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**THE IMPACT ON
CORRECTIONAL OFFICERS
OF EXPOSURE TO CRITICAL INCIDENTS**

by

Lois Rosine, M.A.

A dissertation submitted to
the Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Doctor of Philosophy

Department of Psychology

Carleton University

Ottawa, Ontario

March 1992

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ISBN 0-315-76006-0

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the Faculty of Graduate Studies and Research
acceptance of the thesis,

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in partial fulfillment of the requirements
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ABSTRACT

Persistent psychological problems have been identified in a variety of people who have been exposed to traumatic stimuli. These individuals have been victims of a variety of life threatening events. Over the past fifty years, these victims have come in contact with mental health professionals leading to a developing awareness of traumatic stress. Historically traumatic stress has been associated with warfare but more recently there has been a growing recognition of that public safety and emergency service personnel who are exposed to traumatic events are experiencing symptoms of traumatic stress. These symptoms include intrusive recollections of the traumatic events, nightmares, hypervigilance, an exaggerated startle response, and intense psychological distress when exposed to stimuli that are associated with the original trauma. Correctional officers are one of the occupational groups exposed to traumatic stimuli as a predictable part of their employment. Little is known regarding the impact of such exposure on correctional personnel nor the role of environmental factors and personality variables in terms of immediate and long term outcome. A random sample of 122 security officers were interviewed and asked to provide information on their experience following exposure to traumatic events. The officers also responded to a questionnaire that measured personal disposition, stress related and health related variables, social support, coping

style, and current functioning. A dynamic two staged model of traumatic stress was proposed that considered the role of personal vulnerability, coping style, social support and number of exposures on trauma impact at the time of the event. The second stage considered personal vulnerability, coping style, social support and trauma impact on current functioning. The findings provided support for a reduced two staged model in which vulnerability and an escape/avoidance coping style were predictive of both trauma impact at the time of the event and current clinical functioning. Number of exposures to traumatic events were predictive of trauma symptomatology which was in turn predictive of current difficulties. Social support did not have a significant influence in reducing impact either at the time of the event nor in terms of current functioning.

ACKNOWLEDGEMENTS

I would like to thank Dr. Don Andrews for his encouragement and assistance. Thanks are due Dr. Bob Hoge and Dr. David Robinson for their assistance and comments as committee members.

I would also like to acknowledge the support and assistance given me by the management and staff of the Correctional Services of Canada. A special thanks goes to Mr. Andrew Graham, Deputy Commissioner, Ontario Region for providing the opportunity for me to complete my academic training and to Mr. Sam Brazeau, Mrs. Mary Cassidy, Mr. Don Pyke, Mr. Fred Sisson, and Mr. Larry Stebbans for allowing me the opportunity to speak with their staff.

Of particular importance are the men and women security officers working at Bath Institution, Frontenac Institution, Millhaven Institution, Pittsburg Institution, Prison for Women, and the Prison for Women Annex without whose participation this study would not have been possible. Thank you.

Most importantly I would like to thank my husband, Don Bent, without whose understanding, support and encouragement this project would never have happened.

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CHAPTER 1
THE IMPACT ON
CORRECTIONAL OFFICERS
OF EXPOSURE TO CRITICAL INCIDENTS

Persistent psychological problems have been identified in a variety of individuals who have been exposed to unusually traumatic or life threatening events. These individuals are the victims of rape, violent crime, war, torture, concentration camps, battering, sexual abuse, natural or technological disasters, or other equally unpleasant events. The distress caused by such incidents can continue over extensive periods of the victim's life and severely impair his/her functioning. Over the past fifty years, an increasing number of these victims have come in contact with mental health professionals. This contact has led to a developing awareness of their plight and the study of traumatic stress has become a growing research area.

Historically the concept of a disorder related to trauma has been associated with warfare. As early as 1871, Da Costa described a condition that was characterized by symptoms of anxiety in response to a stressor (Andreasen, 1985). In the American Journal of Medical Science, he referred to "irritable heart" presented by soldiers in the Civil War. The symptoms included chest pain, palpitations and dizziness. Subsequently, this disorder was identified in a variety of combat settings and given names such as "soldier's heart", the

"effort syndrome" or "neurocirculatory asthenia". In World War I, veterans presenting these symptoms were thought to be suffering from "shell shock".

By World War II a number of competing theories began to emerge regarding the cause of these post-traumatic syndromes. Many, following Da Costa's approach, looked for physical causes. It was thought that the phenomena was the result of organic brain damage secondary to carbon monoxide gas or to atmospheric pressure changes caused by detonations. The psychodynamic theorists postulated that important early life experiences predisposed individuals to later develop post-traumatic neurosis. This neurosis was viewed as anxiety that was the result of some unresolved conflict rooted in the patient's unconscious. The conflict was thought to have occurred in childhood and to be of a sexual nature or some other type of developmental experience, such as separation anxiety, phobic response to animals or unresolved guilt for some minor offence. These early unresolved conflicts were thought to be reawakened by later stressors such as warfare, disasters, and severe accidents. Those conflicts, awakened in the theatre of war, were variously called "traumatic war neurosis", "combat neurosis" or "gross stress reaction" (Andreasen, 1985).

The psychiatric disabilities experienced by returning World War II veterans, as a result of exposure to combat, led to an increased interest in the post-traumatic syndrome. The

large numbers of these psychiatric casualties in Europe were of such concern that a task force of psychiatrists was established to study the problem.

Concurrently with the growing literature on war veterans, other investigators were describing similar syndromes in individuals exposed to stressors such as industrial accidents, natural catastrophes or even accidents in the home. The first extensive description of this nature was done by Alexander Adler (1945), who studied the victims of the Coconut Grove disaster. It was this climate that led to the inclusion of "gross stress reaction" in DSM-I in 1952. Gross stress reaction was defined as a transient and reversible reaction and if the patient's symptoms persisted over time an alternate diagnosis was given (Andreasen, 1985).

