Purpose and Scope

The **International Journal of Emergency Mental Health** provides a peer-reviewed forum for researchers, scholars, clinicians, and administrators to report, disseminate, and discuss information with the goal of improving practice and research in the field of emergency mental health.

The **International Journal of Emergency Mental Health** is a multidisciplinary quarterly designed to be the premier international forum and authority for the discussion of all aspects of emergency mental health.

The **Journal** publishes manuscripts (APA style) on relevant topics including psychological trauma, disaster psychology, traumatic stress, crisis intervention, emergency services, Critical Incident Stress Management, war, occupational stress and crisis, employee assistance programs, violence, terrorism, emergency medicine and surgery, emergency nursing, suicidology, burnout, and compassion fatigue. The **Journal** publishes original research, case studies, innovations in program development, scholarly reviews, theoretical discourse, and book reviews.

Additionally, the **Journal** encourages the submission of philosophical reflections, responsible speculations, and commentary. As special features, the **Journal** provides an ongoing continuing education series providing topical reviews and updates relevant to emergency mental health as well as an ongoing annotated research updates of relevant papers published elsewhere, thus making the **Journal** a unique and even more valuable reference resource.

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INTERNATIONAL JOURNAL OF
EMERGENCY MENTAL HEALTH

The *International Journal of Emergency Mental Health* is a practice-oriented resource for active professionals in the fields of psychology, law enforcement, public safety, emergency medical services, mental health, education, criminal justice, social work, pastoral counseling, and the military. The journal publishes articles dealing with traumatic stress, crisis intervention, specialized counseling and psychotherapy, suicide intervention, crime victim trauma, hostage crises, disaster response and terrorism, bullying and school violence, workplace violence and corporate crisis management, medical disability stress, armed services trauma and military psychology, helper stress and vicarious trauma, family crisis intervention, and the education and training of emergency mental health professionals. The journal publishes several types of articles:

- *Research reports:* Empirical studies that contribute to the knowledge and understanding of traumatic disability syndromes and effective interventions.
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ORIGINAL ARTICLES

EMERGENCY MENTAL HEALTH UPDATES - Jeffrey M. Lating, Associate Editor

BOOK AND MEDIA REVIEWS - Daniel Clark, Media Review Editor

Editorial

Crises are complex events and so the responses to them must be multifaced, often involving personnel from many different emergency services disciplines. This issue of the IJEMH reflects this diversity of first responder professionals, in both the work they do and the challenges they face. Zukauskas and colleagues' study of Lithuanian police officers reinforces the fact that the stresses and strains of police work are universal and argue for cross-national and cross-cultural collaboration on effective stress-reduction methodologies. Jeannette's personal account of critical incident interventions with firefighters reminds us that the road to helping our colleagues in distress is never pothole-free and that competent professionals learn at least as much from fixing flat tires as from gunning the engine.

The Haiti earthquake disaster is almost two months old, and a more recent quake has ravaged the area around Santiago, Chile. The timing couldn't be better for the insights provided by Leitch & Miller-Karas' article on resiliency-focused mental health intervention applied following the recent earthquake in China. As I write this, in fact, these authors are over in Haiti, applying their program to that population; it appears they'll have plenty to do for the foreseeable future.

Resiliency is important for the helpers, too. And to be effective, we need solid, empirically-based intervention strategies to help our multidisciplinary colleagues deal with trauma, stress and burnout. Emergency medical staff are crucial in managing the physical and psychological effects of disasters and crises of all types. The study from Ireland by Gallagher documents the level of stress and burnout in a heretofore psychologically underserved population, namely ambulance staff, and again shows that the challenges of helping transcend national boundaries. Everly and colleagues' research examines the complex relationships between cognitive and emotional factors in generating the stress response and in providing clues for treating it.

You wanna talk about stress? How about when we're forced to defend our own actions or pass judgment on the actions of colleagues? In the last issue, I provided some guidelines for dealing with the stresses of an internal investigation, criminal charge, or civil lawsuit. In this issue, I expand the topic of forensic psychotraumatology to provide tips on testifying in court, when our work occasionally brings us into the legal arena as a defendant or, more commonly, as an expert in our field who has something to teach the triers of fact.

These are hectic times, people, so stay safe and remember that those who appreciate our efforts the most are often those who say the least. You want applause? – go on "American Idol."

Laurence Miller, PhD

February 27, 2010

Elearn1 productions and Dr. Jeff Mitchell have developed a variety of new video based training programs on critical incident stress management. Go to www.DrJeffMitchell.com to view DVD samples and purchase online.

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Dr. Jeff Mitchell describes the defusing process and it benefits. Following a crisis management briefing, he conducts a demonstration of a defusing with a small group of business executives.

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A Study of Stress Affecting Police Officers in Lithuania

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Abstract: *This research study aims to identify the key stresses encountered by police officers in Lithuania in 2003. A questionnaire was distributed to officers working in police departments throughout Lithuania. The 2003 results were a compared with a similar study carried out among male and female police officers in Lithuania 1999. The stressors determined to have the greatest negative effects were administrative problems, family problems, and an ineffective criminal justice system. Identified consequences of police stress included depression, alcoholism, physical illness, and suicide. Dealing with stressful situations led to more frequent physical illness in female police officers and higher alcohol consumption in male police officers. This paper confirms the findings of previous studies and adds to the knowledge of the unique stresses affecting police officers. It briefly explores the consequences of stress in police work. Since the study represents a small sample of the 15,000 police officers in Lithuania, caution is urged in the application of the findings to other police departments. [International Journal of Emergency Mental Health, 2009, 11(4), pp. 205-214].*

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Police work is as an extremely stressful occupation not only in terms of critical incident exposure (Miller, 2009; Johnson, 2009), but also in "routine work" or occupational stress (Hanson, 2004; Liberman, Best, Metzler, Fagan, Weiss, & Marmar, 2002). Police officers work in extreme and unique conditions, even when compared to other emergency services personnel (Ward, Lombard, & Gwebushe, 2006). They are typically exposed to a variety of physiological, psychological, and behavioral stressors, resulting in various conditions that result from traumatic exposures. These posttraumatic conditions include, but are not limited to,

panic attacks, substance abuse, withdrawal from contact with others, depression, self destructive thinking and actions, and personality alterations. Police officers are also vulnerable to high levels of posttraumatic stress disorder (PTSD; Stephens & Miller, 1998; Green 2004). Other consequences of police stress reported in the literature include: suspiciousness, emotional detachment from various aspects of daily life, job dissatisfaction, reduced efficiency, "burn out," absenteeism, early retirement, temper flare-ups, excessive aggressiveness, alcoholism, marital or family problems, sleep difficulties, cardiovascular, gastrointestinal, and musculoskeletal disorders, cancers, weight gain, and suicide (Anderson, Litzenberger, & Plecas, 2002; Violanti, 1994; Finn, 2000; Burke, 2005; Violanti, 1996; von dem Knesebeck *et al.,* 2006; Mohr, Vendantham, Neylan, Metzler, Best, & Marmar, 2003; Ramey, Frank, & Shelley, 2004).

Stress reactions vary according to gender, individual personality characteristics, social support structure, life experiences, years of service, level of education, work-family conflict, use and type of coping strategies, intensity of the stressful event, and other unique features of the organization including culture and workload (O'Connor, 2004; Brooks & Piquero, 1998; Morash, Kwak, & Haarr, 2006; Kirkcaldy, Brown, & Cooper, 1998; He, Zhao, & Archibald, 2002; Collins & Gibbs, 2003; Deschamps, Paganon-Badanier, Marchand, & Merle, 2003; Gershon, Lin, & Li, 2002). Although some job stressors can be reduced by organizational changes, police departments are, in general, slow and reluctant to make significant changes (Martelli & Walters, 1989; Toch, 2000). The consequences of police stress not only affect police officers, but also their families (Kirschman, 2006).

The aim of our present study were to determine which factors were the most stressful for male and female police officers in Lithuania at the present time and to compare these findings to those of a previous study conducted in 1999 (Zukauskas, Taljunaite, Jasmontaite, & Susinskas, 2000).

METHODS

A specific questionnaire developed to identify police work-related stress problems in Lithunia, was distributed amongst officers working in police departments. Among those included in the sample were customs officers, commissioned officers (leaders), and regular officers. Also included were students, who were pursuing their education under the Police Faculty of Law at the University of Lithuania. The

questionnaire was distributed in 2003 and its results were compared to the results of an identical survey conducted in 1999. We used a $\div^2$ test to calculate the significance of any differences between the groups on the relevant parameters.

RESULTS

Age distribution and length of service

A total of 314 police officers (210 males, 104 females) were drawn from different age groups. They represented different experience levels. All officers completed the questionnaires anonymously. (Figures 1 and 2)

Figure 1. Age distribution of police officers.
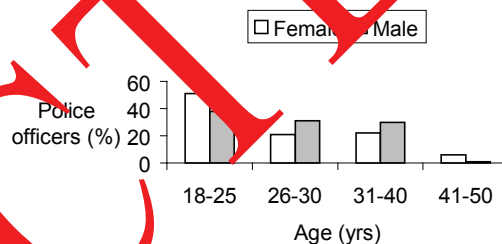
Figure 2. Work experience of police officers.
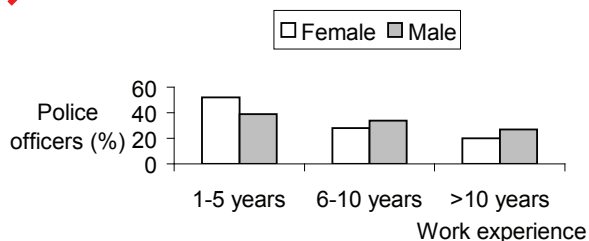
Stressors associated with police work

A total of 58% male and 48% female police officers replied that the most important stressor in their work was the level of violence. There were statistically significant differences between male and female police officers in the following situations: violence against colleagues, hoax calls, crowd control, and dealing with rape victims (Figure 3). Dealing with the mentally unstable or the mentally ill was perceived as stressful by 69% of male and 63% of female officers, dealing with the homeless by 75% and 69% respectively; and dealing with drug addicts by 73% and 63% respectively. Male police officers reported experiencing personal danger and insecurity when using force, during raids, and during unsafe calls as

Figure 3. Stressors associated with police work.
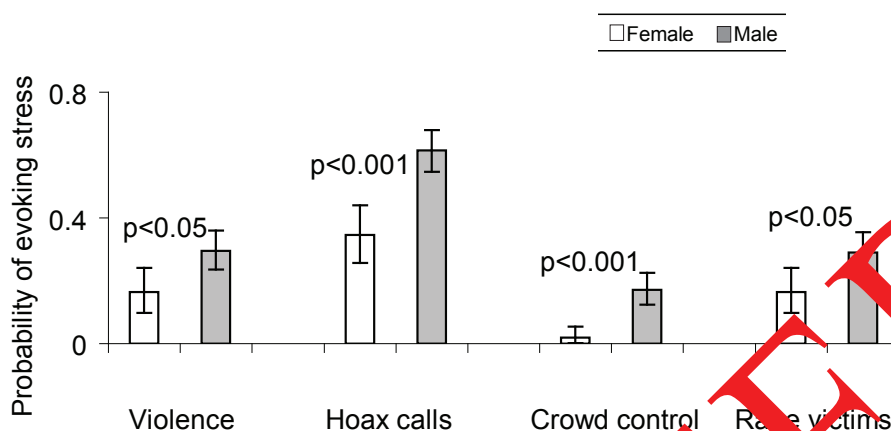
Figure 4. Stressors associated with police work.
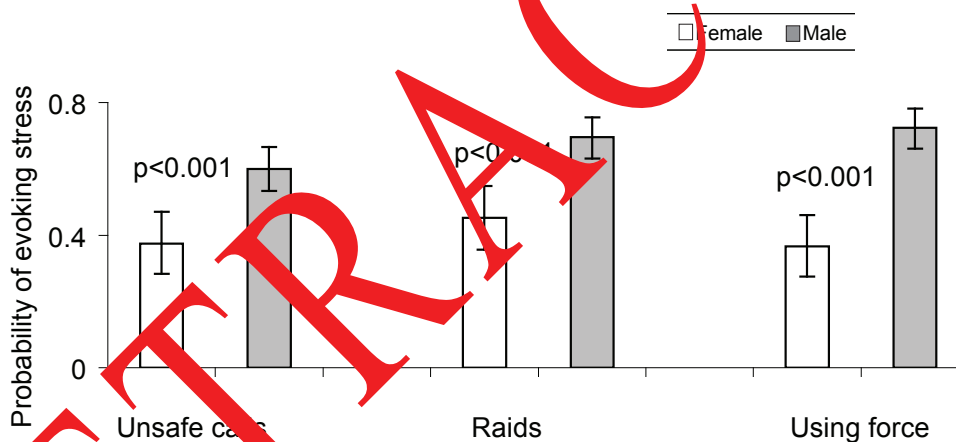
stressful; there were statistically significant differences compared to female officers. A total of 43% of male and 35% of female police officers responded that the inability to convict guilty persons because of lack of evidence was a stressful factor. Autopsies were perceived as stressful situations for 51% of male and 42% of female police officers.

External stressors associated with police work

There are many external stressors in police work. The main finding was that 30% of male and 36% of female officers perceived that the mass media portrayed the police as ineffective and perpetrated a negative opinion of the police.

Of the respondents, 75% of male and 64% of female officers reported that public opinion was a stressful factor (Figure 5). A total of 77% of male and 66% of female officers felt that the negative opinions could be improved by changing the public's view of the police officers' code of conduct; a total of 41% of respondents thought that this could be achieved if police officers modified their behavior with citizens. Rotating shift work was significantly more stressful for males than for females. A total of 43% of male and 39% of female police officers felt that the ineffectiveness of the criminal justice system was a stressful factor. Respondents also indicated that workload was too great and work demands were too numerous; this factor was significantly more stressful

for female compared to male police officers (67% vs 55% respectively). A total of 26% of male and 17% of female police officers reported that the goals of police work and their individual level of responsibility were unclear. Most police officers (74% of males, 73% of females) were dissatisfied with their salary, but admitted that they were also lacking knowledge and experience (28% of males, 32% of females). Respondents complained (69% of males, 58% of females) about "bureaucratic" procedures, i.e. too much paper work, and 44% of male and 36% of female police officers pointed out a lack of equipment and its low quality.

Figure 5. External stressors associated with police work.

Reactions to stress

A total of 41% of both male and female police officers reported avoiding thinking about stressful events. Both male and female police officers attempted to suppress emotions (21% and 23% respectively), and reported stress-evoked disturbances of appetite (24% and 31% respectively) (Figure 6). Male and female officers differed significantly on five measures – sleep, health, and concentration problems, tiredness, and alcohol use. (Figure 7)

Mechanisms for coping with stress

Male and female police officers coped with stress similarly, but male officers were twice as likely to play sports than female officers (49% vs 24% respectively; Figure 8). In general, police officers preferred to relax at home and reported that being with friends reduced stress. Other methods of coping with stress included autotraining and meditation (2% of males and 3% of females), but rarely religion (Figure 8). Recourse options after stress (family, colleagues, psychologist, or coping on one's own) were not significantly different between male and female officers. More than half of police officers (63% males and 52% females) coped with

Figure 6. Reactions of police officers to stress.

1. Recollections of the event; 2. Dreams about the event; 3. Striking/Resigning; 4; Avoiding thoughts of the event; 5. Avoiding work; 6. Sleep problems; 7. Anger; 8. Concentration difficulties; 9. No longer taking pride in work; 10. Difficulties in making decisions; 11. Feeling upset; 13. Increased desire for social contact; 14. Feelings of guilt/helplessness; 15. Inability to control feelings and emotions; 16. Thoughts of suicide; 17. Drinking alcohol; 18. Efforts to suppress emotions; myalgia, etc; 19. Isolating oneself from others; 20. Unwillingness to talk about event; 21. Feeling of aggressiveness; 22. Headache; 23. Breathing problems; 24. Fear, anxiety, suspiciousness; 25. Impaired appetite.

Figure 7. Reaction of police officers to stress.
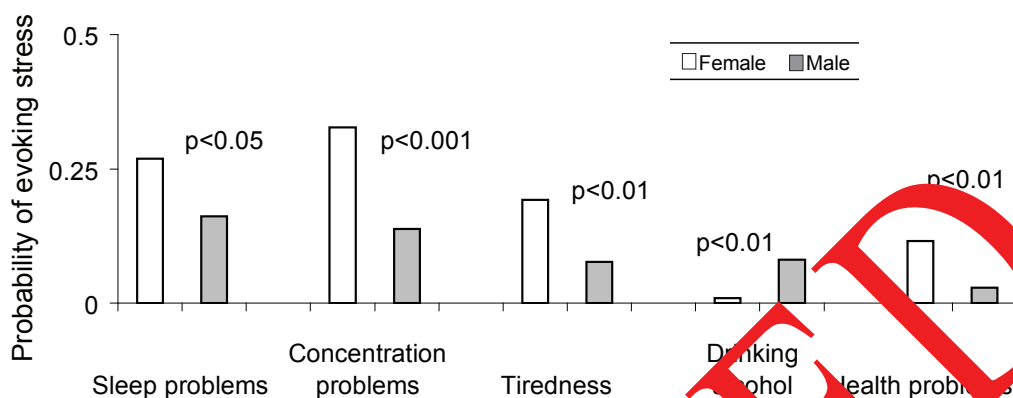
Figure 8. Mechanisms of coping with stress.
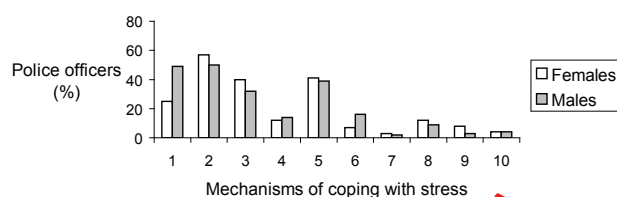
1. Sports; 2. Home/Family; 3. Going out for walking;
4. Going to pub, club, restaurant etc.; 5. Meeting with
friends; 6. Drinking alcohol; 7. Using autotraining, medita-
tion; 8. Being alone; 9. Going to church; 10. Other.

stress alone, 36% and 49% of male and female officers had
recourse to family members, and about 16% police officers
went to colleagues. Less than 1% of officer consulted with
a psychologist (Figure 9).

Figure 9. Recourse options after stress.
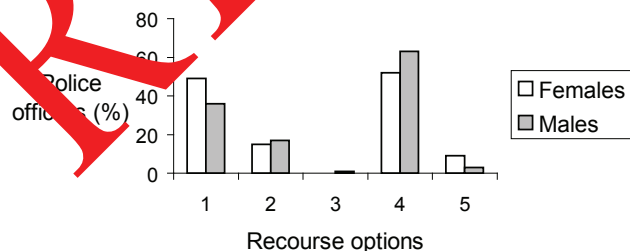
1. Family members; 2. Colleagues; 3. Psychologist; 4.
One's own; 5. Other.

Physical symptoms

No police officer admitted to mental illness (past or pres-
ent), but 37% of male and 36% of female reported physical
morbidity (past or present) including cardiovascular diseases,
allergies, endocrine problems, pulmonary diseases, digestive
troubles, etc. The morbidity rate was significantly higher for
female than male police officers (Figure 10).

Figure 10. Physical morbidity differences between
male and female police officers.
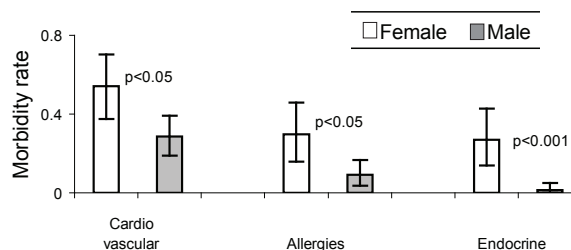
Use of alcohol

There were significant differences in alcohol consump-
tion between male and female police officers (Figure 11). A
total of 48% male and 70% of female police officers admit-
ted drinking alcohol once a month, 41% of male and 23%
of female police officers drank alcohol once a week, and
11% of male and 6% of female police officers drank alcohol
several times a week.

Figure 11. Differences in alcohol consumption between male and female police officers.
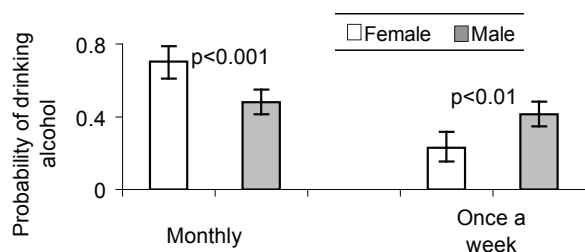
Suicide

Police officers were asked to identify the main causes of police officer suicides. Family problems were considered to be a major factor by 63% of male and 49% of female police officers. A total of 65% of male and 50% of female police officers thought that suicide was directly related to health problems such as alcoholism (Figure 12).

Figure 12. Causes of suicide as identified by police officers.
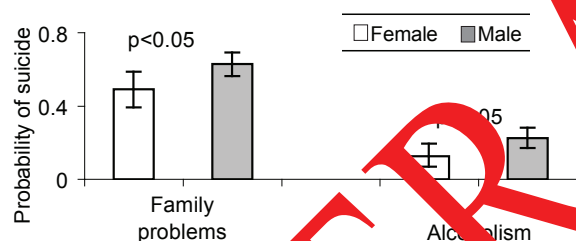
DISCUSSION

The potential sources of occupational stress for male and female police officers in Lithuania were identified in this study. In general, work-related situations were associated with more stress for males (45%) than for female police officers (37%) and specific situations: violence against colleagues, hot calls, crowd control, rape victims, unsafe calls, raids, using force, negative public opinion, rotating shift work. Only one situation — insufficient time to conform with "too high requirements," was more stressful for female than for male police officers. These data support other studies showing that level of personal life threat (pariculary involving firearms), duty-related violence, exposure to death, and dealing with physical and sexual assault victims, as well as "routine work" environment stress are among the

most important factors associated with the development of stress-related symptoms in police officers (McCaslin et al., 2006; Marmar et al., 2006; Bar, Pahlke, Dahm, Weiss, & Heuft, 2004). Other particularly traumatic situations involve officer suicide, civilian death, and child abuse (Bar et al., 2004, Wolfersdorf, 2003). In terms of gender differences, it has been reported that female officers experience job stressors less frequently, but evaluate them as more severe than male officers (Berg, Hem, Lau, Haseth, & Ekeberg, 2005). Female officers have a higher trauma risk dealing with abused children, whereas male officers experience greater trauma risk in association with officer homicide in the line of duty (Violanti & Gehrke, 2004).

Reaction to stress

Many respondents reported that after a stressful incident they experienced intrusive recollections and avoided thoughts and feelings about stressful event. These particular symptoms are consistent with the major diagnostic criteria of PTSD and are described frequently by emergency responders (Hyman, 2004). It has been reported that PTSD rates in police officers may be up to sixfold that of community prevalence rates (Green, 2004). Maia and colleagues (2007) found that the prevalence of "full PTSD" and "partial PTSD" were 9% and 16% respectively in a study of Brazilian police officers while Carlier and colleagues (1997) reported prevalences of 7% and 34% respectively in Dutch police officers for the same conditions. The officers suffering from "full PTSD" were significantly more likely to report poorer physical health, seek more medical consultation, and endorse suicidal ideation than those officers who did not have any PTSD (Maia et al., 2007). Female officers are more likely to be diagnosed with mental illness, but the risk of PTSD is greater in male officers (Bar et al., 2004; Collins & Gibbs, 2004). In our study, there was higher probability for female officers than male officers to report sleep difficulties, concentration problems, tiredness, and physical health problems such as headache, myalgia, etc. usculoskeletal pain has been correlated with adverse psychosocial and physical environments (von dem Knesebeck et al., 2006; Centemeri et al., 2005), and the relationship between PTSD and somatic symptoms is mediated at least partly through sleep (Mohr et al., 2002; Neylan et al., 2002) .

In terms of reaction of police officers to stress, female officers endorsed significantly more response options than male police officers; one female officer reported that after

stress she had thoughts of suicide. Male officers were less predisposed to talk about problems, more likely to isolate themselves, more likely to use alcohol, as well as feeling more aggressiveness after a stressful event. Male officers were more likely to play sports. The type of leisure activity is predictive in terms of adaptional outcomes with relaxing leisure being the strongest predictor of coping with stress (Iwasaki, Manell, Smale, & Butcher, 2005). Fewer than 1% of police officers consulted with a psychologist. According to Levenson and Dwyer (2003) negative perceptions exist concerning the acceptance of professional psychological help because many law enforcement personnel believe that requests for such help reflect weakness, cowardice, and an inability to perform one's job effectively. The authors suggested, however, that peer participation in debriefings and peer support programs may the most effective intervention following critical incidents.

Differences between 1999 and 2003

We compared the results of this study with a previous study carried out with police officers in Lithuania in 1999 (Žukauskas et al., 2000). In both studies, work situations (violence against colleagues, hoax calls, dealing with rape victims, etc.) were noted as the most stressful. On the other hand, administrative problems were reported to be the most prevalent source of stress, e.g., "bureaucratic procedures, poor working conditions, lack of good quality equipment, etc. Problems resulting from an ineffective criminal justice system were more important in 1999 than in 2003 (Figure 13), followed by problems associated with negative public opinion, again higher in 1999 than in 2003. Negative media coverage of police work was endorsed by 31% of police officers in 1999 and 68% in 2003. More police officers felt that their colleagues did not pay enough attention to the job and were lacking in professionalism in 1999 than in 2003. In contrast, more respondents in 2003 expressed the need for additional education (Figure 13).

