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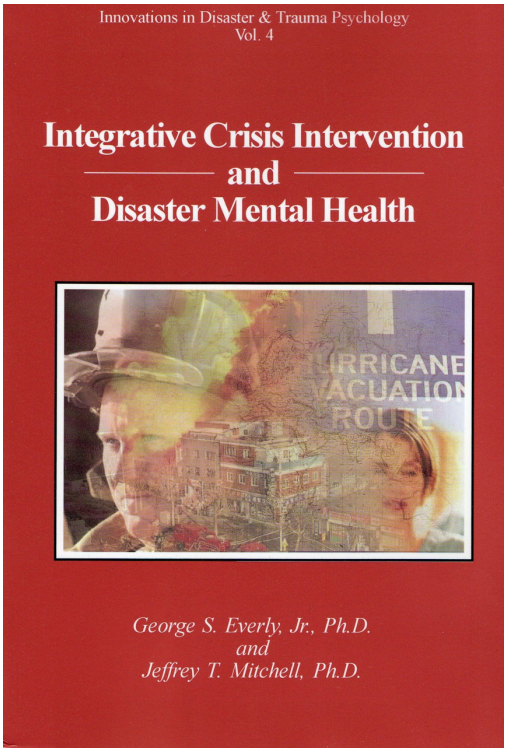

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Repetitively Assaultive Psychiatric Patients: Fifteen-Year Analysis of the Assaulted Staff Action Program (ASAP) with Implications for Emergency Services

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Abstract: *Research has demonstrated that psychiatric patients' assaults on emergency services personnel providing onsite, prehospital care represent a serious and ongoing nationwide concern. Embedded within these patient assailants is a small group of repeat offenders who present a serious increased risk for assault. This study examined the demographic and clinical variables of repeat offenders over a 15-year period. Included in the sample were patients who were transferred from correctional facilities to mental health facilities and then to the community. The results indicated that older, male patients with schizophrenia and younger patients with personality disorders were the more likely to re-offend. The risk of assault was greatly increased if these patients had histories of violence toward others, personal victimization, and substance use disorder. Correction patients did not appear to present any additional risk per se. The significance of the findings and the implications for emergency services personnel are presented. [International Journal of Emergency Mental Health, 2008, 10(1), pp. 1-8].*

Key words: *Assaults, Assaulted Staff Action Program (ASAP), correction patients, emergency services, repetitively assaultive patients, violence*

Research has demonstrated that psychiatric patient assaults on emergency medical services (EMS) personnel are a nationwide concern (Cheney, Gossett, Fullerton-Gleason, Weiss, Ernst, & Sklar, 2006; Mechem, Dickinson, Shofer, & Jaslow, 2002; Tintinalli & McCoy, 1993; Weiss, Ernst, Phillips, & Hill, 2001). These assaults are committed by patients with various forms of psychiatric disorganization, organic impairment, and/or substance use disorders (Flannery, Juliano, Cronin, & Walker, 2006; Grange & Corbett, 2002) in both home and non-home settings (Weiss et al., 2001).

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Embedded among these assaultive psychiatric patients is a small subset of offenders who account for a substantial percentage of these assaults. They are known as repeat offenders (three or more documented assaults). The only review of this literature to date (Flannery, 2002) found repetitively violent patients to be younger, equally male or female, and most frequently diagnosed with schizophrenia or personality disorders. These repeat offenders comprised about 10% of a population of assaultive patients yet they accounted for about 30% of all assaults. Thus, it would appear important for EMS to routinely inquire with the patient about a history of previous assaults.

The risk of EMS encountering such repeat offenders may have been further increased in the past five years by a

nationwide initiative to transfer psychiatric patients in prison for criminal offenses from state Departments of Correction (DOC) to state Departments of Mental Health (DMH). The goal of these step-down transfers is to evaluate each patient for discharge; to stabilize each patient, if necessary; and, in time, to place each patient in a community setting. When EMS are called to community settings, it is reasonable to consider whether EMS are at increased risk of assault from these transferred patients who are now residing in community settings.

This study begins to address this question by analyzing the characteristics of repetitively violent patients in a mental health care system that for the past five years has been receiving transferred correctional patients. Several of these patients have been subsequently placed in the community. A previous 10-year study of the repetitively violent patients in this same health care system (Flannery, Rachlin, & Walker, 2002) *before* the corrections transfers had begun found that 10% of the assaultive patients had committed 31% of the total assaults. In terms of demographic variables these patients were on average 33 years of age, were both male and female, and were primarily diagnosed with schizophrenia or personality disorder. In addition, three common clinical variables were identified. Most patients had histories of violence toward others and personal victimization. Two-thirds had substance use disorders. A comparison of these repetitively violent patients with their non-repetitively assaultive peers revealed no differences on the demographic variables but there was a significantly higher association of the clinical variable of personal victimization with repetitive assaultiveness. This previous study thus provides a baseline for comparison with the present study.

The purpose of the present, retrospective study was to assess the characteristics of repetitively assaultive patients and non-repetitively assaultive patients during a 15-year period in which corrections patients were transferred to this health care system during the last five years of the study. The study included basic demographic variables and the three clinical variables of violence toward others, personal victimization, and substance use disorder. Based on previous empirical research and clinical anecdotal evidence, the study's first hypothesis predicted that the demographic variables would not be predictor variables and that only the clinical variable of personal victimization would be a predictor variable. Its second hypothesis predicted that the presence of transferred correction patients would yield no significantly altered assault characteristic findings, as these patients would have been assessed and stabilized at time of transfer.

METHOD

Subjects

The subjects were 73 male and 81 female repetitively assaultive psychiatric from the Massachusetts DMH. This sample was drawn from a population of 2,103 assaultive patients. There were 797 male and 757 female assaultive inpatients and 250 male and 299 female assaultive patients in community settings. Subjects' average age was 15.77 years (+ 2.46) for child/adolescent patients and 39.89 years (+ 14.14) for adults. The sample was primarily Caucasian (74%), and Black (16%). Major diagnoses for child/adolescent patients were schizophrenia (4%), major affective disorders (19%), and posttraumatic stress disorders (17%). Major diagnoses for adult patients were schizophrenia (51%), major affective disorders (24%), and personality disorders (7%). These findings were generally consistent throughout the 15 years of this study.

Measures of Assault

The four types of assaults included in this study remained the same as they have been since the program was fielded in 1990. Physical assaults were defined as unwanted contact with another person with intent to harm, including punching, kicking, slapping, biting, spitting, and throwing objects directly at staff. Sexual assaults were unwanted sexual contacts and included rape, attempted rape, fondling, forced kissing, and exposing. Nonverbal intimidation referred to actions intended to threaten and/or frighten staff, such as pounding on the staff office door, random throwing of objects, and destruction of property. Verbal threats were statements meant to frighten or threaten staff, and included threats against life and property as well as racial slurs and other derogatory comments.

Procedure

The characteristics of patient assailants were gathered from the medical chart and recorded on Assaulted Staff Action Program (ASAP) report forms (Flannery, 1998) at the time of each incident, after ASAP services had been rendered. ASAP (Flannery, 1998) is a voluntary, system-wide,

peer-help, crisis intervention program to address the psychological sequellae experienced by staff victims of patient assaults. ASAP includes individual, group, and staff victim family crisis intervention services as well as staff victims' support groups, staff-victim family outreach, and referrals to individual trauma specialists, as indicated. ASAP has firm empirical support for its efficacy (Flannery, 1998; Flannery et al., 2002; Flannery, Juliano, Cronin, & Walker, 2006).

ASAP team members practiced completing ASAP report forms until acceptable levels of skill and reliability were obtained. Basic demographic data were gathered for all 15 years. The clinical variable data were gathered beginning in 1994, when the data base was expanded to capture this information. To guard against underreporting (Lion, Snyder, & Merrill, 1981), each facility was required to fill out a DMH report form for each incident, to call the ASAP person on duty, and to review the incident at daily staff meetings. At times, total numbers do not equal 100% because of occasional missing data when staff victims declined ASAP services, declined to identify the patient assailant, or when the patient's record did not include sufficient documentation of the study's variables. This analysis assumed that all staff were at equal risk for the full period, except for some brief hospitalizations during which community patients were absent from residential placements.

This study reports on data from the 16 Massachusetts teams that were fielded during this 15-year period. These included 7 DMH state hospitals and 9 DMH state or DMH-vendored community programs. Over the years, 3 DMH state hospitals and 3 DMH-vendored community programs have been curtailed by closings, downsizings, privatization, and mergers with other facilities. No Massachusetts team was online for the full 15-year period.

In this study, repetitively assaultive patients were operationally defined as patients who had committed three or more assaults during this 15-year period. Non-repetitively assaultive patients were those who had committed assaults less than three times. Data are reported as unduplicative counts of patients unless otherwise indicated.

RESULTS

From 1990 to 2005, the Massachusetts ASAP teams responded to 2,152 patient assault incidents on staff. ASAP services were accepted in 1,857 incidents (86%) and declined in 295 others (14%). There were 1,613 inpatient assault incidents (75%) and 539 community assault incidents (25%) committed by 1,047 male (49%) and 1,056 female (49%) patient assailants. The average age of all assailants was 35.04 years (+11.7). In 49 incidents (2%), either the staff victim declined ASAP services and declined to identify the patient assailant or ASAP was notified so late after the fact that the identity of the patient could not be unequivocally established.

For the full 15-year period, there were 73 male (47%) and 81 female (52%) patients who committed three or more assaults. These subjects were drawn from a sample of 1,286 assaultive patients. These repeat offenders comprised 12% of the sample and committed 32% of the total assaults during this period. As can be seen in Table 1, their average mean age was 35.5 years ($SD = 11.9$) and they were primarily diagnosed with schizophrenia (55%), affective disorders (14%), and personality disorders (17%). These repeat offenders committed 616 physical assaults (85%), 4 sexual assaults (0.6%), 11 acts of nonverbal intimidation (2%), and 56 verbal threats (8%). An additional analysis comparing the repetitive and non-repetitive patients revealed no statistically significant differences on the demographic variables.

Table 2 presents the characteristics of repetitively and non-repetitively assaultive patients on both the demographic and clinical variables for the years 1994-2005. The average age of the repeat offenders was 36.1 years ($SD = 12.98$). There were 55 males (45%) and 67 females (55%) who were primarily diagnosed with schizophrenia (51%), affective disorders (16%), and personality disorders (22%). These repeat offenders had histories of violence towards others (98%), personal victimization (82%), and substance use disorder (70%). An additional analysis comparing the repetitive and non-repetitive assailants on the subset demographic and clinical variables revealed statistically significant differences for the clinical variables of violence toward others ($x_2 = 7$, $df = 1$, $p < .01$), personal victimization ($x_2 = 14.83$, $df = 1$, $p < .01$), and substance use disorder ($x_2 = 6.26$, $df = 1$, $p < .05$).

Table 3 presents a comparison of the repetitively assaultive patients in this data base at 10 years and at 15 years. (Clinical variables are for the years 1994-2005.) They were older patients with a diagnosis of schizophrenia or personality disorder and histories of violence toward others, personal victimization, and substance used disorder. Additional analyses comparing these repeat offenders at 10 and 15 years revealed a statistically significant difference for diagnosis ($x_2 = 11.86$, $df = 4$, $p < .02$).

Table 1
Demographic Characteristics of Repetitively/Non-repetitively Assaultive Patients, 1990-2005

Patient Variable	*Repetitively Assaultive*	*Non-Repetitively Assaultive*
Age	35.5 (*SD* = 11.9)	35.8 (*SD* = 11.9)
Gender		
Male	73 (47%)	582 (52%)
Female	81 (52%)	533 (47%)
Diagnosis		
Schizophrenia	85 (55%)	523 (46%)
Affective Disorder	21 (14%)	207 (18%)
Personality Disorder	27 (17%)	215 (19%)
Other	22 (14%)	186 (16%)
Site		
State Hospital	115 (74%)	827 (73%)
Community	40 (26%)	304 (27%)

No significant differences were obtained for any variables.

Table 2
Characteristics of Repetitively/Non-repetitively Assaultive Patients, 1994-2005

Patient Variable	*Repetitively Assaultive*	*Non-Repetitively Assaultive*	*p*
Age	36.10 (*SD* = 12.98)	35.37 (*SD* = 11.97)	ns
Gender			
Male	55 (45%)	519 (50%)	ns
Female	67 (55%)	499 (48%)	
Diagnosis			
Schizophrenia	63 (51%)	484 (47%)	ns
Affective Disorder	19 (16%)	207 (19%)	
Personality Disorder	27 (22%)	212 (21%)	
Other	14 (14%)	139 (13%)	
History of Violence Toward Others	121 (98%)	948 (92%)	.01
Personal Victimization	101 (82%)	670 (65%)	.01
Substance Use Disorder	86 (70%)	574 (56%)	.05

Table 3
Characteristics of Repetitively Assaultive Patients at Ten and Fifteen Years

Patient Variable	*Tenth Year*	*Fifteenth Year*	*p*
Age	33.56 (*SD* = 9.63)	35.5 (*SD* = 11.9)	ns
Gender			
Male	26 (42%)	73 (47%)	ns
Female	35 (57%)	81 (52%)	
Diagnosis			
Schizophrenia	35 (57%)	85 (55%)	.02
Affective Disorder	3 (5%)	21 (14%)	
Personality Disorder	5 (8%)	27 (17%)	
Other	18 (30%)	22 (14%)	
History of Violence Toward Others	30 (97%)	121 (98%)	ns
Personal Victimization	29 (94%)	101 (82%)	ns
Substance Use Disorder	18 (58%)	86 (70%)	ns

A per capita rate of assault has not been included in this study. During the 15 years of the study, several of its facilities were downsized, closed, and/or privatized. Patient and staff ratios changed repeatedly during these years such that a per capita rate of assault for the entire study period would be statistically inaccurate.

DISCUSSION

This study's findings constitute the longest published study of repeat offenders to date and partially support its hypotheses. The findings confirmed its first hypothesis with regard to the demographic variables. Repeat assailants were older male or female patients with schizophrenia or younger patients with personality disorders, and the preponderance of these assaults continued to occur in hospital settings. Twelve percent of the patients committed 31% of the assaults. This finding is consistent with previous published research for single incident assaults and repeat offender assaults (Flannery, 2002; Flannery et al., 2002; Flannery, Juliano, et al., 2006; Grange & Corbett, 2002). There were modest increases in patients with affective disorders at the 15-year period. This may reflect an increased true incidence, better diagnosis, or an emphasis on the emerging hypothesis that schizophrenia and affective disorders may be two different phenotypes of the same genotype. However, none of the demographic variables suggested a predictive relationship with subsequent assaults.

With regard to the clinical variables, the study's first hypothesis was partially confirmed. Personal victimization was associated with subsequent assault, but in this larger sample so also were violence towards others and substance use disorder. A previous study from this 15-year data base that assessed the contributions of these three variables, both individually and in various combinations (Flannery, Hanson, Corrigan, & Walker, 2006), demonstrated that violence toward others and personal victimization significantly increased the risk of association with subsequent assault. Violence toward others, personal victimization, and substance use presented the greatest risk. These three clinical variables appear to be associated with subsequent assault.

This study's consistent and stable findings of patient assault characteristics over a 15-year time span, coupled with

clinical anecdotal evidence from the various facilities in the study confirm the study's second hypothesis that the transfer of correction patients to DMH did not yield an appreciable risk of being repeat offenders in either the hospital or community. There are several possible explanations for this outcome. First, some of these patients should likely have been diverted to mental health services and not been diverted to the corrections system to begin with. Second, all were assessed and stabilized in DOC and received a second assessment with stabilization, if indicated, when they were transferred to DMH. Third, the transferred patients had greater personal and physical freedom in DMH facilities, a factor which may have reduced frustration or irritability. Lastly, these patients knew that transfer to DMH was the first step to returning to the community and it is unlikely that they would jeopardize this form of opportunity. Although it is possible that some may have engaged in verbal intimidation, no DMH facility reported such occurrences. Psychiatric patients, especially those with the three clinical variables, represent an ongoing risk for assault but there is no evidence at present that a corrections-transferred patient presents an undue heightened risk.

Lastly, the stability of repeat offender assailant characteristics over time presents an issue with important clinical and research implication. While medication, behavioral, and forensic consults may prove helpful in individual cases, the research findings suggest a certain intractability in modifying repeat offender assault risks. This study's findings may be masking an age maturation effect in that certain repeat offenders become less assaultive with time. As this study has continued to grow over time, it may have come to include newer, often younger admissions with the same basic demographic and clinical characteristics as their older counterparts. Another possible explanation for consideration would be that the assault violence in some cases may be stemming from a trauma-shaped neurobiology and that certain changes in the structure and functioning of brains of patients with histories of personal victimization may increase the risk of irritability and subsequent assault (Teicher, Andersen, Polcari, Andersen, & Navalta, 2002). Hypotheses such as these suggest that patient assaults are complex person x event x environment interactions and point to the need for longitudinal prospective studies that include event and environmental variables in addition to demographic and clinical person variables. These findings also suggest the need for those providing clinical care to repeat successful interventions with a repeat offender with other similar repeat offenders to see if there are decreased assaults in these subsequent cases. Such case studies may provide helpful assistance in delineating the key variables associated with repeated assaults that should be investigated in larger empirical research studies.

Implications for Emergency Services

Pre-Incident Training

As has been noted above, psychiatric patients present an ongoing risk to EMS personnel. There are several ways to address this issue. The first approach is through the development of sound pre-incident policies and procedures.

A beginning step is to establish a detailed data base of those calls that result in assault incidents. The greater the collection of details for the data base, the greater will be the ability to identify possible risk. Included below is a statistical summary of the high risk factors in this present study that have been reported in several earlier publications. This data summary covers the years 1990-2005 and illustrates the level of detail that can be gathered.

*Inpatient Assaults***:** Staff most at risk continue to be new, less experienced, less formally-trained mental health workers and nurses during restraint and seclusion procedures. The assaultive patient is most likely to be of the same gender; to have a primary diagnosis of schizophrenia or personality disorder; to have past histories of violence toward others, personal victimization, substance use disorder; and to not be a repeat offender. The most likely precipitants are acute psychosis, denial of services, and/or excess sensory stimulation. Such assaults are most likely to occur in the middle ten days of the month on the first shift from 7:00-9:00 AM.

*Community Assaults***:** Staff most at risk include new, less experienced mental health workers and residential house staff and nurses during restraint procedures. The assaultive patient is most likely to be of the same gender; to have a primary diagnosis of schizophrenia or personality disorder; to have past histories of violence toward others, personal victimization, and substance use disorder; and to not be a repeat offender. The most likely precipitants are acute psychosis, denial of services, and/or excess sensory stimulation. Such assaults are likely to occur in the first ten days of the month. In community residences, the most likely time of assault is on the second shift between 10:00-11:00 PM.

This level of detail was captured on a two-sided, single page that could be completed in less than five minutes and then entered as individual units into a computer data base.

EMS organizations can similarly gather assault incident characteristics efficiently.

In addition to the data base, good pre-incident training should include policies and training in some system of non-violent self-defense, restraint procedures, communication skills with patients, and a knowledge of the early warning signs of impending loss of patient control (Flannery, 1998).

Onsite Incident Provision of Services

As an EMS crew is dispatched, its members should begin to gather as much information as possible about the potential for violence at the scene. What is known of the patient's past history of violence? Does the patient have a diagnosis of schizophrenia or personality disorder? Is there a history of personal victimization? Is there also a history of substance use disorder? Knowing this information in advance from the team's data base or from current care givers can help to assess any initial level of risk.

When arriving onsite, survey the *scene* first. Does anything appear menacing? Why are people where they are? Are there any potential weapons in sight? If the scene appears relatively safe, proceed to the identified patient. Monitor the patient for the early warning signs of loss of control. If the crew has no information on the patient's violence potential, ask about past violence, personal victimization, and substance use as part of a routine history taking to provide better prehospital care. Borum, Swartz, and Swanson (1996) have created a list of excellent, brief, screening questions for violence, such as having trouble with one's temper, hitting others when angry, etc. If the patient is in tenuous control, always have one member of the team monitoring the scene and the patient as the partner provides needed care.

Post-Incident Response

As the present research findings demonstrate, violence may occur in spite of the best precautions. EMS personnel may be physically injured and/or psychologically distressed. In the latter circumstances, all EMS personnel should be routinely offered crisis intervention procedures to address emotional responses to the incident. The Critical Incident Stress Management system (CISM; Everly & Mitchell, 1999) or the ASAP program (Flannery, 1998) are two approaches that may be helpful in these circumstances.

This risk of patient violence during prehospital care will often be present. However, with adequate preparation, EMS personnel will be able to control much of this risk as hospital personnel with the same tools do now.

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Military Psychology and Police Psychology: Mutual Contributions to Crisis Intervention and Stress Management

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Abstract: *Like siblings separated at birth, military psychology and police psychology have each independently addressed the cognitive, perceptual, emotional, and behavioral aspects of men and women performing extreme service in defense of their neighborhood or their country. This article reviews the major areas of commonality in the work of military and police psychologists in the areas of crisis intervention and stress management, and provides practical strategies for handling these operational and clinical challenges. The article makes specific recommendations for how police and military psychologists can cross-contribute to each other's fields for the overall enhanced provision of services to the men and women who wear uniforms of all kinds. [International Journal of Emergency Mental Health, 2008, 10(1), pp. 9-26].*

Key words: *Combat stress, critical incident stress, deadly force, military psychology, police psychology, suicide prevention*

Like siblings separated at birth, military psychology and police psychology have each independently addressed the cognitive, perceptual, emotional, and behavioral aspects of men and women performing extreme service in defense of their communities – whether this be a specific neighborhood or the nation as a whole. In fact, many law enforcement officers have had military experience and many military service members utilize tactics and strategies derived from patrol and special unit policing to carry out their assigned duties. So, when Ralph and Sammons (2006) recently commented that "the military is where much of the most progressive work in psychology is taking place" (p. 375), I felt it was time to highlight the recent advances in police psychology (Miller, 2006d, 2008) that have both drawn from, and can contribute to, the work of our military colleagues and improve the clinical and operational services we provide to men and women in uniform, wherever they may serve.

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Combat and Critical Incident Stress

Clearly, the most stressful aspect of both military service and police work is the prospect of being injured or killed, closely followed by the act of killing another (see below). Other stresses have to do with enduring the loss of compatriots and generally confronting the human cruelty and carnage of warfare and violent criminal activity (Nordland &

Gegax, 2004; Henry, 2004). Police and military psychologists have both made important contributions to the assessment and amelioration of these traumatic stress syndromes.

History of the Military and Law Enforcement Stress Concept

Historically, the pendulum of interest in traumatic stress syndromes has swung back and forth between military and civilian traumas (Pizarro, Silver, & Prouse, 2006; Ritchie & Owens, 2004; Rosen, 1975; Trimble, 1981; Wilson, 1994). During warfare, rulers and generals have always had an interest in knowing as much as possible about factors that might adversely affect their fighting forces. To this end, doctors have been pressed into service to diagnose and treat soldiers with the aim of getting them back to the front lines as quickly as possible. In times of peace, attention turns to the everyday acts of violence that can produce stress, pain, and trauma in the lives of civilians and the law enforcement officers who protect them.

The ancient Greeks and Romans wrote eloquently about the trials and travails that could afflict the warrior mind (Sherman, 2005). One of the first modern conceptualizations of posttraumatic stress was put forth by the army surgeon Hoffer who, in 1678, developed the concept of *nostalgia,* which he defined as a deterioration in the physical and mental health of homesick soldiers, caused by the formation of abnormally vivid images in the battle-weary soldier's brain by overexcitation of the "vital spirits."

The American Civil War introduced a new level of industrialized killing and, with it, a dramatic increase in stress-related ailments. Further advances in weapons technology during the First World War resulted in new categories of battlefield casualties from machine guns, poison gas, and long-range artillery. The latter led to the widely applied concept of *shell shock,* initially believed to be caused by the brain-concussive effects of exploding shells, but later understood to be a form of psychological incapacitation resulting from the trauma of battle.

During this era, physicians (Frazier & Wilson, 1918; Mearburg & Wilson, 1918) described a syndrome in traumatized soldiers called *irritable heart*, which they attributed to overstimulation of the sympathetic (fight-or-flight) branch of the autonomic nervous system. Even Freud (1920) weighed in, opining that the recurring frightening recollections and nightmares in returning soldiers served the function of post-traumatic mastery of the traumatizing experience by working it over in the victim's mind. As the Freudian psychodynamic influence began to be felt more generally throughout military psychiatry, *shell shock* began to be replaced with the more mentalistic-sounding term, *war neurosis* (Salmon, 1919; Southard, 1919).

Kardiner (1941) followed a group of World War I veterans with war neuroses for more than a decade and concluded that severe war trauma produced a constriction of the ego that prevented these patients from adapting to and mastering life's subsequent challenges. Kardiner elaborated a conceptualization of trauma he termed *physioneurosis* that is quite close to the modern concept of posttraumatic stress disorder (APA, 2000). The features of Kardiner's physioneurosis included: persistence of a startle response or irritability, proneness to explosive behavior, fixation on the trauma, overall constriction of the personality, and a disturbed dream life, including vivid nightmares.

The experiences of the Second World War contributed surprisingly little to the development of new theories and treatments for wartime trauma, aside from its relabeling as *battle fatigue.* In fact, resistance to the very concept of battle fatigue, with it's implications of mental weakness and lack of moral resolve, was widespread in both medical and military circles. There was a war on, plenty of good G.I.s were getting killed and wounded, and the Army had little sympathy for the whinings of a few slackers and nervous nellies who couldn't buck up and pull their weight.

However, it was becoming apparent that combat trauma and battle fatigue could take place in circumstances other than the actual battlefield. In World War II, then Korea and Vietnam, and later in the Persian Gulf Wars, clinicians began to learn about disabling stress syndromes associated with large-scale bombings of civilian populations, prisoner of war and concentration camps, "brainwashing" of POWs, civilian atrocities, and terrorism. The 1991 Gulf War spawned a new traumatic stress syndrome, called *Gulf War syndrome,* which may reflect a combination of chemical exposure and psychophysiological anxiety. It has yet to be determined what the eventual psychological casualty rate from the current Afghanistan and Iraq wars will be, but a growing consensus seems to be that psychological stress syndromes are being undertreated (Clary, 2005; Corbett, 2004; Galovski & Lyons, 2004; Nordland & Gegax, 2004; Tyre, 2004).

In the civilian law enforcement and emergency services fields, the equivalent of combat stress has come to be known

as *critical incident stress.* By this definition, a critical incident is any event that has an unusually powerful, negative impact on police personnel because it is above and beyond the range of the ordinary stresses and hassles that come with the job. Major classes of critical incidents include: an officer-involved shooting (see below), line-of-duty death, serious injury to police personnel, serious multiple-casualty incident such as a school shooting or workplace violence incident, suicide of a police officer, traumatic death of children, or an event with excessive media interest. Recent times have expanded exponentially the range and scope of horrific law enforcement critical incidents to include acts of mass terror and destruction involving multiple deaths of civilians, fellow officers, and other emergency personnel (Everly & Boyle, 1999; Everly & Mitchell, 1997; Everly, Flannery, & Mitchell, 2000; Henry, 2004; Karlsson & Christianson, 2003; Miller, 2003; Mitchell & Everly, 1996, 2003; Paton & Smith, 1999).