During this same period a similar category appeared in the International Classification of Diseases (ICD) and its definition was very similar to the one found in DSM-I. When DSM-II was published in 1968, the post-traumatic syndrome category was omitted. This was a surprising event given that the syndrome had achieved international recognition and various research investigations were being carried out. Andreasen (1985) suggests that this may have occurred because post-traumatic syndrome, to this point in history, was closely associated with the activity of war. DSM-II was written during the rather tranquil period between World War II and the Vietnam War and the authors may have assumed that such a

category was not relevant in peace time.

The problems of returning Vietnam War veterans (Card, 1987; Fairbank & Nicholson, 1987; Foy, Carroll & Donahoe, 1987), the research data collected on survivors of disasters such as Buffalo Creek and Coconut Grove (Lindemann, 1944), as well as pressure from professionals in the field (Trimble, 1985) provided convincing evidence to the authors of DSM-III that a category for post-traumatic syndrome needed to be reinstated. The reintroduced category was identified as Post-traumatic Stress Disorder (PTSD) and defined as a disorder that is caused by a stressor severe enough in nature that it is likely to produce psychological trauma in most normal individuals. PTSD was operationalized as a single syndrome resulting from a wide variety of relatively severe stressors (Sparr, 1990).

In the late 1970's, a developing literature in the area of victimology began to identify a host of individuals who were experiencing the symptoms of PTSD but were neither survivors of combat nor of disasters. These were individuals who had been subjected to such things as physical and sexual violence (Brugess & Holmstrom, 1974; Davis & Friedman, 1985; Ellis, 1983; Holmes & Lawrence, 1983; Veronen & Kilpatrick, 1980), nonassaultive crime (Wirtz & Harrell, 1987), and sexual abuse (Browne & Finkelhor, 1986; Finkelhor, 1987; Runtz & Briere, 1986).

Elsewhere, in the literature of the 1970's, a growing

body of information was being accumulated on occupational stress. A variety of occupational groups, such as teachers (Russel, Altmaier & Van Velzen, 1987), health care workers, police (Cullen, Lemming, Link & Wozniak, 1985; Graf, 1986; Loo, 1984) and correctional workers (Black, 1982; Brodsky, 1982; Fitzgerald, 1983; Harris, 1980; Laskey, Gordon & Srebalus, 1986) were being studied. These studies revealed that certain groups of workers were suffering from a number of physiological and emotional difficulties related to stress (Cheek & Miller, 1983; Maddi, Bartone, & Puccetti, 1984).

As the 1980's approached, clinical practitioners, who worked with individuals experiencing occupational stress, began to notice occupational groups where some members were presenting symptoms of PTSD. These were individuals who, by the nature of their work, were being exposed to a number of traumatic events and/or who were acting as helpers to the victims of such events (Baron, 1987; Kelly, 1984; Lamontagne, 1983; Martin, McKean & Veltkamp, 1986). The occupational groups included police (Loo, 1986; Martin, McKean, & Veltkamp, 1986; R.M. Solomon, 1988a), fire personnel (Durham, McCammon & Allison, 1985), ambulance and paramedical personnel, hospital emergency department staff, disasters workers (Raphael, 1984; Wilkinson, 1983), rape crisis workers and other clinicians (McCann & Pearlman, 1990; Talbot, 1990). Public safety personnel who are exposed to contact with victims who have been severely traumatized may experience that

trauma vicariously. They become proxy victims (van Goethem, 1986).

As a function of their job responsibilities, crisis and public safety personnel are directly and indirectly exposed to a host of extremely unusual events (Mitchell, 1984). These events included such experiences as riots, hostage takings, being shot at, shooting someone in the line of duty, finding murder and suicide victims, watching a child die in spite of your rescue efforts, placing bits and pieces of bodies in bags in the aftermath of a major disaster, seeing broken and mutilated bodies, and other situations equally as gruesome. These occupational events, which fall outside the range of usual human experience and are considered to be markedly distressing to almost anyone, have been defined as "critical incidents" (Mitchell, 1983). Chronic, or in some cases acute, exposure to these critical incidents has the potential to induce traumatic reactions in public safety personnel (Mitchell, 1982a, 1982b; Mitchell & Bray, 1990; van Goethem, 1986).

Clinicians in the field are finding that exposed personnel differ widely in their response to critical incidents (Mitchell, 1982a; Mitchell & Bray, 1990; R.M. Solomon, 1988b). Some experience little or no impact, others experience short term impact while a limited number experience severe, long term difficulties. The symptoms that exposed personnel manifest fall into the physical, behavioural,

emotional and cognitive domains (Loo, 1986; Martin, McKean, & Veltkamp, 1986; Mitchell & Bray, 1990).

The broad spectrum of symptoms, identified by clinicians as present in various individuals exposed to critical incidents in the workplace, are the same as those identified as necessary conditions for a diagnosis of PTSD [see Appendix A]. The differences lie in the number of symptoms experienced by the individual and the duration of the symptoms. Traumatic stress can be conceptualized as falling along a continuum of severity with PTSD at the extreme pole.

A pilot study found that a significant proportion of police officers reported suffering from PTSD as a sequela to their exposure to trauma relating to personal or others' victimization (Martin et al., 1986). Loo (1986) found in a study of RCMP officers involved in shootings that post incident 50% experienced sleep disturbances, 36% were preoccupied with the incident, 24% experienced nightmares, 27% had flashbacks. In some cases these symptoms lasted one month and longer. R.M. Solomon (1988a) found that police officers involved in shootings reported a heightened sense of danger (58%), anger (49%), nightmares (34%), isolation/ withdrawal (45%), fear and anxiety about future situations (40%), sleep difficulties (46%), flashbacks and intrusive thoughts (44%), emotional numbing (43%), depression (42%), and alienation (40%).