Consumption of alcohol by police officers was similar in 1999 and in 2003 (Figure 14). It is likely that frequency of alcohol consumption was under-reported particularly when compared to the literature (Rallings, Martin, & Davey, 2005; Kohan & O'Connor, 2002; Richmond, Kehoe, Hailstone, Wodak, & Uebel-Yan, 1999). Interventions that focus on excessive alcohol and tobacco use are important given both the physical health risks as well their relationship with

Figure 13. Differences in police officers opinion (1999-2003).
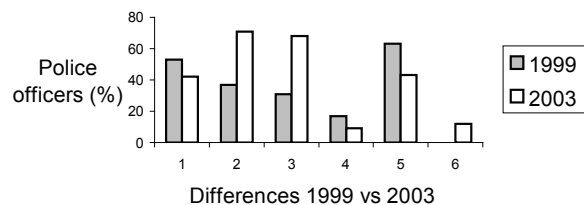
1. Ineffective criminal justice system; 2. Negative public opinion; 3. Negative mass media coverage; 4. Poor attention to work; 5. Lacking professionalism; 6. Needing more education.

Figure 14. Differences in alcohol consumption of police officers (1999-2003).
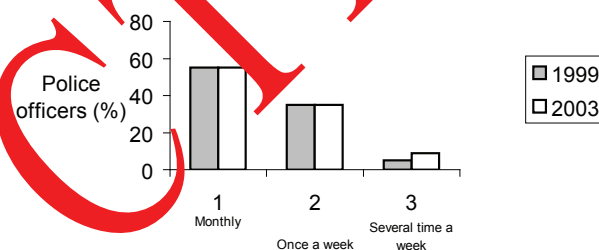
stress and depression, alcohol-related disease, and suicide (Žukauskas, Dapsys, Jasmontaite, & Susinskas, 2001; Smith et al., 2005).

A police officer is not an ordinary member of society and police officers are exposed chronically to extreme and unique stressors . The type and level of stress together with the availablity of firearms likely increase the risk of suicide; and the overall prevalence among police officers appears to reflect this (Violanti, 1996; Collins & Gibbs, 2003; McCafferty, McCafferty, & McCafferty, 1992; Schmidtke et al., 1999). In Lithuania, there were 71 police suicides during the years 1993-2004 giving a suicide rate 43/100,000 police officers per year, approximately double the age-adjusted rates for a comparable population (Hem, Berg, & Ekeberg, 2001; Police Department Republic of Lithuania, 2005). An important feature of police suicides during recent years in Lithuania is that younger police officers are commiting suicide. While the problem of police suicide is a complex one, police officers' opinions about the main causes of member suicides in 1999 were similar to those in 2003 and related primarily to problems associated with family and police work.

CONCLUSION

These findings represent warning signals; they underline the need for more effective stress reduction programs through improving awareness and developing individualized treatment strategies. Clearly, there is not enough attention paid to the stress associated with the work of police officers in Lithuania, but we hope that after more extensive research and collaboration with other countries that this situation will improve over time. While stress is an inherent part of the work of emergency service personnel, it is important to recognize that conditions resulting from traumatic exposures, especially PTSD, is particularly prevalent in police services and thus requires the development of appropriate and effective strategies to address law enforcement critical incident stress (Miller, 2006, Levenson and Dwyer, 2003).

Acknowledgements

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Creating a Critical Incident Stress Program:
A Firefighter's Transition from Client to Counselor

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Abstract: The author recounts the circumstances, beginning in the late 1980s, that lead to the creation of Windsor Fire and Rescue's (WFRS) Peer Counseling and Critical Incident Stress Team. These include his more than 20 year journey from being a firefighter in need of counseling to being asked to become WFRS's mental health professional. [International Journal of Emergency Mental Health, 2009, 11(4), pp. 215-219].

Key words: *PTSD, CISD, firefighter, counseling, emergency services*

In the realm of emergency services, discussions of Post-traumatic Stress Disorder (PTSD) and counseling services are commonplace today. However, in the mid 1980s, its discussion often did not extend beyond the walls of academia. Moreover, the beginnings of post-incident stress debriefings had not yet reached Windsor, Ontario.

I graduated from the University of Windsor in 1976 with a general B.A., majoring in psychology. I was hired almost immediately as a Constable by the Windsor Police Department (WPD). The role of police officer never felt like a good fit for me. Three and a half years later, I transferred to the Windsor Fire and Rescue Services (WFRS). In both departments I was surprised that the primary method of handling stress was to "suck it up" and "shut up." Any sign of perceived mental or emotional weakness was not only frowned upon, it was ridiculed.

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A few weeks after I had started "on the floor" at WFRS, I was sitting in front of the station with a three-year firefighter. I startled when the tones went off for another station. I explained to him that, being new on the job, I was still a little jumpy. He looked at me as if I had admitted to being on heroin. He leaned in and said, "I'm only going to tell you this once. Never show any kind of weakness or they will prey upon you until you break." Psychological vulnerability was definitely not accepted.

In the late 1980s my firefighting partner, one year my senior, and I were racking up fairly large numbers of dead people at fires. This was unusual as groups on either side of us were getting few fire calls. Seasoned firefighters began to refer to our rescue vehicle as the "meat wagon." While I laughed it off in front of the others, I found myself growing more anxious. Every time the tones sounded, my chest tightened and my heart raced. I dreaded getting calls.

At home, I became hyper-vigilant to sound. Usually a calm person, I was now constantly on edge. My wife, seeing the changes in me, was always supportive. Still, I asked her

not to tell anyone about my "nervousness." I did not know where to turn to for help. Though the city did have an Employee Assistance Program (EAP), I was concerned that any contact would leak back to the Fire Department. I did not want my colleagues to learn that I could not handle the job.

Each day I was drawn to news stories of disease, famine, overpopulation, and world conflict. Each night, after a day of mental exhaustion, I collapsed into bed. The reprieve of sleep lasted just a couple of hours before I awoke to have to my fear-filled ruminations begin again. Any negative news that I had read in the newspaper or had watched on television during the day flooded my thoughts. Often, I just laid awake feeling scared without knowing why.

The turning point came for me one day as I sat at my mother's kitchen table. I was 32 years old with 7 years on the job. It took her only one comment to have me fall apart in front of a family that rarely displayed emotion. She simply said, "How are you doing? You look nervous." Within seconds tears flowed from my eyes while words of fear poured from my mouth. I heard myself talking in an exaggerated state about crime, drugs, nuclear war, and death. Mostly I talked about death. As I look back, I still feel embarrassed. However, I am also grateful for this interaction with my mother. It had finally become clear to me that I needed help.

Leaving her house, I drove straight to my primary care physician's office to ask for a referral. The Fire Department provided no more than minimal coverage for psychological services. Under the Canadian health system, specifically Ontario's universal health insurance coverage, I was only able to have a psychologist paid for by attending a local hospital as an outpatient. I had to wait three months for the initial appointment. Meanwhile, my personal hell continued unabated.

The day I arrived at the hospital I found that my self-imposed humiliation was not yet complete. I had hoped to sneak in and out of my appointment unseen. This hope was dashed as I walked through the Psych Ward doors into a crowded but silent waiting room. I took a seat among people who I was sure were "crazy." I tried to look like I was just waiting to pick someone up. It seemed to work until the counter nurse called out, "Jeannette. James Jeannette! Is that you? The psychologist will see you now." I have never been sure that the sessions were that therapeutic, but talking to someone certainly seemed to help. Perhaps taking action to see a therapist gave me back a small sense of having some control in my life. What I do know is that over the next few months three cathartic events happened for me.

The first was a comment made by the young therapist that I was seeing. He was a behaviorist who kept trying to pin me down as merely being "depressed." It seemed from his perspective that a few lessons in pressing the correct lever for pellets should have snapped me right out of it. He seemed to get perturbed as our sessions did not appear to help abate my symptoms. During one session a foreshadowing of my future counseling persona briefly showed itself when I asked what was bothering *him*. Frustrated, he exclaimed, "I'm a behaviorist. I don't believe in guilt, but you seem to be experiencing an unbelievable amount." I explained that guilt felt like the least of my problems. It was not the past that I worried about, but the present and the future. My intrusive thoughts specialized in threats over which I could never exert control. As I look back now, I wonder if I was showing symptoms of PTSD. In all the time that I attended therapy at the hospital there was no mention of PTSD. No matter. The lesson learned for me there was to never try to force a client's symptomatology into your personal methodology.

The second event came after I was referred to a more experienced psychologist. I think the first one had given up. Three months had passed since working with the new therapist when I walked into his office after yet another failed attempt at stealth in the waiting room. For the first time I found my embarrassment to be humorous. The psychologist sensed a change in my mood and said, "This is the first time that I've seen you smile. What's going on?"

I told him about my quest for anonymity. I went on to tell him about my shame of being the only firefighter in town who was "mental."

He responded, "You're kidding, right?"

He told me that he was seeing at least five other firefighters. The psychologist in the next office was seeing five. He also had colleagues in private practice that had firefighters as clients. It turned out that there were many firefighters that needed help for mental health issues. Some, like me, were able to get it. Nevertheless, none of us dared to talk about it.

The third event took place a couple of weeks after my partner and I had finally made a save. Still on the meat wagon, we had pulled a young woman alive out of a fully involved house fire. She had been seriously burned but was going

to make it. I expected this to provide some sense of relief. Instead, my nights of restlessness intensified. I could not figure out why. One day my partner pulled me aside in the kitchen at the fire hall. He said that he wanted to apologize for not talking much. He had been having a lot of restless nights and "some problems."

I inappropriately laughed as I blurted out, "You're having problems? *I'm* having problems!"

"Yeah but…I'm seeing a psychologist."

"You're seeing a psychologist? *I'm* seeing a psychologist!"

These admissions in themselves would have been ground breaking, but it was what happened during the next hour that was a turning point for me. My partner and I sat at the kitchen table talking quietly about what had been going on with us. We were both aware that a senior man was sitting at the counter eavesdropping. For once, I did not care. After about fifteen minutes he got up and walked over to us. He said, "I can't believe you guys are talking about this."

I was waiting for him to call us a couple of wimps. Instead, he sat down and began telling his own stories of emotional turmoil. He had been facing his own demons in secret for years. I sat astonished not only by the content of his stories but also because he was talking so openly. Once he had started talking he could not seem to stop. His frankness was soon trumped. By the end of the hour every one of the ten-man crew, including seasoned officers, was sitting at the table talking. No one member directed the informal discussion. No one was asked or required to participate. Yet they all pulled up chairs, sat down and began talking. For once it was not just fire stories being shared. Instead there were sincere accounts of emotional pain that had been induced by fire-related events. It was a healing experience for all present. I think that for all involved, opening up and talking was an act of bravery. It was a watershed event for the WFRS.

These three events, my experience of not fitting into a therapist's methodology, being told that there were other firefighters seeking mental health assistance, and the experience of the impromptu group discussion were indications to me that it was time to change how we approached mental health issues for firefighters. The need had always been there. It seemed that the willingness to act had finally arrived.

The Creation of the Stress Committee

Over the next year, a small group of firefighters and I met with local psychologist Tony Fellbaum. With his direction, we developed the "Stress Committee." Recruitment was by word of mouth. One of our goals was to have an intervention team made up of our own firefighters. We felt the best qualified to be peer counselors were those who understood, through personal experience, the nature of a firefighter's job. Coincidentally, Dr. Fellbaum had been a firefighter in Ontario before becoming a psychologist.

While 'Stress Committee' was never a name that I cared for, it was one that our members could relate to. More importantly it had the full support of our Fire Administration and Union Executive. Fire Administration came on board after we successfully convinced them that the committee was not being set up to give firefighters an excuse to not show up for work. Using some of Dr. Jeffrey Mitchell's arguments (Mitchell & Bray, 1990), we convinced fire administrators that mentally healthy workers could be better workers. Through contract negotiations and with the backing of the administration, the City of Windsor dramatically increased psychological insurance coverage for firefighters and their families.

Dr. Fellbaum provided training on stress and counseling methods. We attended stress-related seminars throughout Ontario and Michigan. In 1991, he and I attended a Critical Incident Stress Debriefing seminar taught by Dr. Mitchell in Sarnia, Ontario. In a very short time committee members gained a lot of knowledge and developed worthwhile skills. Committee members were trained in two specific areas. One was to provide information on stress to members of the fire department. The other was to implement Mitchell's Critical Incident Stress Debriefing model (for further details, see Mitchell & Bray, 1990; Mitchell & Everly, 1995). We felt prepared to provide what we thought was a valuable service. The remaining problem was selling it to the firefighters. Though there had been some breakthroughs, most firefighters still scoffed at the idea that the job was stressful.

I felt that an education evening on stress and mental health would be a great way to introduce the program. But given the prevalent attitudes, I envisioned sitting in front of an audience of empty seats. I do not know which committee member came up with the idea, but it was a stroke of genius. We mailed the flyer about the meeting directly to the wives

of the firefighters. On the night of the session, the hall that we rented was packed. Firefighter's wives, family members, and many firefighters who had apparently been dragged in by their ears were in attendance. The program was laid out, the psychologists were introduced, and many questions were answered. The Stress Committee was in business.

Acceptance of the program was slow. Firefighter resistance and some rookie counseling mistakes set some obstacles in place that were difficult to get past. For example, our first debriefing went poorly. I left the debriefing feeling that we might have done more harm than good, but also with an appreciation and recognition of what could be done better.

The Current Stress Committee

The Stress Committee is now called the WFRS Peer Counseling and Critical Incident Stress Committee. Though members of the committee attended many severe events, it took about ten years before acceptance of the program was apparent. It was about that time that I began to get calls from individual Windsor firefighters and Captains asking for our team's assistance. Our involvement was no longer just a protocol being followed. It had become a valued service that was being readily accessed. Our participation has also been requested at times by neighboring fire departments. This past month marked the first inclusion of two members from a nearby department to our committee and training program.

Today every member of the Windsor Fire and Rescue Service has been educated about the peer counseling program. We now have peers from almost every division of the WFRS. Any member of the WFRS, from rookie to Fire Chief, who feels that fellow firefighters or members of the WFRS have been negatively impacted by an event, may contact an "on call" peer counselor. The peer will attend the scene or fire hall. If they feel it is necessary, the peer then will activate the entire team. It is important to note that all interaction with peer counselors or the Critical Incident Stress Team is on a volunteer basis (Jeannette & Scoboria, 2008).

Recent Developments

In September 2004, at the age of 49 years, I returned to the University of Windsor to complete my honors degree in Psychology. Originally, I had hoped to learn more about critical incident debriefings. As a peer, I had been involved

in several debriefings. Given the strong, often negative, reactions that I witnessed, I began to question their efficacy. Specifically, I felt that firefighter resiliency had not been adequately addressed in actual debriefings or in the literature.

With the participation of 142 firefighters of WFRS, I investigated several research questions, one of which was, given a series of critical events, which type(s) of psychological intervention(s) would firefighters prefer? Their four choices were *no intervention, informal discussions back at the fire station, one-to-one intervention,* or a *Critical Incident Stress Debriefing* (CISD; for further details, see Jeannette and Scoboria, 2008).

Results indicated that firefighters do welcome psychological intervention following a critical event. However, it is important to note that firefighters also varied on the type of interventions that they preferred. Some favored group interventions, and most indicated an interest in services including informal interventions of the type provided by our committee. Firefighters rejected the choice of *no intervention* across all scenarios. As the intensity of the scenarios increased, so did the firefighter's selection of more formal interventions. For the two incidents rated most severe, both *one-to-one intervention* and *CISD* were endorsed as equally valued as interventions.

My thesis "Firefighter Preferences Regarding Post Incident Interventions" has since been published (Jeannette & Scoboria, 2008). I presented the findings at the International Society for Traumatic Stress Studies conference in 2008. I see the incorporation of research into this work as important. In the absence of evidence supporting specific interventions for firefighters, this study represented a "first step" in examining which type may be appropriate for firefighters. The study not only dealt with what might be beneficial to firefighters, it also examined which types of interventions may be *acceptable* to them. This research was the first effort to formally study what firefighters in the WFRS organization would prefer to receive in terms of support.

Conclusion

Years ago I was a firefighter who needed help but did not know where to turn. Now a Captain at the same station where my story started, I am nearing retirement. I am presently a Master of Social Work candidate at Wayne State University. Currently, I am the Chair of the WFRS Peer Counseling and

Critical Incident Stress Committee. At the requests of Dr. Fellbaum and our fire administration, I will soon take over as the department's mental health professional. My hope, most of all, is that the stigma of asking for help has become just a story from the past.

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A Case for Using Biologically-Based Mental Health Intervention in Post-Earthquake China: Evaluation of Training in the Trauma Resiliency Model

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Abstract: *Catastrophic events, such as the Sichuan Province earthquake in China on May 12, 2008, cause massive suffering. They put a huge strain on local response capacities because of distress of the civilian population and also death and traumatization of local responders. Mental health approaches are needed that are efficient and that help provide stabilization to both responders and civilians. The article has two goals: First, to present a rationale for the use of a biologically-based model of mental health, the Trauma Resiliency Model (TRM), in post-disaster settings and, second, to present evaluation results of TRM training, mental health training focused on the biology of threat and fear with corresponding treatment skills provided as part of the China Earthquake Relief Project (CHERP). TRM training was provided to a non-random sample of more than 350 doctors, nurses, teachers, and counselors during a 18 month period after the earthquake. TRM training was provided in six cities to expand local response capacity by providing didactic sessions and practice in TRM's trauma treatment skills. CHERP's focus on acquisition of practical treatment skills and local sustainability provided TRM skills refresher training sessions over the entire course of the project. The Training Relevance, Use, and Satisfaction Scale (TRUSS) and the Training Evaluation Form (TEF) were used throughout the months of training and supervised practice. Results indicate 97% believe that biologically-oriented TRM training will be very to moderately relevant or useful for their work with the Chinese earthquake survivors, and about 88% report they will use the skills very to moderately frequently during the two weeks following the training. Over 60% of the trainees report they will use TRM skills for their own self-care. [International Journal of Emergency Mental Health, 2009, 11(4), pp. 221-233].*

Key words: *biologically-based, natural disaster, posttraumatic stress, mental health training, Trauma Resiliency Model (TRM), China, earthquake*

On May 12, 2008, the Wenchuan earthquake occurred at 2:28 pm, registering 7.9 on the Richter Scale, striking Wenchuan, Beichuan and Quigchuan counties, located in the northwestern part of the Sichuan Province of China. The earthquake inflicted a devastating toll on China's Sichuan Province, leaving in the aftermath vast numbers of suffering adults and children. This earthquake was the most devastating earthquake in China in the past three decades. It is estimated that there were 87,476 deaths; 374,638 people were injured; 18,176 people are still missing (Rodriguez, Vos, Below, & Guha-Sapir, 2009). It is estimated that 5 million were left homeless, 15 million were displaced, and 46 million were affected (USAID, 2008).

The China Earthquake Relief Project (CHERP) is a 7-phase training project, co-sponsored by the World Health Organization, initiated in July 2008 and completed in January 2010 in response to the devastating effects of the earthquake in Sichuan Province. CHERP was implemented collaboratively by the Foundation for Human Enrichment (FHE) in Phases 1 & 2 and the Trauma Resource Institute (TRI; phases 1, 3-7) in the United States, and The United Foundation for Chinese Orphans in Beijing, China. The overarching goal of CHERP was to bring biologically-based trauma intervention training and treatment to local areas suffering from the earthquake in order to equip local responders with stabilization skills for treating trauma in adults and children. The first part of this article offers a rationale for the use of biologically-based training and treatment intervention following large scale disasters. Empirical support from neuroscience research is offered. When interventions developed in the West are brought to other cultures it is important to conduct thorough evaluation. The second part of the article presents the results of the CHERP training evaluation for Phases 3-7. These phases offered TRM training in Sichuan Province, China as well as TRM treatment demonstrations and supervised practice in resettlement camps, hospitals, and schools.

A Case for Biologically-based Treatment and Training

Effects of Disasters and Trauma

Disasters like the earthquake that cause massive devastation and prolonged community and economic disruption have been termed *atypically strong disasters* (Norris, 2001). Such strong disasters are frequently characterized by severe to very severe impairment of individual victims and survivors. Carr, Lewin, Webster, Kennedy, Hazell, and Carter (1997) describe two sets of psychological consequences that arise from a disaster: *threat effects* (those occurring in the immediate aftermath) and *disruption effects* (those extending weeks, months, and sometimes years beyond the disaster). Threat effects following the Sichuan Province earthquake included fear of aftershocks and another earthquake, heavy rains, collapsing roads and buildings, and mudslides. Disruption effects included constant exposure to debris, disillusionment, and anger with governmental agencies over the poor building quality in the collapsed schools, property loss, displacement, fragmentation of families, financial stress, and the array of emotional symptoms associated with each effect. The study

by Carr and colleagues highlights the fact that natural disasters are not circumscribed events with a defined endpoint. Risk factors that predicted more serious symptoms associated with posttraumatic stress disorder from the survivors of the Sichuan Earthquake included female gender, subnationality, lower educational level, lower social support, and higher initial exposure level. Not surprisingly, the more severely the area was affected by the earthquake, the more serious the symptoms (Wang et al., 2009).

Of course, some survivors' symptoms remit without treatment. In a study of flood victims in Mexico (Norris, Murphy, Baker, & Perilla, 2004), results indicated that PTSD symptoms dropped by 50% in the first 18 months after the flood without treatment. However, between 18 and 24 months post-disaster, no further decreases occurred.

When left untreated, traumatic stress reactions have been found to lead to long-term negative mental-health effects (Bower & Sivers, 1998; Brady, Killeen, Brewenton & Lucerini, 2000; Mayou, Bryant & Ehlers, 2001). Further, symptoms from a traumatic event can still be present after many years and may not spontaneously remit (Kessler, Sonnega, Bromet, Hughes and Nelson, 1995). Levels of symptoms found early in the post-disaster period have been found to be strong prognosticators of later symptomatology. Wang and colleagues (2009) investigated posttraumatic stress disorder (PTSD) and clinical and subclinical distress levels of adult survivors of Beichuan County Town (a city almost completely destroyed; 60% of the population died). Three months after the Sichuan Earthquake 37.8% were found to be suffering from PTSD, 39% suffered from partial PTSD, and 80.4% had at least one positive symptom of PTSD. The investigators further noted that the two most important predictors of PTSD severity, after controlling for all other predictors, were the survivor's personal perception of the disaster, which resulted in intense initial fear, and exposure to extreme devastation, including witnessing death of friends, family and loved ones and the destruction and loss of property (Wang et al., 2009).

There is growing evidence that traumatic stress alters the physiological balance in the nervous system. For example, results from a study by van der Kolk and Fisler (1993) found that "The loss of neuromodualtion that is at the core of PTSD leads to a loss of affect regulation." A later study by Cohen and colleagues (1997) confirmed the physiologic aspects of the PTSD syndrome reported in the Van der Kolk and Fisler study (1995).

Researchers are beginning to use sophisticated measurements to determine the impact of traumatic events on the nervous system. In one study, investigators conducted "resting state" MRIs on a cohort of survivors of the Sichuan earthquake and found changes in brain function. The results revealed that individuals who experienced severe emotional trauma showed hyperactivity in areas of the brain that control emotions (Lui et al., 2009). As Porges (2004) points out: "When we are frightened, we are dependent upon the neural circuits that evolved to provide adaptive defensive behaviors for more primitive vertebrates. These neural circuits provide physiological mechanisms that reflexively organize mobilization or immobilization behaviors before we are consciously aware of what is happening." Porges emphasizes the importance of intervening in ways that exercise the neural regulation of brain stem structures. TRM's intervention skills, which were taught in the CHERP training, are targeted at stabilization through nervous system regulation. Early intervention with disaster survivors that targets nervous system stabilization can help reduce suffering immediately following an event as well as the likelihood of future symptoms (Leitch, 2007, 2009).

The Body and Trauma

There is substantial evidence that, in addition to psychological trauma, survivors of trauma also suffer significant and often debilitating physical or somatic symptoms resulting from their experience. Thus, traumatic stress causes both "mental health" problems and a variety of serious somatic symptoms, that can include loss of bowel and bladder control (Solomon, Laor & McFarlane, 1996); shaking, trembling, and increased heart rate (Bernat, Ronfeldt & Calhoun, 1998; Shalev et al.,1998); myofascial pain (Scaer, 2006); diabetes (Golden, Williams & Ford, 2004); heart disease (Musselman & Nemeroff, 2000), and a continuum of stress-related diseases (Green, Grace & Glesser,1985; Scaer, 2005).

A literature review of the health impact in the aftermath of earthquakes in China between 1906 and 2007 highlighted many health-related repercussions. For example, more patients were admitted with acute-on-chronic respiratory failure and acute exacerbation of bronchial asthma following the Great Hanshin Earthquake in 1995. One study investigated students who were fetuses during and after the Tangshen earthquake of 1976 and observed lower cognitive function among those whose mothers carried them during the earthquake, especially those in utero in the second and third trimesters. The survivors of the Hebei earthquake in 1996 were found to suffer significantly more depression, anxiety, and somatization (Chan, Gao, & Griffiths, 2009).

Knowledge of biological responses to fear and helplessness has been incorporated into trauma intervention strategies by such interventions as Eye Movement Desensitization and Reprocessing (EMDR), Cognitive Behavioral Therapies (CBT), and exposure therapies. However, the trauma field is now seeing the arrival of body-focused interventions such as the one used in this project, Trauma Resiliency Model (TRM), in which the *primary* emphasis is on traumatic symptoms as patterns of dysregulation in the nervous system and only secondarily on cognitions and emotions. Research using neuroimaging (Mujica-Parodi, Greenberg, & Kilpatrick, 2004) finds, even under relatively mild emotional challenge, that negative emotion impairs many components of cognitive functioning. This can make traditional talk therapies less effective, particularly after catastrophic trauma when survivors are highly distressed for weeks and even months.

Somatic models, such as TRM, put primacy on brainstem survival responses and dysregulation in the autonomic nervous system (ANS) by careful tracking of the sensations associated with ANS functioning. Through direct observation of such elements as a client's muscle tension patterns, breathing, small movements (as well as client reports of such self-observed sensations as changes in temperature), patterns of internal constriction and relaxation, areas of pain and less pain, a sensory dialogue is set up that shifts between internal places of neutrality or comfort in the body and places where distress, less comfort, or disorganization is noticed. Panksepp's (1998) work in affective neuroscience contends that emotional processes arise from events at the neural level. His work reinforces the essential importance of interventions that link the body and the mind and that draw upon our biological programming as human animals.