Law Enforcement and Military Stress: Vulnerability and Resilience Factors

Some authorities (Henry, 2004; Violanti, 1999) have characterized police work as "civilian combat," and, as in all areas of psychology, there are individual differences in the ability to cope with combat stress and critical incident stress (Almedom, 2005; Bonanno, 2004; Borders & Kennedy, 2006; Bowman, 1997; Carlier & Gersons, 1995; Carlier, Lambert, & Gersons, 1997; Corneil, Beaton, Murphy, Johnson, & Pike, 1999; Friedman, Hamblin, Foa, & Charney, 2004; Gentz, 1991; Haas, 2007; Higgins & Leibowitz, 1999; Maddi, 2007; McNally, 2003; Miller, 1995, 1998, 2007b, 2007c; Nordland & Gegax, 2004; Orasanu & Backer, 1996; Toch, 2002; Winerman, 2006). Increased *stress resilience* has been found to be associated with higher IQ, especially verbal IQ, active problem-solving, utilization of productive denial, rationalization, compartmentalization, dispositional optimism, self-efficacy and self-confidence, and the ability to access and utilize social supports. Increased *vulnerability to stress* is associated with younger age of service and fewer years of experience, lower educational level (which is correlated with verbal intelligence), prior history of substance abuse or psychopathology, prior history of trauma, and poor social support systems.

Psychological Interventions for Military Combat Stress: PIES and BICEPS

Many of the principles of managing both combat stress and law enforcement critical incident stress incorporate the same basic elements. The primary goal is to depathologize these stress responses by framing them as normal responses of normal people to abnormal or "extra-normal" events (Brickman, 1982; Campsie, Geller, & Campsie, 2006; Mitchell & Everly, 1996, 2003), as well as to reinforce resilience by proper training and a positive service philosophy which has variously been characterized as *battlemind* (Brusher, 2007) or *mettle* (Miller, 2008), among other terms. To this end, beginning in World War I, the military has relied on the *PIE* concept (Artiss, 1963; Jones, Thomas, & Ironside, 2007; Ritchie & Owens, 2004; Salmon, 1919), where:

P= Proximity: Provide care as close to the unit as possible.

I = Immediacy: Offer treatment as soon as possible.

E = Expectancy: Convey the expectation of return to full duty.

Currently, the U.S. Department of Defense's protocol for management of combat stress (Brusher, 2007; Campsie et al., 2006; Munsey, 2006) is based on the *BICEPS* model, where:

B = Brevity: Treatment is short-term, addresses the problem at hand, and is focused on return to service.

I = Immediacy: Intervention begins as soon as possible, before symptoms have a chance to worsen.

C = Centrality: Psychological treatment is set apart from medical facilities to reduce the stigma soldiers might feel about seeking mental health services.

E = Expectancy: A service member experiencing problems with combat stress is expected to return to full duty.

P = Proximity: Soldiers are treated as close to their units as possible and are not evacuated from the area of operations, in order to enhance expectations of recovery.

S = Simplicity: Besides formal therapy, the basics of a good meal, hot shower, and a comfortable place to sleep ensure that a soldier's basic physical needs are met.

Psychological Interventions for Law Enforcement Critical Incident Stress: CISD/CISM

To address the special needs of law enforcement and emergency services personnel, the concept of *critical inci-*

dent stress management (CISM) has incorporated the basic philosophy and methodology of the PIE and BICEPS models and has expanded and refined the methodology, which has, in turn, been adopted back into the military. *Critical incident stress debriefing* (CISD) is a structured group intervention designed to promote the emotional processing of traumatic events through the ventilation and normalization of reactions, as well as to facilitate preparation for possible future crisis experiences (Campsie et al., 2006; Dyregrov, 1989, 1997; Everly & Boyle, 1999; Everly & Mitchell, 1997; Everly et al., 2000; Miller, 1995, 1998, 1999a, 1999b, 2000, 2005a, 2006b, 2006d; 2007d; Mitchell & Everly, 1996, 2003).

A CISD is a peer-led, clinician-guided, group process, although the individual roles of clinicians and peers may vary from setting to setting. A typical debriefing takes place within 24 to 72 hours of the critical incident and consists of a single group meeting that lasts two to three hours, although shorter or longer meetings may be dictated by circumstances. Where large numbers of workers are involved, such as in mass disaster rescues or large-scale demobilizations, several debriefings may be held successively over the course of days to accommodate all the personnel involved (Everly & Mitchell, 1997; Mitchell & Everly, 1996, 2003).

The formal CISD process consists of seven key phases, designed to assist cognitive and emotional integration and mastery, beginning with more objective and descriptive levels of processing, progressing to the more personal and emotional, and back to the educative and integrative levels. These include:

Introduction. The team leader introduces the CISD process, encourages participation by the group, and sets the ground rules of confidentiality, attendance for the full session, unforced participation in the discussions, and the establishment of a noncritical atmosphere.

Fact phase. The group members are asked to briefly describe their activity during the critical incident and some facts about what happened. The basic question is: "What did you do?"

Thought phase. Group members discuss their initial and subsequent thoughts during the critical incident: "What was going through your mind?"

Reaction phase. This begins to move the group from a predominantly cognitive mode of processing to a more expressive emotional level: "What was the worst part of the incident for you?"

Symptom phase. This begins the movement back from the predominantly emotional processing level toward the cognitive processing level. Participants are asked to describe their cognitive, physical, emotional, and behavioral signs of distress: "What have you been experiencing since the incident?"

Education phase. Continuing the move back toward intellectual processing and normalization of the experience, didactic information is provided about the nature of the stress response and the expected physiological and psychological reactions to critical incidents.

Re-entry phase. During this wrap-up, any additional questions or statements are addressed, referral for individual follow-ups are made, and general group bonding is reinforced: "What have you learned?"

On this basic model, there have been a number of specialized adaptations of the CISD/CISM model for the military and law enforcement. These include the Navy's *special psychiatric response intervention teams* (SPRINT); the Army's *special medical augmentation response team-stress management* (SMART-SM); the Air Force's *critical incident stress teams* (CIST; Campsie et al., 2006); specialized *law enforcement debriefing* (Bohl, 1995); *integrative debriefing* (Regehr, 2001; Regehr & Bober, 2004; Ruzek, 2002); *line-of-duty death debriefing* (Mitchell & Levenson, 2006); *individual debriefings* (Solomon, 1991, 1995); *critical incident peer support seminars* (Solomon, 1995); *salutogenic debriefing* (Dunning, 1999; Stuhlmiller & Dunning, 2000; Violanti, 2000); *California Peace Officer Commission Peer Counselor Training* (Linden & Klein, 1986); Salt Lake City Police Department *Traumatic Incident Corps* (TIC; Nielsen, 1991); *the FBI's Critical Incident Stress Management Program* (McNally & Solomon, 1999); *and the US Secret Service's Critical Incident Support Team* (Britt, 1991). Whether explicitly or tacitly, all of these programs incorporate important elements of the military PIE/BICEPS and law enforcement CISD/CISM models.

Psychotherapy for Police and Military Service Members

Mental health services in law enforcement and the military are not limited to critical incident or combat stress (Budd & Kennedy, 2006; Miller, 2006d). Police officers and soldiers can be affected by a wide variety of problems that include depression, suicidality (see below), substance abuse, work

stress, and relationship problems. Here again police and military psychologists can cross-contribute valuable therapeutic strategies for treating these specialized personnel.

Basic Principles of Psychotherapy with the "Wounded Warrior"

Surveying the literature on both military and law enforcement psychotherapy, one is struck by the convergences of theory and technique across both domains. Perhaps this shouldn't be surprising, however, inasmuch as the law enforcement stress has been characterized as "civilian combat" (Violanti, 1999) and both fields attract service members with similar "tough guy" mindsets. In general, the effectiveness of any therapeutic strategy will be determined by the timeliness, tone, style, and intent of the intervention. Effective psychological interventions with military and law enforcement personnel share in common the following elements (Ball & Peake, 2006; Blau, 1994; Budd & Kennedy, 2006; Fullerton, McCarroll, Ursano, & Wright, 1992; Miller, 1995, 1998, 1999b, 2000, 2006d, 2007d, 2008; Peake, Bourdin, & Archer, 2000; Rudofossi, 2007; Wester & Lyubelsky, 2005) which are already familiar from the PIES/BICEPS model discussed above.

Briefness. Utilize only as much therapeutic contact as necessary to address the present problem; the service member does not want to become a "professional patient."

Limited focus. Related to the above, the goal is not to solve all the service member's problems, but to assist in restabilization and provide stress-inoculation for future crises.

Directness. Therapeutic efforts are focused on resolving the current conflict or problem to reach a satisfactory short-term conclusion, while planning for the future if necessary.

Law Enforcement Psychotherapy: Lessons for Military Psychology

The following models and techniques from the field of law enforcement psychotherapy can be productively adapted to the military setting. This approach begins with Blau's (1994) recommendation that the first meeting between the therapist and the service member establish a safe and comfortable working atmosphere, fostered by the therapist's articulation of a positive endorsement of the service member's decision to seek assistance (or obedience of an order to do so), a clear description of the therapist's responsibilities and limitations with respect to confidentiality and privilege, and an invitation to the service member to state his or her concerns.

A straightforward, goal-directed, problem-solving therapeutic intervention style includes the following elements.

Create a sanctuary. The service member should feel safe that what he or she says will be used primarily for the purposes of his or her healing and strengthening, not as part of a disciplinary process.

Focus on critical areas of concern. Therapy should be goal-directed and focused on resolving specific adaptation and recovery issues related to the crisis at hand.

Specify desired outcomes. In the early phases, the clinician may have to help the service member sort out, focus, and operationalize his or her goals so that there will be a way of measuring whether the therapy process is accomplishing them.

Develop a general plan. From the first session, develop an initial game plan that can be modified as you go along.

Identify practical initial implementations. Begin intervention as soon as possible to induce confidence and to allow the clinician to get feedback from treatment efforts that will guide further interventions.

Review assets and encourage self-efficacy. Consistent with the overarching aim of military and law enforcement psychotherapy as a strengthening, not weakening, process, it is vital to assist the service member in identifying and utilizing his or her strengths and capabilities as coping resources.

Blau (1994) delineates a number of effective individual psychotherapeutic strategies for police officers that can be applied to therapy with military service members.

Attentive listening. This includes good eye contact, appropriate body language, genuine interest, and interpersonal engagement.

Being there with empathy. This conveys availability, concern, and awareness of the disruptive emotions being experienced by the distressed service member.

Reassurance. This means realistically reassuring the service member that routine matters will be taken care of,

deferred responsibilities will be handled by others, and that the member has administrative and command support.

Supportive counseling. This includes active listening, restatement of content, clarification of feelings, and validation.

Interpretive counseling. While still keeping the process short-term and focused on the immediate problem, interpretive counseling can stimulate the service member to explore underlying emotional or psychodynamic issues that may be intensifying a naturally stressful traumatic event (Horowitz, 1986).

Humor. When used appropriately and respectfully, therapeutic humor may help to bring a sense of balance, perspective, and clarity to a world that seems to be warped by malevolence and horror (Fry & Salameh, 1987; Fullerton et al., 1992; Henry, 2004), as long as the therapist keeps a lid on destructive types of self-mockery or inappropriate projective hostility and is careful that well-intentioned kidding and cajoling not be interpreted as dismissive of the seriousness of the service member's plight.

Utilizing Cognitive Defenses

In psychology, *defense mechanisms* are the mental stratagems the mind uses to protect itself from unpleasant thoughts, feelings, impulses, and memories. While the normal use of such defenses enables the average person to avoid conflict and ambiguity and maintain some consistency to their personality and belief system, most psychologists would agree that an overuse of defenses to wall off too much unpleasant thought and feeling leads to a rigid and dysfunctional approach to coping with life. Accordingly, much of the ordinary psychotherapeutic process involves carefully helping the patient to relinquish pathological defenses so that he or she can learn to deal with internal conflicts more constructively.

However, in the face of the kinds of immediately traumatizing critical incidents that confront military and law enforcement personnel, the last thing the affected service member needs is to have his or her defenses stripped away. If you sustain a broken leg on the battlefield in the middle of a firefight, the medic doesn't stop to clean the wound, put you under anesthesia, set the bone, wrap you in a cast, and nurse you back to health. Hell no: he binds and braces the limb as best and as fast as he can – with a dirty tree branch and fishing tackle if necessary – and helps you hobble out of there, double-time.

In the same way, for an acute psychological trauma, the proper utilization of psychological defenses can serve as an important psychological splint or emotional field dressing that enables the person to function in the immediate post-traumatic aftermath and eventually be able to resolve and integrate the traumatic experience when the luxury of therapeutic time can be afforded (Janik, 1991; Miller, 2008). In fact, in their regular military and law enforcement work, most service members usually need little help in applying defense mechanisms on their own.

Examples of adaptive cognitive defense strategies (Durham, McCammon, & Allison, 1985; Henry, 2004; Taylor & Brown, 1988; Taylor, Wood, & Lechtman, 1983) include:

Denial. "Put it out of my mind; focus on other things; avoid situations or people who remind me of it."

Rationalization. "I had no choice; things happens for a reason; it could have been worse; other people have it worse; most people would react the way I'm doing."

Displacement/projection. "It was Command's fault for issuing such a stupid order; I didn't have the right backup; they're all trying to blame me for everything."

Refocus on positive attributes. "Hey, that miss was a fluke – I'm usually a great marksman; I'm not going to let one mistake jam me up."

Refocus on positive behaviors. "Okay, I'm going to get more training, increase my knowledge and skill so I'll never be caught with my pants down like this again."

Janik (1991) proposes that, in the short term, clinicians actively support and bolster psychological defenses that temporarily enable the service member to continue functioning. Just as a physical crutch is an essential part of orthopedic rehabilitation when the leg-injured patient is learning to walk again, a psychological crutch is perfectly adaptive and productive if it enables the service member to get back on his emotional feet as soon as possible after a traumatic critical incident. Only later, when he or she is making the bumpy transition back to normal life, are potentially maladaptive defenses revisited as possible impediments to progress. It is thus only when defenses are used inappropriately and for too long – past the point where the person should be walking on their own – that they constitute a "crutch" in the unhealthy and pejorative sense.

Suicide Prevention and Intervention

Arguably, the single most devastating personal mental health crisis is suicide. Considering that both military service and law enforcement are high-demand, high-stress fields that attract personnel who tend to have high expectations of themselves, little tolerance for weakness, and a black-and-white, all-or-nothing view of success and failure, it is perhaps not surprising that self-perceived failure may lead to depression and suicidality, often commingled with alcohol and substance abuse. Police officers and military service members may become despondent and suicidal for a variety of reasons related to their service or their family life (Jones et al., 2007; Miller, 2005b, 2006a, 2006d, 2007a; Norcross, 2003; Rodgers, 2006).

Military and Law Enforcement Suicide: Basic Facts

One area of disparity between military service and law enforcement may be in the actual rate of suicide. While suicide is the third leading cause of non-battle-related deaths in the military, the actual suicide rate for military personnel is lower than that of the nation as a whole (Jones et al., 2007). In contrast, several surveys have identified the suicide rate among police officers as higher than that of the general civilian population (Cummings, 1996; Mohandi & Hatcher, 1999; Rudofossi, 2007; Violanti, 1995, 1996), although this is still controversial (Curran, 2003).

Suicidal crises rarely occur in isolation, but are most commonly seen in police officers with prior histories of depression, or in those who have recently faced an overwhelming crush of debilitating stressors, leading to feelings of hopelessness and helplessness. A typical pattern consists of a slow, smoldering build-up of tension and demoralization, which reaches a "breaking point," and then rapidly nosedives into a suicidal crisis (Allen, 1986; Blau, 1994; Cummings, 1996; Heiman, 1975; Henry, 2004; Mohandie & Hatcher, 1999; Rodgers, 2006). Similarly, the most frequent precipitating factors in suicides among active-duty military personnel include feelings of shame, disgrace, isolation, worthlessness, and hopelessness related to service performance failures, disciplinary charges, professional and personal relationship problems, substance abuse, or prior suicide attempts. Curiously, higher rates of suicide are seen in military personnel who work in security or law enforcement specialties (Jones et al., 2007).

Suicidal crises tend to be short, which means that timely intervention can literally make a life-or-death difference. With appropriate treatment, the vast majority of depressed, potentially suicidal persons improve considerably within a few weeks (Bongar, 2002; Maris, 1981; Reinecke, Washburn, & Becker-Weidman, 2007). This hardly means that depressed moods and suicidal thoughts won't ever occur again, but a history of successful psychological treatment provides a support resource that the individual can rely on if and when the next crisis begins to brew.

Preventing Military and Law Enforcement Suicide

One of the persisting problems in dealing with police officer suicide is the pervasive code of silence that characterizes these personnel. Officers are reluctant to report depression or other problems for fear of being seen as weak or, worse, of having restrictions placed on their activities (e.g., weapon carrying). Fellow officers are equally reluctant to "rat out" a distressed comrade, even though they may strongly suspect he or she needs help. Thus, there is a need for every law enforcement agency to have an efficient, nonstigmatized referral system for dealing with officers in psychological distress, so that any problems noted can receive appropriate treatment in a supportive atmosphere (Anderson, Swenson, & Clay, 1995; Blau, 1994; Miller, 2006d; Rodgers, 2006; Russell & Biegel, 1990; Toch, 2002).

In this regard, police psychologists can learn from their military colleagues, who have been proactive in education and training in regard to mental health issues such as depression and suicide. One advantage of military organizations is that programs generated by the Department of Defense, or even within an individual service branch, can achieve rapid, wide dissemination among service personnel, whereas the fragmented nature of literally thousands of municipal, county, regional, state, and federal law enforcement agencies in the U.S. makes such information-sharing a daunting task.

One example of such a military program is the Air Force's LINK (Staal, 2001), which stands for:

L = *Look* for possible concerns or signs of distress.

I = *Inquire* about those concerns.

N = *Note* the level of risk.

K = *Know* the appropriate referral sources and strategies.

Similarly, the Navy and Marine Corps have adopted a program called AID LIFE (Jones et al., 2007), which stands for:

A = Ask. "Are you thinking of hurting yourself?" or "Are you thinking about suicide?" Remember that asking a suicidal person about his or her thoughts will not impel them to do it, and may in fact save their life.

I = Intervene immediately. Don't wait to take action. Let the person know that he or she is not alone and that someone cares enough to do something.

D = Don't keep it secret. Silence can only lead to increasing isolation and deterioration.

L = Locate help. Seek out a superior officer, chaplain, medical or mental health corpsman, crisis line worker, or other person who can intervene.

I = Inform the chain of command, so that they can arrange for long-term assistance, if necessary.

F = Find someone. Don't leave the person alone.

E = Expedite. Get help now. You may save someone's life.

Warning Signs of Suicide

In turn, one area where the military can learn from law enforcement is in the development and implementation of specific protocols for prevention, response, and follow-up treatment of service members in distress. One of the most important prevention factors involves recognizing the warning signs of suicide (Allen, 1986; Cummings, 1996; Miller, 2005b, 2006a, 2006d; Mohandie & Hatcher, 1999; Quinnet, 1998; Rodgers, 2006), which include the following:

Threatening self. Verbal self-threats can be direct: "I'd be better off eating my gun;" or indirect: "Enjoy the good times while you can – they never last."

Threatening others. Verbal threats against others can be direct: "I oughta cap that damn lieutenant for writing me up;" or indirect: "People with that kind of attitude deserve whatever's coming to them."

Nothing to lose. The service member behaves insubordinately, without regard to career repercussions: "I'll drink or smoke what I want, on or off duty – what are they gonna do?" Or he recklessly puts himself in danger on the job – a kind of "passive suicide."

Weapon surrender. The service member may fear his own impulses, but be reluctant to admit it: "As long as I'm on desk duty this week, can I keep my gun in my locker? It's a pain to lug it around the compound."

Weapon overkill. This is the opposite pattern: the service member begins carrying more than one backup weapon, or begins to keep especially powerful weapons in his vehicle or on his person.

Cry for help. "Things are getting too hairy out here; I think I may need to check into the Bug Hilton to get my act together."

Brotherhood of the damned. "You know the news story about that double-tour corporal who fragged his CO in Iraq? I know how that poor bastard felt."

Overwhelmed. "My wife just left me, my checks are bouncing, I'm drinking again, and the investigative ferrets are crawling up my butt. I just can't take all this."

No way out. "If that Review Board burns me again, that's my last strike. No friggin' way I'm going to jail for just trying to do my job."

Final plans. The service member may be observed making or changing a will, paying off debts, showing an increased interest in religion, giving away possessions, making excessive donations to charities, and other "end of days" activities.

Intervention with the Actively Suicidal Service Member

If the warning signs have been missed, the first chance a clinician or peer may get to intervene with a depressed, suicidal service member may be when the crisis is already peaking. The task now is to keep him or her alive long enough to get appropriate follow-up care, and this can be accomplished by adapting and applying some fundamental principles of civilian and law enforcement crisis intervention (Gilliland & James, 1993; Greenstone & Leviton, 2001; Kleepsies, 1998; Miller, 1998, 2006d; Rudd, Joiner, Jobes, & King, 1999).

Define the problem. While some personal crises relate to a specific incident, many evolve cumulatively as the result of a number of overlapping stressors, until they hit the proverbial "breaking point." In such cases, the service member himself may be unclear as to what exactly led to the present suicidal state. By helping the member clarify what's disturb-

ing him, nonlethal options and coping resources may be explored. It also shows that you're listening and trying to understand.

Ensure safety. You're not going to solve all of the service member's problems in this one encounter. What you want to do is make sure he survives this crisis so he can avail himself of whatever follow-up services are necessary. For now, try to encourage the individual to put even a few short steps between the thought of a self-destructive action and its implementation. For example, if he has a gun, ask him to unload it or decock it. If he's got a knife to his throat, see if he'll put in on the table or at least lower it to his lap. If he's holding a bottle of pills, encourage him to keep the cap on while you're talking. If he's standing on a building ledge or on a curb beside heavy traffic, maybe you can get him to take a step or two back. And so on.

Provide support. Keep the conversation focused on resolving the present crisis, perhaps gently suggesting that the larger issues can be dealt with later – which subtly implies that there will indeed be a "later." In the meantime, just "being there with empathy" (Blau, 1994) with the service member helps.

Examine alternatives. Often, people in crisis are so fixated on their pain and hopelessness that their cognitive tunnel vision prevents them from seeing any way out. You want to gently expand the range of nonlethal options for resolving the crisis situation. Typically, this takes one of two forms: *accessing practical supports:* 1) persons or groups immediately available to help the service member through the crisis until he or she can obtain follow-up care; and *2) coping mechanisms* – cognitive strategies, distracting activities, positive images and memories of family, religious faith, or review of successful handling of crises in the past, that show the service member that hope is at least possible.

Make a plan and obtain commitment. Again, this involves a combination of both practical supports and coping mechanisms, as well as both short-term and longer-term plans. Clarify what the service member will do in the next minutes, hours, and days, and what role other people will play. Confirm that he or she agrees with the plan and set up a system to monitor and ensure its implementation.

Arrange for follow-up. When the acute crisis has passed, referral to a mental health clinician is crucial for two reasons. First, the military or police psychologist may have to perform a fitness-for-duty evaluation to determine if the officer or service member is able to return to work; and if not, what treatment or other measures will be required to restore him or her to active duty. Second, specialized psychotherapeutic techniques may be applied; these may involve a combination of emotional exploration, realistic confidence-building, and practical problem-solving approaches, sometimes combined with medication.

Killing

Many professionals undertake dirty, demanding, and/or dangerous work – firefighters, paramedics, rescue workers, airline pilots, and so on. But only police officers and soldiers share the distinction of having the ability, authority, and in many cases the responsibility to kill other human beings as part of their job description. One difference is that while police officers may have to fire their weapon in the line of duty, killing another person in these circumstances is perceived as a last resort and the overall emphasis is on maintaining order without the use of deadly force. Military service members, however, know that they are trained precisely to kill the enemy and may have to do so on a regular and large-scale basis. Even for highly trained soldiers, the taking of human life can be a profound experience that can contribute to combat stress and behavioral problems (Campsie et al., 2006; Clary, 2005; Corbett, 2004; Friedman, 2004; Galvoski & Lyons, 2004; Jelinek, 2007; Murphy, 2007; Nordland & Gegax, 2004). Thus, there may be much that law enforcement and the military can learn from each other in dealing with the effects of killing as a vocation.

Deadly Force in Policing: Officer-Involved Shootings

Among all public safety and emergency service workers, the unique and ultimate symbol of the law enforcement officer is the gun. No other nonmilitary service group is mandated to carry a lethal firearm as part of their daily equipment, nor charged with the responsibility to use their own discretion and judgment in making split-second decisions to employ deadly force when called for. Yet, in reality, the firing of one's weapon in the line of duty is a rare event and most officers spend their entire careers without a single service-related weapon discharge.

Available data indicate that about 600 criminals are killed each year by police officers in the United States. Some of these killings are in self-defense, some are accidental, and

others are to prevent harm to others. The sources of stress attached to an *officer-involved shooting* (OIS) are multiple, and include the officer's own psychological reaction to taking a life, the responses of his or her law enforcement peers and the officer's family, rigorous examination by departmental investigators and administrators, possible disciplinary action or change of assignment, possible criminal and civil court action, and unwanted attention and sometimes outright harassment by the media (Baruth, 1986; Bohrer, 2005; Cloherty, 2004; Henry, 2004; Honig & Roland, 1998; Honig & Sultan, 2004; Horn, 1991; IACP, 2004; McMains, 1986a,1991; Miller, 2006c, 2006d, 2008; Perrou & Farrell, 2004; Regehr & Bober, 2005; Russell & Beigel, 1990; Zeling, 1986).

Shooting: Perceptual, Cognitive, and Behavioral Disturbances

Many police officers who have been involved in a deadly force shooting episode have described one or more alterations in perception, thinking, and behavior that occurred during the event (Artwohl, 2002; Honig & Roland, 1998; Honig & Sultan, 2004; Solomon & Horn, 1986; Wittrup, 1986); these are similar to those reported in military personnel following a firefight. Most of these reactions can be interpreted as natural adaptive defensive reactions of an organism under extreme emergency stress

Most common are *distortions in time perception*. In the majority of these cases, service members recall the shooting event as occurring in slow motion, although a smaller percentage report experiencing the event as speeded up.

Sensory distortions are also common and most often involve *tunnel vision,* in which the service member is sharply focused on one particular aspect of the visual field, typically, the suspect's gun or weapon, while blocking out everything in the periphery. Similarly, *"tunnel hearing"* may occur, in which the service member's auditory attention is focused exclusively on a particular set of sounds, most commonly the opponent's voice, while background sounds are excluded. Sounds may also seem muffled or, in a smaller number of cases, louder than normal. Police officers have reported not hearing their own or other officers' gunshots. Overall perceptual clarity may increase or diminish.

Some form of *perceptual and/or behavioral dissociation* may occur during the firefight. In extreme cases, the shooter will describe feeling as though he or she were standing outside or hovering above the scene, observing it "like it was happening to someone else." In milder cases, the service member may report that he or she "just went on automatic," performing whatever actions were necessary with a sense of robotic detachment. Some shooters report intrusive distracting thoughts during the scene, often involving loved ones or other personal matters, but it is not known if these substantially affected their actions during the event.

A *sense of helplessness* may occur during the shooting exchange, but this may be underreported due to the potential stigma attached. A small proportion of service members report that they "froze" at some point during the event; again, either this is an uncommon response or personnel are understandably reluctant to report it. In a series of interviews with police officers, Artwohl (2002) found that most of these instances of "freezing" really represented the normal *action-reaction gap* in which officers make the decision to shoot only after the suspect has engaged in clearly threatening behavior. In most cases, this brief evaluation interval is a positive precaution, to prevent the premature shooting of a harmless citizen. But in situations where the ostensibly prudent action led to a tragic outcome, this cautious hesitation may well be viewed retrospectively as a fault: "If I hadn't waited to see the bad guy draw, maybe my partner would still be alive." Very similar situations are encountered by military occupation personnel who patrol potentially hostile civilian areas.

