health for granted			
38	I learned to listen more carefully when others talk to me			
39	I learned to be open to new information and ideas			
40	I now better understand why, years ago, my parents said/did certain things			
41	I learned to communicate more honestly with others			
42	I learned to deal better with uncertainty			
43	I learned that I want to have some impact on the world			
44	I learned that it's okay to ask others for help			
45	I learned that most of what used to upset me were little things that aren't worth getting upset about			
46	I learned to stand up for my personal rights			
47	A prior relationship with another person became more meaningful			
48	I became better able to view my parents as people, and not just parents			
49	I learned that there are more people who care about me than I thought			
50	I developed a stronger sense of community, of belonging, that I am part of a larger group			

Name: _____ Date: _____