Researchers are increasingly using physiological monitoring to examine how the autonomic nervous system responds to traumatic events (Bryant, Harvey, Guthrie, & Moulds, 2000; Griffin, Resick, & Mechanic, 1997; Orr, Metzger, Miller, & Kaloupek, 2004). The study by Griffin and colleagues found that when highly dissociative rape victims were verbally describing the rapes, there was a significant suppression of autonomic reactivity. In a study of assault victims, Bryant and colleagues found that elevated activation of the sympathetic nervous system was associated with later development of PTSD. These studies highlight

the importance of trauma-intervention approaches that attend to the cascade of physiological, not just psychological, responses that can follow traumatic events. They help bring attention to the need for trauma interventions that go beyond the dichotomy of mind and body, particularly interventions that specifically target the way posttraumatic responses have been stored or patterned in the body and that restore self-regulatory functioning. This is the focus of TRM treatment and the training in TRM skills provided in China.

Patterns of dysregulation increase the risk of physical and psychological illnesses such as immune-system disorders, depression, anxiety, and cognitive impairment (Gunnar & Vazquez, 2001; McEwen, 1998; Sapolsky, 1994). Studies such as these highlight the importance of using interventions that target regulation of the ANS. Somatic interventions specifically target the way posttraumatic responses have been stored or patterned in the body, in addition to working with cognitions and emotions (Levine, 1997; Ogden & Minton, 2000; Rothschild, 2000).

In China, as in many other parts of the world, the primary mode of mental health treatment has been talk therapy. Zhong and colleagues (2007) reported that in 2007, leading therapists within China convened the First Chinese-German Congress on Psychotherapy and shared their perspectives of psychotherapeutic approaches being implemented within Mainland China, which included presentations on behavioral therapy, systemic family therapy, mindfulness approaches, and psychoanalysis. Many workshops at the symposium discussed how Chinese therapists are combining traditional concepts with modern western psychotherapeutic approaches. For example, principles of Taoism have been combined with cognitive behavioral therapy (Zhang et al., 2002). In addition, Higgins reported that cognitive psychology and counseling psychology have become popular therapies within China (Higgins, 2002). As the field of psychology expands within China, talk therapies seem to be the most popular interventions. Biologically-based intervention was new to Mainland China.

Biological Models Are Culture-Neutral

TRM's focus on the nervous system helps to make the training and treatment culture-neutral. Every human nervous system is biologically programmed in the same way when a perceived threat is encountered. While the *reason* given for symptoms may differ across cultures, the symptoms themselves are similar. In their discussion of the need for

rapid mental health assessments after disasters in non-industrialized countries, Silove and Bryant (2006) point out that psychological trauma is a Western concept. They list a number of issues that must be considered when Westerners attempt to provide mental-health services to survivors of disasters in non-industrialized countries (p. 576). Their points also have relevance when working in cultures that are not insight-oriented. Issues highlighted include:

- Meaning ascribed to experiences and "symptoms" may differ across cultures.

- Many cultures do not have equivalent terms for PTSD symptom domains.

- Disaster-affected communities may not prioritize psychological distress.

- A PTSD diagnosis may encourage a culture of "victimhood" and passivity.

- Traumatic stress symptoms may be normative coping mechanisms and may not lead to impairment.

- Emphasis on PTSD may encourage an individual and clinical focus in cultures that are community focused.

- Evidence is limited that Western treatments for PTSD are effective across cultures.

- Imported Western techniques may undermine traditional healing mechanisms.

- Attention to social, material, economic, and human rights issues may be more critical in facilitating natural recovery at a group level.

- An emphasis on PTSD may obscure other pressing mental and physical health needs.

Unfortunately, until recently, the tendency of Western countries and practitioners to approach mental health in a way that splits the mind and the body has been firmly entrenched and makes many talk-based, Western trauma interventions inappropriate in other cultures and non-industrialized countries, particularly in the immediate aftermath of a large scale traumatic event. Traditional mental health interventions approach trauma from the "top down," focusing on talk, insight, and emotions. These top-down approaches are likely to have limited relevance in diverse cultures in which group and community have primacy over the individual and in which insight-oriented interventions are not syntonic with cultural or political norms. "Bottom-up" approaches are less culture-

specific because of their focus on biologically programmed survival processes that are common to all humans rather than on individually-oriented insight and emotional expression.

At the onset of CHERP, TRM's biologically-based mental health intervention was a new concept in Sichuan Province; there was much curiosity about a model that focused primarily on biology rather than psychology. Both the duration and intensity of trauma symptoms can often be shortened for survivors if appropriate mental health treatment is provided after a traumatic event (Harvey, Bryant, & Tarrier, 2003) and, as stated earlier, in the months and even years after a large-scale disaster, survivors can be in high states of arousal or dysregulation. MRIs have shown parts of the neocortex to be shut down in states of high activation which can make more cognitively-based talk therapies less useful and make nervous system stabilization an important need.

Biological Models Are Efficient

Efficiency is an important consideration in treatment (Greenwald, 2005). Interventions that can create at least some positive change in low-dosages (1-3 sessions), such as TRM, are more cost-effective and deliver relief to survivors more quickly, and can offer help before the survivor is "lost" to treatment. There is debate as to whether mental health interventions should be provided early in a disaster's aftermath because safety and physical needs are primary and because many survivors' symptoms may remit without intervention as time goes by. It may depend on what type of treatment is offered, those with a primary focus on cognitive/emotional or those whose primary focus is biological. Biologically-focused treatment targets nervous system stabilization. It is likely that survivors who are better regulated will be better able to advocate for themselves in the post-disaster period.

Two outcome studies of TRM (Leitch, 2007; Leitch, Vanslyke, & Allen, 2009) indicate positive gains for disaster survivors in 1-2 sessions of treatment provided from 1 month (after the Thailand tsunami) to 3-8 months (after Hurricanes Katrina & Rita). It is possible that early intervention may accelerate natural recovery (Foa, Zoellner, & Feeny, 2006) and equip survivors to better advocate for themselves. TRM teaches skills that can be used independently outside of treatment making it useful after disasters when people are often displaced and moving from place to place to find housing and jobs. Teaching TRM skills to survivors also promotes independence, affect management, and hope. This is likely to decrease dependency on mental health staff.

EVALUATION OF TRM TRAINING – METHODS

TRM Training Participants

The 367 participants in the TRM training were all local inhabitants of 6 cities in Sichuan Province, China. As such, they had all been personally exposed to the earthquake and its aftermath. Trainees came to the TRM trainings as a result of a Planning Phase of CHERP in July 2008 in which meetings were held with local health departments, hospitals, school administrators, and first responder groups in the major areas of earthquake impact. These sources of collaboration and referral were: 1) oriented to the goals of CHERP (to provide TRM training and supervised treatment), 2) told about the basics of its biological focus, and 3) asked to help with such logistics as providing training space and release time for their staff, providing access to resettlement camps, and helping with local transportation. There was no cost to any trainee for attending the training.

Approximately 60% of the trainees were medical personnel; the majority of training took place in hospitals that were not damaged, in hospital tents, or medical facilities in resettlement camps. The other 40% of trainees were counselors, teachers, and first responders. The trainings for non-medical participants were held at their work site or in whatever space close by was the least damaged. There were no major differences by gender of the trainees and most were between ages 25-50.

Procedure

Format

The original intention was to offer a single format for training: a 3-day classroom experience that included skills practice followed by 1-2 days of supervised fieldwork, providing TRM treatment to survivors. However, in areas of Sichuan Province up to half of all medical providers as well as many other caregivers and responders had died. Hospitals and schools were under-staffed and it was challenging to release staff for 3 days of training. Therefore, we offered the training in several formats in an effort to meet the needs of the participating organizations.

The shorter trainings still had practice built in, and case consultation over the 18 months of the project, but only the first three (of eight) TRM skills were taught. In addition, in one case, upon arrival at a site to provide a 1-day training, it was clear that the trainees were in such high states of traumatic activation and distress that their capacity to learn new

skills was impaired. In this case, the training agenda was suspended in behalf of providing TRM treatment.

Across the five TRM training phases from September 2009 to January 2010, 152 (41.8%) of the survey respondents participated in briefer training which lasted from a half to a full day, 127 (34.9%) participated in training that lasted from 2-3 days, had a more comprehensive skills focus, and included 1-2 days of work in the resettlement camps or hospitals with survivors. Thirty trainees (8.2%) said they attended both types of training formats, and 55 (15.1%) did not indicate which type of session they participated in.

Training Structure

TRM training uses a combination of didactic presentations and experiential learning. It is practical and skills-based; during every classroom session there are small group practices in which each trainee has an opportunity to see demonstrations of the treatment skills and to be a client as well as a practitioner. In a disaster setting, the small group practices have three goals: to help stabilize trainees who may be dysregulated from their own traumatic experience in the disaster, to make the didactic material come to life, and to gain greater competency with the skills.

Evaluations were given at the end of the training. The answers to open-ended questions were translated into English by project translators. The translators were psychology graduate students. All were Chinese; many were familiar with the Sichwanese dialect as well as Mandarin Chinese.

Use of Translators

All training and fieldwork sessions were conducted through translators, most were ages 23-25. All powerpoint slides, manuals, and written materials were in Mandarin Chinese and were reviewed by at least three Chinese project staff for consistency and accuracy. Translators were carefully trained before and throughout the project in the biological framework being used and the specialized terminology. Their interest in psychology made them eager and skillful learners. They were an invaluable help to the project quality.

Evaluation Instruments

There were two instruments used during CHERP to evaluate TRM training: the Training Relevance, Use, and Satisfaction Scale (TRUSS; Leitch, 2007) and the Train-

ing Evaluation Form (TEF; Miller-Karas & Leitch, 2007). TRUSS is a 9-item instrument that examines three domains: 1) relevance of the training material to the trainee, 2) likelihood of use of the skills (including for self-care), and 3) satisfaction with the skills and training. Items 1-6 are Likert scales and items 7-9 are open-ended questions. The Training Evaluation Form (TEF) consists of 14 open-ended questions about the specifics of the training that were most and least helpful. TEF was an important way for the training teams to gain more detailed information about ways the training format and/or content could be refined and better adapted for use in China. Response to TEF questions were also useful in checking the face validity of TRUSS. Responses on TEF are in narrative form.

Both instruments were developed in-house. It is difficult to find an evaluation instrument that is brief, targeted at cultural concerns, and addresses the questions of interest. TRUSS and TEF have been used by Trauma Resource Institute (TRI) in trainings in several diverse cultures as well as used widely in the United States. They are reviewed by key individuals in each culture for suitability of language and item phrasing as well as to insure that the concepts will be comprehensible to and relevant for the intended participants. Both instruments allow for narrative responses in order to capture any information that would otherwise be lost.

Training Protocol

The Trauma Resiliency Model (TRM) is a manualized training program that provides didactic information on the biology of threat and fear as well as teaching and practicing 8 core treatment skills. TRM was inspired by the work of Peter A. Levine (1997) and Jane Ayres (2005). TRM includes Levine's skills as well as other stabilization skills and techniques from sensory integration.

TRM's specific interventions primarily are targeted at self regulation (i.e., restoring equilibrium to the nervous system) and secondarily on working with associated emotions and cognitions. TRM offers eight concrete skills to reduce dysregulation and increase the capacity for self-management. The skills help the client understand the biological elements of trauma and healing by bringing awareness to the bodily sensations associated with trauma and most importantly, sensations associated with resiliency and wellbeing.

The practitioner informs the client about the autonomic nervous system through education and by *tracking,* the first

TRM skill. *Tracking* is achieved through observation, self-report by the client, and attunement between the practitioner and the client. As the nervous system is tracked, the client learns that there are not only dysregulated states (i.e. constricted muscles, rapid breathing and heart rate) within the body but also sensations of comfort (i.e. expanded breathing, slower heart rate, muscle relaxation).

The second skill, *grounding*, is introduced by inviting the client to bring awareness to how the body is physically supported in the present moment. The sensory attention to the here and now stimulates an observable and sensed parasympathetic response in the nervous system.

The third skill, *resourcing,* helps the client become more aware of nervous system regulation by identifying internal and external resources that contribute to wellbeing. As the resources are identified, the client is invited to notice the sensations associated with the resource.

As traumatic states can be difficult to override, *resource intensification*, the fourth skill, is suggested to encourage the client to give more detail to the resource so that it can be sensed more fully.

When uncomfortable sensations are noticed in the body, the skills of *pendulation* and *titration* assist the client to help rebalance the nervous system. *Pendulation* is the shifting back and forth between organization and disorganization within the nervous system. Organization refers to neutral, less distressing, or comfortable sensations within the body. Disorganization refers to traumatic activation, which can be areas of constriction within the body that include pain, muscle tension, and pressure. *Titration* refers to the graduated sensory exposure to the traumatic activation within the body. Helping the client sense smaller pieces of the traumatic activation helps reduce or even eliminate the traumatic activation without overwhelming the body and the mind.

Shift and stay is a self-help skill. During the course of daily living, uncomfortable sensations can emerge or can be triggered that can lead the client to be overwhelmed. The client learns to shift attention from the distressing sensations to more comforting sensations associated with *grounding* and *resourcing* and to stay with the comforting sensations until regulation occurs.

The final skill is *completion of defensive responses*. When a person perceives that he/she is not able to fight or get away in response to a traumatic event, the person may go into collapse and freeze; the energy meant for flight and fight becomes "stuck" within the body due to the flood of neurochemicals that were meant to aid in escape (Scaer, 2005). The freeze state is " a precarious state of abnormally dysregulated and fluctuationg autonomic nervous system activity" (Scaer, R., 2005). TRM skills are designed to help the client release the blocked energy by becoming aware of movement patterns and sensations that would have occurred if the client could have fought or fled. As release sensations (trembling, temperature changes, tingling, burping) are experienced and sensed, the nervous system is reset and equilibrium returns (Levine, 1997).

The TRM treatment skills used in the CHERP training involved gradually (and in increasing gradations of intensity) eliciting awareness of body sensations that are linked to the trauma, balancing each increment of traumatic arousal with a corresponding resource sensation. The individual moves between the sympathetic (arousal) and parasympathetic (calming) functions of the autonomic nervous system in a way that minimizes the risk of flooding and re-traumatization. This mirrors and restores the normal rhythm between the sympathetic–parasympathetic branches of the autonomic nervous system. Practice sessions during the training allowed trainees to both offer and receive TRM treatment, deepening their understanding of the eight skills and also promoting stabilization in their own nervous systems.

TRM TRAINING EVALUATION RESULTS - TRUSS

Over 98% of the respondents to these items reported being *moderately* to *very satisfied* with TRM training, as well as with TRM skills as a tool for self-care and for use with survivors. Trainees' responses to the three domains being evaluated using TRUSS are presented in Tables 1 and 2 below. Table 1 summarizes the pattern of responses on relevance and anticipated use of the TRM skills taught and practiced.

As seen in Table 1, 85% of the respondents believed that the somatic training would be *quite a bit* to *very* relevant or useful for their work with earthquake survivors, and about 88.3% said they thought they would use the skills *moderately* to *very* frequently during the two weeks following the training. Only 11 of the 342 (3.2%) respondents reported that they would not use the somatic skills in the two weeks

Table 1.
Training Relevance, Use, and Satisfaction Scale (TRUSS) Findings
Relevance and Use of TRM Skills.

Trainee Perceptions of Treatment Relevance and Use of Skills (n=342 ~ 352)
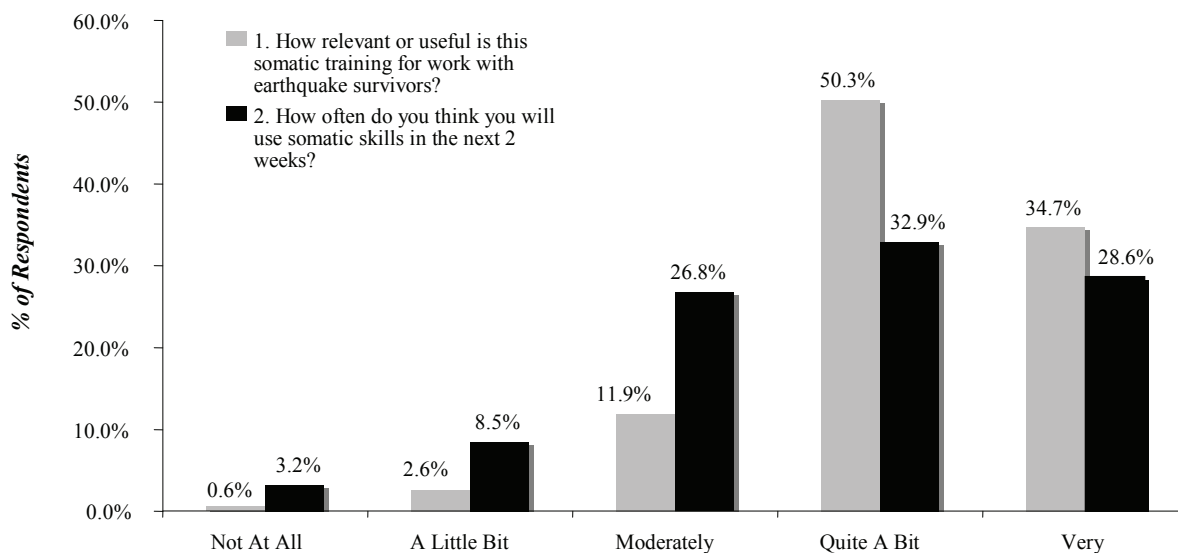
following the training.

When asked to describe some specific ways they thought the training would help in their work with earthquake survivors, the majority of trainees (79.9%) said it would help them relieve or reduce symptoms, such as emotional issues, trauma, stress, lack of confidence, and pain/discomfort. Over half of the respondents (56.9%) said the training would help them apply specific TRM skills. Other factors mentioned by less than 6% of the respondents included discharging energy, helping clients balance their nervous systems, working with children, and helping survivors build a new home or life. In addition, all but seven of the 347 respondents reported that TRM training would be helpful in their work with others than earthquake survivors.

Use of TRM Skills for Self-care

In disaster areas caregivers and first responders are at high risk of secondary traumatization and burnout, in addition to suffering from symptoms that are associated with their own personal experience of the disaster. TRM skills are also taught to be used as tools for responder self-care. More than 60% of the respondents reported they would be able to use the skills they learned from the training for their own self-care when dealing with uncomfortable feelings, feeling anxious, feeling frustrated, feeling angry, building confidence, feeling pain, and/or when feeling depressed. Between 40 and 60% of the respondents thought they would use the skills during an argument, during or after a nightmare, and/or when something challenging happens. Additional situations listed by the respondents included: when experiencing depression; when having body discomfort; when tired; when dealing with relationship problems; when feeling unhappy; when it is difficult to fall asleep; to regulate the nervous system; and after an accident. Table 2 summarizes the situations in which trainees report they would use the skills for their own self-care.

Training Evaluation Form (TEF)

TEF asks for specific details about what worked best and what was less helpful in the training. Table 3 below summarizes TEF responses.

When asked if the trainee's goals for the training were met, 82 % responded *yes*. The remaining 18% said their goals were not met. The main reason given by the 18% who

Table 2.
When Trainees Would Use TRM Skills for Their Own Self-Care (n=364)
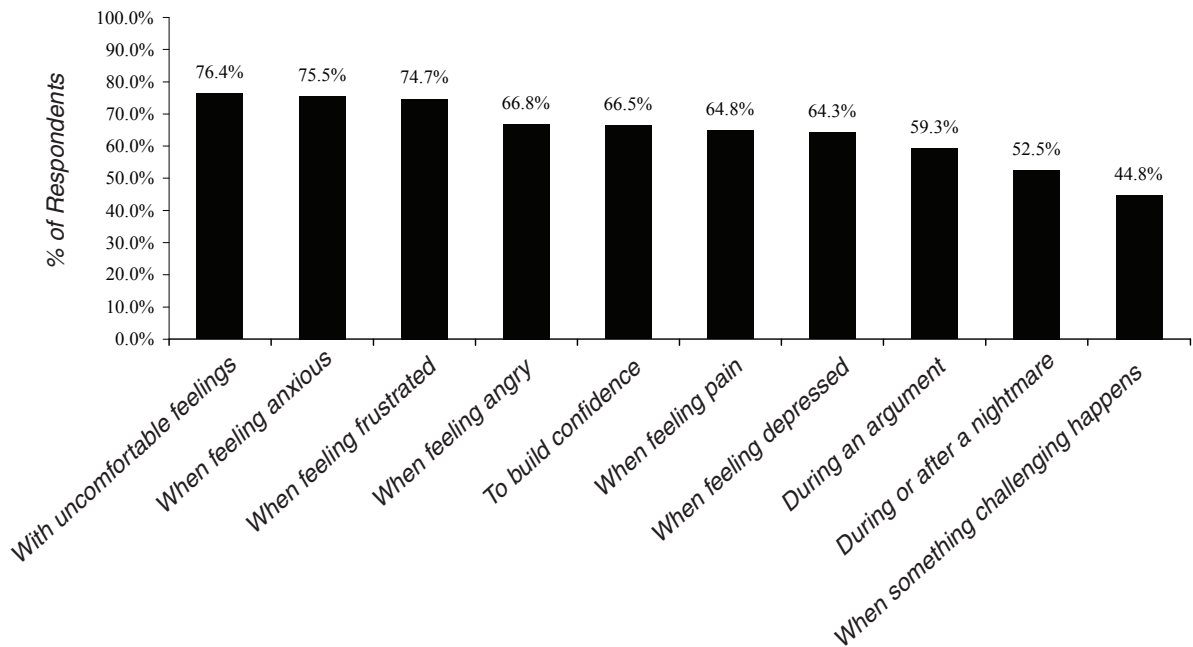
Table 3.
Satisfaction with TRM Training and Treatment Skills (n=343 ~ 348)
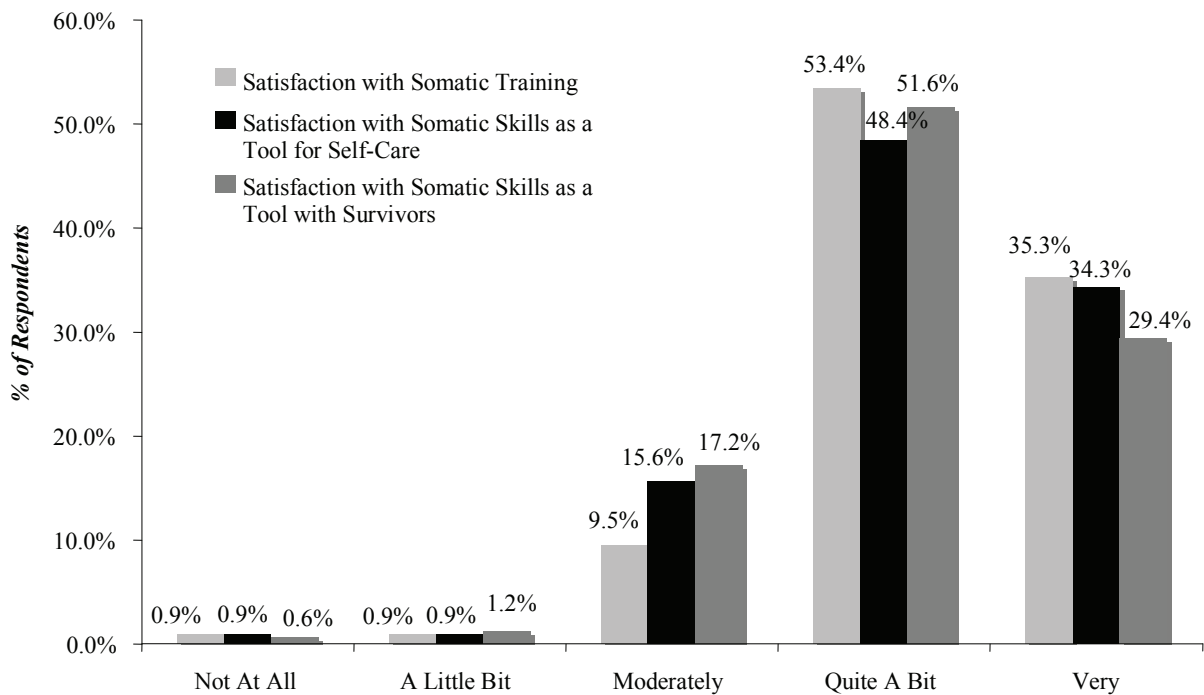
said their goals were not met was insufficient time. Of the 18%, 90% had attended the half to full day training. Time was a big challenge in conducting the training as not all trainees could attend a 3-day training plus fieldwork. As a skills-based training, nothing is more important than practice. The decreased time often meant that fewer opportunities to practice were available. In the shorter trainings only the first three stabilization skills were taught, rather than the full eight skills. These three skills are extremely useful, but trainees in the briefer trainings were often hungry for more. It may be more realistic in future disaster trainings to offer the 3 days of training and the fieldwork across several weeks rather than in a condensed several days.

Aspects of the training that were found most helpful were, not surprisingly, the TRM skills and the opportunity to practice them. Of the 179 responses to this item, the majority (85.5%; $n = 153$) found the various skills they learned from the training most helpful. Practicing the skills, learning ways to help themselves, and theory are perceived as the most helpful by similar numbers of people (14.5%, 14.0%, and 12.3% respectively).

Trainees were asked what topics or aspects of the training needed more time spent.

Of the 146 respondents to this item, two thirds (66.4%; $n = 97$) stated they needed more time in actual practice, demonstration, case studies, games, and small group activities. When working in a disaster area where the level of suffering is so extreme, there is a keen need for practical skills. TRM training provides didactic information about the neurobiology of trauma because this information helps trainees make intervention decisions at various choice-points in the session. Finding the right balance between theory and practice can be a challenge when trainees are sometimes desperate for skills that can make a difference in alleviating suffering.