Disturbances in memory are commonly reported in shooting exchanges. About half of these involve impaired recall for at least some of the events during the shooting; the other half involve impaired recall for at least part of the service member's own actions; this, in turn, may be associated with the going-on-automatic response. More rarely, some aspects of the scene may be recalled with unusually clarity – a *flashbulb memory.* Over a third of cases involve not a total loss of recall but a distortion of memory, to the extent that the shooter's account of what happened differs markedly from the report of other observers at the scene; in such cases, they may be accused of lying or deliberate distortion.

Military and Law Enforcement Shooting and Post-Shooting Reaction Phases

The stages of response that both soldiers and police officers go through following a service-related taking of a human life are similar. Campsie and colleagues (2006) summarize Grossman's (1996) description of five basic phases often seen in response to killing in combat, which is quite similar to the reactions reported by police officers in civilian law enforcement shootings (Nielsen, 1991; Williams, 1999).

The first phase occurs prior to the shooting itself and consists of *concern about being actually able to pull the trigger* when the time comes, of not freezing up and letting one's comrades down.

The second phase is the *actual killing experience,* which is often done reflexively, with the solider describing him/herself as "going on automatic."

Elated at having survived the deadly encounter, and having proven to himself that he can do the deed, there is a third stage of *exhilaration* that comes from having "popped my cherry" and from having been able to put one's training into action. This exhilaration, fueled by the release of large amounts of adrenalin, can create a high or rush, which in some cases can give rise to combat addiction. Rodgers (2006) describes the kind of "adrenalin overdosing" that can poison a police officer's nervous system and lead to adverse reactions later on.

Remorse and nausea, Grossman's (1996) fourth phase – or what police psychologists (Nielsen, 1991; Williams, 1999) have called the *recoil and remorse* phase – follows the rush of exhilaration and is often associated with a close-range kill; this may be more commonly experienced by police officers who tend to confront their adversaries in close quarters, as opposed to many soldiers who often fire from a distance. However, there may be times when a soldier experiences a sense of identification, and empathy for the victim sets in, especially if the slain combatant was a fellow enemy soldier "just doing his job like I was," as opposed to an insurgent bomber or assassin, for whom there will be far less sympathy or identification. The service member may be creeped out by his own initial response: "I enjoyed killing that guy way too much – is there something wrong with me?"

For police officers, feelings of guilt or self-recrimination may be especially likely in cases where the decision to shoot was less than clear-cut or where the suspect's actions essentially forced the hand of the officer into using deadly force, such as in botched robberies, domestic disputes, or suicide-by-cop scenarios (Kennedy, Homant, & Hupp, 1998; Lindsay & Dickson, 2004; Miller, 2006d; Perrou & Farrell, 2004; Pinizzotto, Davis, & Miller, 2005). Military service members may be able to feel more justification in killing on a traditional battlefield, but may experience many of the same kinds of self-recriminations in the nontraditional fighting arenas that have characterized most wars since the Vietnam era, in which targets are often elusive and ambiguous, with blurred lines between combatants and civilians.

During this recoil/remorse phase, the military or law enforcement service member may seem detached and preoccupied, spacily going through the motions of his job duties, and operating on behavioral autopilot. He may be sensitive and prickly to even well-meaning probing and congratulations by his peers ("How close was the enemy?" "Way to go, killer – you got the bad guy"), and especially to accusatory-like interrogation and second-guessing from official investigators or the media: "Officer Jackson, did you really believe you were in fear for your life from a confused teenager?" or, "Sergeant, did you really believe that civilian family was hiding a group of insurgents?"

Also, during this recoil phase, a variety of posttraumatic symptoms may be seen, most of which will resolve in a few days or weeks (Anderson et al., 1995; Blum, 2000; Cohen, 1980; Geller, 1982; Honig & Sultan, 2004; Russell & Beigel, 1990; Williams, 1999). Some of these will represent general posttraumatic reactions familiar to psychological trauma workers (Gilliland & James, 1993; Greenstone & Leviton, 2001; Miller, 1998, 2006d; Regehr & Bober, 2004), while others will have a specific military or law enforcement line-of-duty shooting focus.

Physical symptoms may include headaches, stomach upset, nausea, weakness and fatigue, muscle tension and fasciculations, and changes in appetite and sexual functioning. Sleep is typically impaired, with frequent awakenings and often nightmares. Typical posttraumatic reactions of intrusive imagery and flashbacks may occur, along with premonitions, distorted memories, and feelings of déjà vu. Some degree of anxiety and depression is common, often accompanied by panic attacks. There may be unnatural and disorienting feelings of helplessness, fearfulness, and vulnerability, along with self-second-guessing and guilt feelings. Substance abuse may be a risk.

Service members may show a pervasive irritability and low frustration tolerance, along with anger and resentment toward the enemy, the unit, the police department or military branch in general, unsupportive peers or superiors, or uncomprehending family members or civilians. Service members may long for support, but at the same time reject helping efforts, leading to an alternating *control-alienation syndrome* (McMains, 1986b, 1991) which is offputting and irritating to everyone concerned. All this, combined with increased hypervigilance and hypersensitivity to threats of all kinds, may result in overaggressive policing or soldiering, leading to abuse-of-force complaints (Miller, 2004).

Grossman's (1996) final phase, *rationalization and acceptance,* can be a long process and many veterans wrestle with their war experiences for a lifetime. Similarly, in law enforcement (Miller, 2006d, 2008; Nielsen, 1991; Williams, 1999), as the officer begins to come to terms with the shooting episode, a similar resolution or acceptance phase may ensue, wherein he or she assimilates the fact that the use-of-force action was necessary and justified in this particular instance of the battle for survival that often characterizes law enforcement deadly encounters. Even under the best of circumstances, resolution may be partial rather than total, and psychological remnants of the experience may continue to haunt the officer periodically, especially during future times of crisis. But overall, he or she is eventually able to return to work with a reasonable sense of confidence.

In the worst case, sufficient resolution may never occur, and the officer enters into a prolonged posttraumatic phase, which may effectively end his or her law enforcement career. In less severe cases, a period of temporary stress disability allows the officer to seek treatment, to eventually regain his or her emotional and professional bearings, and to ultimately return to the job. Still other officers return to work right away, but continue to perform marginally or dysfunctionally until their actions are brought to the attention of superiors (Bender, Jurkanin, Sergevnin, & Dowling, 2005; Miller, 2004; Rudofossi, 2007). Similar posttraumatic actions can be seen in military service members (Campsie et al., 2006).

Post-Shooting Psychotherapeutic Strategies

One thing we know from civilian officer-involved shootings is that most officers can be successfully returned to service with minimum psychological intervention. Psychotherapeutic strategies in these cases will follow the short-term intervention model described in a previous section of this article. Some specific principles apply to law enforcement post-shooting stress (Miller, 2006c, 2006d, 2008), and these can be productively adapted to the military setting.

First, review the facts of the case with the service member. This allows for a relatively nonemotional narrative of the traumatic event. But in the case of a shooting episode, it serves a further, specific function. Precisely because of the cognitive and perceptual distortions that commonly occur in these kinds of incidents, what may be particularly disturbing to the service member is the lack of clarity in his or her own mind as to the actual nature and sequence of events. Just being able to review what is known about the facts of the case in a relatively safe and nonadversarial environment may provide a needed dose of mental clarity and sanity to the situation. Solomon (1991, 1995) describes one such therapeutic format as going over the incident "frame by frame," which allows the officer to verbalize the moment-to-moment thoughts, perceptions, sensory details, feelings, and actions that occurred during the shooting incident. This format helps the officer become aware of, sort out, and understand what happened.

Next, review the service member's thoughts and feelings about the shooting incident itself. This resembles the thought and reaction phases of a critical incident debriefing, but may not be as cut-and-dried as with a typical group debriefing. Remember, killing another person represents a special kind of critical incident and it may take more than one attempt for the service member to productively untangle and reveal what's going on in his or her mind. Give him/her extra time or extra sessions to express his/her thoughts and feelings, and be sure to monitor the reaction so as not to encourage unproductive spewing or loss of control. One of the most important things the military or police psychologist can do at this stage is to help modulate emotional expression so that it comes as a relief, not as an added burden.

Provide authoritative and factual information about psychological reactions to a law enforcement or military shooting incident. The kinds of cognitive and perceptual distortions that take place during the incident, the posttraumatic symptoms and disturbances, and the sometimes offputting and distressing reactions of colleagues and family members are likely to be quite alien to the service member's ordinary experience and might be interpreted by him or her as signs of going soft or crazy. Normalize these responses for the service member, taking a somewhat more personal and individualistic approach than might be found in the typical group debriefing's information-education phase. Often, just this kind of authoritative reassurance from a credible mental health professional (and in the military case, a superior officer) can mitigate the service member's anxiety considerably.

Finally, provide the opportunity for follow-up services, which may include additional individual sessions, group or family therapy, referral to support services, possible medication referral, and so on. For both military and law enforcement personnel, the seeking of psychological services must be destigmatized and supported at all levels (Blau, 1994; Friedman, 2004). In addition, both military and police psychologists can utilize the powerful social bonding forces of unit

cohesion and morale to bolster stress-resilience and aid in recovery from shootings and other traumatic incidents (Brusher, 2007; Campsie et al., 2006; Maddi, 2007; Miller, 2006d; Rodgers, 2006).

As with most cases of critical incident psychological intervention, follow-up psychotherapy for shooting episodes tends to be short-term, although additional services may be sought later for other problems partially related or unrelated to the incident. Indeed, any kind of critical incident may often be the stimulus to explore other troublesome aspects of the service member's professional or personal life and the success in resolving the present incident with the psychologist may give the service member confidence to pursue these other issues in an atmosphere of trust, thus potentially avoiding an adversarial disciplinary process (Blau, 1994; Miller, 1998, 2006d).

Conclusions

Military and police psychology are siblings that need to be reintroduced and reunited, along with their firefighter, paramedic, rescue and recovery, and other emergency services cousins, to form a comprehensive system of clinical and operational psychology for personnel in high-danger, high-demand professions. This article has offered a glimpse into that collaboration and cross-fertilization which will hopefully spur further research into the art and science of helping our men and women in uniform, whatever their stripes and colors may be.

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Police Peer Support Programs: Current Knowledge and Practice

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Abstract: *This review examines the current empirical research and literature on peer assistance programs, peer support, and peer-facilitated interventions for police officers. A literature search was conducted to identify studies on police, peer support, and peer assistance programs. Studies were examined in terms of the following criteria: description of data collection methods, findings, study limitations, implications for police, workplace assistance, and peer support. Articles on peer support in the aftermath of the September 11, 2001, World Trade Center rescue and recovery efforts were also reviewed. The research studies reviewed in this article do not evaluate peer program effectiveness from the perspective of those officers receiving peer services. To better serve this invaluable population, efforts must be made to incorporate their views. Information is also needed on the effectiveness of peer assistance programs and peer-driven crisis intervention models. Finally, research is needed that specifically examines the effectiveness of programs that utilize trained peers in partnership with professional mental health practitioners. [International Journal of Emergency Mental Health, 2008, 10(1), pp. 27-38].*

Key words: *Emergency mental health, crisis intervention, peer assistance, peer support, police, program evaluation, social support, trauma stress, training*

First responders are relied upon daily across the nation to respond to emergencies that threaten our lives, well-being, property, peace, and security (Howard & Rattien, 2004). Along with firefighters, emergency medical technicians, and the military, police officers often play a critical role in the initial response to and management of both natural and man-made disasters. As key agents in any preparedness strategy, the police will assume a variety of roles, and their experiences will differ depending on the tasks they engage in, their exposure to traumatic events, and the frequency with which they can expect to be exposed to additional (even more severe) events. For example, disasters caused by mass violence and acts of terrorism are treated as crime scenes, and in such cases, the police assume an additional and critical investigatory role (Jackson, Baker, Ridgely, Bartis, & Linn, 2004). Furthermore, prolonged rescue, recovery, and investigatory efforts may extend over weeks or months. This in turn forces officers to endure uncertainty and ongoing threats—conditions that may result in heightened anxiety and a sense of vulnerability among police and other first responders (Na-

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tional Child Traumatic Stress Network & National Center for PTSD, 2005).

As first responders, police are engaged in a high-risk occupation, and many will be exposed to multiple traumas across their careers. Therefore, it is important to identify which training and psychological interventions are most effective to facilitate optimal work performance, including mechanisms that support ongoing rescue and recovery work, post-event exposure adjustment, and long-term psychological health and well-being (National Institutes of Health [NIH], 2007).

Police peer support programs have been utilized to address many of these needs; however, the empirical research on such programs remains limited (NIH, 2007). This paper will examine that gap, exploring the vital role that peer support and peer assistance programs play immediately after critical and other incidents, as well as the impact such programs may have in mitigating officers' ongoing day-to-day work stress. In particular, studies were reviewed that seek to understand how peer support and peer programs help officers in managing cumulative work-related stress reactions, and whether such programs are an effective option to protect against posttrauma adjustment disorders (including posttraumatic stress disorder).

Some of the literature reviewed in this article was conducted after September 11, 2001, because this event resulted in the large-scale mobilization of several existing peer programs. These programs were part of an ongoing (more than 2 year) large-scale peer intervention effort for New York City Police Officers and other first responders. To date, this post-9/11 literature is the most systematic effort at an examination of peer interventions for police that currently exists.

OVERVIEW

Police work has evolved into a high-profile, professional, round the clock, public service; the nature of policing has expanded to include a diverse range of activities that require a complex set of skills from officers. From maintaining community relations to ensuring public safety via law enforcement, counterterrorism activities, and national homeland security, officers' ever expanding array of responsibilities now precipitate more severe sources of stress than ever before (Raymond, Hickman, Miller, & Wong, 2005). In addition, police officers are vested with the public trust and, when needed, the authority to use force against the public to maintain order and enforce societal laws (Raymond et al., 2005). As a result, police are under pressure to remain lawful, often in dangerous and unprecedented circumstances, while also enforcing civil obedience (Paoline, 2003).

It has been established in the research literature that the nature of police work, coupled with exposure to traumatic events, can have negative consequences for individuals resulting in posttraumatic adjustment issues (Reyes & Elhai, 2004). Additionally, the cumulative effects of this high-risk occupation have been shown to affect police families. In fact, the unusually high suicide and divorce rates of first responders in general—and police in particular—raise questions and concerns about the long-term impact of this work on police officers and their family members (Kirschman, 1997; Loo, 1999, 2003; Witt, 2005; Woody, 2006).

Police Peer Assistance Programs

Police department-based peer assistance programs were first put into practice after a police-involved shooting in Los Angeles in 1981. The specific aim was to address work-related stress among officers (Robinson & Murdoch, 2003). Since then the use of peer programs within police departments has grown. The size, location, sponsorship, and relationship to the department vary from location to location. However, these programs all share the belief that peers are in the best position to help other peers to recognize and acknowledge work-related stress and to facilitate an intervention before the problem becomes life threatening (Finn & Tomz, 1997; Robinson & Murdoch, 2003).

Today, police peer assistance programs provide first-line assistance and basic crisis intervention to fellow officers, relying on carefully selected, highly trained paraprofessionals who are drawn from within the organizations they serve (Robinson & Murdoch, 2003). These programs offer immediate and ongoing peer support after a disaster that, if left unaddressed, may lead to substance abuse, depression, illness, or more serious psychological disorders (Chamberlin, 2000; Robinson & Murdoch, 2003).

Law enforcement assistance programs have also evolved to provide services geared toward the management of general occupational stress (unique to police work). Even so, although assistance programs have been implemented in some law enforcement agencies across the United States, the empirical research on intervention strategies and program models is extremely limited and somewhat inconclusive (Finn & Tomz, 1998). Despite this gap in the literature, however, so-

cial support is considered one vital occupational characteristic of police culture that plays a pivotal role in workplace stress managements (Stephens & Long, 2000). It has indeed been found to prevent negative long-term physical and psychological health consequences following a traumatic event (Boscarino, 1995; Joseph, Yule, Williams, & Andrews, 1993; Norris & Kaniasty, 1996; Solomon & Mikulincer, 1990; Stephens & Long, 2000).

Significance of Workplace Social Support

Social support in the workplace is significant in alleviating stress for all workers, but it may be particularly so for first responders, including police. Social support can buffer the stress of work demands and help alleviate the impact of work exhaustion (House, 1981). Viewed as an interpersonal transaction, social support may include: emotional support (esteem, affection, and trust); appraisal support (affirmation and feedback); instrumental support (money, labor, and time); and informational support (advice, suggestions, and directives; House, 1981). However, to fully understand the significance of social support in the workplace, it is also important to look at received support (actual support received) and perceived support (perceptions about support available), as well as support provided through formal (professional services) versus informal (family, friends) sources (Armeli, Eisenberger, Fasolo, & Lynch, 1998; Joseph et al., 1993; Norris & Kaniasty, 1996). Finally, it is also important to consider who within the workplace provides social support and what this means to the workers (Gerstner & Day, 1997; Schriesheim, Castro, & Cogliser, 1999).

Although workplace social support may be effective in reducing stress (House, 1981), critical questions remain as to how and whether police will access such support systems within the workplace. This is a very complex issue, with roots in departmental expectations of police as well as the nature of police work. Police are expected to address horrendous crime scenes but are trained to dissociate from *any* normal emotional reactions to the work (Levenson & Dwyer, 2003). Yet it may well be that *shutting off* is not possible over time and that the denial of emotional reactions has the most detrimental effect on an officer's well-being. An examination of police acceptance and use of workplace employee assistance programs (EAPs) found that although a majority of officers (70.7%) were aware of the available EAP services, only 22% had ever utilized these services for themselves (Asen & Colon, 1995). However, 54.9% of the participants knew of another police officer who had used EAP services, suggesting that participation is not confidential or that officers utilizing EAP services discuss these experiences with their colleagues (Asen & Colon, 1995).

Police Culture and Help Seeking

Policing has been described as more than a line of work; the job is viewed rather as a way of life with a worthwhile purpose (Reiner, 1992). Thus, strong professional identification is a key element in police culture, characterized by the shared sense of mission that officers hold in regard to the work they do and a responsibility for the well-being of one another (Murray, 2005; Reiner, 1992). However, police work also occurs within the context of a paramilitary organization. This paramilitary context limits autonomy and is not conducive to meaningful interpersonal relationships between supervisors and subordinates (Violanti & Aron, 1994). Renck, Weisæth, and Skarbö (2002), as well, have shown that the organizational setting plays a significant role in traumatic stress reactions and that other organizational issues are pertinent to understanding and managing work-related psychological trauma. Their work further suggests that the organizational environment can define the framework within which trauma and recovery may occur.

Although many scholars emphasize the uniquely supportive role that camaraderie may play among first responders, they also mention some potentially negative effects of this form of bond (Paton, 1997). Officer solidarity can lead to an "us against them" mentality. This can be a double-edged sword that weakens existing emotional attachment to outsiders, including spouses and other family members (Woody, 2005). In fact, one study showed that talking things over with a coworker was the most frequent coping strategy reported while on duty. Yet keeping things to oneself was the coping strategy more frequently used while off duty (Alexander & Walker, 1994). Greenstone (2000) found that law enforcement officers—regardless of the intensity of their work and the cumulative effect of related stressors—are generally reluctant to seek any assistance. They are furthermore particularly resistant to professional mental health intervention. One explanation for this resistance has been that officers begin to feel that only other officers can fully appreciate their situations and offer helpful insights (Woody, 2005).

Although there is a significant body of literature that looks at police officer characteristics, culture, work-related stress, coping, and burnout, there remain few controlled out-

come studies of disaster mental health services for police and other first responders (Institute of Medicine, 2003; NIH, 2007; National Institute of Mental Health, 2002).

Perceptions of Help Seeking—Stigma

Traditionally, police officers have been known to be reluctant to seek formal help or assistance in managing work-related stress—particularly from mental health professionals (Paton, 1997; Woody, 2005). Miller (1995) found that seeking assistance was believed to be a sign of cowardice and an admission of incompetence among law enforcement officers. As a result, police officers are frequently reluctant to seek department-based assistance, fearing that any indication of weakness may result in threats to their careers. For instance, a police officer's disclosing or evidencing high stress in the workplace may risk confiscation of his firearm if that stress reaction is viewed as threatening job performance. The confiscation of firearms would result in an assignment to "desk duty" and the accompanying humiliation associated with this intervention (Levenson & Dwyer, 2003).

Although such an intervention is critical to protect department liability, it may result in a number of other negative consequences, such as censure, stigmatization, ridicule, alienation, and possibly limited career advancement for an officer (Levenson & Dwyer, 2003; Woody, 2005). It may also have financial implications, as officers assigned to desk duty are not permitted to volunteer for or collect overtime.

METHOD

A literature search was conducted to identify studies on peer support and peer assistance programs for police and other first responders. The search was further refined to focus on the effectiveness of peer support and assistance programs for police. This focus also revealed some literature related to police and other first responder peer support efforts made immediately following the September 11 attack on the World Trade Center in New York City (peer support was offered for the duration of the rescue and recovery efforts and continued for approximately 2 years beyond the event). The articles selected for retrieval included those that referenced, either in the title or abstract, police, first responders, crisis intervention, workplace assistance, or peer support.

Key words included police, law enforcement, police stress, workplace assistance, peer support, social support, critical incidents, interventions, utilization, program evaluation, program effectiveness, police characteristics, and police culture. For articles pertaining to 9/11 police involvement, search criteria included September 11, 2001, WTC and health, and WTC and police. The databases searched include: PyschInfo, PyschLit, ProQuest, Social Services Abstracts, Social Work Abstracts, and Sociological Abstracts.

The reference lists of selected studies and articles were screened for other relevant studies. Only articles specific to police were considered for this review. Selected articles appeared in the following publications: *The American Journal of Psychiatry*, *Brief Treatment and Crisis Intervention*, *Critical Care*, *FBI Law Enforcement Bulletin*, *The Forensic Examiner*, *International Journal of Emergency Mental Health*, *Journal of Emergency Medical Services*, *Journal of Organizational Behavior*, *Morbidity and Mortality Weekly Report*, *Occupational Medicine*, and *The New York Times*. All articles used were published between 1997 and 2007.

Peer support is a model of intervention that is utilized in numerous and varied settings (i.e., in 12-step programs, school-based suicide prevention programs, and those for railroad workers). However, the literature lacks continuity and focus in regard to police peer assistance programs and peer support research. In fact, most studies on police generally tend to look at the characteristics of police officers and police culture, whereas few specifically address outcomes related to intervention effectiveness with police.

To date, only three published studies were found that focus exclusively on the issue of workplace peer assistance and support for police. For the purposes of this paper, the studies were examined in terms of the following four criteria: description of data collection methods; findings; study limitations; and implications for police, workplace assistance, and peer support. Although not an empirical study, one report was identified that reviewed the literature on law enforcement stress and stress programs including peer support. This report provides an examination of the nature of support programs and is included in this review. Finally, several articles were identified that provide background and descriptive information on the types of peer support offered to police following 9/11.

Review of the Literature

Much of the material written to date about peer support, peer programs, and police is anecdotal. Indeed, there is a paucity of empirical research into the effectiveness of the

available peer programs (Hammond & Brooks, 2001). However, there is some empirical evidence suggesting that police are more likely to seek out the immediate and informal support of peers to deal with day-to-day stress—as well as in the midst of a critical incident or during the ongoing rescue and recovery phases (Alexander & Walker, 1994).

Police Peer Support and Peer Support Programs

The goal of a support program is to enhance employee well-being, promote job performance, increase organizational efficiency, and help facilitate a work-family balance (Akabas & Kurzman, 2005; Masi et al., 2002).

Finn and Tomz (1997) conducted a literature review of law enforcement stress and stress programs. In addition, they conducted in-person and telephone interviews with program directors, mental health providers, law enforcement administrators, union and association officials, family members, and civilians associated with law enforcement personnel at a number of agencies. Their research project was sponsored by the National Institute of Justice (NIJ) and was informed by an advisory board comprised of police psychologists and practitioners. Finn and Tomz (1997) complied with the recommendations of numerous law enforcement mental health providers who had convened in 1995 at a law enforcement symposium sponsored by the Federal Bureau of Investigation.

Finn and Tomz (1998) found that peer support services offer a beneficial outlet for officers unwilling or not ready to seek professional help. Such services were furthermore found to be effective in reducing the stigma and mistrust associated with professional mental health services. Finally, although many departments have found that establishing a program may take some time, peer support services are ultimately widely accepted among officers. Overall, the report advocates for peer support programs as an effective way for law enforcement agencies to provide important support to their personnel (Finn & Tomz, 1998).

Goldstein (2005) sampled 463 Vermont State police officers via questionnaire in an effort to understand and assess the challenges related to the delivery of peer support services. The survey compared utilization of services with perceived stigma among officers. Of those surveyed, the majority had not used peer services; thus the results indicated that officers who sought help were frequently stigmatized (Goldstein, 2005). These results also indicated that officers who sought help were less influenced by perceived stigma than those who had not. Goldstein posited that these results may be indicative of a greater need for services because of extreme stress or other crises. This study also points to the need for empirical research to determine what interventions and programs work best for whom.

Communication strategies and styles are traits that have been studied among police. In terms of informal peer support, Stephens and Long (2000) examined social support, as measured by communication with police supervisors and peers, as a buffer of work-related traumatic stress. In this study, 527 officers in New Zealand, representing a distribution in rank, were surveyed. The questionnaire included measures of psychological symptoms, physical symptoms, traumatic events, and social support, including both content of communication (non-job communication, negative work communications, positive work communications, and communications about all disturbing experiences) and ease of talking about trauma. The overall findings supported previous research emphasizing the importance of social support (Boscarino, 1995; Joseph et al., 1993; Norris & Kaniasty, 1996; Solomon & Mikulincer, 1990; Stephens & Long, 2000). These authors found that the ease of talking about traumatic experiences in the workplace or positive communication about work-related issues moderated the effects of traumatic stress for officers. However, although some types of communication buffer stress at moderate levels, other types may not be protective. These findings highlight the importance of the source of support (supervisor versus peer) and suggest that supervisors may not be in the best position to facilitate trauma reducing communication with supervisees concerning a critical incident or other traumatic event. This underscores the importance of different sources of support and specific types of communication, as well as the levels of the communication. They argue that the results of this study highlight the need to develop interventions such as peer support programs (Stephens & Long, 2000).

A nationwide cross-sectional survey conducted in the Norwegian police service looked at a variety of conditions in the workplace that cause stress, including work-related events and situations encountered (Berg, Hem, Lau, Haseth, & Ekeberg, 2005). Respondents were also asked whether a peer support service had been established in their workplace. The study found that perceived lack of support was viewed as more severe in districts where peer support had been planned but not implemented. In districts that lacked peer support

services, police experienced all of the stress factors (i.e., job pressure, lack of support, and work injuries) more frequently. This survey found that in districts where peer support services were planned—but not delivered—there were relatively high levels of stress. The authors note that they did not have data addressing why peer support was not implemented in all districts throughout the country. In this study, causality could not be assessed because the study was cross-sectional. Interestingly, police in Norway are normally unarmed, but the culture and reluctance to seek help are consistent with findings among other, armed police populations (Berg et al., 2005).