Wilkinson (1983) surveyed 102 disaster rescuers following

the collapse of the Hyatt Regency Hotel Skywalk. Forty-eight of the group were emergency rescue personnel and off-site workers. Ninety percent of the participants experienced repeated recall of the event and, in 20 percent of the cases, the recall interfered with their daily functioning. Fatigue, anxiety and depression were reported by 50 percent of the subjects. Fifty percent of the subjects experienced sleep disturbances and 25 percent had nightmares about frightening events.

In a study by Card (1987), 1,500 men who had been followed from 1960 as part of a larger effort known as Project TALENT, were looked at in terms of exposure to combat. Approximately 500 of the men had served in the Vietnam war zone, approximately 500 had done military duty during the same period but never been assigned to Vietnam, and approximately 500 had never served in the military. The men were surveyed in 1981, six years after the Vietnam War and more than ten years after the completion of their military service. More than a decade later the combat exposed group

reported significantly more problems related to nightmares, loss of control over behavior, emotional numbing, withdrawal from the external environment, hyperalertness, anxiety, and depression (Card, 1987, p. 6)

than did their peers. Furthermore, the greater the individual's exposure to combat and injury, the greater the

number of PTSD-related problems he was experiencing now.

There is a growing literature in the area of traumatic stress (Briere & Runtz, 1987; Card, 1987; Denny, Robinowitz & Penk, 1987; Ellis, 1983; Fairbank, Keane & Mallory, 1983; Finkelhor, 1988; Foy & Card, 1987; Foy, Carroll & Donahoe, 1987; Holmes & St. Lawrence, 1983; Runtz & Briere, 1986). Many of the psychological reactions experienced by a person exposed to traumatic stress are situationally related and dissipate over time (Brom & Kleber, 1989; Davis & Friedman, 1985; Janoff-Bulman, 1985; Kilpatrick, Veronen & Best, 1985; North, Smith, McCool & Lightcap, 1989). However, for a certain number of individuals the effects are severe, long lasting and inhibit their daily functioning (Davidson, Fleming & Baum, 1986; Donaldson & Gardner, 1985; Stretch, 1986).

The human and economic costs associated with traumatic stress are significant. These include increased absenteeism from work, resignation from work, increased use of medical services, health deterioration, marriage breakdown, and suicide (Davidson, 1979; Martin et al, 1986; Mitchell, 1984, 1987; Mitchell & Bray, 1990; Veronen & Kilpatrick, 1980; Yanke, 1984). The clinical literature examining traumatic stress in occupational settings has emphasized prevention via education and immediate intervention post incident. Mitchell and Bray (1990) recommend several intervention techniques for the management of traumatic stress following exposure to a critical event. These procedures are thought to be most

effective when implemented as soon as possible post incident and all exposed personnel are treated as a prevention strategy. Preliminary evaluation research supports the effectiveness of such procedures at reducing the self-reported symptomatology of individuals following an incident (Robinson, 1989; Rosine, 1991). However, despite the apparent effectiveness of these procedures and the identified costs associated with exposure to traumatic stress, there is debate among managers regarding the usefulness of establishing prevention programs (Bergman & Queen; 1986).

PTSD has recently become recognized as a legitimate work related claim by the Workman's Compensation Board. Compensation is possible when psychology injury is caused by physical trauma but it is extremely difficult to obtain when the causal factor is deemed to be psychological (Corneil, 1990). At present, there are no prevalence or incidence data to support or dismiss the position that PTSD caused by psychological trauma is a work-related disorder (Kahn, 1989).

The Epidemiologic Catchment Area Survey (Helzer, Robins & McEnvoy, 1987) found the prevalence rate of PTSD to be 1 percent in the general population of the United State. In 1988, the Centres for Disease Control reported an incident rate of combat-related PTSD for wounded Vietnam veterans to be 20 percent (Wolfe & Keane, 1990). Wilkinson (1983) found 17.6 percent of the rescuers had PTSD five months after the collapse of a building. One year following a train wreck

seven percent of rescuers had moderate PTSD and eight percent had severe PTSD (Raphael, 1984). Five months following a building explosion 70 percent of the firefighters were experiencing symptoms; 15 percent had moderate PTSD and 11 percent severe PTSD (Durham et al. 1985). Similarly, up to nine years after being victims of hijackings and hostage takings, 12 percent of the victims and 11 percent of the victims' family members were still in need of professional treatment (van der Ploeg & Kleijn, 1989).

The main diagnostic features of PTSD include intrusive recollections of the traumatic event, nightmares, hypervigilance, an exaggerated startle response, and intense psychological distress when exposed to stimuli that are associated with the original trauma. A number of physiological variables have been identified as correlates of these affective, cognitive and behavioural responses. Veterans, diagnosed as having PTSD, when compared to control subjects, showed significant increases in heart rate, and diastolic and systolic blood pressure on exposure to combat sounds (Gerardi, Blanchard & Kolb, 1989; Kolb, 1988). Unusually high urinary levels of norepinephrine and a skewed norepinephrine/ cortisol ratio discriminated PTSD subjects from depressed patients (Mason, Giller, Kosten, Ostroff & Podd, 1986). When catecholamine excretion and receptor parameters, cortisol excretion, and neuroendocrine challenge test results are examined PTSD subjects evidence different

endocrine profiles than do depressed subjects (Giller et al., 1990). Friedman (1990) reports that PTSD victims exhibit abnormal sleep architecture. For a complete overview of the neurobiological aspects of PTSD, see the review by Krystal et al. (1989).