And, as mentioned earlier, the tension between what is optimal training time and what is realistic was on-going.

Extremely high ratings were given to all aspects of the training, with 100% of the respondents rating the quality of TRM instruction as *above average* to *excellent*. Quality of teaching materials, quality of course organization, and quality of teaching methods were also rated by 100% of respondents as *above average* to *excellent.* This was particularly gratifying, given that all the teaching and treatment demonstrations were done through translators. TRI's materials have been tested and revised many times in order to be both culturally-sensitive and relevant in disaster settings in several cultures.

Implications and Conclusions

There are many lessons that CHERP's TRM training provided, as it was implemented in Sichuan Province, that can be useful for other teams providing post-disaster training. They are briefly summarized below.

Be prepared to offer training formats of different lengths. It is often not realistic for trainees to be released from work for 3 consecutive days. Many workers were killed and injured in the earthquake. Thus, each person's workplace responsibilities were expanded and some settings had difficulty releasing people even for 2 or 3 days. Offering training days spread out across 2-3 weeks rather than back-to back might have allowed more people to attend longer trainings. Restructuring the training format so that training days are spread out can relieve work pressure on trainees. This would also permit trainees to practice between week one and week two and bring their questions to subsequent training days.

It is very difficult to control who administrators include in trainings. In later phases of CHERP, where the intent was to deepen the training of previous trainees, new participants would attend (often in large numbers). This required splitting the U.S. team so we could provide an introductory training as well as an advanced training. In addition, the number of trainees was often much higher than expected, which meant that each trainer had a supervision group larger than was optimal. Training teams need to be flexible and adaptable as expected plans for trainings may change as a result of the ever changing needs of the trainees. Fortunately, the evaluations indicate high levels of participant satisfaction in spite of these challenges.

It can be an ethical dilemma to have new trainees work with survivors who are in great distress, even when under supervision of an experienced team member. It is important to select trainees with the strongest skills to work with highly distressed survivors. It is also important to offer trainees the option of observing rather than providing treatment. It was sometimes necessary for a member of the training team to work conjointly with the trainee and survivor or to conduct the treatment as a demonstration rather than only providing coaching to the trainee. It is essential to develop a policy for how the team uses trainees in work with survivors in states of high arousal. The ethics of having trainees with,

at most, 3 days of training treat survivors with complex trauma must be taken into careful consideration so that the learning needs of trainees do not override the well-being of survivors. Organizations requesting treatment for survivors (e.g., Displaced Persons Camps, hospitals, schools) must receive an orientation from the Project Director about the types of "clients" who are not appropriate for treatment by trainees in the field. This would include individuals with severe mental illness.

Biologically-based approaches, such as TRM, have much to offer disaster responders and survivors because they approach survivors holistically rather than in a dichotomized way that splits the mind and body. "Bottom-up" interventions are not as culture bound, working as they do with the neurobiological basis of traumatic response that is evidenced in an array of observable and reportable somatic states. Working at the biological level minimizes issues, such as the differential meaning that symptoms may have across cultures or a cultures' lack of focus on individual psychological experiences. In addition, using the skills for responder self-care can contribute to stabilization of the responders and increase their own nervous system resiliency.

TRM skills target the patterns of nervous system dysregulation that generate significant risk for the development and chronicity of symptoms, whether psychological, cognitive, physical, or behavioral. A focus on the biology of trauma is depathologizing for many survivors, as they begin to understand that their body is simply reacting as it has been neurologically programmed to do. The biological focus recognizes that what manifests as a physical symptom (e.g., a stomachache) may be a traumatic response that can be alleviated by working with sensory stabilization skills.

A major limitation in the study was the limited funding available for research and evaluation. The project was primarily an effort to provide responders with tangible skills for treating mental health trauma. The parameters of the project's research and evaluation component were shaped and limited by this focus. Ideally, a parallel examination of treatment effectiveness would have been done which used random selection of patients, a comparison group, and longitudinal follow-up to test for stability of treatment effects. Assessments were done immediately pre and post TRM treatment on the 114 survivors who received single-session treatment as demonstration cases or during supervised fieldwork over the course of the project. And follow-up by telephone was conducted several months later by project translators. TRM

treatment results were encouraging but, in the absence of longer-term follow-up, are only suggestive of the positive benefits of treatment.

Although research is emerging on the role of the autonomic nervous system in shaping trauma symptoms, future research is needed that tests the neuroscience foundation upon which TRM skills rest. Physiological monitoring of survivors receiving TRM treatment and at several points in time following treatment would strengthen the emerging base of evidence about nervous system response to biologically-based intervention and the stability of treatment.

Biologically-based models, such as TRM, are well-suited for promoting the stabilization of survivors of large scale disasters and providing self-care skills to responders. TRI will be providing TRM treatment and training in Haiti in the wake of the earthquake of January 12, 2010. The project design is similar to CHERP's: to send teams in to provide training to local organizations and offer supervised fieldwork that provides TRM treatment to adults and children. Training local responders expands the capacity of local people to treat their own. Pairs of trainers and trainees in Haiti will also offer 1-2 hour workshops to large community groups to help promote understanding of the biology of trauma and teach the first three stabilization skills that can be used independently. These community presentations will, hopefully, reduce the shame that often accompanies traumatic stress symptoms. A focus on biology lessens the sense of pathology.

What is needed in disaster treatment are culturally appropriate intervention models that give efficient and effective treatment not just to the body or to the mind but to the two together, as inseparable parts of the whole survivor. This is important for those in the community who are both responders and survivors of the disaster.

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Experience of Critical Incident Stress Among Ambulance Service Staff and Relationship to Psychological Symptoms

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Abstract: *This two-stage study was undertaken to assess the extent and nature of Critical Incident Stress (CIS) amongst frontline staff in a large ambulance service in Ireland. In Stage One, 63% (112/180) of participants completed a Screening Questionnaire and the GHQ-12. In Stage Two, 27 participants, who had experienced a critical incident (CI) during the previous year, completed several measures to assess PTSD symptomatology, burnout, health-related Quality of Life, and dispositional optimism. Eighty-one per cent (80/94) of the Stage One group reported that their health had been affected by a CI; 42% (44/106) were identified as 'cases' on the GHQ-12. Stage Two results indicated that 12 participants had PTSD symptoms while this entire group showed moderate levels of emotional exhaustion and depersonalization, despite experiencing high levels of personal accomplishment and optimism. The findings suggest a high prevalence of CIS among ambulance personnel in Ireland and a significant impact on overall health and wellbeing. This has important implications for the effective management of CIS and suggests an important role for occupational health and organizational psychologists in providing routine support to ambulance service staff and possibly other emergency services personnel. [International Journal of Emergency Mental Health, 2009, 11(4), pp. 235-248].*

Key words: *Critical Incident Stress, emergency medical technicians, emergency medical controllers, quantitative research.*

Background

Work related stress is now a major public health concern (WHO, 2003) and available evidence suggests that this is more common in jobs that are physically and psychologically demanding and/or where staff experience low levels of autonomy (e.g. Sutherland & Cooper, 1990)**.** Thus, those working in the emergency services, including ambulance personnel, may be particularly vulnerable to the effects of

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occupational stress. The term 'ambulance personnel,' in the context of the current study, refers to Emergency Medical Technicians (EMTs) and Emergency Medical Controllers (EMCs; also known as dispatchers). EMTs are medical specialists who are trained to provide victims of sudden or acute illness or injury with emergency care and transportation to a hospital**.** EMCs, on the other hand, are specially trained public safety tele-communicators with the specific emergency medical knowledge essential for the appropriate and efficient functioning of emergency medical dispatching. EMTs and EMCs are continually exposed to potentially high levels of emotional stress as part of their occupational activities (Bennett, Williams, Page, Hood, & Woolard, 2004;

Alexander & Klein, 2001; Clohessey & Ehlers, 1999); this is commonly described as *Critical Incident Stress* (CIS) or *Secondary Traumatic Stress*. A *critical incident* (CI) has been defined as "…*an incident that is sufficiently disturbing to overwhelm the individual's usual method of coping*" (Alexander & Klein, 2001). Critical incident stress may arise in response to either a single incident of this type, or a series of such events that cumulatively affect the individual (Mitchell & Everly, 2001).

One of the first (and largest) studies undertaken by Ravenscroft (1994) in the London ambulance service, found that 15% of front line staff (*n* =1420) exceeded the threshold for a Posttraumatic Stress Disorder (PTSD) diagnosis, while over half were suffering from mental disturbance. Similar results were found in an Australian study, in which approximately two-thirds of ambulance officers (*n* =1380) reported trauma reactions due to CIs (Robinson, 1994). In another UK-based study, 21% of ambulance paramedics in Oxfordshire (*n* =56) obtained high scores on the Post-Traumatic Stress Scale while 22% met GHQ-28 screening criteria for the presence of psychiatric symptoms (Clohessy & Ehlers, 1999). More recent work in the Netherlands (Van der Ploeg & Kleber, 2003) and in Sweden (Jonsson, Segesten, & Mattson, 2002) found that 12% of EMTs experienced severe post-traumatic symptoms after exposure to a CI. Importantly, van der Ploeg and Kleber identified social aspects of the work environment (e.g., support from colleagues/supervisors) to be important predictors of health symptoms. The Swedish group also reported that length of service was positively and strongly correlated with PTSD symptoms (Jonsson et al., 2002). Similarly, Alexander and Klein (2001) found that approximately one third of their sample of Scottish EMTs (32%, 35/110) reported high levels of general psychopathology, burnout, and post-traumatic symptoms. Burnout was associated with less job satisfaction, longer time in service, less recovery time between CIs, and more frequent exposure to incidents. Furthermore, in a recent systematic review, Sterud and colleagues (2006) outlined a litany of health problems among ambulance personnel, including a wide range of physical and mental health (and somatic) problems and higher standardized mortality rates.

While emergency services work may be personally and professionally rewarding, existing evidence suggests that traumatic experiences may lead to emotional reactions that are significantly different than, or more intense than, those in other occupational contexts (Paton & Violanti, 1996). Furthermore, while most people may recover from CIS within a few weeks (Mitchell & Everly, 2001), in some instances, this may develop into more serious psychological impairment, or more chronic symptoms, including acute stress disorder and PTSD (Wessely, Rose, & Bisson, 1998). Mitchell and Bray (1990) distinguish between *cumulative stress* (more commonly known as burnout) and an *acute stress reaction*. The former has been described as a deterioration in job performance and reduced job satisfaction due to specific occupational stressors (Paton & Violanti, 1996). However, variables such as hardiness (i.e., commitment, challenge, control), coping skills, and social support may mediate burnout or cumulative stress (McCammon, 1996). An acute stress reaction may occur as a response to a particularly difficult emergency call and involves a risk of developing acute stress disorder. This diagnosis fills the temporal gap between the initial stressor and the subsequent four weeks, at which point a full diagnosis of PTSD may be made if symptoms still persist (American Psychological Association, 1994). The essential feature of the diagnosis of an acute stress reaction is the development of some or all of the symptoms (for at least a two-day period) typically associated with PTSD.

A number of studies in this area have identified other potential sources of stress in ambulance service personnel. For example, in Mitchell's study (1984), 'administrative hassles' were rated as the most significant stressor in the working lives of paramedics. Revicki and colleagues (1987) also found that sources of occupational stress among ambulance personnel (*n* =250) included guilt related to a failure to understand patients, unrealized job expectations, and the failure of colleagues to contribute adequately to patient care. On the other hand, Paton and Violanti (1996) postulate that the 'labeling' process used to describe CIS or PTSD symptoms among emergency personnel, may discourage disclosure due to perceptions of weakness, thereby resulting in a reluctance of some staff to avail themselves of appropriate support services. For the same reasons, high-risk groups may also blame organizational practices rather than traumatic incidents for their symptoms (Paton & Violanti, 1996).

Relatively little research has focused specifically on the links between mental health and occupational factors among both EMTs and EMCs. The current study formed part of a larger investigation into the nature and impact of CIS on staff working in a large ambulance service in Ireland; the qualitative findings of the larger study are reported in a companion paper (Gallagher & McGilloway, 2007). In brief, this second phase of the study focused on the impact of CIs on frontline staff and was conducted in two separate, but related stages,

the objectives of which were to: (1) ascertain the extent and nature of CIS in the sample; (2) assess aspects of psychological health and overall well-being, including burnout; (3) determine the relationship between experience of CIs and of trauma or PTSD-related symptoms; and (4) assess attitudes toward the occupational training and support provided in relation to CIS. Our central hypotheses - based on previous research - were as follows:

Hypothesis 1: Both EMTs and EMCs in an Irish ambulance service are exposed to a large number of CIs within the previous 12 months;

Hypothesis 2: Exposure to CIs among both EMTs and EMCs in an Irish ambulance service has a considerable negative impact upon psychological health and well-being.

Hypothesis 3: Ambulance staff who have experienced CIS show above average levels of trauma and burnout and lower levels of Quality of Life (QoL) than the general population.

Support Following exposure to a CI: The Local Context

Before describing the method, a brief note is provided here on the support provided by the local ambulance service for its staff who are exposed to CIs. Each ambulance base or station (or a station within close proximity) employs a Peer Support Worker (PSW) or volunteer staff member, who is a fellow EMT/C. The Peer Support Program was implemented in 1998 under the ICISF Model of CISM (previously known as the Mitchell Model; Mitchell& Everly, 2001) in order to specifically address issues surrounding CIS. Each PSW receives a five-day training course in defusing; debriefing; providing short-term peer counselling programs; and facilitating contact with mental health professionals.

The PSW service is predicated on the notion that the PSW is ideally placed to understand the needs and unique occupational demands of EMT/Cs and to provide immediate support where required. Each public sector ambulance service also has a peer support coordinator who coordinates and drives the program. Additionally, all of the Irish Health Service Executive (HSE) areas provide a general staff support service (i.e. for all staff members including ambulance personnel) and posters and leaflets with relevant contact names/numbers (e.g., of professional counsellors) are distributed to each station.

METHOD

Participants

Stage One involved a postal survey of all the EMT/Cs within the ambulance service, including 155 EMTs and 25 EMCs in 11 bases throughout the region, which serves a population of 1.6 million within an average radius of 622 sq. miles (240 sq. km).

Measures: Stage One

Two self-report questionnaires assessed the prevalence of CIS and psychological functioning. A *Screening Questionnaire (SQ)* was devised on the basis of a literature review and on information obtained during an earlier part of the study which involved interviews with Peer Support Workers (PSWs). The SQ elicited information on sociodemographics, the number and nature of the Critical Incident(s) encountered in the previous 12 months, any support/help received, and its perceived effectiveness. The 12-item *General Health Questionnaire* (Goldberg, 1978; GHQ-12) provided a brief, but reliable measure of psychological well-being. Each of the 12 questions may be scored as 0 or 1 to give a maximum score of 12 so that those scoring above two are classified as a 'case' (i.e., they would benefit from formal mental health intervention).

Measures: Stage Two

Participation in the second stage was determined by whether or not the Stage One respondents had experienced a CI within the previous 12 months and were agreeable to participate in further research. This stage commenced approximately two months after completion of Stage One. A number of well-known self-report measures were used to assess: (1) symptoms of Posttraumatic Stress Disorder (PTSD); (2) burnout; (3) physical and mental health status; and (4) dispositional optimism. One-to-one interviews were also conducted with all participants, but these are reported elsewhere (Gallagher & McGilloway, 2007).

The Posttraumatic Stress Disorder Checklist scale (PCLS)

The PCLS (Weathers, Litz, Huska, & Keane, 1994) is a 17-item self-report inventory that assesses the three syndromes of PTSD including: (a) *re-experiencing;* (b)

avoidance; and (c) *hyperarousal.* Each item is scored from 1(low/not at all) to 5 (high/extremely), yielding a maximum hyperarousal score of 85 and minimum score of 17, based on the participant's feelings during the previous months. Participants may be classified as having PTSD symptoms if they score above the cut-off of 44 (Blanchard, Jones, Buckley, & Forneris, 1996).

Impact of Event Scale - Revised (IES-R)

The IES-R (Horowitz, Wilner, & Alvarez, 1979) measures respondents' feelings over the past week and determines the presence of the post-traumatic symptoms of avoidance behaviour and intrusive events (e.g., flash backs and nightmares) in relation to a specific CI experienced up to 6 months earlier. The IES-R is commonly used as a screening instrument for victims after disaster and other extreme situations. The severity of symptoms may be classified as 'low' (0-8), 'medium' (9-19), or 'high' (20+).

Maslach Burnout Inventory (MBI)

The MBI – (Human Services Survey) (Maslach & Jackson, 1996) is a widely used instrument consisting of 22 items that assess *burnout*, or more specifically, the cumulative effects of work-related pressures on three central dimensions of burnout. These include: (1) *depersonalization* (e.g., loss of concern or compassion towards others); (2) *emotional exhaustion* (e.g. overextended or emotionally drained); and (3) *personal accomplishment* (e.g., personal achievement at work). The items are scored on a 7-point scale (0 =never, 6=always) to yield a maximum score of 90. Cut-off scores on each of the subscales indicate 'low,' 'moderate,' and 'high' levels on each dimension.

The Short Form-36 version 2 (SF-36v2)

The SF-36 version 2 (Ware, Kosinski, & Dewey, 2002) is a multi-purpose, short-form health survey comprising 36 questions that assess health-related Quality of Life (QoL). An 8-scale profile of scores is generated including: physical functioning; role physical; bodily pain; general health; vitality; social functioning; role emotional; and mental health. These may be aggregated into two summary measures: Physical Component Summary (PCS) and Mental Component Summary (MCS). Norms for the SF-36v2 scales include a (transformed) mean of 50 and a standard deviation of 10 (US norms; Ware et al., 2002). Transformed scores that fall above or below 50.96 on either summary scale suggest above/below average population scores respectively.

Life Orientation Test (LOT)

The LOT (Johnston, Wright, & Weinman, 1985) was used to assess participants' dispositional optimism, as it was thought that this may act as an important buffer to post-CI stress. The LOT comprises 12 items, each of which is scored from 0 (agree a lot) to 4 (disagree a lot), with a maximum score of 48. Higher scores indicate higher levels of optimism. Johnston and colleagues (1985) outlined normative mean scores on the LOT of between 21 and 22 (SDs of 4 to 5).

RESULTS

Stage One

A total of 112 EMT/Cs participated in the study (63% response rate); 85% were EMTs and 15% were EMCs. Respondents were typically married men (with children) who ranged in age from 23 to 61 years (*Mn* =40; *SD* =9.00). Forty per cent were smokers while 86% consumed alcohol; half reported drinking regularly (every few days). The largest proportion of respondents (29%) had been working for five years or less in the ambulance service, although more than a third had at least 15 years of experience. Eighty-five percent of respondents (95/112) found their job 'moderately' (36%) or 'very stressful' (48%), while a similar proportion (81%, 80/94) indicated that their health had been affected by a CI. Forty-two percent (44/106) were identified as 'cases' on the GHQ-12. Only 38% (42/112) reported that they would feel comfortable approaching their PSW for help in coping with stress; the same proportion indicated that they would not, while one quarter (28/112) were unsure. Sixty-three per cent (70/112) reported that the training that they had received to help them manage job related stress was 'not at all adequate.'

Those CIs reported to be most traumatic included: suicide and homicide (72%); assault /abuse (physical/psychological; 70%); serious injury/grotesque mutilation of patients (64%); death or serious injury to an infant/child (62%); and life threatening experience or perception of serious threat (60%) [see Table 1]. Some verbatim descriptions of the CIs are provided in Box 1. On average, six CIs (*SD* = 2.82) were reported during the previous 12 months. Approximately one

Table 1.
Types of Critical Incident experienced by participants

Critical Incident	N^1	%
Abuse (physical, sexual, emotional) to pt[2], self/colleague	73	65
Suicide/homicide (pt or colleague)	73	65
Assault (physical, sexual, psychological) to pt, self/colleague.	71	63
Death/serious injury of child	63	56
Serious/ grotesque mutilation of pt	62	56
Perception of serious threat (to self/colleague)	60	54
High publicity events/crimes	47	42
Physical / sexual abuse or serious neglect of children	29	26
Death serious injury (family or colleague)	28	25
Life threat experience (to self/colleague)	28	25
Line of duty injury/death (self/colleague)	24	22
Disasters(natural, manmade, technological) involving risk or damage to self, family/colleague	15	13
Breakdown of equipment which results in death of patient	6	5

1. More than one CI may have been experienced   2. Pt = patient

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Box 1.
Some descriptions of the CIs reported by respondents

"Death by suicide. Patient hit by train, one mile down the track from access - the longest walk of my life."

"Stillborn child on the hall floor with mother crying in the house."

"RTA [Road Traffic Accident] – 11-year-old girl found in a state of cardiac arrest. I was 12-15 minutes doing mouth-mouth CPR. Patient's lungs flooded with blood. Could not give up."

"Death of a two-year-old child from drowning and watching a man drown trapped in his car. We were absolutely powerless."

"Young man on motorcycle hit from behind - horrific injuries...I have to attend court at a future date."

"I've had 5 children on my shifts that died over the last 3 months. It doesn't really hit you until you get home. When I get home, I'm in bits." (Controller)

"We get a lot of abuse/emotion on the phone from callers and patients, and from colleagues - EMTs on the radio. I also feel helpless in some situations, especially sudden death incidents or if there's violence involved."(Controller)

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third (32%, 31/98) had experienced between one and four CIs, while almost half (48%, 47/98) reported between five to eight. A notable one-in-five (20/98) reported experiencing 9 to 12 CIs. An analysis using Spearman's Rho indicated no significant association ($p > 0.05$) between location of station (urban/rural) and number of CIs experienced.

Perceived effects on mental and physical health and help received

A wide range of physical and mental health effects was reported. Some of the former included: stomach problems; loss of weight; increase in heart rate; chest pain;

and high blood pressure. However, the effects on psychological health appeared much more widespread and problematic and included: bouts of depression; restlessness; flashbacks; excessive worry; nervousness and agitation; intolerance to trivia; intrusive thoughts; low self esteem; feeling isolated; mood swings; lack of concentration; and general apathy. Some respondents also reported, in their own words (i.e., in response to the open-ended questions), how they felt their health had suffered as a result of their experience of one or more CI(s) [see Box 2].

Approximately 20% of respondents sought/received support following a CI, only 2% of whom approached their PSW; the remainder sought help from their GP, family, friend, or colleague. Only 12% found the support moderately/extremely helpful. The duration of contact ranged from a half-hour chat to six weeks' consultation with a mental health professional (some still ongoing). Participants reported a number of difficulties in using the PSW service, including embarrassment, mistrust, confidentiality issues, and perceptions relating to machismo and peer pressure. Importantly, the need for support from trained professionals, such as occupational or clinical psychologists and mental health counsellors, was highlighted as an important and recurring issue. One participant reported that he had received counselling after a number of very stressful incidents (including the death of a neonate) and that he had found this to be extremely beneficial. A number of respondents described the benefits of "*day to day support from colleagues and family*" while some felt that they might be able to deal more effectively with CIS if they were kept informed about patient outcomes. Three EMTs commented very positively on one occasion when they had been *'stood down'* from calls following a CI and received a telephone call from the Ambulance Officer enquiring about their welfare. It seems that even these relatively small actions can make a difference to those working "at the coalface" of emergency ambulance care.

Significant proportions (35%-44%) of respondents on the GHQ reported difficulties relating to 'feeling constantly under strain,' 'poor concentration,' 'loss of sleep,' and 'feeling unhappy or depressed.' More than one in ten (12/106) obtained scores in the highest range (9-12), half of whom were EMCs, and two-thirds (8/12) of whom reported that they consumed alcohol on a regular basis (i.e., every few days). Three-quarters (9/12) of this high scoring group felt that their training was inadequate and that they did not feel comfortable with their PSW. All 12 of these participants rated their job as 'very stressful.'

GHQ 'cases' versus 'non-cases'

Forty-two per cent (39/92) of those who had experienced a CI (and who had completed a GHQ) were identified as 'cases' (five respondents who had not experienced a CI were also identified as 'cases'). However, the small number who

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Box 2.
A selection of the written comments relating to the perceived impact of CI(s) on health

"I drink more to forget - sometimes it all seems pointless."

"Psychologically, it is a miserable, depressing job. It's just the real world in my face every day. It's given me a grim outlook on life and our society. I also smoke, drink and eat more since I came into the job. I'm unfit and overweight."

"At the time of the incident, I felt very shocked and disturbed at the injuries and circumstances of the case. It was the first time I had seen a person so badly mutilated and it made me do a lot of thinking about different aspects of life. Basically, I had psychological problems and loss of sleep for a while after."

"Human misery affects everybody. EMTs are more exposed. The years take their toll."

"Mental health flashbacks. Unsure of my own end or how it might be. Pointlessness of the service."

had *not* experienced a CI precluded any meaningful comparison with respect to 'caseness' and exposure to one or more CIs. Furthermore, only a weak (non-significant) association ($r = 0.17$, $p > 0.05$) was found between the number of CIs experienced and GHQ scores. There was no statistically significant association ($p > 0.05$) between age and caseness, while there were insufficient numbers of females to facilitate a meaningful caseness-by-gender analysis. A further analysis of marital status and living circumstances failed to distinguish between cases and non-cases ($p > 0.05$). Table 2 provides a summary of chi-square results relating to GHQ caseness and several job-related variables. More than one third of EMTs (35%, 30/86) were identified as 'cases' compared to almost three-quarters (70%, 14/20) of the, albeit smaller, group of EMCs. There was a moderate ($\varphi = .279$) statistically significant association ($p < 0.05$) between caseness and job title, indicating that proportionately more EMCs were suffering from psychological distress when compared to EMTs. However, this finding must be interpreted with caution in view of the small number of EMCs included in the study.

Over half (29/41) of those identified as cases had been working in the ambulance service for more than 10 years.