Role of Peer Support in the Aftermath of September 11, 2001

In a study of rescue and recovery workers (including police) from the World Trade Center Health Registry (WTCHR), a voluntary, longitudinal cohort of individuals highly exposed to the 2001 WTC attack, Perrin and colleagues (2007) found that emergency medical services/medical disaster personnel and firefighters were twice as likely to have current probable posttraumatic stress disorder (PTSD) than police. These authors note that police department screening procedures may result in a more psychologically resilient workforce. They also posit that police may be more likely to underreport symptoms of psychological distress for fear of the negative consequences associated with this admission. Perrin and colleagues (2007) argue that their findings demonstrate a need for targeted interventions specific to the occupational diversity of workers responding to large-scale disasters to mitigate any psychological adjustments associated with this work.

The literature reveals some interest in peer-based intervention strategies for police officers to offset the possible negative psychological consequences of cumulative work stress and, in particular, exposure to critical incidents. Renewed attention was given to intervention efforts to prevent PTSD in first responders in both the academic and popular press after the events of September 11, 2001 (Hammond & Brooks, 2001; Jones, 2001).

A great number of uniformed New York City Police Department (NYPD) officers had significant exposure to World Trade Center (WTC) attacks in 2001. In fact, more than 5,000 officers responded within the first 2 days, and another 25,000 officers worked at ground zero, the morgues, and the Staten Island landfill over a 6-month period (Castellano, 2003; Dowling, Moynihan, Genet, & Lewis, 2006). Still there are little data on the long-term impact of this exposure, including stress symptoms and other related psychological adjustment issues (Dowling et al., 2006).

In November 2001, the New York City Police Department mandated that all 55,000 employees, including uniformed members, attend mental health counseling sessions to relieve the stress and strain imposed on them by the WTC attacks and its aftermath (Jones, 2001). The departmental mandate was a response to the known stigma and resistance associated with help seeking for psychological distress among police. It was thought that the mandate would eliminate the perception of any stigma because everyone was forced to attend (Jones, 2001). The program was implemented in partnership with Columbia University and offered individual, group, and family assistance. This three-tiered approach received financial support from the Police Foundation and was modeled after a similar approach utilized in Okalahoma City in 1995 in which first responders were mandated to participate in counseling sessions (Jones, 2001).

The issue of time has important implications for disaster mental health and early intervention (Reyes & Elhai, 2004). Generally, it is believed that the sooner the intervention is provided the better it is for individuals exposed to critical incidents (Reyes & Elhai). Yet, almost a year later, only 15,000 of the 55,000 NYPD officers had attended the mandated sessions (Jones, 2001).

The CISM model: Critical Incident Stress Management (CISM) is an intervention model that was designed specifically for emergency response personnel and, later, the military (Sheehan, Everly, & Langlieb, 2004). CISM is the primary peer-led intervention model utilized after a critical incident today. CISM comprises multiple intervention techniques for individual and group intervention. However, the empirical research on CISM is limited and unclear because of methodological limitations, including timeliness of interventions and concerns about model fidelity (e.g., strict adherence to model protocol), which is believed to be critical to the effectiveness of each component of CISM (Everly & Mitchell, 1999, 2000; Hammond & Brooks, 2001). Despite this lack of research, CISM techniques and methodologies have been adopted worldwide and have recently been made an integral part of the United Nations critical incident protocols.

Although some scholars and law enforcement personnel advocate for widespread training and use of the CISM

model, others point to the mixed empirical findings and caution that this form of intervention may in fact cause further harm to some individuals (Deahl, 2000; Dowling et al., 2006; Reyes & Elhai, 2004). Yet scholars on both sides of this debate agree that more research is needed (Bisson, Churchill, & Wessely, 2001; Sijbrandij, Olff, Reitsma, Carlier, & Gersons, 2006; Wessely & Deahl, 2003). The potentially lasting negative psychological effects of such exposure also speaks to the need for multiple intervention strategies that can be utilized over time and in some cases over years (Scurfield, Viola, Platoni, & Colon, 2003). Although after September 11 CISM was provided to police officers and some firefighters, still other first responders, including emergency medical technicians (EMTs) and paramedics within New York's 9-1-1 systems, were not offered CISM or other intervention services (Dionne, 2002).

EIU, POPPA, and Cop-2-Cop: Three established peer programs specializing in the unique mental health needs of police in New York City and New Jersey provided services immediately following the WTC attacks in 2001. These programs included the Early Intervention Unit (EIU), a peer-based program internal to the NYPD that comprises police officers and civilians; the Police Organization Providing Peers Assistance (POPPA), an independent nonprofit program external to the NYPD comprising retired and active NYPD officers who volunteer as peer support officers; and Cop-2-Cop (located in New Jersey), which is external to all departments and funded by the state (Ussery & Waters, 2006). Cop-2-Cop was established as a crisis intervention help-line for law enforcement personnel throughout the state—including law enforcement officers and fire and emergency service personnel—and is staffed by retired peers from each of the respective professions. All three programs provided on-site and off-site defusing and debriefing, as well as hotline services, after the attacks, and indeed they continue to provide ongoing peer counseling and crisis intervention services (Castellano, 2003; Dowling et al., 2006).

Proponents of peer support programs have long addressed the potential negative toll of cumulative police work stress and the need to protect officers by providing competent mental health services that tend to their unique concerns. Programs such as POPPA and Cop-2-Cop have made great efforts in establishing services that could engage officers in a confidential venue to overcome their resistance to help seeking. Confidential service delivery is believed to reduce the threat of stigma and other negative attitudes and beliefs about mental health services within police departments and precincts (Dowling et al., 2006; Ussery & Waters, 2006).

The intervention efforts made after the WTC attacks by POPPA and Cop-2-Cop are documented in a few descriptive reports that detail both the research efforts as well as accounts of the interventions employed to assist officers (Castellano, 2003; Dowling et al., 2006). POPPA, in partnership with Project Liberty, developed a survey and collected data, between December 2002 and December 2003, from 28,000 uniformed members of the NYPD who had participated in the WTC rescue and recovery efforts. This survey, which assessed the officers' stress symptoms, yielded some striking data. However, the authors caution that these results are limited for two reasons. First, the authors did not rely on existing scales or structured clinical interviews. Second, there is no comparison data prior to September 11, 2001, which would provide pre-event or baseline data (Dowling et al., 2006).

Nevertheless, the results of this survey indicated high levels of behavioral, emotional, physical, and cognitive stress symptoms. For instance, 13.3% of the officers reported hypervigilance, and another 7.8% reported social isolation and withdrawal. Increased irritability was reported among 17.2% of the officers, and 12.9% reported increased sadness and tearfulness. Additionally, 14.1% of the officers reported fatigue and exhaustion, and 9.2% reported difficulty concentrating (Dowling et al., 2006). Despite the limitations of this data set, the results clearly underscore the ongoing lack of available information on the effects of this response effort. Such findings further draw attention to the need for ongoing research into the immediate and long-term effects on the mental health of police officers exposed to critical incidents (Dowling et al., 2006).

WTC screening program: In July 2002 the Mount Sinai School of Medicine established a comprehensive screening program to evaluate the mental health status of the 2001 World Trade Center rescue and recovery workers, including police, construction trades, utilities, sanitation, firefighters, and other first responders. Smith and colleagues (2004) published a report that examined a subset of participants, 1,138 individuals, who were screened between July 16, 2002, and December 31, 2002, approximately 10 to 16 months after the incident (Smith et al., 2004). The majority of study participants were men (91%) and non-Hispanic White (58%). Several standardized measures were used to screen for symptoms of antici-

pated post-disaster mental health conditions (including GHQ-28, PTSD Symptom Checklist, CAGE, and Sheehan Disability Scale). Approximately half (51%) of the participants, on the basis of one or more measures, met the threshold criteria for a clinical mental health evaluation (Smith et al., 2004).

Approximately 20% of the participants also reported symptoms that meet the threshold for PTSD; of this group, 13% met the full diagnostic criteria for PTSD (Smith et al., 2004). Furthermore, only 3% of all participants reported accessing mental health services prior to participating in this screening program. The findings are limited because they were not categorized by occupational group and the researchers may have lacked knowledge about the size of the WTC rescue and recovery worker populations; a selection bias might exist in that individuals who came forward to participate in the screening may have done so because they experienced greater exposure and/or symptoms; and questionnaires that were utilized in the screening were validated using populations other than the one under study—including psychiatric patients and women (Smith et al., 2004).

Summary

The literature reviewed above highlights the lack of evidence-based intervention practices with first responders generally and indicates a need to rigorously test the interventions currently utilized in large-scale disaster mental health response efforts for all responders including police (Scurfield et al., 2003). In particular, the components of the CISM model, including interventions such as defusing, debriefing, demobilization, one-on-one peer support counseling, and crisis intervention, are all in need of further evaluation (Hammond & Brooks, 2001; Reyes & Elhai, 2004).

DISCUSSION

The literature reviewed in this paper underscores the current limitations of the empirical research on peer support programs for police officers. It furthermore sheds some light on the existing state of disaster mental health intervention, practice, and programming. In particular, there are several important issues that require attention. The first involves present gaps in knowledge about the peer intervention models and programs currently in use for police. Although CISM is the dominant intervention model in which many peers provide support, this model requires further empirical evidence to support widespread use after a critical incident (Reyes & Elhai, 2004; Wessely & Deahl, 2003). And though the implementation of peer programs has been widely approved by federal agencies and police organizations, such endorsement is based largely upon observation, intuition, and conjecture (Finn & Tomz, 1998). Additionally, more information is needed on peer models and staffing because many programs utilize both professional mental health practitioners and trained peers. Issues of model fidelity and training would also benefit from evaluation. Finally, the research studies reviewed in this article do not evaluate peer program effectiveness from the perspective of the officers receiving peer services. To better serve this invaluable population, efforts must be made to incorporate their views.

A critical issue in this review of the literature is the nature and focus of research conducted on police officers. In other words, what is it that studies have focused on? Although researchers have examined police officer characteristics and organizational culture, these studies do not address strategies for overcoming police resistance to services that promote psychological health and well-being. In particular, more studies that look at the interaction between officers and organizations are needed to understand what perpetuates the mistrust and stigma attached to job-related stress and help seeking in the workplace. Finally, established peer support programs would benefit from evaluation.

Additionally, how police officers provide one another with spontaneous or informal peer support during the course of a day's work and in the aftermath of a disaster warrants further study. This research would lend valuable insight into how to train officers to enhance these skills (such as the ability to assess for suicidal ideation, alcohol abuse, etc.) to avoid harmful (though well intended) interventions. Program models must also be examined for issues of feasibility and flexibility. Lastly, due to the radiating impact of police work on police families, further investigation into strategies to assist police family members is needed.

Several significant questions remain regarding the effectiveness of peer support and peer programs in supporting the psychological health and well-being of police and other first responders. For instance, are peer programs an appropriate intervention that can assist in protecting the psychological health and well-being of police? Given the perceived threats to help seeking discussed above, what role, if any, should the police organization play in providing support services? And will police officers voluntarily utilize support services that are provided within their departments? What

effect, if any, does mandating services have on officers' mental health? Most importantly, what can be done to offset the impact of long-term high-risk occupational stress and exposure to manmade and natural disasters on psychological health and well-being?

Finally, although the empirical research is limited, there is a wealth of anecdotal evidence that suggests that peer programs may be well situated to certain high-risk occupations including police and other first responders. Of particular importance seems to be the likelihood of greater utilization and retention in services facilitated by peers, individuals who know first hand the realities of the day-to-day stress. Peers also offer an alternative mechanism for engaging reluctant officers in treatment and facilitating connection to traditional mental health services.

Recommendations

Based on this review of the literature, the following key factors should be included in program planning when considering the implementation of a peer support program. These recommendations are drawn from the works of Finn and Tomz (1997) and Robinson and Murdoch (2003).

An organization seeking to establish a peer support program should determine which population it aims to serve. A needs assessment allows an organization the opportunity to identify the target population and to determine why services are needed, and whether or not a peer program model is the appropriate fit. A mission statement and clear list of objectives should be established to assist in addressing relevant issues, such as program goals, and would facilitate outreach to potential clients and funding sources.

Access and utilization issues are essential components when considering peer programs for police and other first responders. The need for privacy when accessing help and confidentiality of services has been consistently shown to obstruct help seeking in the workplace (Woody, 2005). Therefore the following things need to be considered. It is important to determine the location of services (i.e., whether they will be implemented on-site or off). Next, legal considerations, such as state laws and agency policies concerning client disclosure problems to peers and therapists, must be communicated to all potential program participants. In addition, it is useful to establish and disseminate written policies and procedures that address such areas as peer selection criteria, client eligibility, limits to confidentiality, criteria for vetting outside mental health resources, and other services offered (for a more comprehensive discussion see Finn & Tomz, 1997). Finally, it is also useful for the peer program to determine relationships and established boundaries between the peer program, the organization, and the unions. Once these issues have been addressed it is important to consider how to market the program to reach the intended client population.

Evidence informed practice requires monitoring and evaluation of the peer program. An evaluation can help the program by revealing the extent to which it is effective—describing the ways in which it is achieving the desired outcomes—and offer recommendations to refine program development. In the early stages of program implementation, process and impact evaluations are useful for maintaining funding and to improve program operations and program effectiveness (Finn & Tomz, 1997). By integrating this valuable feedback, not only do you address gaps in empirical knowledge, but you also assist in advancing the potential of this unique peer-based intervention to the next level.

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Group Process Research and Emergence of Therapeutic Factors in Critical Incident Stress Debriefing

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Abstract: *Critical incident stress debriefing is a highly utilized and often debated form of post-trauma exposure intervention. This article presents exploratory group process research that utilized a mixed method approach and group process research techniques. The article's findings, the emergence of therapeutic factors, support that CISD group work does yield indicators consistent with support/ psychoeducation groups with a crisis theme. Further the events that trigger the intervention yield specific therapeutic factors. CISD group work may be better understood through established group research patterns. [International Journal of Emergency Mental Health, 2008, 10(1), pp. 39-48].*

Key words: *CISD, process research, group work, therapeutic factors*

Crisis intervention after mass violence and disaster events has become an important effort in the recovery of humans impacted by traumatic stress. The toll on the human psyche is a significant concern for all disciplines of mental health professions. Group crisis intervention, through varying protocols, is one key standard of care for victims. The goal of this exploratory research is to investigate the potential effectiveness of Critical Incident Stress Debriefing (CISD) by using group research methodology.

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The issue of CISD efficacy is intensely debated, underscored by the importance of early intervention for those exposed to extreme stressors, and clouded with uncertainty as the results of efforts to capture the intervention in random controlled trials have not yielded empirical support. Strategies found in group process research methodology may provide a path to understanding the mechanism of change that may occur in CISD work. This article assessed therapeutic factors identified in narrative reports and as selected by CISD participants, Critical Incident Stress Management (CISM) peer leaders, and CISM mental health facilitators and employed multi-site, multi-incident data collection techniques. The research intended to answer the call given by the National Institute of Mental Health (2002) Consensus on Early Intervention to develop scientifically valid research and technological innovations to improve assessment, early intervention, and the treatment of people exposed to mass violence and natural disasters.

The State of the Inquiry

The Search for Efficacy

Efficacy-based research has led to findings both in support and not in support of the intervention. Problems in conducting methodological research on the effectiveness of CISD (also referred to in some literature as psychological debriefing or PD) have led to two camps: protagonists of CISD/PD interventions (Deahl, Srinivasan, Jones, Neblett, & Jolly, 2001; Everly & Boyle, 1999; Everly, Flannery, & Eyler, 2002; Everly, Flannery, & Mitchell, 2000; Hokanson & Wirth, 2000; Mitchell & Everly, 2000; Robinson & Mitchell, 1993; Wee, Mills, & Koelher, 1999) and critics warning of risk of harm in these processes (Bisson, McFarlane, & Rose, 2000; Bledsoe, 2003; Carlier, Voerman, & Gersons, 2000; Gist & Devilly, 2002; Gist, Lubin, & Redburn, 1998; Kenardy, 1998; Kenardy, 2000; McNally, Bryant, & Ehlers, 2003; Rose & Bisson, 1998; Rose, Bisson, & Wessely, 2001; Van Emmerik, Kamphuis, Hulsbosch, & Emmelkamp, 2002).

The National Institute of Mental Health's Early Intervention consensus cautions that the evidence in support of CISD/CISM interventions is weak in that random controlled trial (RCT) studies have not shown strong support for the method/model (NIMH, 2002). Everly's rebuttal in the appendix of the report noted that most of the RCT studies conducted did not use a group intervention and have serious methodological flaws (e.g. assigning primary victim with more serious injuries to the treatment group, providing individual not group interventions, and providing services during acute phase of the trauma before resolution work is appropriate).

The belief that quantitative research can capture complex interventions, such as a CISD or other interventions within the CISM model, and then determine their efficacy seems too simplistic and over-reaching. A recent article indentifying empirically based essential elements of psychological first aid begins with the acknowledgment "that no evidence-based consensus has been reached supporting a clear set of recommendations for interventions in the immediate and mid-term post-trauma phases. Because it is unlikely that there will be evidence from clinical trials…" (Hobfoll et al., 2007, p 283-284). Within the opening paragraph, they cite evidence that psychological debriefing is not effective in preventing PSTD and may be harmful.

Several authors (Deahl, 2000; Shalev, 2000; Wilson, 1999; Wilson & Sigman, 2000) conclude that PD/CISD research needs to address the following components: the reasons it is valuable; the beliefs that drive it; the forms it should take; and the processes that are relevant and for whom. Everly's rebuttal to the NIMH consensus served as a key guide in his emphasis upon looking to the group factors in CISD. The discussion now shifts to how methods of conducting group research may enhance the current depth of understanding about the CISD group processes.

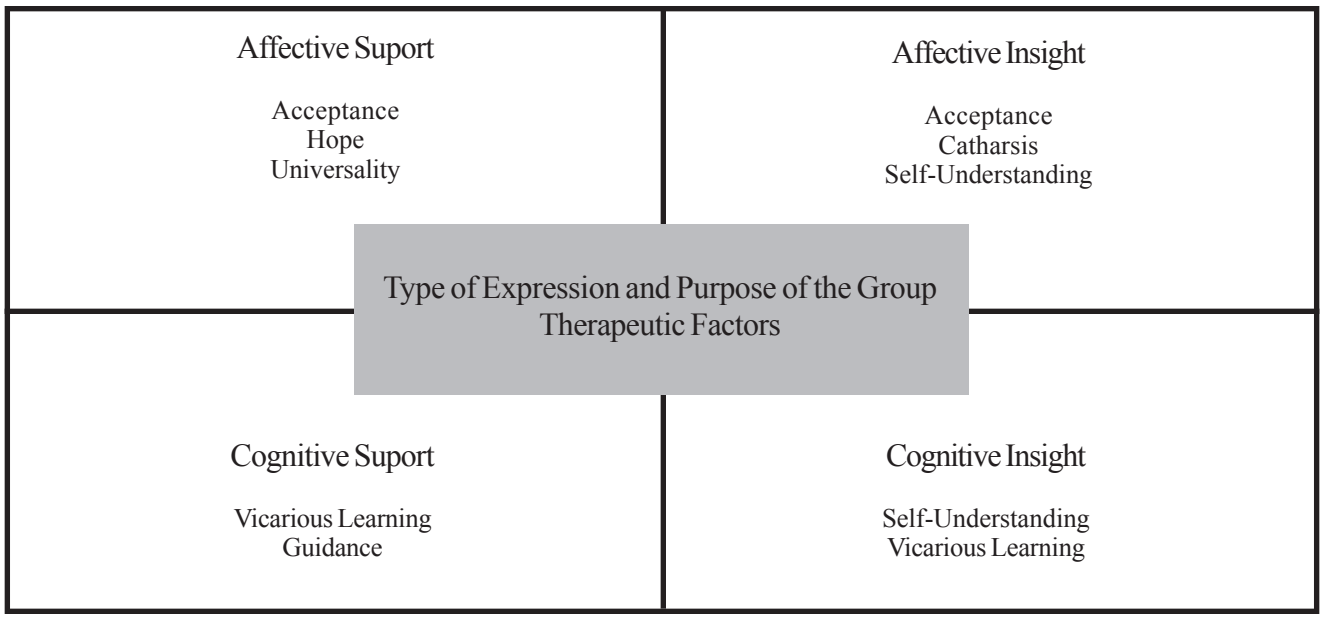
Group Process Research

Recognition of the importance of therapeutic factors in group work first appeared in the writings of Corsini and Rosenberg (1955). Extensive study of both training and psychotherapy group participant responses to group events led to the development of eleven therapeutic factors (Yalom, 1970, 1995, Yalom & Lesick, 2005). These include universality, imparting information, altruism, hope, corrective recapitulation of primary family group, development of socialization techniques, imitative behavior, interpersonal learning, group cohesiveness, catharsis, and existential factors.

Yalom's therapeutic factors have been further categorized into three theoretical classes: cognitive "thinking about" factors (guidance, self-understanding, universality, and vicarious learning), behavioral "learning from doing" factors (altruism, learning for interpersonal actions, and self-disclosure), and affective "emotional expression" factors (acceptance, catharsis, and instillation of hope; Bloch, Reibstein, Holroyd, & Themen, 1979). Kivlighan and Holmes (2004) developed a typology of groups based on the therapeutic factors members of many varied forms of group work endorsed as important. The analysis led to four distinct types of groups: affective insight, affective support, cognitive support, and cognitive insight. The different dimensions were characterized by type of expression, (i.e., whether the group leader emphasized affective or cognitive interventions) and purpose of the group [i.e., whether interventions were perceived as supportive/stabilizing (psychoeducational) or insight/challenge to grow (counseling/treatment)]. Figure 1 illustrates the top therapeutic factors in the typology.

Understanding the perceptions of therapeutic factors from both providers and participants in the CISD process and noting the similarities and differences in reported factors may lead to clarification of why some find the groups helpful and others do not. It has been proposed that therapeutic factors are present in CISD work but research has not documented which factors will emerge.

Figure 1. Kilvighan and Holmes (2004) Affective/cognitive and support/insight typology of therapeutic factors found in group work.



RESEARCH METHOD

This mixed model inquiry utilized web-based data collection of a structured interview with a purposive sample of emergency service personnel and CISM mental health and peer providers to assess the group process factors and contextual factors in CISD interventions. This section outlines the strategies for undertaking this study: selecting the research paradigm and theoretical frame; identifying the primary research question; describing the methodological tactics for gathering the data; constructing the web-based questionnaires; selecting and recruiting informants; and utilizing purposive sampling via web-based recruitment. The section concludes with data analysis procedures.

Paradigm Selection and Theoretical Frame

The selection of pragmatism as the guiding philosophical framework for the inquiry was consistent with the inquiry goals of understanding how CISD group effectiveness serves to mediate trauma resolution for emergency responders. Pragmatically-based designs strive to integrate assumptions, data collection methods, and analytic techniques toward explanations that not only distill the best of both worlds but also serve to more fully capture the studied phenomenon (Creswell, 1998). While the mixed model design reflected the principles of pragmatism, the final product, the understanding and reconstruction of knowledge coalesced from a consensus of personally defined experience, is underscored by constructivist values. Consensual qualitative research principles served as a unifying qualitative model that allowed generation of theory of how the "essence" of trauma exposure and resolution either emerges or fails to emerge across multiple case studies of CISD group process reviews (Hill, Thompson, & Williams, 1997; Hill, Knox, Thompson, Williams, Hess, & Ladany, 2005).

The theoretical frame, or lens, for this type of inquiry consisted of three primary perspectives that influenced the choices for data collection methods and the subsequent analysis: current literature on CISM and CISD; current literature on trauma resolution; and methods of conducting group process/outcome research. The theoretical frame was further influenced by the personal lens of the primary researcher who is a CISD mental health provider and CISM trainer, and a practicing trauma counselor with familial connections to those impacted by emergency services trauma exposure. Selection of the method of inquiry was congruent with the philosophical assumptions of pragmatism. The chosen methods reflected the three theoretical fields and accounted for researcher influence.

The primary focus of using a mixed method (emphasis on qualitative) approach to further understanding the CISD process is further supported by Patton's (2002) support of qualitative approaches:

> *"(a) depicting process requires detailed descriptions of how people engage each other; (b) the experience of process typically varies for different people so their experience needs to be captured in their own words; (c) process is fluid and dynamic so it can't be fairly summarized on a single rating scale at one point in time; and (d) participants' perceptions are a key process consideration" (p. 159).*

In summary, the rationale for the inquiry design was based upon the philosophical approach of practical exploration of the CISD utilizing process research. More specifically, this research effort used principles set forth for conducting group process research (Burlingame, Fuhriman, & Johnson, 2004; DeLucia-Waack, 1997; DeLucia-Waack & Bridford, 2004) and principles that were consistent with the contextual model of finding effectiveness in psychotherapy and counseling (Ahn & Wampold, 2001; Wampold, 2001). Effectiveness of the CISD process may be better understood in terms of the mechanisms of change (i.e. therapeutic factors) that occur, or do not occur. This data can be provided through intensive analysis of the narrative accounts of those that provide CISD interventions and the emergency responders that receive the intervention.

Research Question and Questionnaire Design

The "participant" in the research was the CISD, that is, the report about the debriefing itself. We considered each CISD report in totality as we analyzed the data. Three types of informants were recruited for participation: emergency services personnel, CISM peers (emergency service personnel trained in CISD protocols), and CISM mental health providers (Master's level and above practitioners). Each offered a different view of the CISD group process and the convergence/divergence of these viewpoints was used in both analysis of data and interpretation of findings.

The question was as follows: *What can we learn about CISD effectiveness by examining the potential mechanisms of change?*

The selection of items in the web-based questionnaires reflected established methods and procedure in conducting group process/outcome effectiveness research (Burlingame et al., 2004). The core focus, CISD group process/outcome research, has clear foundations in the seminal works on the effectiveness of groups. Therapeutic factor research developed through two distinct methods, the Q-sort methodology that employs group member ranking of descriptive statements about the group experience (Yalom, 1970, 1995, Yalom & Lesick, 2005), and the critical incident questionnaire (CIQ) methodology that employs rater coding of members' answers to open-ended questions about their group experience (Bloch et al, 1979). Using both a ranking system and open-ended questions in the web-based questionnaire allowed for cross checking the veracity of the narrative, as a source of verification for the raters, and served to allow a direct comparison to the aforementioned expression/purpose therapeutic factor typology.

There were a series of studies utilizing the critical incident questionnaire (CIQ) in group work methodology to develop frameworks to explain helpful moments, group climate, damaging aspects, leader effectiveness, member contribution, and group cohesion (Kivlighan & Goldfine, 1991; Kivlighan & Holmes, 2004; Kivlighan & Jauquet, 1990; Kivlighan, Multon, & Brussant, 1996; Smokowski, Rose, & Bacallo, 2001; Wheeler & Kivlighan, 1995). Each employed a different version of open-ended questions focusing on the particular aspect being sought. Replication of these methods within the current design allowed for direct comparison to existing group research during the analysis and interpretation of data.

The web-based questionnaires for each informant type gathered data about the experience of the CISD process. The questionnaire used CIQ style questions asking informants to identify the important aspects (helpful moments), "What did you see as the most important aspects or discussion points that happened during the debriefing?" and distressful moments (leader failures or challenges to the protocol), "Please describe any stressful or upsetting moments/discussion points during the CISD. What happened?" This part of the questionnaire concluded with a therapeutic factor rating scale. Basic demographics and work/training experiences were collected as well.