Conceptual models of traumatic stress and its development have had significant influence on the nature of traumatic stress research (Wolfe & Keane, 1990). Exposure to traumatic stress was originally conceptualized as activating a pre-existing psychiatric problem (Andreasen, 1985). Following this, PTSD was seen as the adverse effects of exposure to traumatic stimuli on any individual, even well-adjusted persons (Wolfe & Keane, 1990). Both of these models assume a stimulus-response paradigm where the individual is essentially a passive reactor to external forces (Corneil, 1990). Recent research has shown that other factors are influential in the development of PTSD. These include dispositional and demographic variables, behavioural and cognitive skills, and environmental factors (Green, Wilson & Lindy, 1985; Keane, Wolfe & Taylor, 1987; Reich, 1990; Z. Solomon & Mikulincer, 1987; Z. Solomon, Mikulincer & Hobfoll, 1987; Vitaliano, Maiuro, Bolton & Armsden, 1987). Vitaliano et al. (1987) contend that dynamic models of traumatic stress are necessary to understand person environment-interactions. Further, they argue that researchers should draw on the knowledge base of the general stress literature when developing models of

traumatic stress. The advantage to this is that "the variables represented are well grounded in the stress literature... and are supported by a strong theoretical foundation" (p. 103). In the general stress literature, Lazarus and his associates have argued cogently for a process-oriented approach to the study of stress (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986). Stress is conceptualized as a relationship between the person and the environment that is reciprocal, bidirectional and dynamic (Folkman, Lazarus, Gruen & DeLongis, 1986).

There are major difficulties when attempting to study the impact of exposure to traumatic events. It is impossible to predetermine when disaster, war, riots, murder or most other traumatic events are going to occur (Green, Grace & Gleser, 1985). Generally, the appropriate data cannot be collected prior to the event, the exception being in those cases where the data were collected for other purposes. Thus if we are to understand traumatic stress we must compromise and study it retrospectively (Z. Solomon & Flum, 1988). The work place can provide a natural laboratory for learning about the impact of exposure to traumatic stress on high risk occupational groups.

Correctional officers are one such group. Penal institutions represent an occupational context where exposure to traumatic events is not unusual. Officers are subjected to a variety of critical incidents during the performance of their duties. Correctional facilities have typically been

described as environments

where the potential for physical injury and even death is omni-present, and where verbal and physical abuse from one's charges is commonplace. The correctional institution is a unique social environment in which employees must work in close association with many individuals who have demonstrated a propensity to engage, often without scruple, in rebellious, destructive, belligerent and assaultive behaviors (Ross, 1981, p. 260).

The correctional literature identifies working in the field as a highly stressful occupation with unusually high negative consequences to health and adjustment (Brodsky, 1982; Cheek, 1983, 1984; Cheek & Miller, 1983). However, a recent study by Hughes (1990) found that Canadian correctional workers were not obviously different from the general population in terms of the ability to effectively cope with the stress of their jobs nor were they particularly dissatisfied with their jobs. This conflicting evidence may be in part explained by the populations sampled in the various studies. The Hughes sample included non-security as well as security staff whereas previous research has generally confined sample selection to security (guard) personnel. One of the primary functions of security personnel is custody and control over the inmate residents in the correctional environment.

Hughes (1990) was interested in ascertaining the coping behaviours of correctional staff used to deal with specific problems. He asked his subjects to consider problem situations, both at home and at work, that they had experienced within the preceding three month period. Hughes did not ask nor did he probe for information, either past or present, regarding unusual or traumatic events.

It is unlikely that subjects would spontaneously self disclose details regarding traumatic symptoms that related to an event that occurred prior to the three month period for several reasons:

1. there is a "macho" image of the guard within the correctional officer sub-culture. Officers attempt to present to their peers and to others an image of being unaffected by unpleasant or frightening events;
2. symptoms, such as intrusive thoughts and reoccurring nightmares, conjure up concerns of losing one's mind and officers are often reluctant to report such experiences; and
3. as mentioned above the sample included non-security as well as security staff. During a crisis situation, non-security staff are removed from front line duty and security staff assume responsibility for managing inmates. Non-security personnel are much less likely to be exposed to traumatic stress.

Eleven percent of the Hughes' subjects rated concern for

personal safety as the most stressful aspect of their job. Thirty six percent of his sample were considered by their physicians to have a stress related problem that required a lifestyle modification. As both fear and stress related health problems have been associated with exposure to traumatic stress some of the officers may have been experiencing more significant problems than they revealed or that predated the three month time frame.

The existing data regarding the effects of traumatic stress on personnel who provide protection for the public are generally based on opinion surveys and have not been corroborated by more objective measures. Exposures to traumatic events in a correctional setting are often repetitive and generally unpredictable. Self-report data from correctional workers (Rosine, 1991), clinical experience, and anecdotal reports from other clinicians working in corrections suggest that correctional staff suffer from exposure to traumatic events. To date there has been no studies that examine the impact on correctional workers, of exposure to traumatic events during the course of their employment.

A number of questions must be considered when studying PTSD in correctional setting:.

1. The degree of acute versus chronic symptomology experienced by the staff;
2. Is there a differential effect between single and multiple exposures?

3. What role does vulnerability (pre-existing factors) social support and coping strategies play at the time of exposure and in terms of long term impact?

There are three basic ways in which traumatic stress and the survivor's personality traits and personal resources can interact. The first is that there is no relationship, that traumatic experience and personality are completely independent of one another. This is unlikely given present understanding of the nature of stress and its interaction with appraisal variables and coping styles (Folkman & Lazarus, 1988; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Folkman, Lazarus, Gruen & DeLongis, 1986; Folkman, Lazarus, Pimley & Novacek, 1987). The second possibility is an inverse relationship. This assumes that personality factors are important in exposures of low intensity but become increasing less so as the intensity and seriousness of the stimulus increases. This hypothesis was supported to some extent by the early combat literature where combat exposure was significantly related to subsequent development of PTSD (Foy, Sipprelle, Rueger & Carroll, 1984). The final possibility is that the relationship is curvilinear and that "very low stress and those of extreme and extended stress diminish the role of personality on psychological effects" (Hartsough, 1988, p. 150). In other words, in situations with very little threat value few psychological effects are evoked, whereas in situations of extreme and ongoing stress a

relatively uniform stress response is elicited across individuals. Support for this last hypothesis is developing in the more recent combat literature (Z. Solomon, Mikulincer & Hobfoll, 1986; Z. Solomon et al., 1987). Hartsough (1988) hypothesizes that in moderate stress incidents or in events of severe stress but short duration there is an interaction between personality differences and the stressor but in situations of extreme stress the effect of individual differences disappears and a relatively homogeneous stress response occurs.