Those respondents who were working as an EMT/C for 11-20 yrs ($n = 39$) were more likely to be identified as GHQ 'cases' than other groups (i.e., 1-10yrs ($n = 48$); >20 yrs ($n = 22$) [F (2, 100) = 4.8, $p = 0.01$]. A chi-square analysis showed no statistically significant association ($p > 0.05$) between caseness and location. However, those who rated training as 'not at all adequate' obtained significantly higher GHQ scores when compared to those who rated training as 'reasonably or more than adequate' ($t = 2.248$, $df = 80$, $p = .027$). Cases and non-cases were also examined with respect to whether or not they felt comfortable with their PSW. A chi-square analysis indicated a moderate ($\varphi = 0.389$) statistically significant association between the two ($p < 0.001$), indicating that cases were significantly more likely than non-cases to report that they did *not* feel comfortable with their PSW. The majority of respondents in both groups (80% non-cases; 72% cases) did not seek help after a CI, but those who did so obtained significantly higher scores (mean rank = 56.67) when compared to those who did not seek help (mean rank = 42.8) ($z = -2.195$, $p < 0.05$). There was also a highly statistically significant association between caseness and the perceived impact of one or more CI(s) on health ($p = .000$, $\varphi = 0.457$).

Table 2.
GHQ 'cases' versus 'non-cases': summary of chi-square results on job-related variables

Key Variables	Value	df	p value	Phi/Cramer's V
Job title : (EMT & EMC)	$\chi^2 = 8.242$	1	0.004**	0.279
Years' of experience (<10, 10-20, & >20)	$\chi^2 = 9.442$	2	0.009*	0.312
Location of stations (Urban & Rural)	$\chi^2 = 3.018$	1	.082ns	-
Perceived adequacy of training (adequate versus inadequate)	$\chi^2 = 3.332$	1	0.068ns	-0.187
Job stress ratings (high vs low)	$\chi^2 = 6.532$	1	0.011*	0.248
Comfortable with PSW (comfortable , not comfortable, unsure)	$\chi^2 = 16.043$	2	0.000***	0.389

Notes: * = $p < 0.05$ **$p < 0.01$ ***$p < 0.001$ ns = not significant

Stage Two

Approximately one-quarter (24%, 27/112) of Stage One respondents volunteered to participate in the second stage. The total subsample included 21 EMTs and 6 EMCs, all of whom were males aged between 31-60 years (*Mn* =42, *SD* =8.00); over three-quarters were married with children (22/27). Almost half smoked while all but three participants consumed alcohol typically on a regular basis. Almost two-thirds of the interviewees (17/27) were working in the ambulance service for more than 10 years and the group was divided approximately equally between urban (13/27) and rural (14/27) stations. Almost two-thirds (17/27) scored three or more on the GHQ-12 (*Mn* =4.04; *SD* =3.11).

Posttraumatic Stress Disorder

Almost half (12/27) of the participants obtained scores above the PCLS cut-off of 44 (*Mn* =40.89; *SD* =16.50), indicating the presence of PTSD symptoms. In relation to re-experiencing and avoidance, almost half (12/27) reported experiencing symptoms of a 'moderate' to 'extreme' degree, while 15 respondents had been 'moderately' to 'extremely' affected by symptoms of hyperarousal. The mean score on the IES-R (*Mn* = 31.33, *SD* = 22.02) indicated extremely high levels of PTSD symptomatology related specifically to avoidance behaviour and intrusive events experienced during the previous week.

Burnout

The mean score on the MBI-HSS EE subscale indicated 'moderate' overall levels of emotional exhaustion; over two-thirds of the participants were classified as 'high' (12/27) or 'moderate' (8/27) on this scale (Table 3). The mean depersonalization score showed a 'moderate' impact, with over two-thirds of the respondents classified as 'high' (11/27) or 'moderate' (6/27). Conversely, almost all of the respondents (25/27), reported high levels of personal accomplishment. The small number in the sample precluded carrying out any meaningful comparative analysis of EMCs and EMTs.

Health-related Quality of Life

Over one-third (10/27) of the respondents scored below average with respect to their PCS scores, while almost two-thirds (17/27) fell below average on the MCS. An interesting picture emerged with respect to the eight individual scale components, with most respondents falling below average on: role emotional; social functioning; vitality; general health; mental health; and role physical. A series of one-sample t-tests showed that all but two of the sub-scale scores were statistically significantly lower than the norm values (Table 4).

Dispositional optimism

The mean LOT score (31.26; SD = 6.61) indicated above average levels of optimism and all but six (21/27) scored above the normative mean of 21-22.

Correlations between various measures

Correlation analyses revealed a number of sizeable, statistically significant correlations between the various measures, all of which were in the expected direction (Table 5). These showed strong positive correlations between PTSD symptomatology (PCLS) and emotional exhaustion, depersonalization, and personal accomplishment. A moderate to strong statistically significant negative correlation was found between the GHQ-12 scores and the SF-36 PCS and, as expected, the MCS. The GHQ also showed moderate to strong positive associations with PTSD symptoms, emotional exhaustion, and personal accomplishment. The LOT scores showed strong negative correlations with the PCLS, MBI subscales, SF36 MCS, and the GHQ-12. High levels of optimism (LOT) were also moderately associated with better levels of mental health (SF36 MCS).

Overall, the findings from this study illustrate the significant and potentially serious effects of exposure to one or more CIs on overall health and well-being among ambulance staff. First, the types of CI that appeared most distressing to participants involved children, suicides, and road traffic accidents (RTAs); this is a pattern also seen in other countries (e.g. Van der Ploeg, & Kleber, 2003, Alexander & Klein, 2001; Clohessy & Ehlers, 1999; Mitchell, 1984). However, the number of CIs reported in the current sample during the previous year was higher than that seen elsewhere and supports our first hypothesis that both EMTs and EMCs in this Irish Ambulance service are exposed to a large number of CIs (within the previous 12 months). For example, in the Netherlands one study reported a mean of three CIs (Bryant & Harvey, 1996) while a second more recent study (van der Ploeg & Kleber, 2003) indicated an average of four. Johnson and Thompson (2008), in a recent review of the development

Table 3.
Level of burnout: summary of scores

MBI Subscales Range	Low	Moderate		High	Mean	Sd
		(Number)				
Emotional Exhaustion[1]	7	8	12	24.2	13.01	46
Depersonalisation[1]	10	6	11	9.8	6.54	26
Personal Accomplishment[2]	0	0	25	14.7	6.84	26

1. Higher scores indicate higher levels of burnout
2. Higher scores indicate lower levels of burnout

Table 4.
Norms versus the mean and standard deviations on the SF-36 components and summary scales

Sub-scale[1]	Mean	(sd)	Norm) d s (Sample score	
Role emotional***	42	(6.71)	51.10	(9.31)
Social functioning***	42	(9.42)	50.98	(9.33)
Vitality*	46	(11.81)	51.36	(9.60)
General health**	44	(11.79)	50.66	(9.72)
Mental health**	45	(10.81)	51.26	(9.30)
Role physical*	46	(10.68)	50.99	(9.54)
Bodily pain[ns]	49	(10.74)	50.96	(9.59)
Physical functioning[ns]	50	(10.90)	51.41	(9.11)
Physical component summary	49	(8.80)	50.96	(9.30)
Mental component summary	41	(11.76)	50.96	(9.17)

1. A one-sample t-test was carried out using the sample means and norm values
*** = $p < 0.001$, ** = $p < 0.01$, * = $p < 0.05$, ns = not significant

and maintenance of PTSD, indicate that the number of previous trauma experiences (to which the conceptualization of CIS in the current study bears a close resemblance) is one of the most potent predictors of PTSD. This may account, in part, for the high levels of mental ill health and PTSD reported in the current study, although only a weak (non-significant) positive association was found between the number of CIs experienced and total GHQ scores. While this variation across studies may also be related to methodological differences (e.g., how CIs are defined and recorded), the findings support our first hypothesis relating to the large number of CIs experienced in this occupational sub-group.

Our findings also support the second hypothesis that exposure to CIs has a considerable impact on psychological health and well-being of EMTs and EMCs and it is interesting to note that the levels of psychological distress (42%) were also higher than those found in the small number of (roughly comparable) UK-based studies. For example, the prevalence figures for a Scottish and Oxfordshire ambulance service were 33% and 22% respectively (Alexander & Klein, 2001; Clohessy & Ehlers, 1999). Unlike previous research, we included EMCs in our sample and the results showed that proportionately more of this group were classified as GHQ 'cases' when compared to EMTs. EMCs may have to deal regularly with traumatic callers and often have the added

Table 5.
Correlation matrix for all six measures

Measures	[1]PCLS	[2]IES-R	[3]MBI:EE	[3]MBI: DP	[3]MBI: PA	[4]SF-36: PCS	[4]SF-36 MCS	[5]GHQ-12	[6]LOT
[1]PCLS	—	0.59***	0.71***	0.68***	0.69***	-0.33**	-0.56**	0.61***	-0.61***
[2]IES-R	0.59***	—	0.38*	0.34ns	0.34ns	-0.22ns	-0.40*	0.25ns	-0.25ns
[3]MBI- EE	0.71***	0.38*	—	0.76***	0.30ns	-0.48*	-0.49*	0.47*	-0.48*
[3]MBI- DP	0.68***	0.34ns	0.76***	—	0.35ns	-0.48**	-0.63**	0.26ns	-0.58**
[3]MBI- PA	0.69***	0.34ns	0.30ns	0.35ns	—	-0.02ns	-0.42*	0.41*	-0.39*
[4]SF-36: PCS	-0.33**	-0.22ns	-0.48*	-0.48**	-0.02ns	—	0.58**	-0.44*	0.28ns
[4]SF-36 MCS	-0.56**	-0.40*	-0.49*	-0.63**	-0.42*	0.58**	—	-0.66***	0.60**
[5]GHQ-12	0.61***	0.25ns	0.47*	0.26ns	0.41*	-0.44*	-0.66***	—	-0.60ns
[6]LOT	-0.61***	-0.25ns	-0.48*	-0.58**	-0.39*	0.28ns	0.60**	-0.60ns	—

*** = $p<0.001$,   ** = $p<0.01$,   * = $p<0.05$ ns = not significant
1. The Post-Traumatic Stress Disorder Checklist scale (PCLS)
2. The Revised Impact of Event Scale (IES-R)
3. The Maslach Burnout Inventory - Emotional Exhaustion (EE), Depersonalisation (DP), Personal Accomplishment (PA)
4. The Short Form-36 Physical Component Summary (PCS), Mental Component Summary (MCS)
5. The 12 item General Health Questionnaire (GHQ-12)
6. The Life Orientation Test (LOT)

anxiety, or pressure, of inadequate staffing during times of major incidents, while also dealing with their routine duties. Future research ought to further investigate this important sub-group, given how little attention they have received in the research literature to date.

More than one in ten of all participants obtained GHQ scores in the highest range**,** and while it was not possible to examine specifically the links between caseness and experience of a CI, it would be reasonable to expect a positive association between the two (Alexander & Klein, 2001). Furthermore, respondents who reported that their job was stressful obtained significantly higher GHQ scores than those without any form of occupational stress. It is difficult, though, to identify an 'at-risk' group in view of the absence of any associations between key sociodemographic variables (e.g., age, gender, marital status) and GHQ scores. Years of experience and caseness in the current study were also positively correlated, with those working longer in the job (especially during a critical period of 11-20 years) reporting higher levels of mental ill health. This may be due to the cumulative stress or burnout reactions following continued exposure to traumatic incidents (Alexander & Klein, 2001; Robinson, 1994). The fact that almost all respondents rated their job as 'moderately' to 'very stressful' suggests that other work-related or personal stressors may exacerbate post-CI stress reactions. Van der Ploeg and Kleber (2003) outline a number of work-related stressors which may significantly affect stress levels in ambulance personnel including: poor communication; lack of support from colleagues/supervisors; insufficient financial reward; high emotional demands; lack of information; physical strain; and lack of job autonomy. Indeed, some of these emerged in the one-to-one interviews that were conducted as part of the larger study (Gallagher & McGilloway, 2007). All of these findings support our second hypothesis and point toward an urgent need to provide appropriate and timely psychological support for frontline ambulance staff.

While training in the management of CIS for managerial staff may be important, it is equally, if not more, important to consider the training needs of frontline staff. Alexander and Klein (2001) highlight the value of good training and preparation for those who perform emotionally challenging duties at the front line of emergency care. Similarly, Mitchell and Everly (2001) allude to the importance of pre-crisis training. A need for further training to manage 'on-the-job' stress was also identified by almost two-thirds of respondents

in the current study, a figure almost twice that reported by Alexander and Klein (2001). Additionally, those who perceived their training as inadequate were more likely to report worse mental health, indicating perhaps that this group may benefit from training in helping them deal more effectively with work-related stress. The timely and effective provision of appropriate support in the event of a CI (e.g., from mental health professionals) was an important and recurring finding in this study and is also supported by the, albeit smaller, number of Stage Two participants who reported high levels of PTSD and low levels of physical and mental health.

The assessment of burnout revealed some interesting findings, with moderate levels of emotional exhaustion and depersonalization reported alongside remarkably high levels of personal accomplishment. Most of the participants reported that they regularly felt emotionally drained by their work, "used-up" at the end of their work day, or that their job was "hardening them emotionally." Conversely, the entire group showed high levels of personal accomplishment not typically seen in people experiencing burnout; this suggests a strong sense of achievement, but one which is perhaps insufficient to overcome other feelings of negativity. The high levels of 'personal accomplishment' are also consistent with the above average levels of dispositional optimism which may act as a 'buffer' to work-related and Critical Incident Stress. Furthermore, the strong positive association between PTSD symptoms and 'personal accomplishment' indicates, perhaps counter-intuitively, that those who felt a greater sense of achievement and job satisfaction were more likely to suffer PTSD symptoms. It is difficult to identify any clear reason for this, other than the fact that those who are more committed to their work may experience CIS more acutely.

Collectively, these findings support our third hypothesis that ambulance staff experience above average levels of trauma and burnout and lower levels of Quality of Life (QoL) than the general population. Despite the high levels of mental ill health reported, the overall level of help-seeking was low and only two participants had contacted their PSW. Interestingly, those who sought help after a CI obtained higher GHQ scores than those who did not receive support, indicating that those who were seeking out help were perhaps most in need, although they continued, at some level, to have difficulties in this regard. The need for a 24-hour helpline was also highlighted by some of the respondents in order to accommodate shift working. Arguably, the provision of routinely available care and support to ambulance staff,

by means of a dedicated occupational health psychologist and/or mental health service professional, would represent a significant move on the part of management, not only in acknowledging and possibly preventing the incidence of CIS, but also in helping to increase staff confidence in its role and to encourage appropriate help-seeking behaviour.

According to Mitchell and Everly (2001), the key to effective treatment of PTSD and related post-trauma syndromes, is early aggressive intervention by a mental health professional with expertise in the management of psychological trauma. Mitchell and Everly also emphasize the need to pursue the prevention of PTSD and related syndromes, primarily through *Critical Incident Stress Management* (CISM). This is an integrated system of interventions, including Peer Support, which is designed to prevent and/or monitor the impact of (or mitigate) the adverse psychological reactions that can accompany emergency services work.

Participants reported a number of concerns about approaching their PSW, including fears about confidentiality, perceived inappropriateness of receiving any form of counselling from a PSW, feelings of embarrassment, and peer pressure. Some of these appear to stem from the 'machismo' attitude that prevails within this male-dominated occupational group and which was identified across both stages of the study. The results suggest that a number of confidence building measures may need to be implemented by management in order to promote a greater awareness of the PSW service and to improve uptake. One important issue that should also be considered, and perhaps further investigated in future research, is the training provided for ambulance officers or middle management. This is likely to increase awareness of CIS and perhaps lead to more concern and compassion for staff who are exposed to one or more CIs; this type of training may also help to promote the need for management to pay close attention to other work-related stressors which may exacerbate CI-related stress.

Conclusions

This study was based on a sizeable sample of EMTs and EMCs drawn from one of the largest ambulance services in Ireland. The findings provide a useful insight into the prevalence of stress, related specifically (but not exclusively) to exposure to one or more CIs during the previous year. A key strength of the study is its two-stage, multi-method approach in which a battery of reliable and valid measures was used to provide important insights into the nature of mental ill health among a smaller sub-group of participant volunteers. There is also a good level of internal agreement between the postulated constructs. Another strength of the study is the inclusion of an, albeit smaller, group of EMCs; this provided a unique opportunity to examine the impact of their role (including the handling of CIs) on their overall health and well-being. To date, little is known about this group, as they are generally not included in studies of this kind.

This study was limited, first, by the smaller than anticipated number of participants who agreed to participate in Stage Two. Second, questions relating to psychiatric history were not included in the SQ, because it was thought that this might deter individuals from taking part in the study, in view of the continuing stigma surrounding mental health. Therefore, the possibility that some participants had a pre-existing mental health problem, or developed difficulties due to problems only partially related to CIS, cannot be ruled out. Nonetheless, the 42% prevalence of mental ill health is still dramatically higher than would be expected in the general population. However, it remains difficult to disentangle the effects of CI stress from other job-related stressors. Third, it was not possible to ascertain the extent to which the small sub-group who agreed to participate in Stage Two differed systematically from the non-participants, and to what extent the well known "volunteer effect" was at play. Nonetheless, the triangulation of data from Stages One and Two goes some way toward minimizing these potential sources of bias.

This study suggests that exposure to CIs among both EMTs and EMCs has stressful and potentially psychologically damaging effects that may impact upon overall productivity and working relationships. Some intriguing findings emerged with respect to personality characteristics, such as optimism and personal accomplishment, which merit further investigation. Overall, the findings have important implications for the appropriate and effective management of CIS in ambulance staff (and perhaps other emergency services personnel); they also underline the importance of training for all staff (including management) in order to raise awareness of CIS and of its potential impact on overall health and well-being. Ambulance services should consider routinely providing support and assistance in order to meet the mental health needs of staff and to identify, assess, and support those most at risk. Arguably, this should go beyond solely providing an under-used peer support service.

Psychologists could also play a key role in any CISM system while providing appropriate training in CIS awareness and management, supporting personnel following exposure to particularly traumatic CIs and dealing with ongoing work-related stress. Furthermore, there is a need to raise awareness among all mental health and occupational health professionals on the extent and nature of psychological distress experienced by ambulance staff (and possibly other emergency service providers) and their potentially important role in supporting such a vulnerable occupational group.

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A Rationale for Cognitively-Based Resilience and Psychological First Aid (PFA) Training: A Structural Modeling Analysis

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Abstract: *Based on the recommendations of Rodgers (2010) and practices by Smith, Davy, & Everly (2007) and Everly, Smith, and Welzant (2008), structural modeling was used in this investigation designed to better discern causal mechanisms within the cognitive-affective arousal construct that contribute to burnout, job dissatisfaction, turnover intention, and performance. The primary purpose of this study was to better inform those interested in program develop and clinical intervention of the nature of mechanisms of pathogenesis and resiliency. This study utilized the responses of the 491 individuals employed in public accounting. Results indicate that the cognitive-affective domain is an essential determinant of burnout, job dissatisfaction, turnover intention, and performance. Furthermore, cognitive states appear to exert their effect through affective arousal that subsequently appears to have a defining role in the development of the aforementioned variables.[International Journal of Emergency Mental Health, 2009, 11(4), pp. 249-262].*

Key words: *resilience, psychological first aid, PFA, job satisfaction, burnout, turnover intention, psychological resistance.*

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Despite the evidence suggesting that nearly 90% of people will be exposed to at least one traumatic event during their lifetime (Breslau, 2002), and that 5 -10% of those exposed will meet diagnostic criteria for Posttraumatic Stress Disorder (PTSD; Ozer, Best, Lipsey, & Weiss, 2003), there is growing recognition that most people exposed to traumatic or stressful life events do not experience serious disruptions in normal life pursuits or functioning (Mancini & Bonanno, 2006; Rutter, 1985; Westphal & Bonanno, 2007). These individuals are considered to be resilient, which has been broadly defined as enduring a transient state of distress following adversity, yet eventually being able to return to psychological

homeostasis, or a pre-trauma level of functioning (Carver, 1998; Westphal & Bonnano, 2007). Bonnano (2004) further implies that resilience, which in essence refers to the ability to maintain equilibrium, is different from recovery, which refers to a return to functionality subsequent to the development of certain manifestations of psychopathology.

Empirical Evidence of Stressful Life Events and Resiliency

Early empirical work in the area of resiliency centered largely on children developing under challenging circumstances, including, for example, runaways (Werner, 1984; Werner & Smith, 1982; William, Lindsey, Kurtz, & Jarvis, 2001), and those who experienced loss and grief (Bonnano et al., 2002; Bonnano, Moskowitz, Papa, & Folkman, 2005; Shucter & Zisook, 1993; Stein, Folkman, Trabasso, & Richards, 1997; Wortman & Silver, 1989). Some researchers have explored the resiliency of individuals exposed to disasters, such as the aftermath of September 11 (Bonnanno, Galea, Bucciarelli, & Vlahov, 2006; Fraley, Fazzari, Bonanno, & Dekel, 2006; Fredrickson, Tugde, Waugh, & Larkin, 2003). In the study by Bonnanno and colleagues (2006) that used a representative sample of 2,752 New York residents, more than 65% of the participants met criteria for resilience, defined as having no or only one PTSD symptom. Overall, data are increasingly consistent in indicating that, even in the aftermath of severely traumatic loss and critical incidents, people are generally able to maintain resiliency. However, what may be relevant attributes or reactions that help to create or foster resiliency?

Factors that Influence Resiliency

There are several factors that have been purported to influence the enhancement of resiliency, including constructs such as self-efficacy (Bandura, 1977; 1982), hardiness (Kobassa, Maddi, & Kahn, 1982), repressive coping (emotional dissociation; Bonnano, 2004), and positive emotions. Haglund, Cooper, Southwick, and Charney (2007) identified six primary resiliency factors that may serve to protect against or facilitate the recovery from traumatic events: 1) actively facing fears and trying to solve problems; 2) regular physical exercise; 3) optimism; 4) following a moral compass; 5) promoting social support, friendships, and finding role models; and 6) being flexible and open minded in how one approaches problems. Theoretical and empirical evidence suggest that resiliency is fostered by appropriate appraisal of the stressful encounter, the ability to attach meaning to the experience, effective coping strategies, and the ability to possibly learn and grow from the experience (Bogar & Hulse-Killacky, 2006; Everly & Lating, 2002; 2004; Reivich & Shatte, 2002; Smith, Davy, & Everly, 2007).

Support for some of these resiliency tenets comes from quantitative studies in the aftermath of September 11. Fraley and colleagues (2006) reported that highly secure individuals tended to be better adjusted than dismissive individuals following the tragedy, and offered that the secure individuals may be able to experience some form of personal growth following the attacks. In a study of 46 college students, Fredrickson and colleagues (2003) reported that positive emotions served to buffer against depression following the attacks. Therefore, attributes such as self worth, hardiness, and optimism, and behavioral factors such as seeking support, exercising, and cognitive restructuring seem to enhance resiliency.

Factors that Influence Resiliency, Job Satisfaction, and Job Performance

While the primary focus of resiliency research over the years has been assessing the construct following traumatic events, there is emerging emphasis focusing on examining resiliency and its associated constructs from the perspective of primary prevention, or exploring ways of assessing resiliency prior to exposure to a traumatic event. Thus, recent studies have begun to examine the association of resiliency, appraisal, and coping in job-related outcomes such as compensation, job satisfaction, turnover, and burnout.

In two studies out of China, the relation between psychological capital, theorized as a positive state of development and including dimensions such as hope, optimism and resiliency, and job performance revealed that psychological capital in the aggregate and hope, optimism, and resiliency when considered separately, correlated positively with performance (Luthans, Avolio, Walumbwa, & Li, 2005; Zhong, 2007). In a recent cross-national examination assessing Lazarus and Folkman's (1984) cognitive appraisal theories of stress, Nauta, Liu, and Li (2010) reported that high self-efficacy buffered against low job autonomy in experiencing psychological stress among US employees. However, among Chinese employees with high self-efficacy, job autonomy was negatively associated with job stress, whereas for those with low self-efficacy, job autonomy was positively related to job stress.

In another study that investigated the relation between wages and occupational emotional labor demands, defined as the "management of feeling to create a publicly observable facial and bodily display" (Hochschild, 1983, p.7), Glomb, Kammeyer-Mueller, and Rotundo (2004) found an interaction effect. More specifically, they reported that "occupations with high cognitive demands evidence wage returns with increasing emotional labor demands; occupations low in cognitive demands evidence a wage penalty with increasing emotional labor demands" (p. 713). Taken collectively, these studies highlight the importance of recognizing cultural differences as well as how cognitive and affective indica are associated with job stress and performance.

In addition to assessing specific cognitive and affective appraisal components, other studies have explored the association between occupational resiliency and coping strategies and how this impacts workplace stress, burnout, and crisis. Caverley (2005) reported that resilient employees were adaptive, had high self-esteem, were optimistic, and possessed an internal locus of control. They further noted that these features were associated with better health ratings, increased exercising, lower absenteeism, and lower burnout rates.

Everly, Smith, and Welzant (2008) examined the relation among positive emotionality – conceptualized as the presence of ambient positive emotions, as well as the ability to express positive emotions during adversity, and measures of burnout, job satisfaction, perceived performance and intention to leave one's job in a sample of Certified Public Accountants (CPAs). Results of the study supported a complementary relation between positive emotions and negative emotions such that positive emotions appear to support job satisfaction and performance, whereas negative emotions appear to predict burnout and intentions of leave the job.

The use of psychological mechanisms aimed at fostering preoccupation, or suppression of emotions (emotion-oriented coping) consistently fail to reduce dysphoria. Jehel, Duchet, Paterniti and colleagues (2001) found emotion-oriented coping correlated significantly with posttraumatic stress disorder (PTSD; r = .49), while task-oriented coping that involved enhancing self-efficacy and re-conceptualization as well as reframing of the stressor was correlated negatively (r = -.39) with PTSD. Similarly, using structural modeling, Shikai, Uji, Chen, and colleagues (2007) found that emotion-oriented coping was correlated with depression (r =.34) and anxiety (r =.49); similarly emotion-oriented coping was inversely related to self-efficacy (path coefficient = -.43). These find-ings suggest that there is a cognitive primacy effect whereby cognitively oriented intervention techniques appear to exert a meaningful resilience effect. Furthermore, these cognitively-oriented techniques may work by directly impacting one's affective experience.