The final aspect of the questionnaire design was the decision to adopt computer-mediated collection as a vehicle for contacting respondents and collecting, storing, and ana-

lyzing the data. Computer-mediated research offered the advantage of increasing the diversity and heterogeneity of the sample (Mann & Stewart, 2000) as well as the types of individual experiences, events, quality of the CISD interventions, and the variety of outcomes. Emergency responders as well as many mental health providers have access to computers and use them as a routine part of daily work activities. Both mental health providers and emergency response personnel are accustomed to case notes that deal with a record of what happened within bounds of protecting sensitive client information. Thus both groups would have a familiarity with narrative reporting (Mann & Stewart, 2000). The study protocols were reviewed by the Southern Illinois University-Carbondale Human Subjects Committee and found to be appropriate to commence the study.

Informants and Recruitment

Emergency services personnel and CISD service providers, both mental health and peers, who had participated in the CISD process within the last six months were recruited through the membership email services of professional associations (e.g., the International Critical Incident Stress Foundation, the CISM Coordinators list serve, the Illinois Network of Critical Incident Stress Management Teams, the Central Illinois Fire Fighters Union, and the Illinois Fraternal Order of Police). Recruitment letters were sent in the form of emails and provided a hypertext link to the appropriate form of the questionnaire as well as a paper flyer version distributed by participating CISM teams. As CISM teams agreed to participate, they in turn were asked to forward the link to the questionnaire for emergency service response personnel that had received services. Recruitment continued until the data set reflected a variety of CISD reports that represented the range and scope of typical CISD groups.

Data Analysis

Consensual Qualitative Research (CQR) method (Hill et al., 2005; Hill & Williams, 1997) was selected for coding the transcripts. The CQR method allows for multiple researchers to create a strategy, code the records, use consensus decision-making, and complete systematic examination of the data. The research team consisted of the principal investigator and two professionally licensed, master's level counselors. The auditor during the consensus meetings is an Association for Specialist in Group Work Fellow. All were advanced group work supervisors and had been trained in the group CISM model. The use of an auditor enhances trustworthiness of the data (Hill et al, 2005).

The team met on multiple occasions to create a consensus on the kinds of information that was emerging in the data and how we might begin to interpret the themes. We identified textual data that yielded an understanding of the importance of therapeutic factors. The team identified consistency between the endorsement of therapeutic factors rating scales and the narrative responses.

FINDINGS

The consensual qualitative research (CQR) derived findings from the cross analysis of 38 critical incident stress debriefing (CISD) reports reflects 8 reports submitted by emergency service responders (ESR), 14 reports by critical incident stress management (CISM) peers, and 16 reports by CISM mental health (MH) providers. Each informant sample size is consistent with the recommended 8 to 15 participants (Hill et al., 2005; Hill & Williams, 1997) and the methodological requirement that participants be knowledgeable about the phenomenon under study.

The presentation of data in a CQR study is given in the third person rhetoric and uses certain terms to convey frequency (Hill et al, 2005).

Analysis of the Sample

Basic details regarding the CIS event offered information about the necessity of conducting a CISD based on nature of the event and emergence of need in the emergency responders. In order to establish the applicability of the group process data to follow, it was important to determine the kinds of incidents that were reported, whether the reports reflected significant incidents, and whether stress reactions were noted in the initial aftermath. Each of the reports included here met those criteria. The CISD reports included incidents from 15 different states, as well Canada. There was an equal distribution of reports from rural, suburban, small city, and urban areas. Gender distribution for the informants was 18 men and 14 women.

The ESR informants presented fire service, fire/emergency medical services, emergency medical services (EMS), telecommunications, and law enforcement occupations. Six of the ESR informants held two or more emergency services

occupations (e.g., full time in a sheriff's department and part-time or volunteer in both fire and EMS). All occupational statuses of full-time, part-time, paid-on-call, and volunteer were represented. The years of emergency service ranged from 5 to 29 years.

The CISM Peers and Mental Health informants had completed the ICISF Group Intervention course and in general had completed two to three additional ICISF courses. Peers generally reported having experienced multiple CIS events within their own careers. Mental health providers generally reported training backgrounds that included trauma assessment, intervention, and group work. All providers in the study met the protocols for selection of CISM team members.

Emergence of Themes

The CIQ responses and therapeutic factor rating scales yielded indications of key therapeutic factors. The research team identified multiple therapeutic factors in the narratives. The prominent narrative themes revealed therapeutic factors of universality, acceptance, catharsis, and expression. Narratives that reflected universality included a response by an emergency responder who identified the most important aspect of the CISD, "that what I was feeling was 'normal' - that others felt the way I did." Others responders concurred. "I wasn't alone. It brought us all together in a way that anyone who hasn't experienced a debriefing can never understand. It was truly a wonderful experience. It made the pain external and not internal anymore." "It is good to discover that I am having normal responses to an abnormal situation. I learn this from those I work with at the debriefing. None of us are bullet-proof and we are affected differently depending upon our experiences and involvement. I believe it has to do with where we are at personally as well." Yet another reported, "Everyone is reluctant to discuss personal affects. It is helpful to hear they are normal and judging by the responses in the room, I am not alone." These themes were generally reported by mental health and CISM peers as well.

Acceptance emerged as a thematic therapeutic factor. An emergency responder reported, "I think all the others had the same idea. We done everything we could do." Three different mental health providers reported "The support several people received that they did a good job and that the fire service was proud of their performance;" "The most important component was dealing with the sensory stimulus as the response went well and there was not a great deal that could have been done;" and "After struggling to second guess the tactical decisions, most came to the conclusion that there had been nothing individually that could have changed the outcome." One of the CISM Peers noted, "The most important discussions during this debriefing is that it appeared that everyone performed their part in the incident to the best that could be expected. It was important for each of the participants to hear this from their peers."

Catharsis and expression emerged through narrative that included an emergency responder who identified the most distressful aspect in his CISD experience as "hearing a colleague describe his nightmares about the mother screaming and seeing his distress" and yet his most important was "that I was not alone." Another shared, "There were tears... it's hard to see a coworker who is always so strong break down. But it also made me respect that coworker and the team all the more." Yet another stated, "I felt blessed to be able to share enough that I could feel cleansed." Mental health providers also voiced the importance of the catharsis/expression theme. "Anger was a strong factor. To be able to express it and have others understand helped to diffuse it." A CISM Peer expressed "Open honest communication was vital to this debriefing. When the participants were finally able to admit that they felt angry towards the parents in this situation it made a difference."

In addition to responding to the CIQ questions, each informant was asked to indicate what statements reflected one's experience of the CISD process. "Pick the five most important items for participants in the debriefing you just described with 5 being the most important, 4 being the next most important, and so on." These results were generally consistent with the written descriptions of the process elements. The team found rare instances where the written word indicated a different factor than those chosen.

Each informant group selected a different cluster of therapeutic factors. Results are displayed in Figure 2. It is noted that none of the informants were reporting on the same CISD, so comparison across the groups is not meaningful. However, additional analysis of the therapeutic factors by the type of incident resulted in different clusters emerging based upon the event itself. Table 1 illustrates the clusters.

In summary, both the narrative responses and the therapeutic factor rating scale identified themes of therapeutic factors that emerged during the 38 CISD interventions included in this study. The findings were derived by consensual analysis that included an auditor who is a Group Work

Figure 2. Ranking of therapeutic factor rankings by informant type and by composite findings.

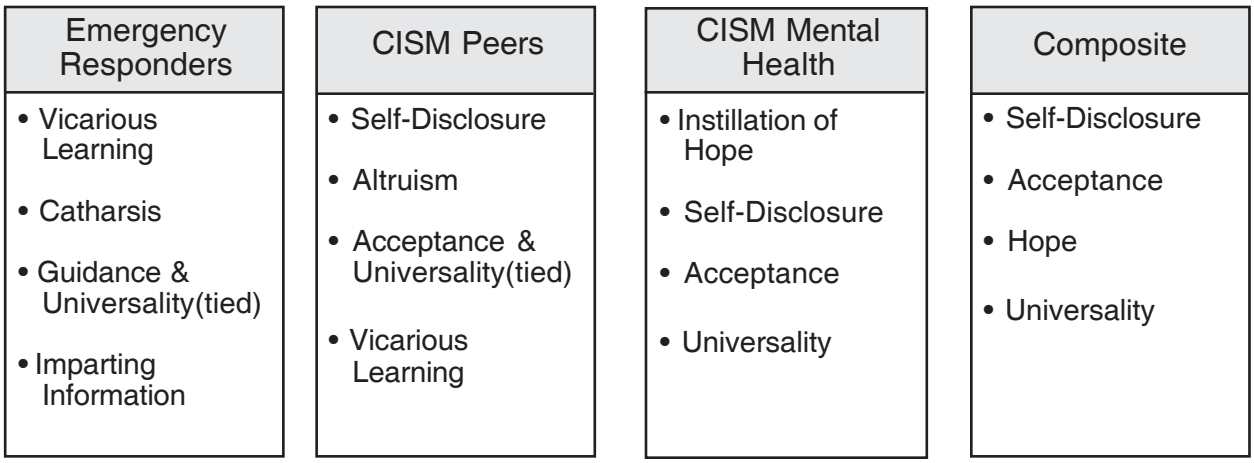


Table 1
Therapeutic Factors by Type of Event

Event Type	Top Ranked Therapeutic Factors
Graphic Death	Hope, Altruism, and Acceptance
Malicious Harm	Universality, Guidance, and Hope
LOD Death/Injury	Acceptance, Self to Disclosure, Guidance
Known Victim	Universality, Catharsis, Self Disclosure
Mass Casualty	Self Disclosure, Acceptance, Altruism
Officer Suicide	Impart Information, Family Norms, and Catharsis

Fellow in the Association of Specialists in Group Work, and were further supported in the selection and ranking of therapeutic factors statements used in other group work studies.

LESSONS LEARNED FROM THE CISD GROUP PROCESS

The emergence of the therapeutic factors, or mechanisms of change, in group work have been previously identified as empirical support for the effectiveness of group work (Burligame et al., 2004; Delucia-Waack, 1997; Delucia-Waack & Bridford, 2004). The therapeutic factors that emerged here further support the conclusion that the CISD intervention is indeed a support group with both affective and cognitive elements. The Kivlighan and Holmes (2004) expression/purpose typology of therapeutic factors serves as a useful interpretive tool for the current findings (see Figure 1). It is also important to note that the selected therapeutic factors that would typically occur in affective or cognitive insight groups (psychotherapy groups) were not endorsed by the informants. Informants did endorse Catharsis and Vicarious Learning which Kivlighan and Holmes (2004) identified as elements for insight (growth) groups. It is important to recall that these factors are consistent with mechanisms of change for crisis resolution (Everly & Mitchell, 1999; Mitchell & Everly, 1997; Raphael, 1986).

Our findings reported that each type of informant indicated a different ranking of the therapeutic factors. Yalom and Lesick noted that group leaders often view the process differently than group members (Yalom & Lesick, 2005). None of the informants were reporting on the same CISD, so com-

parison across the groups may also be due to the differences in the event dynamics. In fact, additional analysis of the therapeutic factors by the type of incident resulted in different clusters emerging based upon the event itself. This event-based emergence of therapeutic themes tends to further support the CISD protocols of event-driven processing, or the "normal reaction by normal people to an abnormal event" premise, that drives CISD group work.

Therefore, evidence of therapeutic factors support the conclusion that the CISD interventions reported here shared common ground with the literature on affective and cognitive support groups and with the literature on crisis intervention. Effectiveness of the CISD process may be better understood in terms of the mechanisms of change that occur, or do not occur, as mediated through the perceptions of those that provide and those that receive the intervention than in trying to prove or disprove overall efficacy. Themes from the narratives reported here confirmed that the CISD does reduce social isolation and promote adaptation to the demands of ESR work.

CONCLUSIONS

Effective and ethical group work is rooted within empirical evidence. The emergence of the therapeutic factors is very important support for the usefulness of the CISD process. The endorsement of factors supports the conclusion that the process, as reported here, is being conducted as a support group with a specific crisis intervention theme. The evidence that different events lead to different therapeutic factors is intriguing. Further research on the kind of event and therapeutic factors may improve the field's ability to improve the process.

The decision to explore the CISD using well-established group research methodology and consensual qualitative research has yielded important information about the group process aspects. An adage in group work is the "proof is in the process." The limitations of qualitative research *prohibit* the claim that the study has "proven" CISD to be effective. It has simply confirmed that effective and ethical group process did occur in the 38 CISD reports so considered.

Well-established pathways of lines of research in group work also offer the direction for future research. Inquiries often begin by gathering comprehensive process data and then evolve into quantitative methods. As the research team met and discussed the analysis of the CISD narratives, we began the framework for a systematic rating scale that would allow future CISD reports to be coded into numerical data. Such a system would allow multiple reviewers, both those who are familiar with the CISD process and those who are not, to code the narrative responses from remote locations. After completing the analysis structure, we will be able to recruit additional coders and use the existing data set to establish the reliability and validity of the coding instrument. Then the research efforts would seek to gain endorsements from emergency service trade unions and associations, thereby increasing the number of ESR personnel reports, and allowing for the collection of comparison data on ESR who do not attend or who are not offered a CISD intervention. This is an exploratory work intended to yield group process findings. Process commentary is meant to provoke practitioners to deeply engage in reflection about what they do and why they do it.

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The Effects of an Aerobic Exercise Program on Posttraumatic Stress Disorder Symptom Severity in Adolescents

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Abstract: *The purpose of the study was to investigate the impact of aerobic exercise on the severity of symptoms of Posttraumatic Stress Disorder (PTSD), depression, and anxiety. Twelve institutionalized female adolescents completed a 15-session aerobic exercise program consisting of moderate-intensity walking. All participants completed the Child PTSD Symptom Scale (CPSS), Trauma Symptom Checklist for Children (TSCC), Multidimensional Anxiety Scale for Children (MASC), and Children's Depression Inventory (CDI) twice at pretest. Data were collected twice during an extended baseline period, at post-intervention, and again at a 1-month follow-up assessment. Yarnold's (1988) ipsative z-score comparison method for single-case repeated measures design was utilized in data analysis for participants with stable levels of symptomatology during baseline. Strong effects of aerobic exercise were found for PTSD and trauma symptom severity but not for anxiety and depressive symptom severity. Follow-up results were mixed. The results of this study were fairly consistent with previous research findings. Strong effects of aerobic exercise on depression and anxiety were not found; however, relatively low levels of such symptomatology had been noted for many participants during the baseline phase of the study. [International Journal of Emergency Mental Health, 2008, 10(1), pp. 49-60].*

Key words: *PTSD, trauma, anxiety, depression, aerobic exercise*

The purpose of the study was to investigate the impact of moderate-intensity aerobic exercise on PTSD symptom severity in children. Past findings with regard to the effects of aerobic exercise on various aspects of children's psychological adjustment demonstrate that such physical activity is related to significant benefits in social, emotional, and behavioral functioning (Basile, Motta, & Alison, 1995; Brown, Welsh, Labbe, Vitulli, & Kulkarni, 1992; Hatfield, Vaccaro, & Benedict, 1985; Hilyer, Wilson, Dillon, & Caro, 1982; Percy, Dziuban, & Marten, 1981). For example, previous research has found physical exercise to be related to significant reductions in depressive and anxiety symptomatology and significant gains in self-esteem in children (Brown et al., 1992; Percy et al., 1981).

Two studies have examined the relationship between physical exercise and PTSD symptomatology, specifically, in adults and children (Manger, 2000; Newman & Motta, 2007). Manger (2000) examined the impact of aerobic exercise on

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PTSD in nine adult participants. The aerobic exercise program involved walking and jogging on a treadmill for approximately 30 minutes, two or three times weekly, for a period of 6 to 10 weeks. Participation in the aerobic exercise program was associated with significant reductions in reexperiencing symptom severity, avoidance and numbing symptom severity, and hyperarousal symptom severity. Significant reduction in depression and anxiety symptoms was also found. These reductions were evident at post-treatment and on 1-month follow-up assessment.

Although Manger (2000) found preliminary support for the efficacy of aerobic exercise in the treatment of PTSD, the study's weaknesses should not be overlooked. These include a high attrition rate; the original sample consisted of 26 participants, and only 9 completed the exercise intervention. Also, treatment integrity is an area of concern. Manger completed statistical analyses of the data on participants who completed a minimum of 12 exercise sessions within a 10-week period. Some variability was found in the number of sessions completed among the participants. Also, compliance with the exercise program was assessed by self-report.

Newman and Motta (2007) investigated the effects of an aerobic exercise program on childhood posttraumatic stress, depression, and anxiety. They found preliminary support for aerobic exercise as a treatment intervention. Eleven adolescent females from a residential treatment center completed an 8-week aerobic exercise program involving structured group exercises. Participation in the program led to significant declines in posttraumatic stress, depression, and anxiety. Significant reductions in psychological symptomatology were noted mid-intervention after 4 weeks of the intervention had passed. Further significant reductions were noted at the conclusion of the 8-week exercise program.

The greatest weakness in the Newman and Motta (2007) study was variability among the types of exercise in which the participants engaged. For example, some girls jogged, whereas others completed kickboxing exercises. The lack of uniformity is a concern.

It should be noted that currently no empirically grounded explanation(s) exists for the psychological benefits of aerobic exercise. Proposed factors include physiological changes, mastery and related increases in self-efficacy, and mental distraction (Basile et al., 1995; Petruzzello, Landers, Hatfield, Kubitz, & Salazar, 1991; Rowland, 1990). Clearly, future research is needed to identify the underlying mechanism(s) of change.

The purpose of the current study is to examine the effects of moderate-intensity aerobic exercise on childhood PTSD symptom severity while addressing weaknesses found in previous studies of this nature, including questionable program schedules, high attrition rates, and questionable treatment integrity. Given that PTSD is an anxiety disorder with a significant depression component, it was hypothesized that exercise would lead to reductions in PTSD, just as it had in prior studies of anxiety and depression. The strengths of our study include a fixed program schedule, a reward system to manage possible attrition, and direct monitoring of treatment integrity and compliance by the principal investigator. The principal investigator hypothesized that participation in an aerobic exercise program would result in significant reductions in PTSD symptom severity, trauma-related stress severity, anxiety symptomatology, and depressive symptomatology in a sample of institutionalized female adolescents. A 1-month follow-up assessment of psychological functioning was planned. Specific predictions regarding the findings from the follow-up assessment were not made, given the inconsistency of past research findings in this area.

METHODS

Participants

Participants were recruited from a private residential treatment facility in Westchester County, NY. The final sample included 12 participants with ages ranging from 14 to 17 years ($M = 15.42$, $SD = .79$). Four girls identified their ethnicity as African American, three girls identified their ethnicity as Latina, two girls identified their ethnicity as Caucasian/White, two girls identified themselves as Biracial, and one girl identified her ethnicity as Other. The length of stay at the facility ranged from 3 to 12 months ($M = 6$, $SD = 2.45$). All 12 participants received medical clearance for participation from the medical staff of the residential facility.

The current study would have been strengthened by knowledge of specific histories of trauma. However, institutional guidelines of the residential facility prohibited the investigator from obtaining information regarding trauma histories, socioeconomic backgrounds, and current treatment plans.

Materials

Materials included a demographics questionnaire, an exercise history form, the Child PTSD Symptom Scale (CPSS),

the Trauma Symptom Checklist for Children (TSCC), the Multidimensional Anxiety Scale for Children (MASC), the Children's Depression Inventory (CDI), a stopwatch, and index cards for listing individual heart rates.

The Child PTSD Symptom Scale (CPSS; Foa, Johnson, Feeny, & Treadwell, 2001) is a self-report instrument that assesses the severity of PTSD symptoms in children between the ages of 8 and 18. The 24-item scale assesses reexperiencing, avoidance, and arousal symptoms (Foa et al., 2001). This scale was created to reflect DSM-IV diagnostic criteria. The first 17 items correspond directly with the 17 symptoms listed in the DSM-IV, and the remaining 7 items assess daily functioning. The score derived from the first 17 items, the First Total Score, was used in statistical analyses in the current study. Overall PTSD symptom severity was assessed with 17 items on a four-point Likert-type scale, with a possible total score of 51. Higher scores are indicative of greater symptom severity.

Foa and colleagues (2001) reported the following information regarding scale reliability and validity. Reported internal consistency of the cluster scores and total score ranged between .70 and .89. The following coefficient alpha was calculated for the First Total Score: .89. Reported test-retest reliability coefficients of the total and cluster scores ranged between .63 and .85 (Foa et al.). Regarding scale validity, the total scale score correlated with the severity rating of the Children's Posttraumatic Stress–Reaction Index (CPTSD-RI) at .80.

The Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is a self-report instrument that assesses traumatic stress symptoms in children between the ages of 8 and 17 years. It assesses the following five dimensions of trauma-related stress in children: Anxiety, Depression, Anger, Posttraumatic Stress, and Dissociation. The Posttraumatic Stress Scale assesses the frequency of intrusive thoughts and images, fears of men and women, and avoidance tendencies. Unlike the CPSS, scale items do not correspond directly to the DSM-IV criteria for PTSD. This scale assesses significantly more intrusive symptoms than avoidance and hyperarousal symptoms. Respondents are instructed to indicate how often they think the described thought, engage in the described action, or feel the described emotion on a four-point Likert-type scale. The raw scores are converted to T-scores. In the current study, data analyses were conducted on the Posttraumatic Stress Scale scores exclusively.

Research indicates that the TSCC-A is reliable and valid. Briere (1996) reported the following information. In terms of reliability, the results of data gathered from the normalization sample revealed high internal consistency. The normalization sample was a non-clinical sample consisting of 3,008 children. The reported coefficient alpha for the Posttraumatic Stress was .87. Information regarding test-retest reliability was unavailable.

In terms of validity, TSCC results have been compared to results obtained via completion of the Achenbach Child Behavior Checklist-Youth Self-Report. The TSCC Posttraumatic Stress Scale was found to correlate significantly with the Internalizing Composite of the Youth Self-Report at .75. This correlation was statistically significant.

The Multidimensional Anxiety Scale for Children (MASC; March, 1997) is a self-report instrument that assesses four dimensions of anxiety in children between the ages of 8 and 19 years. The four dimensions of anxiety assessed by this measure include physical symptoms, avoidance tendencies, social discomfort, and separation fear/panic symptoms. Respondents are asked to indicate how often they have been thinking the described thought, engaging in the described action, or feeling the described emotion recently on a four-point Likert-type scale. The raw scores obtained on these scales were converted to T-scores. Completion of the entire measure yields a Total Anxiety Scale score, a composite score that reflects endorsement of multiple symptoms of anxiety. Changes in the Total Anxiety Scale were monitored in this study.

March (1997) reported the following scale reliability information. The internal consistency of the scales was measured with Cronbach's alpha coefficient. The reported internal consistency of the Total Anxiety Scale was .878 for females and .888 for males. Test-retest reliability coefficients were calculated based on 3-month follow-up testing. The coefficient for the Total Anxiety Scale was .933, which was statistically significant.

The following validity information is also reported in the instrument manual (March, 1997). In terms of convergent validity, the Physical Symptoms and Social Anxiety Scales were found to be moderately to highly correlated with the Revised Children's Manifest Anxiety Scale, a measure of worry, fear, and physiological symptoms of anxiety. In addition, the Physical Symptoms Scale was moderately correlated with the Children's Depression Inventory-Short. Finally,

the parent and child reports on the MASC were analyzed, and significant correlations were found between the Physical Symptoms and Harm Avoidance and Separation/Panic Scales.

Finally, the Children's Depression Inventory (CDI; Kovacs, 1992) is a self-report instrument that assesses a variety of depressive symptoms in children ages 7 to 17 years. This scale yields six scores; however, only the Total score was analyzed in this study. Items are scored on a three-point Likert-type scale, and the total score can range between 0 and 54. Raw scores are converted to T-scores. Higher scores are indicative of greater depression.

The following reliability and validity information is reported in the scale manual (Kovacs, 1992). Internal consistency is good; it reportedly ranges between .71 and .89. The scale also possesses adequate test-retest reliability, as it has been found to range between .38 and .83. Studies with psychiatric populations report test-retest reliability coefficients ranging between .5 and .87. Regarding scale validity, Asarnow and Carlson (1985) found that the scale significantly correlated with the Depression Self Rating Scale at .81. Bodiford, Eisenstadt, Johnson, and Bradlyn (1988) found a significant correlation between the CDI and the Depression and Internalizing scales of the Child Behavior Checklist.

Procedure

The 12 participants who volunteered to participate in the study completed a 5-week baseline period prior to the start of the exercise intervention. They completed the demographics questionnaire, exercise history form, CPSS, TSCC, MASC, and CDI during an initial baseline assessment at the first week. Then, the participants completed the exercise history form and psychological measures at the conclusion of the 5-week baseline period. After completion of the baseline period, all participants engaged in the exercise program. The intervention involved 25-minute sessions of moderate-intensity aerobic exercise three times a week for a total of 5 weeks. Each 25-minute session was divided as follows: 1 minute of slow, leisurely walking (warm-up), 23 minutes of moderate-intensity walking, and 1 minute of slow, leisurely walking (cool-down). Participants measured their heart rates at the conclusion of the 12th minute of moderate-intensity walking in each session in order to ensure that they fell between 60% and 90% of their maximum heart rates. The examiner led the group in all sessions, and all sessions were held outdoors. An additional assessment was conducted at the conclusion of the exercise program. Again, the participants completed the exercise history form and psychological measures.

A follow-up assessment was conducted 1 month post-intervention. The purpose of the follow-up assessment was to explore whether or not significant gains in psychological functioning had been maintained for at least 1 month. Three participants remained in the facility at the time, and all of them completed the exercise history form and psychological measures.

Data Analysis

Participants met specific eligibility criteria in order for their data to be included in statistical analyses. First, the CPSS score obtained during the initial screening equaled or exceeded a predetermined cut-off score of 11. Foa et al. (2001) found that a score of 11 on the CPSS differentiated between low and high symptoms of traumatic stress on the CPSTD-RI, the most widely used measure in the assessment of childhood trauma symptoms (McNally, 1991).

Second, the investigator intended to exclude the data of children who reported that they engaged in regular, rigorous physical activity for at least a 20-minute period three times or more weekly throughout the course of the study. None of the participants reported such an activity schedule, and thus no data were excluded for this reason.

Given the small sample size ($N = 12$), changes on the CPSS, the Posttraumatic Stress Scale of the TSCC, the Total Anxiety Scale of the MASC, and the Total Depression Scale of the CDI were examined over time via a statistical method developed by Yarnold (1988) for single-case repeated measures designs. Yarnold's method can be employed in statistical examinations of studies involving a small number of repeated observations. Using Yarnold's approach, each participant's score on each dependent variable at each assessment point was converted to an ipsative z-score. To test for statistically significant changes in scores, the investigator calculated the absolute difference between two z-scores. This absolute difference was then compared with a critical difference score for each participant on each variable. The following formula was used to calculate the critical difference score for each participant on each variable: $CD = 1.64\ [J(1 - \text{reliability coefficient for the measure})]^{1/2}$. In this formula, J refers to the number of comparisons conducted for each participant. J corrects for the number of comparisons made for

each participant by increasing the critical difference score. This increase makes it more difficult to achieve statistical significance.

If the absolute difference between two scores was greater than the critical difference score, the change between scores was deemed statistically significant. The critical difference scores had an overall $p \leq .05$ for a one-tailed test.

The reliability coefficient is the test-retest reliability coefficient for each dependent measure. Originally, Yarnold (1988) explained that lag-1 autocorrelations should be subtracted from 1 in the formula. However, Mueser, Yarnold, and Foy (1991) clarified the method and recommended that test-retest reliabilities be used rather than lag-1 autocorrelations to estimate the expected autocorrelation among sequential values when the number of observations is relatively small, as is the case in the current study. On the CPSS, MASC, and CDI, the test-retest reliability scores were obtained from the scale manuals. The TSCC test manual did not report such data; thus, the test-retest reliability score obtained between the baseline assessment points in the current study was employed, $r = 0.89$, $p \leq .05$.