Consistent with the curvilinear hypothesis of traumatic stress it is predicted that security officers will experience few difficulties when there is little threat, and in situations of extreme and protracted threat there will be fairly consistent reporting of impact whereas for other critical events personality variables will play an important role.

The following model, based on the model of disaster/distress suggested by Vitaliano et al. (1987), is presented as a paradigm for evaluating the impact of exposure to traumatic stress in a criminal justice setting (see Figure 1).

Insert Figure 1 about here

Vitaliano et al. argue that dynamic models of stress are necessary to allow the inclusion of the broader stress

Figure 1. Model of traumatic stress.

literature in the conceptualizing of traumatic stress as an occupational response.

VULNERABILITY

Vulnerability refers to those factors that predispose an individual to having a traumatic stress reaction. The category includes demographic, dispositional, and attitudinal variables and stressors, current work stress, previous serious life stress events, and health related behaviours.

Demographic Variables

It is important to consider basic demographic variables such as age, education, marital status, and gender, in a study of traumatic stress. The literature on children and adolescents suggests that the impact of exposure to trauma may be moderated by age (Eth & Pynoos, 1985). Younger persons may not yet have developed the skills necessary to successfully cope with traumatic events (Bandura, 1977).

Folkman and Lazarus (1988) found there were notable differences, between a younger and an older group of adult subjects, in the effects of coping on emotional state. For example, in the older group, seeking emotional support was related to increased positive emotion but had no association in the younger group. They suggest that the age differences may be due to developmental changes in coping efficacy. Folkman, Lazarus, Pimley, and Kovacek (1987) also found significant differences between two different age groups when comparing them across eight types of coping behaviours.

Hughes (1990) found that age was related to the type of coping behaviour used to deal with stress and Billings and Moos (1981) reported that coping behaviours varied with both age and gender. Hamilton and Fagot (1988) noted that while women reported more overall general stress than did men there were no gender differences in terms of either frequency of stressful events or proportion of problem-solving behaviours. In their study of correctional staff, Cullen, Link, Wolfe and Frank (1985) found that women reported higher levels of work stress than did their male counterparts. In the area of traumatic stress, Gibs (1989), in reviewing the literature, found conflicting evidence regarding the effect of gender on exposure to traumatic situations and victimization.

Fleishman (1984) noted that education and income are positively correlated with active coping behaviours. Worthington (1977) found that low education was significantly related to the development of PTSD. The general stress literature has consistently confirmed that education facilitates the reduction of stress (Link & Dohrenwend, 1980).

Marital status prior to the time of exposure to a traumatic incident may have a moderating effect on the outcome of that exposure. Card (1987), Egendorf, Kadushin, Laufer, Rothbart and Sloan (1981), and Z. Solomon and Flum (1988) found that soldiers with prior family instability were more likely to develop PTSD.

Dispositional Variables

There is a growing body of evidence that suggests that a portion of the variance in self-reported measures of distress and psychological adaptation such as health complaints, stress and satisfaction. are attributable to a personal disposition of negative affect (NA) (Brief, Burke, George, Robinson & Webster, 1988; Watson, 1988; Watson, Clark & Tellegen, 1988; Watson & Pennebaker, 1989; Watson, Pennebaker & Folger, 1987). The authors argue that both independent and dependent variables are being confounded by negative affect and the relationship between measures of stress and outcomes may reflect this common link.

Watson and Pennebaker (1989) argue that health complaint scales likely assess at least two distinct sources of variance. One is health related and correlates significantly with external measures of wellness such as physicians' ratings, medical records and documented health visits. The other component is subjective and psychological in nature and unrelated to external measures. Tessler and Mechanic (1978) found that negative affect was significantly associated with self-ratings of health, the self-ratings of health correlated significantly with doctors' ratings, but the doctor's ratings were unrelated to negative affect. In other words, "subjective health measures contain a psychologically important but organically suspect component that essentially represents the influence of trait NA" (Watson & Pennebaker,

1989, p. 247).

An additional problem with self-report data is the reliability and the validity of the recall of respondents. The literature on eyewitness testimony indicates that while free recall is the most accurate method of obtaining information about past events, it results in the least amount of information (Loftus, 1979). McFarlane (1988) found that when victims were asked to report on injury four months following an event and then one year post incident, accuracy of recall decreased for those individuals who were no longer reporting symptoms. Only 43 percent of those without symptoms continued to report that they had been injured.

Watson et al. (1987) suggest the use of objective measures such as sick days, days of hospitalization and physician ratings be used to determine health status. Unfortunately, these measures raise other problems.

There is limited opportunity for physicians to evaluate their patients' health on a continuous basis, sick leave credits are often taken for other reasons regardless of health, and hospitalization occurs so infrequently as to present major statistical problems (Hughes, 1990, p. 11). Even more problematic is whether psychological variables such as satisfaction can be measured without using self-report. In order to address the problem of bias resulting from a personal disposition of negative affect, the present study controlled for this potential confound.

It is important, in a study of traumatic stress, to consider the resiliency and resourcefulness that some people bring to stressful situations (Kobasa, Maddi, & Kahn, 1982; Scheier, Weintraub & Carver, 1986). Several authors have argued cogently for the abandonment of pathogenic models of health in favour of salutogenic models (Antonovsky, 1987, 1990; Rosenbaum, 1990). Meichenbaum (1985) and others are attempting to explain how individuals maintain their health despite exposure to various risk factors. Antonovsky (1987, 1990) argues that some people not only survive in the face of significant demands and personal difficulties but in fact are able to thrive. Rosenbaum (1990) postulates that this occurs because of the role of personality repertoires in promoting self-control.

A personality repertoire is not a personality trait, but rather a set of well-learned behaviors, cognitions, and affects that are in constant interaction with the social and physical environment of the person. It influences the way a particular individual will respond to her social and physical environment, and at the same time it is modified by the person's experience (Rosenbaum, 1990, p. 9).