Support for these contentions comes from an intervention program developed by Klingman (2002) who implemented a brief burnout intervention program with school counselors in Israel following the wave of terrorism and violence, known as the Intifada, that was designed to shift processing of the situation from the affective domain to a more structured cognitive focus. His results demonstrated that a task and cognition solution-focused approach was most helpful in fostering optimistic and self-confident expectations. Another program that focused on the cognitive affective complex, with an emphasis on task-oriented coping, is the Johns Hopkins RAPID – PFA program developed at the Johns Hopkins Bloomberg School of Public Health (see Everly & Mitchell, 2007; Kaminsky, McCabe, Langlieb, & Everly, 2007).

The purpose of this current study is to expand upon these types of resiliency findings using a sample of individuals employed in public accounting. In particular, the goal is to use structural equations modeling to test the relation between prolonged exposure to stressors and cognitive and affective arousal mechanisms on burnout and how this is related to job satisfaction, turnover intentions, and performance. Another purpose of this study is to provide additional support for the theoretical tenets associated with the provision of interventions, such as pre-event protective factors and resistance training, as well as psychological first aid (PFA) in the aftermath of traumatic events. More specifically, such programs seek to foster resistance and enhance resilience by targeting the cognitive-affective complex and fostering factors such as social support, self-efficacy, optimism, and hardiness.

Model Development

Listed herein is a direct-effects theoretic model of the relationship between cognitive and affective indicia and job-related outcome using burnout as a mediating variable.

Smith and colleagues (2007) note that prolonged periods of stress arousal produce consequences such as burnout, thus prompting paths A and B that purport direct positive relationships between cognitive and affective arousal and burnout. Paths C-H posit direct relationships between both cognitive and affective arousal, and the outcomes job sat-

Figure 1: Theoretical Model to Be Tested
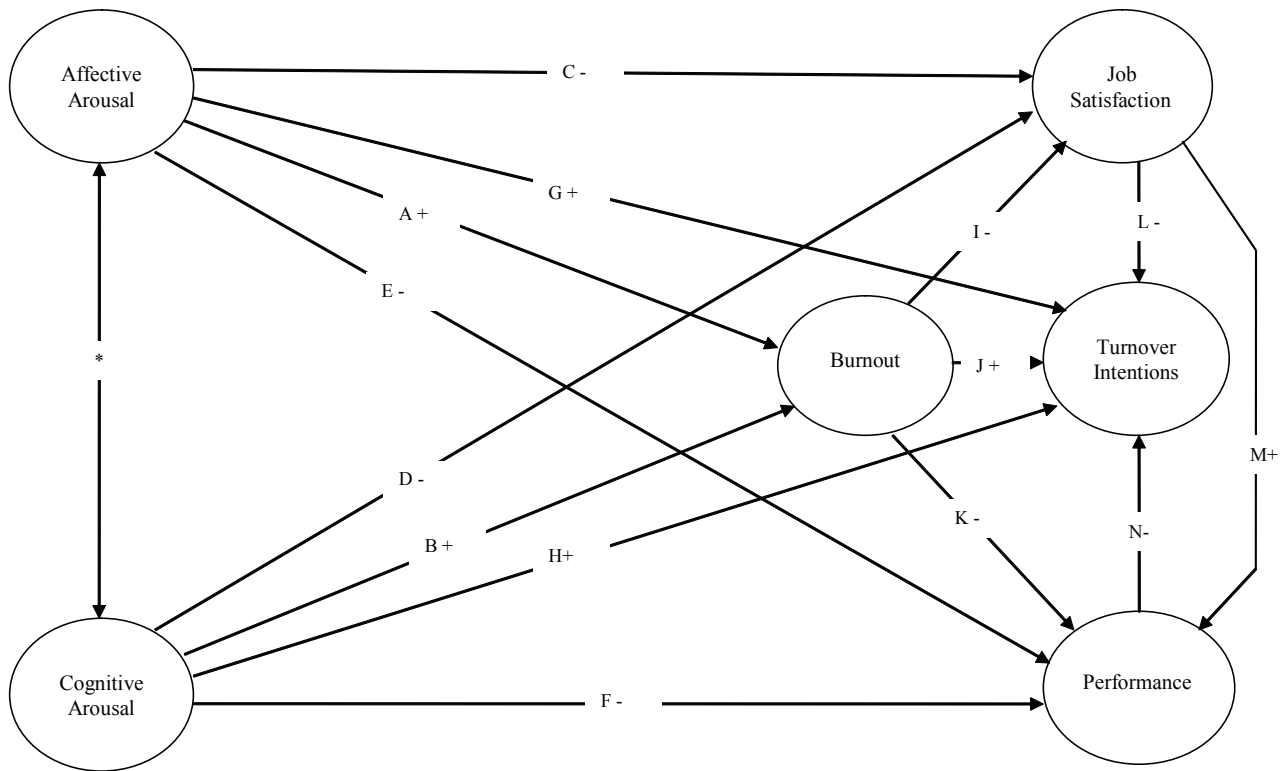
* covariance between independent factors illustrated with double-headed arrow

isfaction, turnover intentions, and performance. Previous research using a single stress arousal construct (Smith et al., 2007) supports the negative relationships purported between the arousal constructs and job satisfaction (paths C and D) and performance (paths E and F). The purported positive relationship with turnover intentions (paths G and H) are supported by prior studies which argue that excessive stress can lead to dysfunctional outcomes (Libby, 1983; Michaels & Spector, 1982; Smith, Davy, & Everly, 1995).

Burnout appears to represent the consequence of prolonged exposure to stress(ors). In turn, burnout has been directly related to job outcomes. Fogarty, Singh, Rhoads, and Moore (2000) and Smith et al. (2007) found burnout to have a negative relation to job satisfaction and a positive relation to turnover intentions, prompting paths I and J.

Path K, consistent with prior research (Bullen & Flamholtz, 1985; Davy, Kinicki, & Scheck, 1991; Smith et al., 2007; Smith & Everly, 1990; Smith, Everly, & Jones, 1993; Snead & Harrell, 1991), purports a negative relation between job satisfaction and turnover intentions. Finally, Paths M and

N purport a positive relationship between job satisfaction and performance, and a direct negative relationship between performance and turnover intentions, respectively. Research findings have been somewhat inconsistent in clarifying the relationship among these constructs (Iaffaldono & Muchinsky, 1985; Jackofsky, Ferris, & Breckenridge, 1986; Werbel & Bedian, 1989). This study provides an opportunity to test these relationships in a different, i.e., structural equations modeling, context.

METHOD

Based on the recommendations of Rodgers (2010) and practices by Smith, Davy, & Everly (2007) and Everly et al. (2008), structural modeling was employed as the primary analytic tool in this investigation (Bentler, 1995). Participants were selected from a database of responses from 701 individuals who were sampled from a mailing list provided by the American Institute of Certified Public Accountants (AICPA). The database contained responses to a demographic data sheet and a battery of psychometric instruments. This

study utilized the responses of the 491 individuals in the aforementioned sample employed in public accounting. Of these participants, 58% (283) were male, 79% (387) were married, 457 (95%) were Caucasian, and 61% (299) indicated that they were between 26 and 45 years of age. More than 64% (314) possessed a bachelor's degree and another 34% (166) had a masters degree.

Measures

The cognitive and affective stress arousal measures were drawn from the 20-item Stress Arousal Scale (SAS) developed by Everly, Sherman, and Smith (1989), and utilized in a number of accounting research studies (e.g., see Smith et al., 2007; Smith, Davy, & Everly, 2006; Smith, Davy, & Stewart, 1998; Smith et al., 1990; Smith et al., 1993). The SAS is designed to assess the respondent's cognitive-affective domain, i.e., the precipitators of the physiological stress response, thereby allowing an indirect assessment of one's level of stress arousal. The SAS was split into 10 predominantly cognitive items and 10 predominantly affectively oriented items based upon author consensus. The conditions that define emotional arousal (as measured on the SAS) are highly correlated with stress-related physical symptoms (Everly & Sobelman, 1987; Lazarus & Folkman, 1984;).

Burnout was measured using the 24-item multidimensional role-specific (MROB) version of the Maslach Burnout Inventory (MBI), developed by Singh, Goolsby, and Rhoads (1994). Fogarty and colleagues (2000) point out that the MROB version spans three conceptual dimensions and four role members (co-workers, customers, immediate supervisor, and top management). Favorable psychometric properties of this revised burnout measure appear in prior research (Coulter, 2005; Fogarty et al., 2000). Responses to the items were measured on a six-point Likert scale version of the MROB.

Congruent with Fogarty and colleagues (2000) and with Smith and colleagues (2007), the key outcome measures were:

1. Performance: a six-item scale drawn from Dubinski and Mattson (1979);

2. Turnover intentions: two items drawn from Donnelly and Ivancevich (1975).

3. Job Satisfaction: 27 items drawn from the Churchill, Ford, Hartley, and Walker (1985) scale.

Each of the key outcomes was measured using five-point Likert-type scales. Fogarty and colleagues (2000) outline prior utilization and conceptual desirability of these measures. For example, with job satisfaction they cite the multidimensional nature of the Churchill et al. (1985) scale and its selection over alternative measures due to… "its superior consideration of more specific aspects of jobs" (Fogarty et al., 2000, p. 42).

Procedure

While the burnout and job satisfaction scales were multifactorial in nature, the arousal, performance, and turnover intentions scales were unidimensional, i.e., the items on each scale loaded on a single factor. In order to facilitate the subsequent measurement model tests, the items on these scales were combined onto two composite indicator variables using a procedure described by Bentler and Wu (1995). This procedure is suitable when there is no expectation that any of the composites created would be different from one another, and "each composite should measure the same construct, or combination of constructs, as measured by a single composite of all the original scores" (Bentler & Wu 1995, p. 201). This procedure facilitated the development of a latent variable model by allowing for a better estimate of the random error associated with these constructs. Random error is taken into account when estimating paths from constructs to indicator variables as well as within the structural model.

We conducted a confirmatory factor analysis on the sample data to independently test the construct and discriminant validity among the constructs represented by the measures. By doing so, we were able to assess whether the stress arousal, burnout, and key outcome factors would load on the underlying theoretical constructs with our data. To test the complete measurement model, we used maximum likelihood estimation procedures in EQS Version 6.1 (Bentler, 2006) with Satorra and Bentler's (2001) scaling corrections, which allowed us to calculate the Satorra-Bentler chi-square value (SBχ^2). We selected the Satorra-Bentler rescaled estimate because of the relatively high Mardia's normalized multivariate kurtosis, indicating that the data were not normally distributed. Bentler and Wu (2002) state that the Satorra-Bentler scaled χ^2 "is the most widely studied and generally accepted best alternative test statistic for model evaluation under nonnormality" (p. 250). Table 1 presents the items comprising each latent variable to be tested, the mean score and standard deviation for each predicted latent

variable, and the coefficient alpha score for the items comprising each latent variable.

We next conducted EQS structural modeling tests to evaluate the theoretical model. We then dropped statistically nonsignificant parameters from the model based on the output of Wald tests applied to the full model. To measure overall fit, we used the SBχ2 statistic, the SBχ2/*df* ratio, the robust normed and nonnormed fit indices (NFI and NNFI)), the robust comparative fit index (CFI), the average off-diagonal squared residual (AOSR), and the adjusted root mean squared error of approximation (RMSEA) for nonnormal conditions. An acceptable cutoff value for the SBχ2/*df* ratio is 3.00 according to Grouzet, Otis, and Pelletier (2006). NFI, NNFI, and CFI values of at least .90 are considered indicative of

Table 1. Factors for Measurement Model Tests		
Latent Construct	**Number of Observed Indicators**	**Model test results[1]**
Cognitive Arousal	2	$\mu = 2.017$, $\sigma = 0.587$, $\alpha = .789$
Affective Arousal	2	$\mu = 2.300$, $\sigma = 0.599$, $\alpha = .806$
Burnout	3	$\mu = 2.220$, $\sigma = 0.663$, $\alpha = .746$
Job Satisfaction	4	$\mu = 3.836$, $\sigma = 0.696$, $\alpha = .744$
Performance	2	$\mu = 4.144$, $\sigma = 0.625$, $\alpha = .839$
Turnover Intentions	2	$\mu = 2.249$, $\sigma = 1.276$, $\alpha = .979$

[1] Cronbach's alpha reliability computed to index the internal consistency of the measure. Values exceeding 0.70 are considered satisfactory (Nunnally, 1978).

good model fit (Bentler & Bonnett, 1980). Finally, AOSR and RMSEA values of .05 and .08 or less, respectively, are considered acceptable (Hu & Bentler, 1999). We examined model fit using a variety of measures, as no one index is definitive of model fit (Fogarty et al., 2000).

Our final analyses consisted of tests of an *a priori* sequence of nested models against the reduced, i.e., final, theoretical model. This nested sequence of models provided direct tests of the hypotheses that the relevant arousal and burnout factors are related to one or more of the key outcomes as determined by significant path coefficients measured in the reduced structural model. We compared the nested structural models using the scaled difference chi-square test (ΔSBχ2; Satorra & Bentler, 2001). A significant chi-square difference value indicates a significant loss of fit by constraining a path to zero, indicating that the path should be retained in the model. A nonsignificant chi-square difference indicates the path could be dropped with no significant loss of model fit.

RESULTS

Tables 2 and 3 present the measurement model test results. Table 2 indicates that the path coefficients from each latent construct to its manifest indicator is significant at p < .01. The goodness-of-fit summary presented in Table 3 indicates that the model generally provides a good fit to the data. The robust NFI, NNFI, and CFI are all above .90. Moreover, the AOSR value of .028 and the RMSEA of .076 fall within their respective standards for acceptance. Only the SBχ2/*df* ratio of 3.85 exceeds the upper threshold of acceptance.

The nested measurement model comparison reported in Table 4 supports the construct distinctiveness of the cognitive and affective stress arousal factors. As indicated, the model that constrained these constructs to load on one underlying factor demonstrated a significant loss of fit in comparison to the reduced theoretical model ($\Delta SB\chi2_{diff} = 11.54$; df = 5, p < .05). Similarly, Table 4 statistics support the distinctiveness of each arousal factor from burnout, and the distinctiveness of burnout from job satisfaction.

Latent Constructs and Indicators	Standardized Coefficient	t-value[1,2]
Cognitive Arousal		
Cognitive$_1$	.799	-
Cognitive$_2$	.815	21.172
Affective Arousal		
Affective$_1$	.938	-
Affective$_2$	.732	20.998
Burnout		
Depersonalization	.755	-
Emotional Exhaustion	.851	16.661
Reduced Personal Accomplishment	.565	10.605
Job Satisfaction		
Recognition	.810	-
Family	.307	5.746
Boss	.750	14.211
Perks	.717	15.408
Performance		
Performance$_1$	.939	-
Performance$_2$	.756	7.911
Turnover Intentions		
Turnover Intent$_1$	.981	-
Turnover Intent$_2$	.978	66.242

[1] Each of the reported t-values is significant at p<.01.
[2] Structural equation modeling procedures require that one measure of each construct be fixed to 1.0 to establish the scale of the latent construct.

Table 5 provides goodness-of-fit statistics for the tests of the theoretical model. The robust NFI, NNFI, and CFI are all above .90, indicating good model fit. In addition, the AOSR and RMSEA are below their respective maximum thresholds for acceptance. Again, only the SBχ2/*df* ratio of 3.60 exceeds its maximum threshold for acceptance.

Table 6 presents the results from testing the *a priori* sequence of nested models against the final theoretical model. As indicated, the model that constrained the path from Burnout to Performance resulted in a significant loss of model fit (ΔSB$\chi2_{diff}$ = 4.46; df = 1, p < .05), indicating that this path should remain in the model. The third model constrained the path from Affective Arousal to Job Satisfaction to zero.

Again, the ΔSB$\div$2 test indicates that this path should remain (ΔSB$\chi2_{diff}$ = 5.23; df = 1, p < .05). As is also illustrated, the ΔSBχ2 difference tests for each of the four successive constrained models also indicate that the respective constrained paths should remain in the model.

Figure 2 illustrates the six significant paths in the final theoretical model as well as the standardized path coefficients. Affective arousal has a significant positive relation to burnout (.674) and job satisfaction (.156). In turn, burnout has a significant negative relation to job satisfaction (-.770) and performance (-.322), and a significant positive relation to turnover intentions (.412). Finally, job satisfaction has a significant negative relation to turnover intentions (-.316).

Table 3.
Goodness of Fit Summary[1]

	Satorra-Bentler Scaled Results	Standard for Acceptance
Statistical Tests		
Chi-Square	289	NA
Df	75	NA
p-value	.00	>.05
Chi-Square/df	3.85	<3.0
Fit Indices		
NFI	.926	>.90
NNFI	.921	>.90
CFI	.944	>.90
Residual Analysis		
AOSR	.028	<.05
RMSEA	.076	<.08
90% Confidence Interval of RMSEA	(.067 - .086)	

NFI = Normed Fit Index. Higher values indicate better fit.
CFI = Comparative Fit Index. Higher values indicate better fit.
RMSEA = Root Mean Squared Error of Approximation. Lower values indicate better fit.

Table 4.
Nested Model Comparison Test Results

Model	S-B scaled χ^2	df	χ^2/df[1]
Measurement Model	289	75	NA
Cognitive Arousal and Affective Arousal constrained to load on one underlying factor	301	80	11.537*
Burnout and Job Satisfaction constrained to load on one underlying factor	465	80	110.700***
Affective Arousal and Burnout constrained to load on one underlying factor	577	80	307.494***
Cognitive Arousal and Burnout constrained to load on one underlying factor	605	80	354.169***

[1] The χ^2/df statistics reported in this column were calculated manually using a procedure developed by Satorra and Bentler (2001, 511).

*p<.05

***p< .001

Table 5.
Theoretical Model Goodness of Fit Test Results

	Satorra-Bentler Scaled Results	Standard for Acceptance
Statistical Tests		
Chi-Square	299	NA
Df	83	NA
p-value	.00	>.05
Chi-Square/df	3.60	<3.0
Fit Indices		
NFI	.923	>.90
NNFI	.928	>.90
CFI	.943	>.90
Residual Analysis		
AOSR	.030	<.05
RMSEA	.073	<.08
90% Confidence Interval of RMSEA	(.064 - .082)	

NFI = Normed Fit Index. Higher values indicate better fit.
NNFI = Non-Normed Fit Index. Higher values indicate better fit.
CFI = Comparative Fit Index. Higher values indicate better fit.
RMSEA = Root Mean Squared Error of Approximation. Lower values indicate better fit.

Table 6.
Nested Model Comparison Test Results

Model	S-B scaled χ^2	df	χ^2/df[1]
Final Theoretical Model[2]	299	83	NA
Path from Burnout to Performance constrained to zero	309	84	4.46*
Path from Affective Arousal to Job Satisfaction constrained to zero	304	84	5.23*
Path from Job Satisfaction to Turnover Intentions constrained to zero	320	84	8.59**
Path from Burnout to Turnover Intentions constrained to zero	333	84	16.53***
Path from Burnout to Job Satisfaction constrained to zero	401	84	194.96***
Path from Affective Arousal to Burnout constrained to zero	485	121	359.12***

[1] The χ^2/df statistics reported in this column were calculated manually using a procedure developed by Satorra and Bentler (2001, 511).
[2] The final theoretical model reflects the release of eight non-significant parameter estimates as determined by examination of the multivariate Wald test output from the test of the full model.
*p< .05
**p< .01
***p< .001

Figure 2: Theoretical Model Standardized Path Coefficients[1]
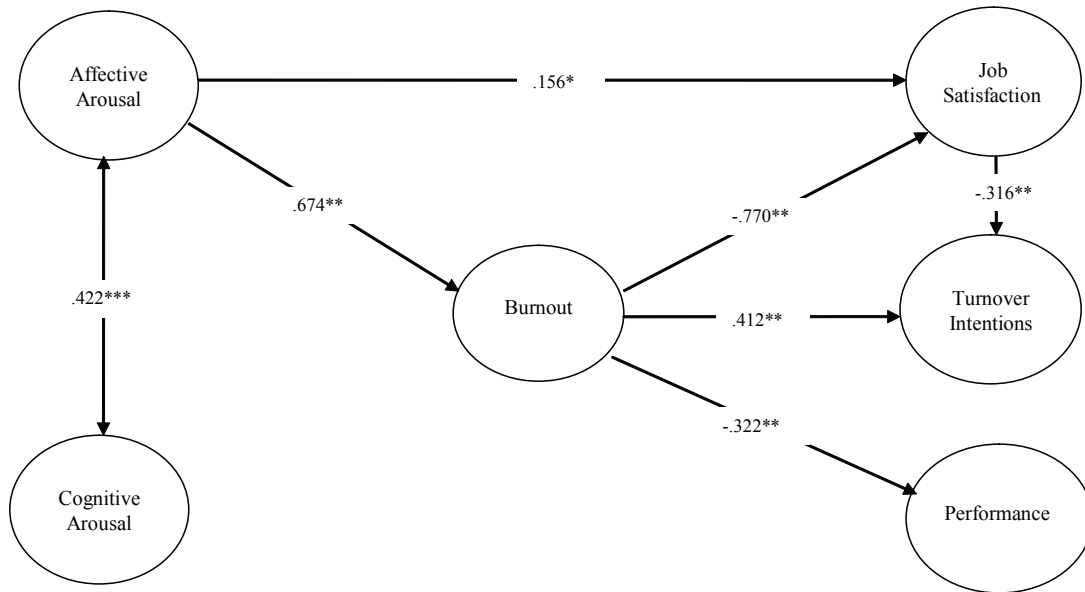
DISCUSSION

This study's results support the propositions that: 1) stress arousal, both cognitive and affective, and burnout are conceptually distinct constructs; and, 2) affective stress arousal is an important direct influence on burnout and job satisfaction, and an indirect influence on each of the key outcomes through its relation with burnout. For example, affective arousal has indirect influence on turnover intentions and performance though burnout. However, the direct influence of affective arousal on job satisfaction is positive contrary to expectation, while the indirect influence of the affective arousal on job satisfaction is through burnout. The positive direct influence may be the result of individuals evaluating affective arousal as a challenge rather than a threat (thus representing a cognitive reframe or reinterpretation of felt affect). Challenge stressors have been noted to have the potential to promote personal gain and growth (LePine et al., 2005). This is what Choo (1986) characterized as the eustress or more positive component of stress. Conversely, arousal prolonged to the point that it gener-

ates burnout in a person ultimately reduces job satisfaction and performance, and may lead one to consider alternative employment options.

The large covariance with affective arousal may in part explain why cognitive arousal failed to demonstrate any of the purported relations. Even with this large covariance, both of these constructs have been shown to be distinct through the confirmatory factor analysis in this study. Given the size of the covariance between these two constructs, affective arousal may have negated cognitive arousal's effects. That is, the explanatory power of cognitive arousal may have been subsumed by affective arousal. Similarly, cognitive intervention may exert its effects by augmenting or dampening affective arousal, a notion consistent with the classic views of pioneers such as Richard Lazarus (Lazarus & Folkman, 1984).

We believe the primary significance of this paper may not be what it contributes to the theoretical or statistical foundations in the study of resilience. Instead, we believe this paper has meaningful direct translational value. For

those concerned with program development in the areas of resistance and resilience, especially psychological first aid, the message seems clear. Such programs should emphasize the cognitive-affective domain as the primary, though not exclusive, point of intervention. Emphasis should then be placed upon cognitive augmentors and mitigators of affective processes. Clinically, the message seems to be the same. Clinical interventions are most likely to be most effective when targeting the cognitive-affective arousal.

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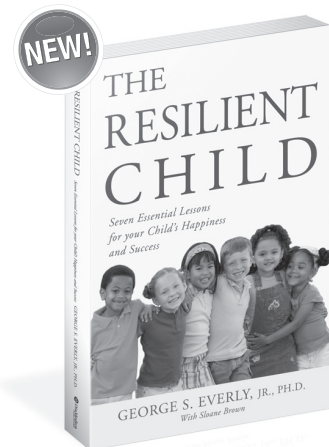Mancini, A.D., & Bonanno, G.A. (2006). Resilience in the face of potential trauma: Clinical practices and illustra-

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Testifying in Court:
Practical Strategies for Public Safety,
Emergency Services, and Mental Health Professionals

Laurence Miller

Abstract: *Testifying in court can be an opportunity or an ordeal for public safety, emergency services, and mental health personnel, depending on the stakes involved and the status of the professional – fact witness, expert witness, or defendant. This article provides practical guidelines for effective courtroom testimony, including understanding your role in the legal process, knowing your case, preparing your testimony, using optimal presentation strategies, manifesting appropriate demeanor and body language, answering questions, parrying challenges, and carrying yourself overall as a dignified professional. [International Journal of Emergency Mental Health, 2009, 11(4), pp. 263-269].*

Key words: *Expert witness, fact witness, forensic psychology, jury consulting, testifying in court.*

Aside from police officers, fire investigators, forensic psychologists, and others whose jobs require them to regularly spend part of their time testifying in court, most emergency services, medical, and mental health personnel may regard the courtroom as a hostile and alien environment, where their judgment and professional actions may be questioned and misinterpreted by clever attorneys with their own axes to grind – hey, we all watch too many of those lawyer shows on TV.