For all participants, the investigator began statistical analyses by comparing the two baseline scores on each dependent measure. If the absolute difference between the two baseline z-scores was less than the critical difference score, the average of the two baseline scores was calculated and used for the remainder of the z-score comparisons. If the absolute difference between the two baseline z-scores was greater than the critical difference score, further calculations were not conducted, as there was no evidence of stable baseline levels of symptomatology. Kazdin (1998) explained that a stable baseline provides a clear basis for evaluating the effects of an intervention on an individual's performance or functioning.

For the majority of participants, two comparisons were made on each dependent variable. The two baseline scores were compared with each other, and the average baseline z-score was compared with the post-intervention z-score. For the three participants who completed the 1-month follow-up assessment, four comparisons were generally made. The investigator compared the two baseline scores, the average baseline z-score to the post-intervention z-score, the average baseline z-score to the follow-up z-score, and the post-intervention z-score to the follow-up z-score.

RESULTS

It was expected that participants would experience significant reductions in PTSD symptom severity, as assessed by the CPSS, following participation in an aerobic exercise program as compared to baseline levels of symptom severity. Eleven of the 12 participants showed a stable level of PTSD symptomatology across the extended baseline period. Ten of these 11 participants experienced significant reductions in PTSD following participation in the aerobic exercise program. Of these 10, 9 participants' levels of symptomatology fell from the high-level range of PTSD to the low-level range following participation in the aerobic exercise program. Of the three participants who completed the 1-month follow-up assessment, all three reported significantly less PTSD symptomatology at the follow-up, in comparison to baseline levels. A significant difference was found for one of these girls in PTSD symptomatology between post-intervention and the follow-up.

It was predicted that participants would experience significant reductions in trauma-related stress severity, as assessed by the Posttraumatic Stress Scale of the TSCC, following participation in an aerobic exercise program as compared to baseline levels of symptom severity. Nine of the 12 participants showed a stable level of trauma-related stress across the extended baseline period. Six of the nine demonstrated a significant reduction in PTSD symptomatology between baseline and post-intervention. Clinically, one participant's score fell from the "clinically significant" range to the "at risk" range, one participant's score fell from the "clinically significant range" to the "average" range, and four participants' scores fell from the "at risk" range to the "average" range. All three of the girls who completed the follow-up assessment reported significantly less symptomatology at the follow-up in comparison to the baseline. Two of the three girls showed significant reductions in symptomatology between post-intervention and follow-up.

It was expected that participants would experience significant reductions in anxiety symptomatology, as assessed by the Total Anxiety Scale of the MASC, following participation in an aerobic exercise program as compared to baseline levels of symptom severity. Six of the 12 participants showed a stable level of anxiety across the extended baseline period. Three of the six demonstrated significant reductions in total anxiety between the baseline and post-intervention periods. Two of these three participants were the only participants in

the sample to demonstrate above-average levels of symptomatology during the baseline period. Of the three girls who completed the follow-up assessment, one reported significantly less anxiety at the follow-up in comparison to the baseline period. This participant showed a significant reduction in anxiety between post-intervention and follow-up. At the follow-up assessment, one participant's level of anxiety had returned to below average, which was the level of anxiety observed for her during the baseline phase of the study.

Finally, it was predicted that participants would experience significant reductions in depressive symptomatology, as assessed by the Depressive Symptoms Total Scale of the CDI, following participation in an aerobic exercise program as compared to baseline levels of symptom severity. Eight of the 12 reported stable levels of depressive symptoms across the extended baseline period. Two of these eight participants reported a significant reduction in depressive symptoms following participation in the aerobic exercise program. The reductions were also clinically significant. One participant's level of total anxiety fell from "very much above average" to "slightly above average," one participant's level fell from "much above average" to "slightly above average," and one participant's level from "average" to "slightly below average."

Two of the three girls who completed the 1-month follow-up assessment had demonstrated stable levels of symptomatology across the extended baseline period. One of these two participants reported significantly less depressive symptomatology at the 1-month follow-up than she had at baseline.

Please refer to Tables 1 through 4 for z-score data for each participant on each dependent variable across the extended baseline phase of the study. Post-intervention assessment z-score data are also presented for those participants who demonstrated stable levels of functioning on the dependent variable measures across the extended baseline phase of the study. Finally, follow-up data are also presented for the participants who demonstrated stable levels of functioning on the dependent variable measures and completed the 1-month follow-up assessment.

Table 1
Z-score Data and the First Total of the Child PTSD Symptom Scale (CPSS)

Participant	B1	B2	B	PI	FU
A	.87	.87	.87	**-.87**	**-.87**
B	.87	.87	.87	**-.87**	**-.87**
C	.63	.52	.58	**-1.15**	—
4	.49	.66	.58	**-1.15**	—
5	.10	.95	.52	**-1.05**	—
6	-.12	1.05	—	—	—
7	.52	.71	.62	.24	**-1.47**
8	.73	.41	.57	**-1.14**	—
9	.65	.51	.58	**-1.15**	—
10	.58	.58	.58	**-1.15**	—
11	.45	.7	.57	**-1.15**	—
12	.53	.62	.58	**-1.15**	—

Note: B1 = Baseline 1/ First Assessment; B2 = Baseline 2/Beginning of Exercise Program (5 weeks post-Baseline 1); B = Average of the two baseline scores; PI = Post-intervention/End of 5-Week Aerobic Exercise Program; FU = Follow-up/One month following the post-intervention assessment. Dashes indicate that data were not obtained or reported. Post-intervention and follow-up scores that differed significantly from the average baseline scores are in bold print, $p \leq .05$.

Table 2
Z-score Data and the Posttraumatic Stress Scale of the Trauma Symptom Checklist for Children (TSCC)

Participant	B1	B2	B	PI	FU
A	.61	.83	.72	-.06	**-1.39**
B	.54	.94	.74	-.13	**-1.34**
C	.48	.67	.58	**-1.15**	---
4	-.37	1.36	---	---	---
5	1.10	-2.40	---	---	---
6	.49	.10	.29	**-1.15**	---
7	.72	.80	.76	-.16	-1.35
8	.46	.69	.57	**-1.15**	---
9	.36	.77	.57	**-1.13**	---
10	.52	.63	.58	-1.15	---
11	.52	.63	.58	**-1.15**	---
12	0	1.00	---	---	---

Note: B1 = Baseline 1/ First Assessment; B2 = Baseline 2/Beginning of Exercise Program (5 weeks post-Baseline 1); B = Average of the two baseline scores; PI = Post-intervention/End of 5-Week Aerobic Exercise Program; FU = Follow-up/One month following the post-intervention assessment. Dashes indicate that data were not obtained or reported. Post-intervention and follow-up scores that differed significantly from the average baseline score are in bold print, $p \leq .05$.

Table 3
Z-score Data and the Total Anxiety Scale of the Multidimensional Anxiety Scale for Children (MASC)

Participant	B1	B2	B	PI	FU
A	-.28	-.60	-.44	**1.48**	-.60
B	0	0	0	0	0
C	67	.48	.58	**-1.15**	
4	.22	.87	---	---	---
5	-.09	1.04	---	---	---
6	0	1.00	---	---	---
7	.73	.24	.49	.49	**-1.47**
8	1	0	---	---	---
9	0	1.00	---	---	---
10	.22	.88	---	---	---
11	.73	.42	.57	**-1.14**	---
12	.64	.52	.58	**-1.15**	---

Note: B1 = Baseline 1/ First Assessment; B2 = Baseline 2/Beginning of Exercise Program (5 weeks post-Baseline 1); B = Average of the two baseline scores; PI = Post-intervention/End of 5-Week Aerobic Exercise Program; FU = Follow-up/One month following the post-intervention assessment. Dashes indicate that data were not obtained or reported. Post-intervention and follow-up scores that differed significantly from the average baseline score are in bold print, $p \leq .05$.

Table 4
Z-score Data and the Total Depression Scale of the Children's Depression Inventory (CDI)

Participant	B1	B2	B	PI	FU
A	-.58	-.32	-.45	**1.48**	-0.58
B	.50	.99	.74	0.17	**-1.32**
C	.58	.58	.58	**-1.15**	---
4	-.57	1.16	---	---	---
5	-.58	1.15	---	---	---
6	-.29	1.11	.41	-0.82	
7	.92	-.63	---	---	---
8	-.13	-.92	-.53	1.06	---
9	.58	.58	.58	-1.15	---
10	.58	.58	.58	-1.15	---
11	-.80	1.21	---	---	---
12	0	0	0	0	---

Note: B1 = Baseline 1/ First Assessment; B2 = Baseline 2/Beginning of Exercise Program (5 weeks post-Baseline 1); B = Average of the two baseline scores; PI = Post-intervention/End of 5-Week Aerobic Exercise Program; FU = Follow-up/One month following the post-intervention assessment. Dashes indicate that data were not obtained or reported. Post-intervention and follow-up scores that differed significantly from the average baseline score are in bold print, $p \leq .05$.

DISCUSSION

The purpose of the current investigation was to examine the effects of participation in a moderate-intensity aerobic exercise program on childhood PTSD symptom and trauma-related stress severity as well as on concomitant symptoms of anxiety and depression. It was predicted that participants would experience significant reductions in PTSD symptom severity following participation in the aerobic exercise program. The majority of participants showed statistically and clinically significant reductions in PTSD symptomatology from baseline to post-intervention on the CPSS. Our current results are fairly consistent with previous preliminary research in the area of PTSD and physical activity, specifically the results of Manger (2000) and Newman and Motta (2007). In their studies, participation in an aerobic exercise program was found to lead to significant reductions in PTSD symptomatology.

We also predicted that participants would experience significant reductions in trauma-related stress severity. Again, the majority of participants showed statistically and clinically significant reductions in such stress between baseline and post-intervention. These results again are consistent with those of Manger (2000) and Newman and Motta (2007). Clearly, the results of this study add further support to the growing body of research documenting the beneficial effects of aerobic exercise on trauma survivors.

It is noteworthy that the results of the CPSS provide stronger support than the TSCC for the beneficial effects of aerobic exercise on PTSD symptomatology, specifically as per the DSM-IV-TR. The differences in the scores on the CPSS and TSCC may be attributed to differences in the specificity of the items. Generally, the CPSS items are more specific and descriptive than the TSCC items; such specificity may lead to greater sensitivity to change.

Three of the six participants demonstrated statistically significant reductions in total anxiety following the exercise intervention. One participant demonstrated a significant increase in total anxiety between baseline and post-intervention. The reason behind the significant increase is unclear. However, although a statistically significant increase was

found, clinically the participant's level of total anxiety rose only to the average range, the range typical for a child of her age. Exercise was not associated with any increase in anxiety to subclinical or clinical levels.

The results found with the MASC were somewhat unexpected, given past research that has documented the relationship between aerobic exercise and anxiety reduction in children (Brown et al., 1992; Hilyer et al., 1982; Norris, Carroll, & Cochrane, 1992). Low initial levels of anxiety may account for the low number of statistically significant reductions in total anxiety symptomatology in this sample. Walters and Martin (2000), Crews, Lochbaum, and Landers (2004), and Hinkle, Tuckman, and Sampson (1993) attributed weak support for the benefits of exercise on psychological functioning to low initial rates of psychopathology in their studies. The current study may have shared the same weakness.

The majority of participants did not show significant reductions in depressive symptomatology between baseline and post-intervention. The levels of symptomatology for two participants appeared to increase significantly between baseline and post-intervention. However, clinically, both participants' scores on the CDI remained within the "average" range across the phases of the study. Exercise was not associated with any increase in depression to subclinical or clinical levels.

The results found with the CDI were somewhat unexpected, given the solid body of past research that had documented the relationship between aerobic exercise and depression in children (Brown et al., 1992; Crews et al., 2004; MacMahon & Gross, 1987). As was the case in the Walters and Martin (2000), Crews et al. (2004), and Hinkle et al. (1993) studies, perhaps a sample with higher initial levels of psychopathology may have shown greater benefit from the aerobic exercise program.

Exploratory Analyses

The results were indicative of the maintenance of the beneficial effects of aerobic exercise on trauma-related symptomatology. On the CPSS, the levels of PTSD symptomatology were maintained, or had even decreased, for at least 4 weeks post-intervention for all three girls, despite the cessation of the exercise program. On the TSCC, the levels of symptomatology for all three girls decreased to the point of statistical significance at the follow-up assessment. These results contrast with those of Newman and Motta (2007), who found no maintenance of the positive effects of exercise on psychological functioning 1 month following participation in an aerobic exercise program. The cause of the discrepancy between the studies is unclear. However, this discrepancy is consistent with the mixed findings of previous studies. Clearly, further research is warranted.

Results with the MASC and CDI were mixed. Again, such inconsistency is fairly consistent with previous research. Stitch's (1999) review of the literature indicated that only a small number of studies investigating the relationship between exercise and anxiety or depression included follow-up assessments of functioning. However, the majority of the studies indicated that significant reductions in anxiety or depression were maintained between 4 and 15 months. On the other hand, Brown et al. (1992) and Newman and Motta (2007) found no maintenance of reductions in anxiety and depression at a 1-month follow-up assessment of participation in an aerobic exercise program. In addition, McEntee and Halgin (1999) found no maintenance of significant reductions in anxiety. Clearly, further research is needed to clarify previous findings.

It should be noted that none of the participants reported continued participation in a structured, regular aerobic exercise program at the follow-up assessment. The lack of participation may reflect the individuals' choices to avoid exercise. However, it may also reflect limited opportunities for participation in exercise programs within the residential facility.

Implications

Current findings suggest that moderate-intensity aerobic exercise is a valid adjunct to more traditional treatment methods for PTSD, including psychotherapeutic interventions and psychotropic medication. Aerobic exercise treatment for PTSD may be appropriate for individuals who demonstrate difficulty with the verbal processing, expressive language, and receptive language skills needed for "talk therapies," such as cognitive-behavior therapy (Morris & Kratochwill, 1983; Salmon & Bryant, 2002). In addition, it may be more appropriate than exposure techniques for children with concentration difficulties, self-control difficulties, histories of sexual abuse, comorbid psychosis, attention-deficit/hyperactivity disorder (ADHD), conduct disorder (CD), substance abuse, and cognitive impairment (Saigh, Yasik, Oberfield, & Inamdar, 1999; Salmon & Bryant, 2002).

Strengths and Limitations of the Current Investigation

In terms of strengths, the study may be replicated easily. The intervention involved simple physical activity, and the activity was clearly defined. Also, there was no attrition in the current study between the baseline and post-intervention phases. Two reasons may account for this. First, the sample was drawn from a "captive" population, meaning that all participants resided at the treatment center. On several occasions, we noted that the girls were often eager to attend the exercise sessions in order to "escape" their residences. It is possible that the enjoyment of the escape contributed to the beneficial effects of the exercise program.

The second factor contributing to the high rate of participation may have been the reward system. We addressed the issue of high attrition rates observed in previous exercise studies by promising the girls a pizza dinner at the conclusion of the study.

Several limitations of the current investigation are noted. First, the study employed a small *N* design. Such a design limits external validity. It should be noted, however, that the current study's sample size was larger than the two previous studies that found beneficial effects of physical activity on PTSD symptomatology. Manger's (2000) study involved 9 participants, and Newman and Motta's (2007) study involved 11 participants.

Additional limitations of our investigation include the lack of a control group, limited information regarding specific trauma histories and treatment programs, limited follow-up assessment data, lack of a blind researcher, and lack of blind participants.

Summary and Recommendations

The results of the current study are promising in terms of their support for the beneficial effects of exercise on PTSD, anxiety, and depression symptoms. The beneficial effects of aerobic activity on PTSD symptomatology were expected, given previous research findings.

Further research is recommended to clarify current findings, remedy the current study's flaws, and expand scientific knowledge regarding the relationships among PTSD, anxiety, depression, and physical exercise. Investigators in future studies may wish to compare the effects of aerobic exercise treatment to other PTSD treatment methods, compare the effectiveness of aerobic exercise to that of other physical activities (such as anaerobic exercise), and alter the duration and frequency of exercise treatment sessions. It is recommended that for future investigations information be obtained regarding preexisting treatment programs for clinical samples, including therapeutic and psychopharmacological services. Comparisons of the use of aerobic exercise as the primary or adjunct treatment should be explored.

New directions are encouraged. No researcher has yet examined the relationship between aerobic exercise and PTSD symptomatology with male, preschool-age, elementary school-age, and middle school-age children.

Finally, it is recommended that future research examine the mechanism(s) of change associated with the benefits of aerobic exercise. Currently, there are no widely accepted explanations for the psychological benefits of physical exercise.

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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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Certification and the Pledge of Excellence in Traumatic Stress Interventions

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Abstract: *Traumatic stress interventions used by practitioners in the field of traumatic stress are constantly developing as knowledge expands. The competency of the providers must keep pace with the developments in the field of psychological trauma. Further, it is imperative that a high degree of provider competence be communicated to the public at large to insure an atmosphere of trust and safety. Traumatic stress certifications represent one viable method of communicating competence. Rigorous certification standards serve as a safeguard and demonstrate the ongoing development of expertise in an evolving field.[International Journal of Emergency Mental Health, 2008, 10(1), pp. 61-66].*

Key words: *certification, competence, standards, best practices, accreditation, training, interventions, traumatic stress, emergency mental health*

The need for psychosocial support following critical incidents has been well documented (Caplan, 1964; Hartsough & Myers, 1985; Everly, 1995; Vernberg, 2002). During times of need, many individuals and organizations respond, wishing to be of service. A number of organizations have risen to the task, seeking to provide mental health support and crisis services. Not all are trained in crisis intervention. Additionally, not all interventionists are aware of the dynamics of early traumatic stress responses. Some clinicians have demonstrated a lack of understanding by attempting to provide conventional talk therapy-based paradigms early in the response. As a result, it is possible they may not be making use of best practices, as based in scientific study and recognized by leaders in the field of trauma response. It is difficult for the public to be certain whether the support they are receiving is going to be helpful or potentially harmful. One method available, drawn upon well-established practices in other fields, is that of certifying crisis interventionists and trauma counselors.

Mental health professionals in the field of traumatic stress have long promoted the highest standards of practice. These standards are not static. Instead, as research illuminates further the dynamics of the stress response, as well as providing insights into how traumatized people respond to different interventions, the standards of practice evolve as well. Depending on the timing and circumstances, traumatic stress interventions represent either specialized support services or treatment paradigms that require practitioners to keep pace

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with evolving practice parameters. Thoughtful providers of trauma services recognize that often those practices, based in what might be termed "common sense," are not necessarily therapeutic. Poorly thought out and carelessly executed services may, in some case, cause harm.

There are two main categories of trained provider personnel in the traumatic stress field: those with clinically based academic degrees and paraprofessional support personnel. The first category is made up of mental health professionals. Unfortunately, accurate, hands-on intervention strategies are not normally included in the more generalized training provided through university curricula, whether for undergraduate or graduate programs of study in psychology and social work. Some specialized traumatic stress training programs have recently been developed in university settings. However, these programs do not serve the large number of professionals currently engaged in trauma work. Most training programs that focus on trauma intervention and treatment are specialized postgraduate internships and fellowships or continuing education seminars and workshops, either standalone or connected with major conferences. Given the importance of using particular standards and paradigms in trauma work, coupled with the fact that there is a significant lack of specialized university programming, questions naturally arise concerning the appropriate assessment of clinician competence.

The second category of providers in the traumatic stress field are the paraprofessionals including, but not limited to, police officers, fire fighters, paramedics, nurses, communication specialists, and military personnel. As Gerald Caplan (1964) pointed out more than 40 years ago, excellent help can be provided by people who do not hold professional degrees. That is not to say that peer support personnel do not need training or appropriate certifications. They do, and my own organization, the Association of Traumatic Stress Specialists, as well as other accrediting bodies, has developed accrediting procedures for paraprofessionals.

There are important questions, however, that must be answered regarding the methods that emergency managers and even consumers might employ to ascertain the competence of professionals and paraprofessionals who respond to traumatic events in their communities. Assessment of competency is particularly important for those engaged in the work of crisis intervention as paraprofessionals and whose work does not require post-secondary education in the psychosocial fields. The need to assure provider competence is particularly essential as we recognize the vulnerability of those in the midst of the disaster experience. Simply put, by what standard do we judge the competence of these workers? Without a doubt, accurate standards must be engaged and upheld rigorously, and the public must be assured of the proficiency of those who are serving them in their most vulnerable of moments. Possession of one or more specialized certifications indicating such proficiency is one viable method of communicating competency and standards. Certification for both mental health professionals and paraprofessionals can provide a pledge of excellence that is essential for us to subscribe to in all that we do.

As a result, a number of trauma-focused organizations have recognized the viability of this method of communicating competency and have developed and promoted trauma certifications. The key organizations offering specialized training and certification in traumatic stress management are the Association of Traumatic Stress Specialists, National Organization of Victim Assistance, International Critical Incident Stress Foundation, and American Academy of Experts in Traumatic Stress. In light of the numerous difficulties associated with emergency mental health response following the Hurricane Katrina disaster, several state governments, as well, are implementing disaster mental health certification.

This article will review and evaluate the range of certifications offered in the field of traumatic stress services today. It will also make recommendations for further development of the certification method of promoting excellence. First, the definition of certification will be explored through deconstructing a typical certification process into its components. Each component will be examined to elucidate the mechanisms behind certification. Thereafter, the process and requirements of various categories of trauma certification will be scrutinized. Finally, the article will conclude with recommendations for dynamic and comprehensive preparation for trauma work.

Certification Deconstructed

If certification is promoted as a method of assuring and communicating competence, it is a given that the certification necessarily must accomplish what it purports. Certification must represent true competence and the upholding of accurate standards of practice. A careful review of what a certification is and the criteria that are required for that certification will help to clarify the manner in which competence

and standards are represented. Further, certifications in the field of traumatic stress often represent specialized paradigms, yet these are not always clearly differentiated for the public. This lack of differentiation poses a problem in communicating clearly with the public. In other words, just what is the area of expertise claimed by the holder of the certificate?

In the process of deconstructing certifications, we will examine four areas: 1) what a certification represents, in general; 2) a description of the criteria for certification; 3) the process by which standards for certification are determined; and 4) the method by which competency in these standards is determined. Following this deconstruction, the components of certification will be used as a template for examining the various types of trauma certifications offered in the field today.

What is Certification?

Certification is defined broadly as an attestation that what is stated under the auspices of the certificate is true. It is a confirmation, guarantee, and assurance that the level of professional practice claimed is accurate. In the case of trauma certifications, what is claimed to be true is that the certificate holders possess both training and experience that guarantees that the particular type of work they do with people who have undergone trauma is based in best practices. Certifications represent confirmation of specialized expertise.

The basis of the confirmation and the nature of the claim are often broad. Not all certification in any field of endeavor requires academic degrees, whether baccalaureate or graduate. It would seem, then, that certifications that do not require academic degrees must either make up for the perceived deficit through rigorous requirements or employ some method of measuring competence. For example, in many states one does not need to possess or earn an academic degree in order to earn a certification as an addiction counselor. However, there are still rigorous requirements that include college or specialized course work. Competency in accepted standards is measured through comprehensive examinations as well as by logging a minimum number of hours of supervised field experience. In some cases where an academic degree is required, certification is synonymous with licensure. For example, in order to provide mental health services, some states require individuals with a Master's degree in social work to become certified. The requirement, in such cases, is for a Certified Social Worker (CSW). In other states, licensure alone is required for the professional initials LCSW (Licensed Clinical Social Worker) to be applicable. In all cases, regardless of the nomenclature of certification or licensure, the requirements include both academic and experiential verification. Both of these certifications (CSW and LCSW) also require written examinations.

In summary, certification is a formal assurance that certain standards of professional practice have been attained. Some certifications require academic degrees; others require a rigorous equivalent, including academic coursework and experiential verification. Certification is sometimes synonymous with licensure, but most often it is not. Certification reflects the embodiment of explicit standards.

What Are Standards of Practice for Certification?

Standards reflect both scientifically validated knowledge and the manner in which this knowledge is translated into practice. Such validated knowledge is derived from rigorous research, based in scientific traditions, including both quantitative and qualitative designs. Standards of practice are widely recognized within a given field. Recognition is based on the acceptance of the results of rigorous scientific study. Best practices are built upon the foundation of these standards. Effective interventions are most likely to be assured when providers engage only in best practice interventions. That is possible only when trauma interventionists have proficiency in the recognized standards of practice.

Among the standards of practice in the field of traumatic stress, for example, is knowledge in the following areas:

- Common symptoms of traumatic response including how these symptoms appear early on and develop over time.
- A variety of interventions aimed toward mitigating the symptoms of early stress, acute stress, and also chronic or posttraumatic stress.
- The ecology or systemic dynamics that support or thwart recovery.
- Methods of supporting natural resilience in individuals as well as organizations and communities.

In addition, there are standards of practice for specialized interventions. Although there may be some mutuality, the standards of practice for crisis intervention include different components than the standards of practice for victims'

advocates. The standards of practice for psychological first aid include different components than the standards of practice for cognitive-behavioral exposure therapy. Practitioners should also be aware of the difference between crisis interventions, which are simply support services, and actual psychological treatments offered under the broad banner of psychotherapy. In this way, we can see that there are standards for a variety of trauma interventions. There are standards for crisis intervention, for brief treatment strategies, and for longer term treatment paradigms. Standards also include proven methods of prevention of acute stress responses, secondary stress responses, and exhaustion brought about by empathic involvement with trauma survivors. Trauma certifications represent competence in standards and also necessarily reflect that the holder is proficient in a specific modality or a combination of modalities of trauma intervention.

As knowledge is always increasing, standards of practice can best be viewed as evolving. Such evolution implies that standards need to be updated regularly. Those holding to certain standards of practice must constantly update their knowledge and skills through continuing education and training programs. Maintaining the most current standards of practice suggests that a person's certifications are most current, accurate, and rigorous. Certifications should contain a requirement for at least a minimum of continuing education hours in order to verify ongoing training and updated practice parameters.

Who Determines Standards for Certification?

In deconstructing certifications, it becomes necessary for us to review carefully the standards, requirements, and nature of the accrediting bodies that support a given certification. Certain standards have been determined based upon academic content and specific types of supervised experiences. These standards are developed by accrediting bodies. Determining the credibility of a specific accrediting body becomes a vital task. Such terms as *accreditation council*, *authentication*, *quality assurance*, and *accrediting commission* are used readily by those being recognized as well as by those organizations that are commonly acknowledged as accrediting bodies. These accrediting organizations uphold a high standard and require that certificate holders meet specific criteria for certification. The *process* of being recognized also must be scrutinized in order to ascertain the credibility of a given accrediting body. In the broader academic community, there are some accrediting organizations with low standards; these organizations are not recognized by mainstream academia, government commissions, or other organizational bodies of like vocation. Therefore, accrediting bodies that develop standards of practice that reflect the competence of those seeking certification necessarily must be *recognized* by academic and governmental bodies that uphold high principles.

Standards for certifications that represent an accurate claim of competence must be developed by organizational bodies that are recognized widely as leaders in their respective fields. Accrediting bodies generally conduct their work through boards, commissions, and/or working committees. These working groups are composed of professionals drawn from the field of practice that reflects the purpose for which the body was organized. Those accrediting bodies that develop and promote trauma certifications, for instance, are made up of professionals in the field of traumatic stress intervention. It would make good sense that these professionals reflect the specializations represented by the certifications offered. Once again, this underscores the need for explicit standards for particular types of trauma work, developed by those professionals trained *and* experienced in that specific context and paradigm. Formal training is not enough; practical experience is imperative for members of trauma certification boards. The members of the certification board need to legitimately hold the certification that they offer.