The particular personality repertoire that is of interest to Rosenbaum is that of learned resourcefulness which consists of a constellation of beliefs plus self-control skills and behaviours. The underlying assumptions of this model are that

people acquire these components without formal training, that the amount of learned resourcefulness varies across individuals, and that for any one person the repertoire is relatively stable across time.

Studies have found a number of differences between subjects high on resourcefulness (HR) and those low on the quality (LR). HR seasick sailors experienced significantly fewer performance deficits than did LR's. HR's were better able to cope with psychological consequences of their epilepsy, reported more control over the delivery process during natural childbirth, and made better postoperative adjustment following minor surgery using a local anaesthesia only (Rosenbaum, 1990). HR subjects are more able to implement the cognitive and self-management behaviours acquired during therapy. The two groups do not differ on their ability to acquire the skill but rather on their ability to implement the skill on a long-term basis. The LR subjects are more likely to relapse.

Self-control is related to other measures of adaptive outcome. Rosenbaum (1980) found HR subjects were less likely to hold irrational beliefs. Rational Emotive Therapy contends that failures in coping are due to irrational thinking whereas rational beliefs lead to rational (coping) behaviours which maximize desired outcomes (Ellis & Grieger, 1977). Learned resourcefulness was also found to correlate with locus of control (Richards, 1985).

Rachman (1990) defines resourcefulness as "the ability to use one's personal and social resources for successfully dealing with problems, especially those that are novel (p. 178)". He links resourcefulness with Bandura's (1977) concept of self-efficacy. The concept of learned resourcefulness offers potential for developing some understanding of why, in an occupational setting, some individuals develop traumatic stress symptomatology following exposure to critical events and others do not.

Several studies have looked at the effect of a positive attitude toward correctional work. Gerstein, Topp and Correll (1987) found that staff who perceived inmates negatively reported higher number of bad work days and felt more exhausted than did their colleagues. Cullen, Link, Wolfe and Frank (1985) found a favourable attitude toward inmates to be positively correlated with job satisfaction and Poole and Regoli (1980a) found it to be inversely correlated with cynicism. These results suggest that a human service/treatment orientation may moderate stress.

Stress related Variables

A number of researchers have attempted to identify sources of correctional officer stress (Cheek et al., 1983; Graf, 1986; Lasky et al., 1986; Long, Shouksmith, Voges & Roache, 1986). Cullen, Flemming, Link and Wozniak (1985) and Cullen, Link, Wolfe and Frank (1985) discriminate between "stressors", which refer to the sources of discomfort, and

"stress", which refers to the psychological discomfort that results from exposure to stressors. These authors suggest that the lack of a distinction between the concepts has led to inconsistent terminology and conceptual confusion. In this study, both stress and the stressors are conceptualized as representing moderator variables that already exist in the environment of the individual independent of exposure to a traumatic incident.

Role problems and dangerousness were found to be major stressors in criminal justice work (Cullen, Flemming, Link & Wozniak, 1985; Cullen, Link, Wolfe & Frank, 1985; Poole & Regoli, 1980b). Role problems, which are defined as ambiguous or conflicting expectations, place significant demands on correctional officers. Similarly, the unpredictable possibility of being assaulted while at work is a potential source of stress. In victims of crime, life threat and physical injury made significant contributions to the explanation of the variance associated with traumatic symptoms (Kilpatrick et al., 1989). Further, Foa, Steketee and Rothbaum (1989) suggest that perceived threat is a better predictor of traumatic stress symptom development than is actual threat.

Of additional concern in a study of traumatic stress, is the role played by other serious life events on the adaptive ability of the individual when exposed to traumatic events. In a study, using 96 women in an urban community, Caspi,

Bolger and Eckenrode (1987) investigated the possibility of major life events potentiating the effects of daily stressful events. Contrary to their expectations, major life events appeared to reduce the impact of daily stressful events. Major life events in this study were defined as "exposure to acute environmental stressors.... such as eviction, loss of job, hospitalization, and death of a family member or friend" (p. 187). Z. Solomon and Flum (1988), studying Israeli combatants, found that both positive and negative life events were unrelated to the reactions of personnel that occurred during or shortly after battle but were related to the subsequent development of PTSD. The number of negative prior life events was positively associated with the number of PTSD symptoms. There was an inverse relationship between PTSD and prior positive life events. The authors suggest that positive life events occurring prior to or during a traumatic event may act as a buffer against possible negative impact.

Health related behaviours

Health related and lifestyle behaviours that have the potential to effect coping efficacy and subsequent outcome measures must also be considered. The consumption of legally sanctioned drugs such as alcohol, nicotine and caffeine have been associated with poor health and generally are considered to be maladaptive methods of coping with stress (Hanson, 1985). Rodin and Salovey (1989) suggest that combinations of stress and cigarette smoking or stress and caffeine

consumption may have a greater than additive effect on blood pressure and heart rate responses, and plasma cortisol level and serum cholesterol. Ingestion of these drugs as a coping strategy may exacerbate traumatic stress reactions and/or impede more functional coping (Carver, Scheier & Weintraub, 1989).

EXPOSURE TO TRAUMATIC STIMULI

Much of the trauma literature has focused on major catastrophic events such as hostage takings (van der Ploeg & Kleijn, 1989), air crashes (Bartone & Wright, 1990; Mitchell, 1982b), train wrecks (Raphael, 1984), building collapse (Durham et al. 1985; Wilkinson, 1983), terrorism (Kleinman, 1989), and massacre (Hough et al., 1990). War related PTSD has been strongly associated with frequency, duration and intensity of exposure to combat (Card, 1987; Foy & Card, 1987; Foy et al., 1984; Z. Solomon et al., 1986; Z. Solomon et al., 1987). Similarly the degree of life threat and physical injury was predictive of the development of PTSD in rape victims (Ellis, Atkeson & Calhoun, 1981; Kilpatrick et al., 1989).