Yet, there will almost inevitably come a time when your work in the office or the field requires you to make a foray – or be dragged into – the legal system. There are two main

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ways this can happen. First, you may be called as a fact witness or expert witness to testify about one of your patients or clients (e.g. Is Ms. Brown disabled from work due to her back injury or PTSD?), or to opine on the actions of another professional's standard of care (e.g. Did firefighter-paramedic Jones conduct a proper dwelling search during the rescue action?). Second, and more jarring, you yourself may become subject to a disciplinary action, criminal charge, or civil lawsuit on the basis of some action performed during your course of duty (Miller, 2004, 2009). In both cases, your task is to ensure that the facts you present tell the complete story and that your delivery of these facts makes your testimony clear, credible, and convincing. This article provides some practical recommendations that can be utilized by both the novice and the seasoned expert (Brodsky, 1991; Kressel & Kressel, 2002; Miller, 1996, 1997, 2006a, 2006b, 2008b, 2008c; Mogil, 1989; Posey & Wrightman, 2005; Vinson & Davis, 1993).

When You Are a Witness

Types of Witnesses and Testimony

A *fact witness* is someone who has personal knowledge of events pertaining to the case and can only testify as to things he or she has personally observed, experienced, or done ("Our team received the call-out from Dispatch at 17:00 hours" "When I arrived, Officer Smith was administering CPR to the unconscious driver"). They may not offer *opinions,* i.e. professional judgments, about what transpired ("Officer Smith was not using the proper resuscitation technique" "Officer Smith has an impulsive and careless personality"). The latter are the province of the *expert witness,* who is either retained by an attorney from either side of the case or appointed by the court to make statements about aspects of the case that he or she personally may not have observed in order to assist the judge or jury in understanding specialized technical knowledge that would otherwise be beyond their expertise. This is typically the role of credentialed specialists in forensically-related fields, such as a medical examiner, crime lab expert, fire inspector, vehicle specialist, or forensic psychologist. Although experts are typically allowed more leeway in testimony than fact witnesses, the content of their testimony is carefully vetted by the court for admissibility.

Public safety and mental health personnel may find that their testimony sometimes straddles the domains of fact and expert witness. For example, you may be queried about what you did and what the defendant did, like a fact witness, and then asked to state an opinion like an expert witness. Or you may state such an opinion, which the opposing attorney may challenge, and the judge must decide whether or not to allow it to be admitted into the record.

Attorney: *Officer Jackson, can you tell us how you first approached the defendant while undercover?*

Witness: *Well, actually, he first approached me.*

A: *What do you mean?*

W: *I was undercover as a local high school student, and the defendant came over and asked me if I "needed directions."*

A: *And what did you answer?*

W: *That I was "going uptown."*

A: *Can you explain to this court what that conversation means?*

W: *Well, in that neighborhood, "needing directions" means you want to buy drugs, and "uptown" is coke or sometimes crystal meth – some kind of upper or stimulant drug.*

A: *But at no time did the defendant actually ask you if you, quote-unquote, "wanted to buy drugs," did he?*

W: *Not in those words.*

A: *So you don't know for sure if he really intended to sell you drugs or was just trying to help you out because you looked lost.*

W: *Of course I knew. That's the language they use.*

A: *Officer Jackson, are you an expert in linguistics?*

W: *No, but I'm an expert on that neighborhood – I've worked undercover there for five years.*

Preparing for Testimony

All public safety, emergency services, and clinical professionals should understand the importance of proper record keeping and strive to develop a well-organized, standardized, and readable style for writing reports – not just because these may one day be read by probing, critical eyes, but because writing out your thoughts in words is an excellent way to clarify, organize, and remember the points you will want to get across, should this case come to trial. Draw pictures to help your description and to jog your memory, and don't be afraid to supplement standard forms and checklists with your own words and illustrations if this will help you explain a potentially confusing scenario.

There is no such thing as too much preparation, so review your case as many times as necessary, so that you will have assimilated the relevant facts and theories well enough to answer questions thrown at you from "left field." This will be possible because you won't be relying on rote memorization of individual answers to different questions; your knowledge and recollection will be an organic, holistic, automatic process that is hard to trip up by manipulative cross-examination. You will probably have one or more meetings with your attorney to go over your testimony. Ideally, the goal is not for the attorney to spoon-feed your words to you, but for both of you to clarify the substance of your

testimony, to agree on a terminology that will best express what you have to say, and to get a sense of what you will be asked by both sides.

Rehearse your testimony, not so that you sound like a trained parrot, but so that you will *know your case*. Some of this will be mental rehearsal, going over the facts of the case and your testimony in your head. But also rehearse out loud, while driving in your car or in front of a mirror at home. Your attorney will also probably have you do several run-throughs. If trial testimony is unfamiliar to you, visit a courtroom and observe other trials in progress. But even for the most seasoned witness, there is still no substitute for adequate preparation, and many a veteran "expert" has been snagged by his or her overconfidence and lack of adequate case review.

On the Stand

Like the content of your testimony, many important aspects of courtroom demeanor cannot be rigidly scripted or programmed because every witness brings his or her own unique style to the stand. Nevertheless, there are a few basic principles of effective testimony that all fact or expert witnesses may productively apply. Remember that most jurors during most trials are feeling stressed, confused, and tired (Bornstein et al., 2005; Cooper et al., 1996; Feldman & Bell, 1993; Greene & Bornstein, 2000; Kaplan & Winget, 1992; Miller, 2008a; Sunby, 1997), so anything you can do to make their job easier will earn their appreciation.

Your general attitude should be one of confidence, but not cockiness. To the average juror, a doctor, police officer, firefighter, paramedic, or mental health clinician conveys an air of authority and respect, so use this to your advantage. Maintain composure and dignity at all times. No matter what the stakes of the outcome, your job is to present the facts and evidence as accurately and clearly as possible, and then let the legal process take its course. Always remember the watchword: *be professional.*

Be aware of your body language. Like your mother said, sit up straight and don't slouch. If there is a microphone in front of you, sit close enough so that you don't have to lean over every time you speak. Plant your feet on the floor and avoid swiveling in your chair. Keep your presentation materials neatly organized in front of you, so you can find documents and exhibits when needed.

While testifying, look at the attorney while he or she is questioning you, then switch your eye contact to the jury while answering the question; it's them you have to establish a connection with, and jurors tend to find witnesses more credible when they "look straight at us" (in a *bench trial* and in many juvenile courts, there will be no jury, so direct your attention and comments to the judge). Be neither overly aloof nor overly intense. Open, friendly, and dignified are the attitudinal words to remember. Speak as clearly, slowly, and concisely as possible to be understood. Keep sentences short and to the point. Keep your voice tempo steady and use a normal conversational tone. Don't mumble, shout, or waffle, but neither should you speak in a robotic monotone. Your general attitude toward the jury should convey a sense of collegial respect: you are there to present the facts as you know them to a group of mature adults who, you are confident, will make the right decision.

Listen carefully to each question before you respond. If you do not fully understand the question, ask the attorney to repeat it or rephrase it. Don't be baited into giving a quick answer; if you need a couple of seconds to compose your thoughts, take your time. Speak as clearly and concisely as possible. Answer the question completely, but don't over-elaborate or ramble. If you don't know the answer to the question, state plainly, "I don't know." Don't try to bluff your way out of a tricky question. The opposing attorney will manage to seize on the one piece of evidence you didn't present or the one inconsistency in your testimony and try to use it to discredit you. Don't become defensive. Above all, be honest. If anyone in the courtroom detects even a faint whiff of deliberate bullsquat, it can stink up the rest of your entire testimony. Always remember that *trustworthiness* is the quality that jurors admire most in a witness (Brodsky, Neal, Cramer, & Ziemke, 2009).

Attorneys will typically phrase questions in a way that constrains your answers in the direction they want you to go. If you feel you cannot honestly answer the question by a simple yes-or-no response, say so: "Sir, if I limit my answer to yes or no, I will not be able to give factual testimony. Is that what you wish me to do?" Sometimes, the attorney will voluntarily reword the question. If he presses for a yes-or-no answer, at that point either your attorney will pop up to voice an objection or the judge will intervene. The latter may instruct the cross-examining attorney to allow you more leeway in responding, or to rephrase his or her question, or the judge may simply order you to answer the question as

it has been asked, in which case that's what you do, with a resigned look on your face.

Another attorney ploy is to phrase questions in such a way as to force you to respond in an ambiguous manner, often prefacing your answer with such wishy-washy phrases, as "I believe," "I estimate," "To the best of my knowledge/recollection," "As far as I know," "What I was able to piece together," "I'm pretty sure that," and so on. If the facts warrant it, be as definite about your answers as possible; if they don't, honestly state that this particular piece of your testimony may not be a clear perception or recollection, but be firm about what you *are* sure about.

In general, try not to answer beyond the question. For example, if the attorney asks you to phrase your answers in precise measurements that are not relevant to the subject matter or that you cannot accurately recall, don't speculate, unless you're specifically asked to do so.

> Attorney: *Lt. Green, you say you observed the patient swallow some pills just before your paramedic team reached him and began the IV line. How far away from this activity were you when you made this observation?*
>
> Witness: *About half a block away.*
>
> A: *How many feet away would that be?*
>
> W: *I don't know.*
>
> A: *You've been in this business along time, Lieutenant – surely you can estimate the distance. Was it a hundred feet? Two hundred? Fifty? Ten?*
>
> W: *I really can't accurately estimate the number of feet. But on that block, between myself and the patient, there was a liquor store, a dry cleaner, and the front steps of a post office. The patient was standing right next to the first step, close enough for me to observe his hand movements clearly.*

A related ploy is for the attorney to ask you to estimate something reasonable, like the amount of time that has passed (which most people can roughly gauge in terms of minutes or hours), and then switch to other, more potentially quantifiable topics, while maneuvering you to preserve the estimative mindset. Now, everything you say has become an "estimate" or something recalled "to the best of my recollec-

tion." Later, in his or her summation, opposing counsel will state something like this: "And our so-called expert witness really hasn't described anything solid has he? Everything is an estimate, a guess, an inference. Ladies and gentlemen of the jury, is a loose collection of 'maybe's' and 'I-guess-so's' sufficient evidence to make a case?"

Again, this is not a recommendation for injecting false certainty into naturally ambiguous information, but try to emphasize that the ambiguity lies with the subject matter, not with your own perceptions and interpretations.

> Attorney: *Firefighter Smith, could you tell how much Ms. Atkins had had to drink when she refused to come out of the smoke-filled room? Do you know how many ounces of liquor she had consumed?*
>
> Witness: *Exactly how many ounces, no.*
>
> A: *So you can only* guess *what the amount was, is that correct?*
>
> W: *Obviously, I couldn't measure the alcohol in the victim's stomach. But I could clearly see that she had an empty pint bottle of bourbon on the table and another one that was about half full, and there was no one else in the room with her. So assuming she'd drank it all herself, that would have been about a pint and a half of 80-proof bourbon she consumed. I can't say how long it took her to drink all that, but by her appearance and speech, she was quite inebriated when we got there.*

Again, if you don't know the answer to a question, just say you don't know. Triers of fact (jurors or judge) will respect and appreciate honest ignorance of a few details far more than an apparent attempt to make everything artificially "fit in" with your testimony.

When You Are the Defendant

In the last issue (Miller, 2009), I discussed how public safety, emergency services, and clinical health professionals understandably experience a mixture of anger and depression when they are investigated or charged with an offense involving their work, and I provided some recommendations for staying sane, keeping your cool, and working toward a favorable outcome of your case. In the course of these proceedings, almost inevitably, you will be called upon

to testify before a review board, special magistrate, or in open court, and the general principles of testimony outlined above still apply. But this time the personal stakes are much higher (Chambers, 1996; Griffiths, 2005; Miller, 2004, 2006a, 2006b, 2009). Now your role switches from dispassionate fact or expert witness to the defendant on trial, and you may not be afforded the same deference and respect you were in your official role. Accordingly, your demeanor, while still dignified and professional, should shade slightly more to the deferential and humble side. This does not mean that you should bow and scrape to the jury, but your attitude should convey that you are confident in putting your fate in their hands and are trusting them to do the right thing. Otherwise, the principles of effective court testimony are essentially the same as those discussed in the previous sections.

When You Are a Mental Health Clinician in Court

A special issue relates more directly to the issue of confidentiality and admissibility of psychological records of psychologists and other mental health clinicians who treat and counsel public safety and emergency services personnel in the form of a critical incident stress debriefing, individual or family therapy, substance abuse counseling, or other type of mental health service. Sometimes the treatment relationship has been ongoing prior to the legal issue; other times the service member seeks help specifically to help him or her cope with the strain of the investigation and adjudication; still other times, the service member has been mandated to undergo treatment for a particular problem, either currently or in the past.

In my experience, it is exceedingly rare for courts to order the release of confidential mental health records, except under the most extreme circumstances; it's never happened to me or to any colleague I personally know. Courts generally understand that violating doctor-patient confidentiality destroys the whole motivation and rationale of treatment for those who need it the most (Colledge et al., 2000). Still, such an order can never be categorically ruled out. Therefore the advice I give my patients who are undergoing any kind of legal charge is this: Tell me about your feelings, tell me about your symptoms, tell me about your efforts to cope with your ordeal. But if there is a piece of factual case evidence that you're not sure you should reveal, *ask your lawyer first*. And if he or she advises you not to tell me, then don't. We can still do effective psychotherapy without my having to know

every technical detail and, that way, neither of us is put in the position of having to worry about revealing a secret that has never been told.

In addition to records, mental health clinicians may be subpoenaed to testify, and the line of questioning by the other side's attorney can be skillfully used to make it look like the clinician is hiding something, or at least that he or she is an incompetent dupe:

> Attorney: *Dr. Mendez, during the course of your psychological treatment of Officer Jackson, did he render to you a history of the events he is charged with and a description of what took place?*
>
> Psychologist: *He pretty much told me what's in the record regarding the circumstances of the charges against him.*
>
> A: *Did he tell you how many times he struck Mr. Stokes after he had been handcuffed and restrained?*
>
> P: *No.*
>
> A: *Isn't that something you would want to know when taking a clinical history from Officer Jackson?*
>
> P: *The exact number of strikes isn't really an important detail at that point.*
>
> A: *Did he tell you how he felt during his struggle with Mr. Stokes? Was he mad? Frightened? Enraged? Was he looking for revenge?*
>
> *[At this point, the officer's attorney will probably object.]*
>
> P: *We really didn't discuss that in our first session. I was more concerned with his mental status at that time.*
>
> A: *And how was he feeling, doctor? Did he express remorse? Was he sorry for what he'd done? Or was he glad Mr. Stokes got what he deserved?*
>
> *[Probably another objection.]*
>
> P: *He was generally upset about the injuries Mr. Stokes received, as that was not his intention. As it has already been well-documented in the record, Officer Jackson maintains that the injuries were accidental, sustained while Mr.*

> *Stokes was violently resisting arrest in a state of extreme intoxication.*

> A: *And that's it, doctor? That's all you got from Officer Jackson in that first session? You mean to say, you spent an hour with Officer Jackson, and all he told you was what was in his initial statement?*

> P: *I believe I just answered the questions you asked me.*

The lesson here is that no party to the case is immune from manipulative cross-examination from aggressive opposing counsel. So try to maintain as much composure and dignity as possible. Remember, an important part of trial testimony is the impression you make on the jury by your demeanor, language, and grace under pressure, so avoid either being cowed into submission or baited into an angry overreaction. Yes, easier said than done. But that's one more reason to go over your testimony before the trial: to anticipate challenges and become comfortable with the substance of your case.

Finally, remember that most citizens, including most jurors, want to believe that the people they place their trust in – doctors, police officers, emergency services personnel, mental health clinicians – have their best welfare in mind. This means that they will often mentally bend over backward to give you the benefit of the doubt if you can give them a credible reason to do so. It also means that if you cross them through dishonesty or disrespect, they may come down on you especially hard for betraying that trust. Prepare carefully for your case, be clear and honest in your testimony, maintain dignity and decorum, and in most cases the system will work to your advantage.

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The Association of Traumatic Stress Specialists is an international multidisciplinary organization founded to educate and professionally certify qualified individuals actively engaged in crisis intervention, trauma services and response, and the treatment and healing of those affected by traumatic stress. The Certification Board represents individuals who have practical experience in providing direct support to trauma victims and survivors.

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Selected Annotated Journal Resources

Rich A. Blake, BA. and Nicole E. Schechter, B.A.

Nietlisbach, G., & Maercker, A. (2009). Effects of social exclusion in trauma with posttraumatic stress disorder. *Psychological Trauma,* **1(4), 323-331.**

TYPE OF ARTICLE

- Original Empirical Investigation

OBJECTIVE/PURPOSE OF THE ARTICLE

- To compare the impact of self-perceived social exclusion between individuals diagnosed with PTSD and a nontraumatized control group.

METHODS

Participants

- The sample, recruited through newspapers, the Internet, and correspondence with counseling centers, consisted of 16 individuals with PTSD who had not received and were not seeking treatment, and 25 individuals in a nontraumatized control group.

- The two groups were matched on age, gender, and years of education; however, a slight difference existed between the groups for years of education.

- Within the PTSD group, 13 participants were victims of man-made trauma, and three survived an accidental trauma or natural disaster. Ten participants met full PTSD criteria and six met subsyndromal criteria, which was defined as meeting the re-experiencing criterion and either the avoidance criterion or hyperarousal criterion

Materials

- The Structured Clinical Interview for the Diagnostic and Statistical manual of Mental Disorders (SCID), Fourth Edition was used to diagnose full or subsyndromal PTSD. The Impact of Event Scale-Revised (IES-R) was used to assess the impact of PTSD symptoms.

- The Social Acknowledgement as a Victim or Survivor Questionnaire (SAQ) was used to assess the extent to which participants felt appreciated and supported following the traumatic event.

- The Satisfaction of Life Scale was used to assess life satisfaction.

- Outcome was measured utilizing the Brief Symptoms Inventory to assess psychological distress, the Post Game Questionnaire to assess belonging, self-esteem, control, and meaningful existence, and the Visual Analogue Scale on Emotional Well-being to assess emotional well-being before and after experimental manipulation.

Procedure

- The study was separated into four steps: preassessment/instruction, experiment, immediate postassessment, and follow-up assessment/debrief.

- The preassessment/instruction phase consisted of making PTSD diagnoses based on responses on the SCID and IES. Additionally, the Visual Analogue Scale on Emotional Well-being was administered.

- Upon completion of the preassessment/instruction phase, participants were directed to a waiting room and were instructed not to talk to each other and to wait for the investigator to prepare the next task. The actual experiment took place in the waiting room facilitated by two confederates.

- The experiment lasted five minutes for each group and consisted of a ball tossing activity. In the inclusion condition, the two confederates tossed the ball to the

participant about one third of the time. In the exclusion condition, the confederates stopped throwing the ball to the participants and continued to throw it to each other.

- During the immediate postassessment phase, emotional well-being was reassessed, and the State-Anxiety-Inventory, Brief Symptoms Inventory (BSI), Post Game Questionnaire, and two manipulation check questions were administered.

- The follow-up assessment/debriefing phase consisted of completing the emotional well-being measures and a debriefing which included a $50 reimbursement for participants.

RESULTS

- Responses on the manipulation check questions confirmed expected differences between groups as those in the exclusion group were more likely to report feeling ignored and excluded.

- Group differences were demonstrated for life satisfaction and years of education and subsequent analyses controlled for these two factors. There were significant interaction effects for the depression, anxiety, and psychoticism subscales of the BSI. The largest effect size (.14) occurred on the BSI total score.

- Post-hoc analyses revealed that in the exclusion condition, participants diagnosed with PTSD reported significantly higher levels of depression, anxiety, and psychoticism than control participants. PTSD participants also reported higher levels than the controls in the inclusion condition, but the difference was not significant.

- Results from the Post Game Questionnaire indicated that PTSD participants reported feeling less control. Additionally, PTSD participants in the exclusion group showed lower levels of belonging, meaningful existence, and control than those in the inclusion condition.

- PTSD participants in the exclusion group showed decreased levels of well-being as measured by the visual analogue scale.

CONCLUSIONS/SUMMARY

- The results of this study indicate that a face-to-face ball tossing game is an effective social manipulation tool for exclusion.

- These results suggest that those with PTSD may feel worse after experiencing social exclusion as participants with PTSD in the exclusion group showed higher levels of depression, anxiety, and psychoticism.

CONTRIBUTIONS/IMPLICATIONS

- This study was consistent with previous research that has demonstrated that social exclusion impacts the fundamental needs of belonging, meaningful existence, and control in individuals with PTSD and controls. However, this study did not find an effect for self-esteem which has been demonstrated in previous research.

- This was the first study to apply the ball tossing social exclusion tool to a PTSD population. The authors suggest that an awareness of the negative effects of exclusion and the implementation of interventions based on education and cognitive behavioral therapy could buffer the adverse consequences of social exclusion.

Adler, A. B., Bliese, P. D., McGurk, D., Hoge, C. W., & Castro, C. A. (2009). Battlemind debriefing and Battlemind training as early interventions with soldiers returning from Iraq: Randomization by platoon. *Journal of Consulting and Clinical Psychology, 77*(5), 928-940

TYPE OF ARTICLE

- Original Empirical Investigation

OBJECTIVE/PURPOSE OF THE ARTICLE

- To determine the impact of mental health interventions following a combat deployment. Specifically, to compare the Army's traditional stress education to Battlemind debriefing and Battlemind training.

BRIEF OVERVIEW

- The term *Battlemind* refers to the inner strength of military personnel and courage to face fear and adversity in combat. *Battlemind debriefing* is a military-oriented debriefing similar to the civilian Critical Incident Stress Debriefing.

- *Battlemind training* uses cognitive and skills-based education to educate returning military personal about transitioning after a combat deployment.

METHODS

Participants

- The sample consisted of 1060 U.S. Army soldiers who were part of a Brigade Combat Team and returning from a 12-month deployment in Iraq. Seventy-six percent of potential participants agreed to participate, and 46.1% of the original sample took part in the second part of the study at Time 2.

- For the sample surveyed at Time 1 and Time 2, 94.24% were male, 72.02% belonged to a combat arms unit, 73.55% were below the enlisted rank of noncommissioned officer, 23.14% were noncommissioned officers, and 3.31% were officers.

Materials

- A baseline survey was used to gather demographic variables including gender, rank, unit type, and marital status, and the Subjective Units of Distress (SUDS) was administered to measure the participants' current state of distress.

- Combat exposure was measured with a 34-item list that included events such as "handling human remains" and "being ambushed," and the Posttraumatic Stress Disorder Checklist (PCL) was used to measure PTSD symptoms.

- Questions were developed and administered immediately following the intervention that measured attitudes toward mental health services, as well as the perceptions of training received, including training goals and training utility.

- Depression symptoms were measured using the Patient Health Questionnaire for Depression (PHQ-D), sleep problems were measured with items adapted from other measures including the PCL, and stigma was assessed using items adapted from the Stigma Scale.

Procedure

- Platoons taking part in a seven day post deployment reintegration program were randomly assigned, stratified by unit type, to one of the study's four conditions: stress education, Battlemind debriefing, small group Battlemind training, and large group Battlemind training.

- A baseline survey along with the selected intervention was administered at Time 1. Stress education sessions consisted of 51-257 participants and lasted between 45-50 minutes. Battlemind debriefings consisted of groups of 20-32 participants and had a median session duration of 50 minutes.

- Small group Battlemind training consisted of 18-45 participants, and large Battlemind training consisted of 126-225 participants. Battlemind training sessions had a median duration of 39 minutes.

- Participants were surveyed again four months later at Time 2. No attempt was made to track individual participants and there was a 53.9% attrition rate.

RESULTS

- Battlemind debriefing, and small and large group Battlemind training led to fewer PTSD symptoms than stress education for participants who reported high levels of combat exposure.

- Battlemind debriefing led to fewer depression symptoms than stress education for those reporting high levels of combat exposure, and large group Battlemind training led to fewer depression symptoms than stress education regardless of exposure levels.

- Battlemind debriefing and small group Battlemind training led to fewer sleep problems than stress education, and large group Battlemind training led to lower stigma levels for those who reported high levels of combat exposure.

CONCLUSIONS/IMPLICATIONS

- Battlemind debriefing, as well as small and large group Battlemind training were demonstrated to be effective brief early interventions in a sample of Iraq veterans, and may have more advantages than traditional Army stress education.

- Battlemind interventions appear to be similarly effective as traditional debriefing models, and may be considered for other high risk groups including first responders.

Andrews, B., Brewin, C. R., Stewart, L., Philpott, R., & Hejdenberg, J. (2009). Comparison of immediate-onset and delayed-onset posttraumatic stress disorder in military veterans. *Journal of Abnormal Psychology, 118*(4), 767-777.

TYPE OF ARTICLE

- Original Empirical Investigation

OBJECTIVE/PURPOSE OF THE ARTICLE

- To investigate differences in symptoms, trauma exposure, dissociative reactions to trauma, emotional reactions to trauma, and life stress in military veterans reporting immediate-onset, delayed-onset, or no PTSD.

METHODS

Participants

- The sample consisted of 142 military veterans in the United Kingdom recruited through the United Kingdom Service Personnel and Veterans Agency (SPVA), and the charitable organization Combat Stress.

- Forty participants reported immediate-onset PTSD, 63 reported delayed-onset PTSD, and 39 reported no PTSD.

Materials

- The Structured Clinical Interview for DSM-IV (SCID-IV) was used to obtain lifetime and current diagnoses of psychopathology including PTSD, major depressive disorder, and alcohol abuse.

- The Deployment Risk and Resilience inventory was used in addition to the SCID-IV to identify potential trauma exposures during service. As part of a clinical interview, participants listed, described, and dated traumatic events during service and specified which event was most impactful.

- Dissociation resulting from the main trauma was assessed using the Peritraumatic Dissociative Experiences Questionnaire-Rater Version. Anger, shame and other variables were assessed by interview.

- The Life Events and Difficulties Schedule (LEDS) was used to assess life stress for the delayed-onset and no-PTSD groups.

Procedure

- Over an 18 month period, 191 veterans were interviewed, and 49 mere excluded after being recruited by letter by the SPVA or by staff members of the Combat Stress organization.

- Groups were compared using chi-square tests for frequency data and analysis of variance (ANOVA) and

t-tests for continuous variables. Some transformations were necessary after which Kruskall Wallis ANOVA and Mann-Whitney U tests were applied to confirm parametric test results.