How is Competence Toward Standards Measured?

*S*tandards are determined at the accreditation level, although whether one has reached and is able to show competence toward standards in practice requires further verification. In addition to providing verification of extensive and appropriate training, there are three different ways to determine whether standards have been reached and embodied in practice: These include an oral and/or written examination, a report from a supervisor with field experience, and letters of recommendation by professionals in the field who have worked with the individual in question testifying to the person's competence. There are limits to the guarantee of certification. A test, for example, whether oral or written, reflects only a moment in time. A rigorous test of knowledge and practice infers the likelihood that the individual who is able to pass the test will portray competence in their professional practice.

Another method that may help to insure competency is the requirement for newly trained professional and paraprofessional crisis intervention or stress management personnel to participate on a crisis response team under the direct supervision of a mental health professional who is qualified in traumatic stress management. The newly trained person should continue to work under supervision until he or she gains sufficient experience to be "signed off" by the supervisor as a crisis intervention or traumatic stress management provider. This variation on a certification process falls under the second and third methods of certification as described above.

Paucity of Proof

Not all certifying bodies have a method in place to measure an applicant's competence to meet standards of practice. Some certifying bodies have adopted the practice of "grandfathering" those working in a particular field, based simply upon the fact that they have worked in the field, whether or not they have demonstrated verifiable competence. Grandfathering enables professionals to obtain certification with only general forms of proof. Some certifying bodies grant certification upon participation in a time-limited seminar. For example, training that takes place on a local level often is conducted in a 2-day seminar with no follow-up method of measuring competence. A few of the trainers who conduct some of these seminars may not possess extensive knowledge and experience in trauma work. As a result, inaccurate information may be presented or mistakes may be made in the training offered on certain intervention procedures. Although some certifying bodies might base their criteria in recognized standards of practice, they lack any method of measuring competence. This suggests that it would be possible to obtain a certification without actually possessing competence to practice up to current standards. Unqualified instructors compromise the accuracy of training to standards. Additionally, without some method of evaluating a person's competence, it would be difficult for the public to ascertain the quality of a certification.

Note well that even some of those who can prove high levels of academic achievement, including the passing of postgraduate licensure exams and verification of extensive experience, may still actually lack competence. Organizations that operate at the highest levels of professional practice should, however, still strongly promote multiple methods of assuring competence to the best of their ability.

To this end, it is the policy of the four key traumatic stress organizations mentioned above, that is, the Association of Traumatic Stress Specialists, National Organization of Victims Assistance, International Critical Incident Stress Foundation, and American Academy of Experts in Traumatic Stress, to encourage their members to pursue appropriate credentials and accreditation before initiating crisis intervention and stress management work. All four organizations encourage cross-training and gaining additional accreditations beyond their own. Finally, all four subscribe to the principle that anyone who provides either crisis intervention support services or psychological treatment after traumatic events, whether they are mental health professionals or paraprofessionals, should be properly certified.

What's In a Name?

There are basically three types of certification offered in the field of trauma work today. The first type, which I will refer to as *limited attestation* certification, requires an application with limited or generalized verification. The second type, *certificate* certification, requires short-term training with no supervised experience. The third type, *rigorous* certification, requires extensive training and course work, including examinations, supervised experience, and references. Any of these types of certification may claim titles that may serve to suggest something other than what they actually reflect. For example, the title "board-certified" suggests rigorous advanced training, often at the postgraduate fellowship level, assessment through written exam, and board review. Some of the more rigorous board certifications require advanced degrees from programs of study that have been preapproved by the board. Yet, in the field of trauma, one can obtain a board-level certification through a process that is equivalent to the *limited attestation* type. Once again, communicating competence to the public may be impaired through the use of such confusing language. There is also a lack of means for ascertaining the differences between *certificate* certification and *rigorous* certification. The former can be achieved over a period of a week's time; the latter may require up to 2 years. What's in a name? Apparently, there can be quite a bit of confusion in a name when various certifications are put to the test. Certifying organizations should make it clear to their constituents and to the public what they mean when they use terms such as "certification" or "board-certified."

Summary and Recommendations

To insure that the best possible work in the field of trauma is being offered to those in the midst of an emergency, crisis interventionists and trauma counselors should seek out certification that best suits the work they are undertaking. Not all certifications are equal, however. Not all require training and experience as prerequisites. This article has illuminated four key organizations that have developed certifications that communicate the highest aptitude and offer a broad range of credentials. It is recommended that all certifying bodies in the field of traumatic stress indicate the type of certifications they are offering and clarify what the requirements are for attaining such certification. Additionally, crisis interventionists and trauma counselors are encouraged to cross-train and obtain certifications that represent the range of services that they provide. Indeed, the Association of Traumatic Stress Specialists does not differentiate between levels of education. Rather, ATSS certifications represent types of work conducted in the field, not a hierarchy of academic achievement. Each certification we offer can be attained by anyone who wishes to demonstrate the prerequisite training and experience.

Becoming certified not only serves to elevate the work we do in the eyes of the public and of those we serve, but it is also a method of demonstrating the training and experience that paraprofessionals and professionals have undertaken to assure the highest standards. It is recommended that the level of certification sought be of the "rigorous" type. Regardless of the type of work undertaken, from peer support to trauma counseling, by paraprofessionals to psychotherapists, trauma certification communicates that great care has been taken to protect the public in times of crisis.

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Selected Annotated Journal Resources

Jessica R. Rothstein, M.S. and Katie J. Loomis, M.S.

Goodman, R.F. & Brown, E.J. (2008). Service and science in times of crisis: Developing, planning, and implementing a clinical research program for children traumatically bereaved after 9/11. *Death Studies, 32,* 154-180.

TYPE OF ARTICLE

- Original empirical design: Program development

OBJECTIVES/PURPOSE OF THE ARTICLE

- This article reviews the implementation of a clinical research program. The program utilized evidence based cognitive behavioral therapy (CBT) to treat children and families of uniformed emergency service personnel who lost their lives in the September 11th terrorist attacks.
- The authors discuss strengths of their program, obstacles they experienced, and reflect on their decision-making process during the planning, program development and outreach phases.

PROGRAM DEVELOPMENT

Cultural Context

- The program began at the New York University Child Study Center, a public and private health facility for children and families with psychiatric problem. It was implemented by faculty and staff with training in grief, trauma, public education, school-based mental health and research.
- The authors indicate that they targeted children of uniformed emergency service personnel because these children and their families could be identified quickly and were a manageable number and discrete group to focus on for program development.
- In developing the program, information about the unique aspects of the September 11th tragedy were taken into account as well as the needs of the children and families in the community. For example, unique aspects of the September 11th attack include: the larger number of human lives lost on American soil, the large number of uniformed emergency service personnel who were killed, the constant media, and the continued threat of attacks and effects on everyday life (i.e., increased airport security).
- The cultural context of the service personnel was also taken into account in order to provide effective services. The authors discussed that the service personnel of the Fire Department of New York (FDNY) are humble, do not like the spotlight, and like to "take care of their own." Firefighters also typically have two families, their family outside the fire house and the one within. When the tragedy struck widows of firefighters were brought together under their common loss and formed a community that did not exist previously.

Partnership

- The authors also discussed how they identified their funding and program partners. Initially the authors applied for four funding sources; however, once they decided to serve children of emergency service personnel it became possible to target funding from an organization with a similar purpose (i.e., The Silver Shield Foundation).
- In terms of partners in the local community, the authors realized that it would be important to network with the uniformed service community in order to gain access to clients and to show an investment in the community. In order to maintain a working relationship with their community partners the authors found it was beneficial to provide continual assessments, consultation, education, referrals, and support, throughout the duration of their project.

- Additionally, identifying professional colleagues with experience treating children with traumatic bereavement was vital to the program's success.

Infrastructure

- Although the authors highlight that they wanted to hire clinicians who had advanced degrees with specialty work in children, trauma, and grief work, they indicate that this was not feasible.
- However, they emphasize that in order for their staff to succeed they needed a background in cognitive behavioral therapy (CBT).
- Considerable time was spent providing extensive training to the staff with training topics such as: the treatment of children who had been exposed to trauma, treatment of children experiencing bereavement, diagnostic interviewing techniques, treatment protocol training, and crisis management training.
- Ultimately the staff on the program consisted of: a clinical psychologist with a doctoral degree who focused on outreach, assessment, and intervention; a psychiatrist who conducted psychiatric assessments and prescribed medication; a research assistants with a bachelor's degree who performed data management and conducted assessments; a project coordinator who handled administrative tasks and conducted assessments; and an administrative assistant who provided support.
- In addition to having a previous knowledge of CBT, the authors indicate that another key characteristic of successful staff was their ability to be flexible and have a sense of humor even while working in a stressful environment.

Outreach

- In developing their outreach program the authors identified three goals: identifying children with psychiatric problems, decreasing stigma associated with seeking mental health services, and increasing the use of services by those in need.
- The outreach program consisted of psychoeducation on the normal experience of grief and providing contact information for mental health care providers. The authors stressed that they deemphasized pathology and the research components and focused on the need for education and service in all of their outreach materials.
- In disseminating information the authors utilized multiple methods such as: phone calls, mailings, passing out fliers, posting web articles, providing recruitment materials such as refrigerator magnets, and sending holiday cards.
- The authors also used multiple means to access individuals in need including: attending FDNY family meetings, attending meetings of professionals, searching websites and media announcements, and counting on news to spread by word of mouth.
- One challenge experienced was the ethical and logistical problems associated with finding eligible children and families. The authors spent considerable time looking at newspaper records, internet sites, online postings, and researching updated phone contacts; however, they were careful in their outreach to try to respect the families' privacy.

Assessment

- When considering what assessment to provide to the children and families the authors first conducted a literature search to identify the type of problems most commonly found in this population.
- They found that the children were at risk for internalizing symptoms such as depression and Posttraumatic Stress Disorder (PTSD), as well externalizing behaviors and somatic problems. In addition, bereavement has been shown to have a "sleeper effect" at times putting these children at continual risk for later substance abuse problems, interpersonal problems, and the development of personality disorders.
- Based on this information assessment packets were developed to use with preschoolers, school age children, adolescents, and young adults.
- The authors noted a need to gather information from multiple informants given the research findings that traumatized children and their families often inaccurately identify their distress.
- Assessment procedures included behavioral observations, clinical interviews, mental status exams, and self-report measures, but the exact procedure varied based on age.
- The authors aimed to capture the developmental continuum of traumatic bereavement by assessing the children every six months.

- Assessments were often conducted in the families' homes or offices in their local community given the authors desire to respect the families' privacy, the families' transportation difficulties, and the hardships of single family parenting.
- Another challenge of the assessment procedure was the difficult balance between the need to comprehensively evaluate the children and the additional demands placed on the families. Given feedback from families changes to the assessment protocol were made to make it more concise.
- In total, 220 (43%) of the children were scheduled for initial assessments and of these 204 (93%) began the assessment procedure.
- Of the children who began the procedure, 176 (86%) completed while 28 (14%) refused or were excluded as their assessments were incomplete.
- Forty-five (22%) of the assessments were conducted on preschoolers, 149 (73%) were conducted on 4-18 year olds, and 9 (4%) were conducted on 19-24 year olds.

Intervention

- In their literature review of treatment utilized for bereaved children, the authors reported that most were receiving Rogerian or client centered therapy (CCT) in community-based bereavement programs. However, the authors noted that these types of program have limited efficacy research.
- Based on findings of children and adults with trauma related PTSD, anxiety disorders, depression, and behavior problems, parent and child CBT was selected for the intervention strategy.
- The treatment intervention consisted of 16 parent and child sessions focusing on traumatic grief. Participants were either given CBT or CCT treatment for children ages 4-18 years old. However, given that the intervention period overlapped with summer vacations and other events, the authors allowed the treatment to be completed during a 20 week period.
- Alternative treatment strategies were used for the infants, preschoolers, and young adults ages 19-24 enrolled in the program.
- All family members were treated with the same treatment model and by the same clinician.
- The authors indicated their intervention was different than typical manualized treatments because not all of their children met criteria for a DSM-IV diagnosis. However, they asserted that because of the recent trauma experience it was appropriate to also include children with who appeared to be experiencing distress and were at risk of developing a problem.
- Additionally, the authors state that it was challenging to treat a wide age range of children (birth to 24 years old).

Research

- The findings of the research have been published in other work by the authors (see Brown and Goodman, 2002; Brown, Goodman, Cohen, & Mannarino, 2004); however, for this article the author reflected on the design of the research component and its strengths and challenges.
- The research component of the program consisted of three studies:
    - Using the first assessment of each child the authors used a cross-sectional design to study the correlations of traumatic bereavement.
    - Based on the six month assessments, the authors conducted a longitudinal study of the developmental of traumatic bereavement.
    - Comparing the CBT and CCT intervention strategies, the authors conducted a randomized clinical treatment trial for children exposed to traumatic bereavement.
- Ultimately 140 children (94%) in 69 families consented for research participation in the different studies.
- When considering the research design, the authors considered how much the participants desire not to participate in research would impact their ability to receive treatment. Thus they had a three-step process to try to ensure that the families could receive services regardless of their interest in being involved in research.
- There were few exclusion criteria in the research design (e.g., suicidality, psychotic symptoms, and pervasive developmental disorders) because the authors' focus was on meeting the clinical needs of the population.
- In addition, the authors believed that the number of procedures and the use of those with high reliability, validity, and utility, ultimately strengthened their findings.
- One challenge experienced was the pragmatic and emotional difficulties in getting mothers and caretakers to return for follow up assessments.

CONTRIBUTIONS/IMPLICATIONS

- According to the authors, an asset of their program was that even before potential participants were asked to participate in research they had received support and guidance from the program, portraying the authors' commitment to the community. They urged other disaster studies researchers to implement these types of practices.
- The authors highlighted that one of the most challenging aspects of their work was to navigate the balance between theory and practice and the balance between research design and clinical service.
- The authors asserted that their findings may work to change public opinion about disaster studies. They hoped that the public may begin to see that these types of studies can provide clinical value and help develop future interventions rather than being intrusive or insensitive as is a common counterargument.
- Furthermore, they suggested that a national trauma-specific institutional review board would help provide services quickly, and being research, in the time of crisis without being held up in traditional institutional review board procedures.

Adams, S.A. & Riggs, S.A. (2008). An exploratory study of vicarious trauma among therapist trainees. *Training and Education in Professional Psychology, 2,* 26-34.

TYPE OF ARTICLE

- Original empirical investigation: Passive observational design

OBJECTIVES/PURPOSE OF THE ARTICLE

- The purpose of this study was to study vicarious traumatization in new therapist, or trainees.
- The authors defined vicarious traumatization as a "cumulative consequence not specific to any one client, which can be lasting and linked to multiple aspects of the therapist's personal and professional life" (p. 26), and can eventually lead to PTSD like symptoms such as anxiety, depression, somatic symptoms, emotional numbing or emotional flooding, suspiciousness, intrusive thoughts, and feelings of vulnerability.
- In addition, the authors investigated whether therapist characteristics such as defense style, and a personal history of trauma, would influence the development of vicarious reinforcement.
- The authors believed that trainees with less experience and less trauma specific-training would be more likely to experience vicarious traumatization.
- They also hypothesized that therapists with a history of trauma would be more vulnerable to experiencing vicarious traumatization and would endorse higher levels of trauma symptoms.
- In regards to defense style, the authors hypothesized that therapists that utilized active, problem-focusing strategies would experience less vicarious traumatization and report fewer PTSD and other negative symptoms.
- Furthermore, the authors believed that there would be an interaction between these variables.

PROCEDURE

Participants

- The authors sent 355 packets to graduate students in APA accredited clinical and counseling psychology graduate programs at state universities in Texas.
- After excluding information from students who did not work with trauma clients or who were not currently enrolled in a graduate training program, 129 graduate students participated in the study.
- Of these participants 83.7 % were female, 83.5% were Caucasian, and there was a mean age of 31.21 years (*SD* = 8.69).
- Doctoral trainees in counseling psychology made up 43.4% (*n* = 56) of the participants, while there were 25.6% (*n* =33) doctoral level trainees in clinical psychology, 31% (n = 39) students in counseling masters programs, and one student pursuing a masters in clinical psychology.

Materials

- Demographic information was gathered such as the number and type of coursework in trauma and the number of semesters spent working with trauma patients.
- The demographic portion also asked trainees if they had ever been exposed to a trauma including: being involved

in a natural disaster, witnessing or participating in combat, witnessing someone being seriously injured or killed, being a survivor of a violent crime, being a survivor of child physical, sexual, or emotional abuse, being an adult survivor of rape or sexual assault, or being involved in a physically abusive relationship.

- The participants were also administered five subscales, or 42 items, of the Trauma Symptom Inventory (TSI). These subscales were: Anxious Arousal, Intrusive Experiences, Defensive Avoidance, Dissociation, and Impaired Self-Reference. The full measure was not administered because the authors believed that some of the subscales were too broad.
- To measure the defense style of the trainee, the Defense Style Questionnaire (DSQ) was used. The DSQ is a widely used self report measure, with 88 items utilizing a 9-point Likert scale. Using this measure's manual participants were classified into the following hierarchies:
  - Defense styles that utilize withdrawal, inhibition, passive aggression, regression, acting out, and projection were labeled the most maladaptive or immature.
  - An image distorting defense style features splitting, primitive idealization, and feelings of superiority.
  - A self-sacrificing defense style is used by individuals who want to appear kind and helpful to others and may engage in acts that can be described as psuedoaltruistic acts.
  - Adaptive or mature defense styles are described as those in which individuals engage in humor, suppression, and sublimation.

Procedure

- When the authors contacted program directors at APA accredited graduate programs, 9 (PhD = 7, MA = 2) agreed to distribute the project materials to trainees who were seeing clients as a part of their practicum or internship during the fall of 2002.
- The participants' packet contained a description of the study, a consent form, a questionnaire about their training experience, the TSI, the DSQ, and a stamped return envelope.

RESULTS

- Fifty participants (38.7%) endorsed a history of personal trauma.
- Ninety-six (74.3%) indicated that they had some formal trauma specific training, with 46 participants (35.6%) stating that their training was substantial and 50 participants (38.7) related that there training was minimal.
- Experience working with trauma ranged from 0 to 38 semesters ($M = 4.86$, $SD = 6.09$). However, 52 participants (40%) indicated that they had worked with trauma clients for two or fewer semesters.
- Mean results from the TSI were not clinically significant with only 8-15% of the participants scoring higher than the clinical cut-off score on each subscale. However, the authors indicate that 31% of the sample had an elevation on one or more TSI subscale.
- On the DSQ, due to low cell counts the maladaptive ($n = 3$) and image distorting ($n = 6$), categories were collapsed into one defense style, as the authors indicate is supported by theory.
- Thus participants were categorized into the following three defense styles: maladaptive/image-distorting 7.0% ($n = 9$), 51.2% self-sacrificing ($n = 66$), and 41.8% adaptive ($n = 54$).
- As for demographic variables, ethnicity was significantly correlated with TSI intrusive experiences $p = .01$ with participants who were ethnic minorities endorsing lower levels of intrusive experiences. There were no other significant differences between the demographic variables.
- Using a MANOVA a main effect was found for defense style and personal trauma ($p < .0001$). Using an ANOVA, there were significant findings for all of the trauma scales: anxious arousal ($p = .007$), intrusive experiences ($p = .04$), defensive avoidance ($p = .001$), dissociation ($p = .001$), dissociation ($p = .001$), and impaired self-reference ($p < .0001$).
- Post hoc comparisons revealed that a self-sacrificing defense style was associated with significantly higher scores on all five of the TSI subscales, than the adaptive defense style.
- The maladaptive/image-distorting defense style was also associated with significantly higher scores on the TSI impaired self-reference and dissociation subscale than the adaptive style. In addition, the maladaptive/image-

distorting style was also associated with significantly higher scores on the dissociation subscale than the self-sacrificing defense style.

- The interaction of defense style and personal trauma was significant for intrusive experience (p = .001) and defensive avoidance (p = .002).
- Another MANOVA resulted in a main effect for defense style (p = .028), and experience working with trauma survivors (p = .007), and a significant interaction between these variables (p = 0.28).Follow up univariate tests found significant findings for defensive avoidance, dissociation, and impaired self-reference.
- Follow up ANOVAs for experience working with trauma patients was significant for impaired self reference (p = .004). It was found that participants who had worked with trauma patients for two or fewer semesters endorsed higher levels of trauma symptoms. However, the interaction of defense style and experience was only significant for dissociation (p = .010).
- Another MANOVA revealed a significant main effect for defense style (p < .00 01) and formal trauma-specific training or coursework (p < .0001) but the interaction was not significant. Follow up univariate tests showed trends toward significance for dissociation (p = .035) and impaired self-reference (p = .021).
- Finally, using medium effect sizes, exploratory post hoc comparisons were conducted on trauma-specific coursework and trauma symptoms. The results indicated that participants with substantial training in trauma had lower levels of dissociation and impaired self-reference than those with minimal training, and had lower levels of impaired self-reference to those with no training.

CONCLUSIONS/SUMMARY

- This study finds support for the hypotheses that vicarious trauma may be linked to the amount and degree of trauma-specific coursework, a trainees previous experience working with trauma clients, and a trainee's defense style.
- Specifically, these finding suggest that trauma symptoms for participants with an adaptive defense style were relatively the same regardless of personal trauma history.
- Participants who engaged in a self-sacrificing defense style and reported a history of personal trauma had higher levels of trauma symptoms than participants with the same defense style without a history of trauma.
- Conversely, participants who could be classified as having a maladaptive/image-distorting defense style and had a history of personal trauma endorsed lower levels of trauma symptoms than the participants who had the same defense style but had no history of personal trauma. However, due to a small cell size these findings should be interpreted with caution.

CONTRIBUTIONS/IMPLICATIONS

- The findings of this survey could have implications for graduate school training programs. For example, these results indicate that when trainees have previous training in trauma specific work, more than a one-time lecture or class discussion, they are less likely to experience vicarious trauma. Thus it is imperative that graduate training programs include both didactic and experiential work with trauma clients.
- Based on the results of their study, the authors suggested that supervisors may want to conduct informal assessments of trainees' defense style in order to identify each trainee's specific needs.
- As a result of this study, it seems that supervisors of trainees working with trauma clients need to be alert for symptoms of vicarious trauma (especially identify confusion and disruptions in self concept).
- When working with student trainees encouraging defenses such as sublimation, humor, and suppression may help decrease the chance of experiencing vicarious trauma. On the other hand, trainees who engage in a less mature defense style may need to be more closely monitored for symptoms of vicarious trauma.
- Finally, the authors indicate that having a personal history of trauma and engaging in a self-sacrificing defense style can put trainees at risk for vicarious trauma. Therefore, the authors assert that supervisors must be prepared to talk about the potential impact of working with trauma patients with trainees who have a personal trauma history, while being mindful of a trainees right to privacy

Weierich, M.R. & Nock, M.K. (2008). Posttraumatic stress symptoms mediate the relation between childhood sexual abuse and nonsuicidal self injury. *Journal of Consulting and Clinical Psychology, 76,* 39-44.

TYPE OF ARTICLE

- Original empirical investigation: Passive observational design

OBJECTIVES/PURPOSE OF THE ARTICLE

- The purpose of this study was to investigate the relationship between nonsuicidal self-injury (NNSI), or the "direct and deliberate destruction of body tissue in the absence of suicidal intent," (p. 39) and posttraumatic stress disorder (PTSD) symptoms for clients with a history of childhood abuse. Specifically, the authors believed there would be relationship between NNSI and reexperiencing, avoidance/numbing, and hyperarousal symptoms.
- The authors believed that trauma exposure and NNSI might be independently mediated by symptoms of reexperiencing and avoidance/numbing.
- Additionally, they hypothesized that the presence of Borderline Personality Disorder (BPD) and Major Depressive Disorder (MDD) would not account for all of the NNSI behavior in that individuals without these diagnoses would also engage in NNSI.

PROCEDURE

Participants

- Adolescent participants were recruited through advertisements in newspapers, postings on bulletin boards and in psychiatric clinics, and through the internet.
- The description of the study stated that it was a laboratory based study of self-injurious behavior.
- The authors indicate that they purposefully aimed to recruit twice as many adolescents who had a lifetime history of NSSI ($n = 56$) than individuals who had never engaged in NNSI ($n = 30$).
- After some participants were excluded due to lack of completed forms, a total of 86 adolescents were used (mean age = 17.03, $SD = 1.92$).

Measures

- After the informed consent process, the authors interviewed and assessed the adolescents without their parents in the room in hopes that the adolescents would be more forthcoming.

Child Trauma Questionnaire (CTQ)

- The participants were administered the CTQ, a measure that assesses the participants experience with maltreatment such as: physical abuse, sexual abuse, emotional abuse, emotional neglect, or physical neglect. However, the authors indicate that they were most interested in the experiences of emotional abuse, sexual abuse, and physical abuse.
- When completing the questionnaire the adolescents answered 28 items using a 5 point scale with anchors of "never true" to "very often true."
- According to the authors, they converted the CTQ subscales scores into a dichotomous score (yes or no) because they were more concerned about the occurrence of maltreatment than the severity.

Self-Injurious Thoughts and Behavior Interview (SITBI)

- In order to measure NSSI the participants were administered a clinical interview, the SITBI.
- This measure assesses suicidal behavior and NSSI during a one month period.

Kiddie Schedule for Affective Disorders and Schizophrenia-Present and Lifetime Version (K-SADS-PL)

- The K-SADS-PL was used to measure PTSD symptoms and exposure to a traumatic event. The authors emphasize that for the purpose of their study they focused on present symptoms and diagnoses rather than lifetime experiences.
- During this clinical interview information was gathered that can be used to categorize symptoms in the following domains: reexperiencing, avoidance/numbing, and hyperarousal.
- The authors indicate that they used the major depressive disorder module of the K-SADS-L to assess for MDD.

Structured Clinical Interview for DSM-IV-II-Personality Questionnaire (SCID-II)

- Using the SCID-II, a measure that relies on self-report data from participants, symptoms of BPD were gathered.
- The authors indicate that they used the total number of symptoms endorsed, rather than the clinical cut off for

diagnosis, because the measure does not give specific information on criteria changes for individuals under the age of 18 years.

RESULTS

- The authors reported that the raw NSSI frequency variable was positively skewed, so in order to make the distribution normal they performed a logarithmic transformation. Additionally, they used z-scores to standardize the PTSD symptoms.
- Due to the authors interest in differentiating sexual abuse from other abuse experiences, abuse was coded into three categories: **no abuse** or participants who indicated they did not experience emotional, physical, or sexual abuse (n = 26), **nonsexual abuse** when participants endorsed experiencing emotional and/or physical abuse (n = 42), or **sexual abuse** when a participant indicated they experienced sexual abuse alone or in conjunction with other abuse (n = 18).
- On the CTQ no participant reported that they were currently experiencing any type of abuse.
- A significant difference in gender was found in that female adolescents who engaged in NSSI were more likely to pick at their wounds ($p < .05$) than male adolescents who engaged in NSSI.
- The results indicated that there was a significant relation between sexual abuse and the frequency or presence of NSSI ($p < .01$).
- There was a significant association between sexual abuse and PTSD symptoms ($p < .001$) but this relationship was not found for adolescents who had not experienced abuse or who had experienced abuse that was not sexual.
- Using a hierarchical linear regression, sexual abuse was found to be significantly associated with NSSI ($p < .01$) when controlling for the presence of BPD and MDD symptoms. In addition, MDD, PTSD, and symptoms of reexperiencing and avoidance/numbing were also found to be significantly ($p < .05$) associated with NSSI after controlling for BPD and sexual abuse.
- Using separate regression analyses both reexperiencing and avoidance/numbing symptoms were found to be mediators in the relation between the frequency of NSSI and childhood sexual abuse.