The literature identifies certain classes of events as potential triggers for traumatic reactions in an occupational context (Mitchell, 1988; Mitchell & Bray, 1990; Sewell, 1983). These include:

- death of a co-worker
- suicide of a co-worker

- serious injury to self or others
- multiple casualties
- loss of life following prolonged or extraordinary expenditure of energy during a rescue attempt
- incident with unusual sights, sounds or circumstances
- personal identification with a victim
- dealing with body parts
- exposure to serious life or safety threat

For correctional officers these classes of events are represented by incidents such as suicides, murders, riots, hostage takings and assaults. While these events are not everyday occurrences they do occur with some frequency in correctional settings. Generally, the likelihood of a critical incident occurring increases as the level of security and control increases. The chronicity of exposure and the degree of threat during exposure appears to play a significant role in the subsequent development of traumatic symptoms (Kolb, 1988; van der Kolk; 1988).

COPING AND SOCIAL SUPPORT VARIABLES

Coping is a construct that has been considered to be one of the intervening variables that accounts for the relationship between stressful events and outcome measures of distress and adaptation (Cohen, 1980; Folkman, Lazarus, 1988; Folkman, Lazarus, Gruen & DeLongis, 1986; Hamilton & Fagot, 1988; Litt, 1988; McCammon, Durham, Allison & Williamson,

1988; Moos, 1984; Steptoe, 1989). The construct of coping encompasses a number of conceptually similar constructs such as hardiness (Kobassa, 1982), learned resourcefulness (Meichenbaum, 1977), and sense of coherence (Antonovsky, 1987, 1990). Some theories have focused on the cognitive aspects of coping while others emphasize the more behavioural components.

One of the most influential of the theories of coping is that of Lazarus and his associates (Folkman, Lazarus, 1988; Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986; Folkman, Lazarus, Gruen & DeLongis, 1986; Folkman, Lazarus, Pimley & Novacek, 1987). In this theory, "stress is conceptualized as a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and as endangering well-being" (Folkman, Lazarus, Gruen & DeLongis, 1986, p.572). Two processes, cognitive appraisal and coping, are seen as mediating both the stressful person-environment relationship and subsequent outcomes. Appraisal is a two part process. The first stage is primary appraisal where the person evaluates the type and degree of threat, and the degree of potential harm or benefit to his/her well-being. Then secondary appraisal occurs where the individual determines what response choices will either prevent or minimize harm or maximize benefit. The individual then implements some form of behavioural and/or cognitive coping that will effect some

change in the person's internal state and/or the external environment. Coping is defined as the cognitive, behavioural and affective efforts extended to manage the internal and external demands of stressful person environment interactions. Coping has two major functions, one is to deal with the problem that is the source of the distress, and the other is to regulate the emotional response associated with the distress.

Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen (1986) identified eight coping factors; confrontive coping, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving and positive reappraisal. The type of coping used by individuals is defined by the context of the threat and by an appraisal regarding the likelihood of influencing the outcome of the encounter.

F. Cohen (1980) in a review of the literature on coping with surgery suggests that the most effective coping style varies according to the seriousness of the operation and the pre- post-operative stage of the patient. For example, avoidance and/or denial was the most effective strategy in situations where many risks are a potential but few actually occur. However, the same strategy following a major operation, such as open-heart surgery where compliance with stringent directives are required post-operatively, could lead to serious consequences. The propensity of an individual to

use a particular coping style has had some success in predicting health outcomes, such as psychological symptoms (Folkman, Lazarus, Gruen & DeLongis, 1986), depression (Coyne, Aldwin & Lazarus, 1981), and positive and negative emotion (Folkman & Lazarus, 1988). There is a paucity of research considering the effect of coping behaviour on the impact of exposure to traumatic stimuli.

The lack of social support in times of trauma has been linked to the development of psychological distress (S.D. Solomon, 1986). Studies of combat soldiers have found that the presence of social support from family (Card, 1987), superiors (Z. Solomon et al. 1986), and peers (Z. Solomon et al., 1987) is related to a reduction in the likelihood of developing traumatic stress reaction. In terms of life stress, Holahan and Moos (1986) found that the availability of family support helped to protect people from the negative psychological consequences of the stressors.

Social support must be conceptualized not only in terms of availability but also in terms of perception. L.H. Cohen, Towbes and Flocco (1988) found that negative mood did not affect the amount of perceived social support but it did have an effect on the subjects' perception of current availability of their social support. Retrospective self-reports of social support were obtained from three groups of Vietnam-era veterans (Vietnam veterans with PDST, Vietnam veterans with no PTSD; veterans with no Vietnam combat) for three time periods

(1-3 months prior to entering the service, 1-3 months following discharge, and at the time of the study) (Keane, Scott, Chavoya, Lamparski & Fairbank, 1985). Prior to Vietnam, all three groups reported comparable levels of support. However, the PTSD veterans reported a subsequent systematic decline in social support over the identified time periods. Z. Solomon and Flum (1988) found that PTSD combatants tended to perceive their social supports as inadequate prior to their wartime experiences. Z. Solomon et al. (1987) found that both objective and subjective measures of reduced social support were predictive of the development of traumatic stress reactions.

In an occupational setting, the reaction of family, peers, and/or supervisors may serve to define the severity of the traumatic incident (S.D. Solomon, 1986). Cullen, Link, Wolfe and Frank (1985) found that both family and supervisory support were associated with reduced level of work-related stress for correctional workers. For police officers, family support was found to mitigate life stress, whereas supervisory support mitigated work stress (Cullen, Lemming, Link & Wozniak, 1985).

OUTCOME MEASURES

As mentioned above, there is need for information regarding incident and prevalence rates to facilitate the planning of both short and long-term intervention strategies as well as prevention programs. A number of authors have

suggested that by establishing prevention programs many of the difficulties experienced by staff post incident can be minimized (Bartone & Wright, 1990; McCann & Pearlman, 1990; Mitchell, 1983; Robinson, 1989).