RESULTS

- Significantly more participants in the delayed-onset group reported experiencing symptoms before the main identified event than in the immediate onset group. The groups did not differ in number of symptoms at onset, but the delayed-onset group reported more symptoms prior to onset.

- The delayed-onset group was significantly more likely to have experienced major depressive disorder and alcohol abuse at sometime during their service than the other groups. The no-PTSD group was more likely than both other groups to be currently employed.

- Both of the PTSD groups were more likely than the no-PTSD group to report having reacted with intense fear, helplessness, or horror to the main identified event, and dissociation, anger, and shame were more highly reported in the immediate-onset group than the other two groups.

CONCLUSIONS/SUMMARY

- The findings of this study suggest that veterans with delayed-onset PTSD are likely to have developed the syndrome gradually with many symptoms occurring before the event that they identified as the most impactful, and that they are more likely to have experienced increased life stress prior to onset.

- Alcohol abuse and major depressive disorder appear more likely in veterans with delayed-onset PTSD prior to onset, but dissociation, anger, and shame were more likely in veterans with immediate-onset PTSD.

CONTRIBUTIONS/IMPLICATIONS

- This study suggests that awareness should be increased for veterans at risk to develop delayed-onset PTSD, and that they may be identified by symptoms of major depressive disorder, alcohol abuse, and the gradual onset of subsyndromal PTSD symptoms.

- This study suggests that veterans are at an increased risk for PTSD onset during a period of time of approximately one year following discharge from service, and they could benefit from mental health services at this time.

McCauley, J.L., Danielson, C.K., Amstadter, A.B., Ruggerio, K.J., Resnick, H.S., Hanson, R.F., Smith, D.W., Saunders, B.E., Kilpatrick, D.G. (2010). The role of traumatic event history in non-medical use of prescription drugs among a nationally representative sample of US adolescents. *The Journal of Child Psychology and Psychiatry*, **51(1), 84-93.**

TYPE OF ARTICLE

- Original empirical investigation: national epidemiological survey study

OBJECTIVE/PURPOSE OF THE STUDY

- To identify major life experiences and traumatic events that occur in the lives of a population of American adolescents.
- To identify prevalent psychological disorders that result from trauma exposure for American adolescents.
- To examine the potential risk factors that correlate with exposure to violence and resulting psychological disorders.

METHODS
Participants

- Participants were obtained through telephone surveys of two samples: a national sample of households in the United States and an oversample of urban households.
- Inclusion criteria for this study were the consent of a parent or legal guardian, interview with a parent or legal guardian, and an interview with the adolescent between the ages of 12 and 17 years.
- In total, 2,419 adolescents from the national sample and 1,115 urban adolescents participated in the study.
- The data were weighted in order to correct the sample to match the 2005 Census for adolescents in the United States.

Materials

- A telephone survey was administered to determine if the adolescents had ever used prescription drugs for a non-medical purpose, had ever used or abused substances, and had ever experienced any time of exposure to physical or sexual violence

- The PTSD module of the National Survey of Adolescents (NSA) was used to measure for PTSD symptoms in the adolescents

Procedure

- A 43-minute structured telephone survey was conducted in English by trained interviewers hired by the principal investigators.
- The interviewers called a random sample of households determined by a random-digit dial procedure.
- The interview included parental consent, a short parent interview, adolescent assent, and a longer interview with the adolescent during which the interviewers were prompted with questions on the computer screen.

RESULTS

- Of the sample, 6.7% reported non-medical prescription drug use in the last year with 59.2% of the users falling between the ages of 16 and 17 years, 53.3% of users being female, and 49.9% of users living in an urban setting.
- Of the adolescents who reported non-medical drug use, 24.8% met criteria for PTSD and 30.3% met criteria for a Major Depressive Episode.
- The most common traumatic event reported was witnessing violence (76.9%) while the second most common was physical assault (41.9%).

CONCLUSIONS/SUMMARY

- Risk for abusing non-medical use prescription drugs increased for Caucasian adolescents between the ages of 14 and 17 years who had participated in binge drinking or witnessed violence.
- The findings of this study suggest that adolescents who participate in binge drinking, alcohol abuse, delinquent behavior or exposure to violence might be less supervised by parents or guardians and, therefore, more able to access and misuse prescription drugs.
- Elevated rates of Caucasian adolescents' use of prescription drugs might be related to an increased rate of prescribed medications to white patients versus non-white patients; therefore, Caucasian adolescents have an increased access to prescription drugs.

CONTRIBUTIONS/IMPLICATIONS

- This was the first study of its kind to address traumatic exposure as a factor in non-medical prescription drug use.

- This study implies that psychoeducation with parents and children who are prescribed commonly misused prescription drugs is vital, particularly for Caucasians.

- This study also suggests that community violence prevention efforts are important in order to reduce the frequency of violence exposure for adolescents.

- Any adolescents presenting in treatment with a diagnosis of PTSD should receive psychoeducation regarding prescription drug misuse and should work with his or her clinician to develop appropriate coping skills. As well, any adolescents involved in alcohol use or delinquency will benefit from early interventions directed at prescription drug misuse.

- One limitation of this study was the retrospective quality of the phone interview, as interviewee reporting might have been inaccurate.

- A second limitation of this study was the 46% non-response rate that limits the external validity of this study.

- A third limitation of this study is the lack of data connecting PTSD and Major Depressive Episode (MDE) to specific types of prescription drug misuse.

- Despite these limitations, this study provides relevant information for the relationship between exposure to violence, alcohol abuse, PTSD, and resulting misuse of prescription medication in adolescents.

Marshall, G.N., Schell, T.L., & Miles, J.NV. (2009) Ethnic differences in posttraumatic distress: Hispanics' symptoms differ in kind and degree. *Journal of Consulting and Clinical Psychology*, **77(6), 1169-1178.**

TYPE OF ARTICLE

- Original Empirical Investigation

OBJECTIVE/PURPOSE OF THE ARTICLE

- To examine the overall effect of ethnicity on all Posttraumatic Stress Disorder (PTSD) symptoms

- To explore any effect ethnicity has on individual PTSD symptoms

METHODS

Participants

- Participants were obtained from four trauma centers at hospitals located in different areas of Los Angelos, California.

- Inclusion criteria for this study included that the participants must consider themselves Hispanic, non-Hispanic Caucasian, or African-American, were patients who were hospitalized for acute care for a sudden physical injury that was not caused by domestic violence or a suicide attempt/gesture, were able to speak English, and were not homeless.

- Overall, 676 people were included in the study. By the end of the 3-phase interview process (12 months), 462 participants were included. Approximately one half of the participants were Caucasian and ¾ of the participants were male (77.6%). The average age of participants was 33 years and the average level of education was high school.

Materials

- The civilian version of the PTSD Checklist (PCL) was used to measure participants' PTSD symptom severity.

- Standard census questions were asked to determine participants' ethnicity.

- Cause of injury was assessed through self-report.

- The Injury Severity Score (ISS) was used to measure the severity of participants' physical injuries and the Glascow Coma Score (GCS) was used to measure consciousness following a traumatic brain injury (TBI); these scores were taken from participants' medical records from their hospital charts.

Procedure

- Inclusion criteria were assessed through a two-phase screening; the first stage involved a review of the medical chart and the second stage involved an in-person interview.

- Once a participant qualified for the study, he or she completed three in-person interviews; one within several days of hospital admission, the second after 6-months, and the third after 12-months.

RESULTS

- When compared with non-Hispanic Caucasian participants, Hispanic participants experienced significantly more severe PTSD symptoms (3 point increase on the PCL). However, when compared with African-American participants, Hispanic participants did not experience a significant difference in PTSD symptoms.
- Analysis of individual symptoms and ethnicity revealed that Hispanic participants experienced significantly more symptoms of hypervigilance, intrusive thoughts, flashbacks, loss of interest, emotional reactivity, startle response, avoiding thoughts, foreshortened future, recurrent dreams, avoiding reminders, and irritability relative to non-Hispanic Caucasian counterparts.
- When compared with African-Americans, Hispanic participants experienced significantly more avoidance of thoughts of the trauma.

CONCLUSIONS/SUMMARY

- Findings support past research that Hispanics tend to experience PTSD symptoms at higher rates than do non-Hispanic Caucasians.
- Contrary to previous research, this study concluded that Hispanics show different symptom patterns than do other ethnicities as their symptoms tend to come from several of the symptom clusters rather than one predominate cluster.
- Therefore, PTSD rates within the Hispanic ethnicity are elevated due to the symptom presence across several clusters and several DSM-IV-TR criteria for the diagnosis.

CONTRIBUTIONS/IMPLICATIONS

- The study provided greater insight into the diversity factors affecting the possible rates of PTSD.
- Additionally, this study enlightens trauma care providers in the different manifestations of PTSD symptoms for Hispanic patients.
- One limitation of the study was that it homogenized ethnicities into very broad categories and did not consider the relevance or importance of within-group factors.
- A second limitation of this study was that the only traumatic event included was physical injury and, therefore, it is difficult to determine the external validity for other types of traumatic events that might cause PTSD.

- A third limitation of this study is that the severity of the traumatic event was not measured for any of the participants; therefore, did not consider this as an important variable in resulting PTSD symptoms.
- Despite these limitations, this study supported that Hispanics, in comparison to African Americans and non-Hispanic Caucasians, are more likely to be diagnosed with PTSD as they are more likely to experience PTSD symptoms from a variety of clusters and criteria.

Erebes, C.R., Curry, K.T., Leskella, J. (2009). Treatment presentation and adherence of Iraq/ Afghanistan era veterans in outpatient care for Posttraumatic Stress Disorder. *Psychological Services.* **6(3), 175-183.**

TYPE OF ARTICLE

- Original Empirical Investigation

OBJECTIVE/PURPOSE OF THE STUDY

- To measure treatment presentation and compliance with treatment in Iraq/Afghanistan veterans compared to Vietnam veterans.

METHODS
Participants

- A sample of 160 veterans (54 Vietnam veterans and 106 Iraq/Afghanistan veterans) from a Midwestern Veterans Affairs Medical Center (VAMC) PTSD-focused program was obtained by medical chart review and several questionnaires.
- The majority of the samples were male (100% and 95%, respectively), Caucasian (91% and 95%, respectively) and the average age was 59 years and 29 years, respectively.

Materials

- Medical chart review was used to determine demographic information as well as diagnosis and treatment behaviors, including session attendance.
- The Alcohol Use Disorders Identification Test (AUDIT) was used to measure alcohol use and abuse.
- The PTSD Checklist (PCL) and the Trauma Symptom

Inventory (TSI) were used to measure PTSD symptoms and trauma-related symptoms, respectively.

- The World Health Organization Quality of Life Scale-Brief was used to measure quality of life.

Procedure

- Veterans who presented at the program for intake consented to the study and were administered all of the measures in one session.

RESULTS

- For almost all of the PTSD and trauma-related symptoms, Vietnam veterans experienced greater distress than veterans of Iraq and Afghanistan. However, in particular, there was no significant difference between the two groups regarding anger or tension reduction behavior.

- Iraq and Afghanistan veterans reported higher rates of alcohol abuse difficulties than Vietnam veterans.

- Iraq and Afghanistan veterans were twice as likely to drop out of treatment than Vietnam veterans.

- In general, veterans experiencing depressive symptoms are more likely to continue with treatment.

CONCLUSIONS/SUMMARY

- Findings were consistent with retrospective studies regarding PTSD prevalence and severity in healthcare workers.

- Secondary indirect trauma exposure showed no additive effects on those with prolonged primary trauma exposure.

CONTRIBUTIONS/IMPLICATIONS

- Returning veterans from Afghanistan and Iraq may have a significantly harder time complying with treatment than veterans from Vietnam.

- Clinicians outside of the VA systems should refer veterans as early as possible to PTSD-specific programs so the programs can engage the veterans while the symptoms are still actively present.

- PTSD programs or clinics should focus on short-term treatment models in order to maximize progress in a briefer period of time as younger generation veterans do not appear to remain in treatment for very long.

- One major limitation of the study is that it used a small sample and confined the participants to one specific program. With replication at other sites and with a larger sample, the authors believe the results will expand external validity and have greater impact on modes of treatment used with returning veterans.

The Violent Person: Professional Risk Management
Strategies for Safety and Care
by Raymond B. Flannery Jr., Ph.D., FAPM
AMHF, 2009, 206 pages, Softcover, $30.00

Dr. Ray Flannery, a respected expert on assault, violence, and trauma, continues his focus on assisting health-care providers deal with the potential violence inherent in their jobs. He dedicates this book to the "professionals in all disciplines who quietly and in self-effacing ways serve others in need, even in those situations that place their own lives and safety at risk (p. 15)."

Every year, health care providers and emergency responders are verbally and physically assaulted, sexually assaulted, psychologically traumatized, injured, and even killed by the very people they are caring for. Those impacted by this interpersonal violence may be our colleagues or ourselves.

Throughout this book, he builds a checklist of safety guidelines. Each chapter ends with a summary table of the guidelines discussed so far in the book. For instance, at the end of chapter 1, the list includes: Think medical or psychiatric illness, Think call log, Think scene surveillance, Think old brain stem, and Think early warning signs. By the last chapter, he offers a total of ten safety and two self-care guides.

In the first part of his book, Dr. Flannery reviews the basic nature of behavioral emergencies, and general strategies for assessing and managing risk. As the originator of the Assaulted Staff Action Program (ASAP), he has logged 20 years of assault incident data. From this data, he presents the most common medical and psychiatric illnesses associated with violence, e.g., Alzheimer's Disease, traumatic brain injury, PTSD, and substance use.

Dr. Flannery suggests that every act of violence involves a disruption of one or more of the three domains of good health: caring attachments to others, reasonable mastery of our lives, and a meaningful purpose in life. When responders can identify in which domain the disruption is occurring,

they can attempt to de-escalate the situation by focusing on that domain. He then reviews major theories of violence from cultural, biological, sociological, and psychological perspectives.

The four chapters comprising Part 2 focus on commonly encountered behavioral emergencies: psychological trauma, domestic violence, psychiatric emergencies, and youth violence. Dr. Flannery reviews the psychological dimensions of each potential emergency, then presents specific safety guidelines for that emergency.

A safety guideline consistently recommended throughout this book is forming an alliance with the person with whom you are working. He suggests focusing on the two of you resolving the current situation together, without violence, thus restoring that person's sense of mastery.

The third chapter examines important self-care issues, including basic self-defense techniques, and health and wellness strategies. Dr. Flannery asserts that "violence occurs when effective communication fails, and good communication skills are important self-defense strategies (p. 137)." He reviews essential nonverbal communication factors such as wardrobe, environment, posture, and tone of voice.

He then moves to verbal communication and verbal de-escalation tips. Once again, he advocates developing an alliance with the patient, asking permission before using first names, and developing alternatives and plans of action together with the person. He recommends de-escalation strategies such as giving the individual personal space, keeping the person talking, using a calm tone of voice, and continuously reminding the person of nonviolent alternatives.

I appreciated his comment in his chapter on Strategies for Health and Wellness: "Since we can predict that our work

in responding to behavioral emergencies will be stressful, and since we can also assume that we will encounter inevitable personal life-stress, we need to develop individualized programs to manage stress and reduce the potential negative impact from both (p. 150)." He suggests several areas for focus such as wise lifestyle choices, time management, and the importance of critical incident stress management.

Dr. Flannery closes with four case examples, illustrating the application of relevant guidelines from his list of ten safety and two self-care guidelines.

The Violent Person is a valuable tool for health care providers and emergency responders in all disciplines.

Raymond B. Flannery Jr., Ph.D., FAPM, is the author of numerous articles addressing assault, violence, and psychological trauma plus six other books including Preventing Youth Violence: A Guide for Parents, Teachers, and Counselors; Violence in America: Coping with Drugs, Distressed Families, Inadequate Schooling, and Acts of Hate; and Post-traumatic Stress Disorder: The Victim's Guide to Healing and Recovery. Dr. Flannery is a licensed clinical psychologist, associate clinical professor of psychology, Department of Psychiatry, Harvard Medical School.

BOOK REVIEWS
Reviewed by Laurence Miller, PhD

Copicide: Concepts, Cases, and Controversies of Suicide by Cop
By John M. Violanti and James J. Drylie
Springfield, IL: Charles C Thomas, 2008

You can tell people are uncomfortable about something when they can't figure out what to call it. Variously termed *officer-assisted suicide*, *law enforcement-assisted suicide,* or *suicide by victim-precipitated homicide*, the idea that a suspect would   deliberately expose himself to police gunfire in order to effect his own death has probably long been familiar to police officers, but the phenomenon was first formally articulated by Marvin Wolfgang in 1959, and the actual term, *suicide by cop* was coined by police psychologist and sworn officer Karl Harris in 1983. It's kind of easy to see why none of the other terms ever caught on. The first two wordings place the officer in a Dr. Kevorkian-like role of willingly abetting the suspect's wish to die, while the last term sounds like it's all but calling the cop a murderer. Though still not the most graceful terminology, *suicide by cop* (SBC) is the descriptor that appears to have stuck, and is the term used most often by law enforcement personnel, police psychologists, and media reporters when they talk about this phenomenon. So, in introducing yet another term into the death-by-police-officer lexicon, it is natural to wonder if the concepts underlying *Copicide* provide anything more novel than the new name.

The book begins by discussing the history and concept of suicide by cop. The authors express dissatisfaction with this term precisely because of the implied agency it imputes to the police officer in effecting the suicide of another. Anyone working with police officers can attest to the frustration, anger, and loss of control caused by feeling baited and manipulated into taking the life of a mentally disordered subject, which is invariably seen as a far less noble encounter than facing off against an aggressively hostile criminal with a clear intent to kill. But I can't ever recall an officer actually taking blame for a subject's death under these circumstances. They may feel bad that the poor, deranged schmuck had to die for no good reason, but the officers rarely believe it's their "fault," unless some kind of gross tactical or judgmental error was involved.

The book then reviews some of the research and experiential wisdom on the SBC phenomenon, including the nature and concept of suicide itself, police use of force, and the prominent subject characteristics, behavioral classifications, and motivational theories that have been proposed to explain this phenomenon. This provides the scholarly background for the next chapter, which presents a series of

in-depth and illuminating case studies that give the reader a flavor for what officers experience, how they think, and how they respond on calls that turn out to be SBC incidents. This chapter is important for highlighting the diversity of subject personalities and situational variables that may eventuate in a SBC episode. The authors make the case for developing a comprehensive typology of SBC, but acknowledge that this will have to await further research.

For a book that rightfully advocates for more administrative and clinical recognition of the effect of SBC on police officers, the authors devote a surprisingly short amount of space to identifying, diagnosing, and treating the traumatic aftereffects of this event on officers' psyches. They point out the shattered illusions of invulnerability that often attend SBC shootings – indeed, any fatal police shooting – and how this can percolate with the feelings of being duped and played to produce a noxious psychological brew of helplessness, vulnerability, and demoralization. They also describe the maladaptive coping styles that officers often use and which sometimes prolong and intensify their distress instead of helping it. But I would have liked to see some discussion of self-help, clinician-guided, and/or peer-support strategies to aid and counsel distressed officers resolve, work though, and recover from their SBC reactions.

The final chapter introduces the reciprocal concept (and one that's probably much harder to talk about) of *suicide by suspect,* that is, where a smolderingly depressed and despondent officer tempts fate by taking undue risks that are likely to get him or her killed. Typically, the officer is not consciously aware of any affirmative wish to end his life (although I have spoken with depressed officers who have acknowledged that they feel like such crap that who cares what happens to them?). Examples include being "first-in" at a dangerous call, failing to take necessary precautions during a traffic stop or domestic violence call, or being inappropriately confrontational with potentially dangerous suspects. Once again, I felt frustrated at the lack of therapeutic recommendations for what is obviously such a crucial issue. I hope the authors will expand on this topic in a forthcoming book.

The final chapter attempts to embed SBC in the authors' theory of *scripted behavior,* which they define as any behavior accompanied by some form of suicidal communication that is an obvious indicator of aggressive behavior on the part of the suicidal actor which, in turn, provokes a use of force response by the police officer. In this conceptualization, it is the presence of all three definitional elements – voluntariness of the behavior, a clear threat to the officer, and clear communication of the subject's desire to end his life – that constitute a true SBC incident.

Overall, this is an important book that summarizes and integrates much of the existing literature on suicide-by-cop, here redubbed *copicide.* As these authors clearly have an encyclopedic grasp of this important topic, I'm keeping my fingers crossed that they're working a forthcoming volume that focuses on effective intervention strategies.

Criminal Investigative Failures
By D. Kim Rossmo
Boca Raton, FL: CRC Press, 2009

If criminal investigation is ever to become a legitimate scientific practice, then its professionals ought to start acting like it. At least that's the message of this new volume by Dr. Kim Rossmo, which adapts the new cognitive science of heuristics and bounded rationality to the practical tasks of criminal investigative decision-making. Thoroughly researched and carefully articulated, the chapters in this book discuss the common cognitive and social biases of misperception, skewed intuition, tunnel vision, groupthink, rumor, egotism, and the discounting of chance and randomness in decision-making. This is not as yawningly wonkish as it may seem, because the author weaves these concepts throughout a series of extensive real-life case studies that show how they have been applied and misapplied in the past. Finally, recommendations are provided for improving the accuracy and validity of criminal investigative decision making. This book reinforces the idea that the rigorous application of scientific principles need not detract from the "art" of criminal

investigation any more than adherence to scientific principles of medicine negates the artful diagnosis and treatment by a skilled physician – in fact, it improves it. This book is absolutely required reading for any professional in the law enforcement, emergency services, forensic medicine, or forensic psychology field who has to make complex decisions that affect people's lives in the pursuit of justice.

Evolutionary Forensic Psychology: Darwinian Foundations of Crime and Law
Edited by Joshua D. Duntley & Todd K. Shackelford
New York: Oxford University Press, 2008

Back in the day, during a graduate school class on psychopathology taught by an austere European visiting professor of psychology, one student asked the professor what would be considered a sexually "unnatural act," to which the teacher quickly shot back: "If people do it, it's natural." People do deception and violence as well as sex, of course, and some people do these things way too much and at the expense of other people, so we call them criminals and censure them in some way. In recent years, the burgeoning field of evolutionary psychology has attempted to map out how Darwinian natural selection has molded our vertebrate, mammalian, primate, and ultimately human psyches.

In a skillful and scholarly way, *Evolutionary Forensic Psychology* applies these naturalistic principles to the real-life forensic issues of homicide, intimate partner violence, rape, sexual assault, sexual harassment, theft, and prostitution. The individually-authored chapters of this edited volume also discuss the status of antisocial personalities and psychopaths in societies, how victims adapt to the criminals around them, and how an evolutionarily-informed criminology can lead to improved concepts and applications of therapeutic intervention and justice. This book will be of interest both to academic researchers and practicing professionals in the fields of criminal law, criminology, forensic psychology, and corrections.

Psychotherapy and the Quest for Happiness
By Emmy van Deurzen
London: Sage Publications, 2009

What should be the purpose of psychotherapy? To alleviate stress? Teach improved coping skills? Change your philosophical outlook on life? According to this book's author, the current trend toward manualized, quick-fix, cookbook interventions ignores that fact that when people face adversity or undergo life-altering challenges, they don't just want to "adjust" or "cope" – they want help in constructing some rungs of meaning that will enable them to hoist themselves out of the existential muck. Consistent with this author's orientation toward a philosophical view of the Good Life, she critiques the modern "positive psychology" movement, which sometimes seems like a matter of pasting smiley-faces on distressed patients in order to gag their complaining and save treatment costs.

Instead, the author offers a philosophically harder, but ultimately richer approach to helping patients deal with both predictable life difficulties and wrenching crises. At some points, she seems to forget that profound existential growth is not *always* the preferred therapeutic outcome in every case – sometimes, people just need symptomatic relief – but her approach is a useful corrective to the kinds of existentially sterile short-term interventions often applied to serious life problems. Even many otherwise hardheaded law enforcement, emergency services, and military personnel, when faced with a major life crisis, will crave more than a debriefing or EAP-mandated counseling session to help them cope with their shattered world. This slim volume, although not the last word on existentially meaningful therapy, is a good place to start.

**Living and Surviving in Harm's Way: A Psychological Treatment Handbook
for Pre- and Post-Deployment of Military Personnel**
Edited by Sharon Morgillo Freeman, Bret A. Moore & Arthur Freeman
New York: Routledge, 2009

As more and more military service members return from their tours with psychological injuries and disabilities, expect to see a proliferation of books on military psychology and mental health treatment – but don't expect to see many with the depth and scope of the present volume. This is a large book with a large mission: to provide mental health practitioners with individual clinical guidelines as well as broad administrative recommendations for psychologically preparing service members for deployment, providing effective clinical interventions during their service, and – a topic often neglected in other sources – dealing with the myriad post-deployment stresses and challenges that affect returning services members.

The chapters in this edited volume provide an essential orientation to the basic military mindset and warrior ethos, the stresses and threats of deployment, special challenges faced by women in the military, vulnerability and risk factors for traumatic stress responses, effective psychological treatment planning with military personnel, specific psychotherapeutic intervention strategies for anxiety and mood disorders, substance abuse, sleep disorders, and posttraumatic stress disorder, the role of psychotropic medications, military family issues, including marital intimacy and children of military families, community responses to returning warriors, and issues of mourning and remembrance of fallen comrades and family members. By definition, a "handbook" is a repository of practical wisdom that professionals can refer to when needed. If you work with military service members, this will be an indispensible addition of your clinical reference library.

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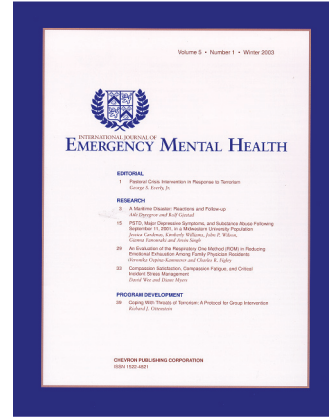
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