CONCLUSIONS/SUMMARY

- Results of this study indicate that in adolescence NSSI is associated with retrospective reports of childhood sexual abuse. The same was not found for nonsexual abuse which includes incidents of physical and/or emotional abuse.
- Since incidents of maltreatment often go underreported, thus the authors contend that the trends discussed above may actually occur in greater magnitude.

CONTRIBUTIONS/IMPLICATIONS

- Survivors of child sexual abuse are more likely to, or at risk for, NSSI behavior in adolescence. These findings should be taken into account in treatment and early intervention planning to potentially reduce the occurrence of NSSI.
- Since NSSI was found to be mediated by PTSD symptoms such as reexperiencing and avoidance/numbing, it may be important to help clients relieve these secondary symptoms without engaging in NSSI.
- The authors noted that given the small sample size and the use of cross-sectional data the generalizability of their findings is limited.
- Additionally, they suggested that their findings may not apply to adolescents who conceal their NSSI, those in inpatient settings, and those who were unwilling to discuss these topics in a research study.

Bryant, R.A., Sutherland, K., & Guthrie, R.M. (2007). Impaired Specific Autobiographical Memory as a Risk Factor for Posttraumatic Stress after Trauma. *Journal of Abnormal Psychology, 116* (4*),* 837-841.

TYPE OF ARTICLE

- Original empirical investigation

OBJECTIVES/PURPOSE OF THE ARTICLE

- The present study addressed the issue of whether overgeneral autobiographical memory retrieval is a *function* of posttraumatic stress and depression or whether it serves as a *vulnerability factor* for the development of posttraumatic stress symptoms following a trauma.

- Past findings have indicated that overgeneral memory retrieval is associated with poor coping in response to traumatic events due to difficulties in problem solving and utilizing past experiences to prepare for future experiences. Thus, this study was designed to assess autobiographical memory retrieval prior to a traumatic experience and measure the relationship between overgeneral retrieval and future posttraumatic stress and depressive symptoms.
- It was hypothesized that preexisting (pre-trauma) deficits in retrieval for specific autobiographical memories or elevated categoric memories would predict the occurrence of posttraumatic stress and depression post-trauma.

METHOD

Participants

- Sixty male recruits of the New South Wales Fire Brigades were initially evaluated prior to beginning active firefighting.
- Forty-six (77%) of the original 60 firefighters were reassessed approximately 4 years (average of 49 months (*SD*= 1.59)) after the initial evaluation.
  - (During those 4 years, all participants were exposed to multiple traumatic events).
- Mean age was 29.6 years (*SD*= 5.0)
- Information on SES and race was not provided.
- Reasons for non-participation: residential move (1), physical injury- workers compensation (1), refused to be reassessed (12).

Procedure

- Participants were evaluated for the presence of lifetime and current Axis I disorders using the Structured Clinical Interview for DSM-IV (SCID-IV).
- To assess for exposure to prior traumatic events participants were evaluated using the Clinician Administered PTSD Scale (CAPS), and the Traumatic Events Questionnaire (TEQ). During the initial evaluation, participants were asked to respond to the CAPS interview based on a "very distressing event" they had experienced.
- To assess for depressive symptoms present within the past two weeks, participants were assessed using the Beck Depression Inventory (BDI-II).
- Cue words (5 positive and 5 negative) were selected from the 1,000 most frequently used English words. The positive words were *happy, brave, safe, love,* and *special*. The negative words were *hurt, tense, angry, fear,* and *stress*. The two practice words were *egg* and *chocolate*. Each word was printed on a white card. The order of presentation was randomized, but positive and negative words were alternated.
- While being audiotaped, participants were asked to state the first specific personal memory triggered by each word. The experimenter read the word while simultaneously showing the participant the printed word. If participants did not provide a specific memory, they were prompted with "Can you think of a specific time-one particular event?" If participants did not offer a specific memory within 60 seconds, the experimenter presented the next word.
  - Coding of audiotapes was conducted by a blind rater. Memories were coded as specific if they incorporated a particular event occurring on a specific day. Coding occurred for: Specificity of the memory (event that occurred on a specific day), categoric memories (a summary of memories), and extended memories (events lasting longer than a day.) The mean kappa coefficient of reliability was 0.87 for specificity of memories.
- Reassessments occurred on 3 occasions: a) within 1 month of initial trauma after commencing active duty, b) 6 months after commencing active duty, and c) 3 years after commencing active firefighting duty. Note: During Time 1 some participants received the Posttraumatic Cognitions Inventory (PTCI), but these data are reported elsewhere - not in the current study due to a 40% overlap with the current sample.
- Approximately 3 years after beginning active firefighting duty, participants were mailed a package that informed them that the current survey was intended to index current coping levels within the fire brigade. They were asked to document the number and type of incidents they had attended and whether they had been threatened or witnessed others being threatened or harmed. They also completed the BDI-II, and the Posttraumatic Diagnostic Scale (PDS), which assists in PTSD diagnostic decisions and the determination of a severity score.

RESULTS

Pretrauma Characteristics

- At Time 1, participants experienced an average of 2.20 (*SD*=1.79) traumatic events prior to becoming a firefighter.
- Specific retrieval at Time 1 was not associated with initial scores on CAPS ($p = 0$), BDI-II ($p = .32$), or history of traumatic events ($p = .29$).
- Three participants reported a single major depressive episode and 1 participant reported prior panic disorder.
- No participants met criteria for an Axis I disorder (according to SCID) or PTSD.
- No participants reported any stress symptoms in relation to any previous traumatic events.
- The mean CAPS score (combining frequency and severity) was .04 (*SD* = .21, range = 0-1). The mean BDI-II score was 2.39 (*SD* = 4.16; range: 0-16).

Posttraumatic Stress and Depression Levels

- Seven (16%) met criteria for PTSD at the follow-up assessment. The mean PDS score was 4.87 (*SD* = 8.67; range: 0-39) indicating that the majority of the sample reported little posttraumatic stress. The mean BDI-II score was 7.17 (*SD* = 7.75; range: 0-34).

Autobiographical Memory Patterns

- There were no differences in retrieval of specific, categoric, extended or omitted memories between participants who took part in the follow-up assessment and those who did not.
- Positive cues: Specific Memories (Mean = 3.85, SD = 1.28); Categoric Memories (*M* = 0.93, *SD* = 1.17); Extended Memories (*M* = 0.11, *SD* = 0.28); and Omissions (*M* = 0.11, *SD* = 0.18).
- Negative cues: Specific Memories (*M* = 4.07, *SD* = 0.97); Categoric Memories (*M* = 0.65, *SD* = 0.93), Extended Memories (*M* = 0.24, *SD* = 0.42); and Omissions (*M* = 0.04, *SD* = 0.18).

Prediction of Posttraumatic Stress

- Hierarchical regression was conducted to examine the pretrauma variables that predict posttraumatic stress (PDS total score).
- Operated under the premise that posttraumatic stress would be predicted by lifetime history of traumatic events, preexisting levels of posttraumatic stress and depression, and pretrauma deficits in autobiographical memory.
- Entered the following variables in separate steps: a) TEQ total score, b) pretrauma CAPS and BDI-II scores, c) pretrauma retrieval of specific memories to positive cue words, and d) pretrauma retrieval of specific memories to negative cue words.
- Pretrauma deficits in retrieving specific memories to positive cues accounted for 22% of the variance. After removing an outlier and repeating the regression, the reanalysis found that pretrauma deficits in retrieving specific memories to positive cues accounted for 19% of the variance.
- Pretrauma retrieval of categoric, extended, or omitted memories did not significantly predict PTSD severity.

Prediction of Posttraumatic Depression

- Hierarchical regression was conducted to predict BDI-II scores at follow-up utilizing same variables as in the prediction of posttraumatic stress.
- Pretrauma CAPS and BDI-II scores accounted for 13% of the variance even after removing the outlier.
- Pretrauma deficits in retrieving specific memories to positive cues accounted for 8% of the variance.
- Pretrauma retrieval of categoric, extended, or omitted memories did not significantly predict depression severity.

CONCLUSIONS AND IMPLICATIONS

- Major finding: pre-trauma deficits in retrieving specific memories were associated with levels of posttraumatic stress after a trauma. This finding provides support for the hypothesis that retrieval deficits for specific autobiographical memories may be a risk factor for the development of a psychological disorder.
  - o Successful response to a trauma may involve the ability to retrieve positive memories from one's past in order to create a context for a traumatic experience.
  - o An additional possibility is that individuals who have more difficulty retrieving specific memories for positive cues may have poorer problem solving abilities which is associated with higher levels of depression post-trauma.

- This study provided insight into the potential risk factors for the development of posttraumtic symptoms among emergency personnel who are frequently exposed to trauma.
- Future research should assess for factors such as history of depression, intelligence, early family environment, cognitive functioning, problem solving ability, and rumination.
- Acknowledging the difficulty in generalizing from the firefighter population to other groups, it will be important to assess these factors in more representative samples.

Ariga, M., Uehara, T., Takeuchi, K., Ishige, Y., Nakano, R., & Mikuni, M. (2008). Trauma exposure and posttraumatic stress disorder in delinquent female adolescents. *Journal of Child Psychology 49*(1), *79-87.*

TYPE OF ARTICLE

- Original empirical investigation

OBJECTIVES/PURPOSE OF THE ARTICLE

- The aims of the current study are to:
  - o Describe the nature and extent of trauma exposure and PTSD among incarcerated female juvenile offenders in Japan.
  - o Clarify the point prevalence of PTSD in this population.
  - o Examine the relationship between psychiatric comorbidity and PTSD.
  - o Examine the associations between PTSD and psychosocial factors such as symptoms of depression, impulsivity, abnormal eating behaviors and parenting attitudes.
  - o Determine the risk factors that can predict the development of PTSD and to determine whether symptoms correlate with psychosocial factors.
  - o Clarify factors related to PTSD evaluations in adolescent female offenders who have never received psychiatric medication in Japan.

METHODS

Participants

- Sixty-four female juvenile offenders (recruited from a group of 181 incarcerated adolescents- excluding: those who had received neuroleptics (9% excluded), or those in a severe physical of psychiatric condition (0% excluded). Only those with a psychiatric history were included. Sixty-four participants completed the initial screening interview and questionnaires, but two refused to participate in the succeeding comprehensive interview.
- Ages ranged from 16 to 19 years ($M = 17.2$, $SD = 1.0$).
- Ethnicity of all participants was Japanese.
- Prior to incarceration, 55% of offenders were not living with their immediate family.
- Sixty-one had dropped out of school before grade 10, 33% had not been admitted to high school. The others were currently enrolled in high school.
- Forty-one percent were detained for drug-related crimes, 30% for violent crimes, 22% for pre-delinquent behavior. 10% were multiple offenders, 60% had been arrested at least twice.

Procedures

- Investigation was conducted as part of the regular medical service for maintaining the mental health of offenders in reformatory schools.
- Written informed consent was obtained from all participants and the institutional head and chief director of the correction center approved the study.
- The participants were provided with an explanation of the nature of the study and an information sheet and consent form. They were aware that the study was voluntary and that they could withdraw at any time.
- During assessment, the interviewers were unaware of the participant's offense and background information. Within one week of the interview, they were asked to complete five self-rating questionnaires.

Measures

- General: demographics, history of illegal drug use, trauma exposure history (Clinician Administered PTSD Scale for DSM-IV- CAPS), age, criminal history, recidivism history, family composition, living conditions, psychiatric

history, familial alcohol and drug use, education, and IQ (previously measured).

Structured Interviews:

- Psychiatric Diagnosis- Japanese Version of the Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-kid).
- CAPS- for diagnosis and severity rating of PTSD.

Self-Rating Questionnaires

- Japanese version of the DSM Scale for Depression (DSD) for the diagnosis of depression.
- Japanese version of the Barratt Impulsiveness Scale 11th version (BIS-11) - provides and impulsiveness score based on motor impulsivity, planning, and inappropriate attention.
- Eating Attitudes Test- 26 (EAT-26) - provides a total score for disturbed eating attitudes and behaviors based on dieting, bulimia and food preoccupation, and oral control.
- Parental Bonding Instrument (PBI) - assesses parenting attitudes based on two dimensions of care and overprotection.
- Impact of Event Scale- Revised (IES-R) - was only used to assess participants who reported experiencing traumatic events. This measure assesses hyperarousal, heightened startle response, difficulty concentrating and hypervigilance, intrusion, and avoidance.

RESULTS

Trauma exposure and PTSD prevalence

- The findings revealed that 76.5% of participants experienced a traumatic event, and most were exposed to multiple traumas.
- Sexual abuse (54.7%), victim of violence (45.3%), confronted with traumatic news and child maltreatment, excluding neglect (32.8%).
- Fifteen (32.8%) of those who had experienced traumatic events were diagnosed with PTSD (using the MINI-kid). This group was reassessed using the CAPS and of those, 15 were diagnosed as having full PTSD, 2 with partial PTSD and 2 as not having PTSD.

PTSD and comorbidity

- Participants with PTSD showed higher comorbidity than those not exposed to trauma with: depression ($p = .002$), panic disorder ($p = .001$), agoraphobia ($p = .016$), separation anxiety disorder ($p = .002$), social phobia ($p = .000$), OCD ($p = .011$), conduct disorder ($p = .045$), psychotic disorder-current episode ($p = .027$).
- Participants with PTSD were more likely to report comorbidities of panic disorder, social anxiety disorder, social phobia and psychotic disorder than those not diagnosed with PTSD.
- Participants with PTSD reported a significantly higher risk of suicidality than those without exposure to trauma.

Comparisons of self-questionnaires

- Participants with PTSD showed significantly higher scores than those without PTSD or trauma exposure on the: DSD ($p < .01$), total EAT-26 ($p < .01$), EAT-26 diet factor subscale ($p < .05$), EAT-26 bulimia/food preoccupation factor subscale ($p < .01$).
- Participants with PTSD showed significantly higher scores than those without trauma exposure on the EAT-26 oral control subscale ($p < .05$).
- No statistically significant differences were found in impulsiveness and parental attitudes.

Prediction of PTSD diagnosis and symptomatology

- Three significant predictors/risk factors for the development of PTSD among those with trauma exposure.
- DSD scores predicted the development of PTSD ($p < .01$)
- Lower maternal protection and maternal care scores were found to be risk factors.
- DSD ($p < .001$) and EAT-26 oral control scores ($p < .08$) were found to predict the severity of PTSD related symptoms.

Features of PTSD in female offenders determined using CAPS

- Comorbid panic disorder significantly increased the intensity scores of criteria B(intrusive recollection), and B (intrusive arousal) + C (avoidance/numbing) + D (hyperarousal).

- The experience of being a victim of violence significantly influenced the intensity scores of criteria D (hyperarousal) and B (intrusive recollection) + C (avoidance/numbing) + D (hyperarousal).
- The experience of witnessing a suicide or finding a dead body significantly affected the increases in the frequency scores of criteria B (intrusive recollection).

CONCLUSION/IMPLICATIONS

- The prevalence of trauma and PTSD, as well as comorbid psychiatric disorders among incarcerated Japanese adolescents is similar to that found in western countries.
- The experience of trauma, particularly of a sexual or violent nature may increase adolescent vulnerability to stressors, and increase suicidality, particularly in confined environments.
- Depression, affectionless parental control and (perceptions of) low maternal care were associated with the risk of developing PTSD.
- Because of the high rates of PTSD and comorbid psychiatric disorders, both psychological support and correctional education are recommended for female offenders.

Limitations

- Small sample size and no control group
- Limitations in accurate diagnosis using the MINI
- The authors suggest that future research should examine:
  - Personality deviations (due to the difficulty assessing personality disorders in adolescents).
  - Links between suicidal risk, impulsivity and substance use.
  - Dissociative disorders in adolescent offenders
  - The relationship between eating behaviors and PTSD
  - Relationship between developmental disorders and offense patterns.

Denson, T.F., Marshall, G.N., Schell, T.L., & Jaycox, L.H. (2007). Predictors of Posttraumatic Distress 1 Year after Exposure to Community Violence: The Importance of Acute Symptom Severity. *Journal of Consulting and Clinical Psychology, 75 (5),* 683-692.

TYPE OF ARTICLE

- Original empirical investigation. Longitudinal Research.

OBJECTIVES/PURPOSE OF THE ARTICLE

- To simultaneously examine the impact of four predictors of PTSD diagnosis and severity:
- demographic characteristics, pretraumatic psychological factors, characteristics of the trauma, and reactions to the trauma.
- To control for issues such as the presence of acute posttraumatic distress and biases due to the use of only retrospective measures.
- To replicate past findings that indicated risk factors assessed a short time after a traumatic experience predict PTSD symptom severity after 12 months.
- To determine whether these risk factors maintain their significance after adjusting for initial levels of posttraumatic distress.
- To evaluate the extent to which long term posttraumatic symptoms are explained by acute posttraumatic distress.

METHOD

Participants

- Hospital admissions between October 1998 and June 2000- screened for blunt or penetrating trauma at a Level I trauma facility.
- Persons with injuries not attributable to community violence were ineligible.
- Of 653 screened, 423 were deemed eligible. Of the 423, 413 (98%) chose to participate in the baseline interview.
- 57% of the patients sustained injuries from gunshots, the remaining patients received injury from blunt objects (closed fists or baseball bats) or other penetrating objects (knives).
- Mean age = 25.10 years, *SD* = 6.03.
- Ninety - four percent were male, 41% high school graduates
- Seventy - nine percent earned $1500 or less in the 30 days preceding their injury.

- Seventy-eight percent were Hispanic (47% born in U.S., 38% in Mexico, 15% in Central America).

Procedure

- Face-to-face structured interviews conducted by trained lay interviewers. (English 72%, Spanish, 28%).
- Initial interview occurred within days of the interview (median interval = 5 days). Subsequent face-to-face in-home interviews were conducted at 3 and 12 months following initial interview. Participants were given $25 for each completed interview.
- At the 12 month interview- PTSD symptom severity was the outcome of interest.
- Of the 413 baseline interviewees, 304 (74%) completed 12 month follow-up interview. For participants who did not complete 12 month follow-up, 3 month symptom severity information was used to estimate 12 month severity levels.
- Three participants were removed because of missing data.
- The final sample consisted of 333 participants.

Measures

- Demographic variables
  - Gender, age, ethnicity, income, educational attainment
    - Ethnicity coded as Hispanic/Non-Hispanic
    - Education coded as completed high school/ did not complete high school.
    - Level of acculturation was assessed using the choice of language for the interview.
- Pretraumatic psychological factors
  - Prior exposure to traumatic events
    - Lifetime community violence exposure assessed using 18 items modeled after the Survey of Children's Exposure to Community Violence (SCECV).
    - To reduce respondent burden, they were asked to dichotomously respond yes or no to questions regarding direct exposure (the attack responsible for current hospitalization was not included).
      - Index of violence exposure (sum of endorsements)
        - (M = 5.58, SD = 3.14, Range = 0 to 16).
      - Other lifetime trauma exposure (non-community violence related trauma exposure).
        - (M = 1.40, SD = 1.16, Range = 0 to 6)
  - Life Stressors
    - Nine relevant items taken from Life Experiences Survey (LES). Respondents indicated if they had experiences including dissolution of a romantic relationship, a major health problem, spending time in jail, losing a job($M = 2.08$, $SD = 1.68$, Range = 0 to 7).
  - Pretraumatic psychological symptoms
    - Recent history of major depression and dysthymia
      - Assessed by three dichotomous items developed by Rost, Burnam, & Smith (1993).
      - Items were summed to create an index ($M = 0.55$, $SD = 0.78$, Range = 0 to 2).
        - In the past year have you had 2 weeks or more during which you felt sad, blue, or depressed; or when you lost all interest or pleasure in things you usually cared about or enjoyed?
        - Have you had 2 or more years in your life when you felt sad or depressed most days even if you felt okay sometimes?
        - Have you felt depressed or sad much of the time in the past year?
  - Personality variables
    - Participants were asked to report what they were generally like before the attack to limit biases from acute distress.
    - Trait optimism was measured with the 6-item Life Orientation Test- Revised, with response options ranging from 1 (strongly disagree) to 5 (strongly agree).
      - Optimists generally expect positive outcomes ("I usually expected the best to happen").
    - Trait neuroticism measured with 5 items from the NEO Five-Factor Inventory. Abbreviated to reduce respondent burden.
      - Asked to rate the personal relevance of each statement ranging from 1 (strongly disagree) to 5 (strongly agree).
      - Individuals high on neuroticism tend to be emotionally labile and experience negative affect and cognition. ("Sometimes I felt completely worthless").

- Characteristics of the traumatic event
  - Event characteristics were obtained from computerized medical records.
  - Injury Severity Scores (ISS) used to obtain objective injury severity. (range = 1 to 75 with higher scores indicating higher probability of death from the injuries ($M = 9.03$, $SD = 8.89$).
    - A score of 9 is considered mild to moderate in severity
  - Mechanism of assault was coded as gunshot vs. all other mechanisms.
  - Mean length of hospitalization was 6.96 days ($SD = 8.06$, Range = 0 to 66).
- Reactions to the traumatic event
  - Peritraumatic dissociation
    - Assessed using a modified 8-item version of the 10-item Peritraumatic Dissociative Experiences Questionnaire (PDEQ). Items rated from 1 (not at all true) to 5 (extremely true). $M = 2.69$ ($SD = 0.89$), Range 1 to 5.
  - Self-blame
    - Used items developed by Downey, Silver & Wortman (1990). Assessed the extent to which participants blamed themselves for the attack. (i.e. "How much do you blame yourself for what happened?", "How much would you say it happened because of something about you as a person?").
    - Ratings ranged from 1 (not at all) to 5 (extremely) with $M = 4.65$ ($SD = 2.33$), Range = 2 to 10.
- PTSD symptom severity
  - Assessed using the 17 item PTSD checklist (PCL)
  - Participants rated the degree to which they were bothered by each symptom on a scale ranging from 1 (not at all) to 5 (extremely).
  - Symptoms were assessed with respect to the attack (e.g., How much have you been bothered by repeated, disturbing dreams of *the attack?")* The time frame for the questions differed slightly across the 5 days ("since the attack") and later follow-up interviews ("past 7 days").
  - Responses were averaged into a symptom severity score (5-day assessment: $M = 2.29$, $SD = 0.86$ Range = 1 to 5; 12 month follow-up: $M = 2.01$, $SD = 0.91$, Range= 1 to 4.77).

DATA ANALYSIS

Missing Data

- Because less than 1% of data points were missing, and case-wise deletion would have resulted in the loss of 10% of the cases, predictor values were imputed for 31 respondents who were missing a single data point, and 1 respondent who was missing 4 data points. Three others were missing extensive data and were dropped from analyses.
- For 32 participants who completed a PTSD symptom assessment at the 3 month follow up but were missing data from month 12, a data resampling technique known as hot decking was used for imputation of the 12 month outcome variable. Using this strategy, they imputed a 12-month PTSD symptom severity value based on the scores of a respondent who was similar to the target respondent in his or her level of distress at the 3-month assessment
- Weighting was used to reduce threats to validity due to the attrition of 77 cases.
- Regression Model Specification
  - Hierarchical multiple regression with stepwise model pruning was used.

RESULTS

- Twenty-five percent of participants met screening criteria for PTSD at the 5-day assessment (excluding duration), and 20% met criteria at the 12-month follow-up.
  - There was a statistically significant decrease in symptom severity for the sample over time ($p < .001$), but the effect size was small ($d = -.31$), suggesting that although symptom levels decreased somewhat they stayed relatively constant over the 12 months following the trauma.
- Bivariate Relationship
  - Predictors associated with 12-month PTSD symptoms severity
    - Recent history of depression, lifetime violence exposure, neuroticism, optimism, injury severity, length of hospitalization, peritraumatic dissociation, self-blame, and 5-day PTSD symptom severity.
    - The magnitude of the correlation between 5-day and 12-month PTSD symptom severity was nearly twice that of other variables.

- These findings were consistent with prior meta-analyses.

- Multivariate Relationships
  - Demographic characteristics
    - Explained 4% of variance in 12-month PTSD symptom severity.
    - May be due to restricted range of characteristics.
    - Hispanic ethnicity was associated with decreased symptom severity.
    - Older age was associated with increased symptom severity.
  - Pretraumatic psychological factors
    - When combined with demographic characteristics- explained 8% of the variance in 12 month PTSD symptom severity.
    - Only a recent history of depression prior to trauma had a significant unique association with the 12-month PTSD symptom severity.
  - Characteristics of the traumatic event
    - Inclusion improved model prediction by 2%.
    - Only injury severity was uniquely related to 12 month PTSD symptom severity.
  - Reactions to the traumatic event
    - Inclusion improved model prediction by an additional 4%.
    - Peritraumatic dissociation and self-blame were significant predictors of 12-month PTSD symptom severity.
  - Five-day PTSD symptom severity
    - The strongest predictor of 12-month PTSD symptom severity.

Additional Analyses with PTSD Symptom Severity Expressed Dichotomously

- Regression analyses were replicated using logistic regression and a dichotomous index of probable PTSD.
  - No variables found to be significant that weren't in the linear regression.
  - 5 day symptom severity was only significant predictor of probable PTSD (odds ratio = 2.30, 95% confidence interval = 1.41 to 2.76, $p = .001$).

CONCLUSIONS/IMPLICATIONS

- PTSD symptom severity at 12 months was predicted by:
  - Demographic characteristics (age and Hispanic ethnicity).
  - Pretraumatic psychological factors (recent history of depression).
  - Characteristics of the traumatic event (injury severity).
  - Reactions to the traumatic event (peritraumatic dissociation, self-blame).
  - (Taken together, the four factors accounted for 14% of the variance in PTSD symptom severity- which is consistent with past findings).
  - Five-day PTSD symptom severity was the only significant predictor of 12-month PTSD severity after adjustments were made to the 4 major risk factors. Acute distress explained nearly as much variability on its own as did all other predictors combined.
  - Early symptoms of distress immediately following the trauma were found to be good predictors of future distress.
  - Authors suggest reserving the term *risk factor* for variables that demonstrate both association and temporal precedence (i.e., only acute posttraumatic distress met these criteria for risk factors in the current study).
  - Findings suggest that high levels of acute posttraumatic distress may be a useful target for early psychological intervention following a trauma.
  - Although self-blame was not found to be significantly correlated with 12-month PTSD symptom severity when 5-day symptom severity was controlled for, it may be a useful intervention target due to its possible influence on acute posttraumatic distress.

Limitations

- Results may not be generalizable due to the limited demographic make-up of the sample.
- Attrition of 77 participants.
- Retrospective assessment used on several measures should be considered in future research in order to assess the level of resulting bias.

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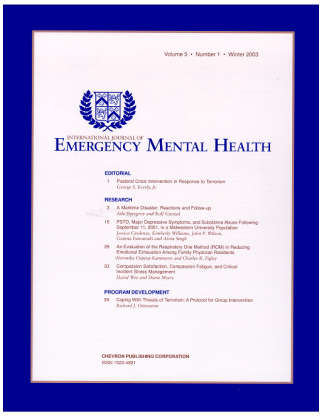

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