Green (1982) emphasizes the need for researchers to use standardized measurement techniques in the study of traumatic stress. This practice would allow comparisons to be made across studies involving different types of traumatic events and different exposed populations. The assumption in the diagnostic criteria of PTSD is that response to trauma is relatively uniform. Cross study comparisons would answer such questions as, "does exposure to similar traumatic stimuli evoke a recognizable and stable response pattern?" (Hartsough, 1988, p. 150).

The instrument that is used in large scale studies as a standardized assessment measure of PTSD, is the Diagnostic Interview Schedule. The Diagnostic Interview Schedule is a highly structured interview designed to assess individuals according to the diagnostic criteria specified in DSM-III (Robins, Helzer, Croughan & Ratcliff, 1981; Robins, Helzer, Orvaschel et al., 1985; Robins, Helzer, Weissman et al., 1984). The Diagnostic Interview Schedule was used in the USA in a large scale epidemiological study to establish prevalence rates in the general population. The data indicated that 1 percent of the total population, 3.5 percent of civilians exposed to physical attack and 20 percent of

Vietnam veterans wounded in battle were presenting symptoms of PTSD (Helzer, Robins & McEvoy, 1987). The Diagnostic Interview Schedule provides a methodology for gathering information on both impact at time of exposure and current problems.

The more widely used measure in clinical research for assessing traumatic stress is the Brief Symptoms Inventory (Derogatis & Melisaratos, 1983). The Brief Symptoms Inventory or it's parent assessment tool, the Self-report Checklist-90 (SCL-90-R), have been used to measure stress reactions in a number of different groups, for example rape victims (Burge, 1988; Kilpatrick, Veronen & Best, 1985), residents of Three Mile Island following the nuclear accident (Baum, Gatchel & Schaeffer, 1983), victims of a natural disaster (Murphy, 1986) and correctional officers (Lasky, Gordon & Srebalus, 1986). The Brief Symptoms Inventory is a self-report measure that provides three global indices of distress; the General Severity Index, the Positive Symptom Distress Index and the Positive Symptom Total, each communicating psychological distress in a somewhat different manner (Derogatis & Melisaratos, 1983).

Another tool used for systematically assessing the aftereffects of traumatic events is the Impact of Events Scale (Schwarzwald, Solomon, Weisenberg & Mikulincer, 1987; Weisenberg, Solomon, Schwarzwald & Mikulincer, 1987). The Impact of Events Scale focuses on the intrusion and the

avoidance components of the traumatic stress response (Horowitz & Wilner, 1980; Zilberg, Weiss & Horowitz, 1982). Intrusion refers to the thoughts, images, dreams/nightmares, and feelings experienced by victims of traumatic stress and avoidance refers to the "tendencies of psychic numbing, conscious denial of meanings and consequences, behavioral inhibition, or counterphobic activities related to the stressful life event" (Schwarzwald et al., 1987, p. 251). The Impact of Events Scale has been used with a variety of victims of traumatic stress; rape victims (Burge, 1988), man-made disaster, Three Mile Island (Davidson et al., 1986), Vietnam veterans (Frank, Kosten, Giller & Dan, 1990; Lipper, 1990; Wilson, Smith & Johnson, 1986) and disaster workers (McFarlane, 1990).

The use of the above mentioned measures in evaluating traumatic stress in a criminal justice setting will not only add to the general knowledge regarding occupational exposure to unusual stimuli but will subsequently assist in the overall goal of gaining a comparative perspective in traumatic stress research.

Security staff in correctional facilities are exposed to a number of critical incidents over the course of their careers. As mentioned above, these include events such as hostage takings, riots, being exposed to assaults to themselves or to others, murders and suicides. While these events are not routine they are considered to be a predictable

part of correctional employment. The purpose of the following study is to examine the role of environmental factors, personality variables, personal and psychological resources, and exposure to traumatic stressors in a correctional setting. It is predicted that following exposure to traumatic events, both short and long term outcomes will be modified by the effect of the environmental and personal variables of the exposed individual.

CHAPTER 2

Method

Subjects

The subjects were 122 correctional officers working in federal prisons (Bath Institution, Frontenac Institution, Pittsburg Institution, Millhaven Institution, Prison for Women and the Prison for Women Annex) within the Kingston area. Bath, Frontenac, Pittsburg and the Prison for Women Annex are all minimum security institutions meaning there are no perimeter fences. Millhaven is a maximum security facility while Prison for Women is a multi-level institution. Correctional officers provide front line service delivery to the residents of these facilities (ie. have regular and direct contact with inmates on a daily basis). Selection was done using a random procedure choosing names from the position list of correctional staff at each institution. If an officer refused to participate in the study the next name on the list was chosen.

All subjects in this study belong to the Union of Solicitor General Employees. The study was discussed with union personnel to elicit their support. The union was not be made aware of the identity of any of the subjects.

Procedure

The subjects were approached and asked to participate in the study. The aims and purpose of the study, the type of information to be asked and the time requirement was explained

to each potential subject. Participation was voluntary and unremunerated. Correctional Services of Canada (CSC), the employer, was not made aware of the identity of subjects and subjects will not be individually identified in any future publication that may arise from this study. All participating subjects were asked to sign a consent form (See Appendix B). Subjects were treated in accordance with "A Canadian Code of Ethics for Psychologists" (Canadian Psychological Association, 1986).

An appointment for a structured interview was scheduled with every consenting subject. At the first appointment each subject was given a questionnaire package and asked to complete the package and bring it to the subsequent interview. The questionnaire took about one and a half hours to complete. Where possible and prior to the interview, subjects were contacted to confirm the upcoming session and reminded to bring their completed questionnaires.

The interviews were held at the subjects' convenience and took approximately one and a half hours. The subjects were asked to sign a consent form (see Appendix C) allowing their physician to release general information regarding their health status (see Appendix D) and to fill out a questionnaire regarding their use of alcohol, nicotine, and caffeine and their use of unplanned leave during the previous three months (see Appendix E). If a subject had forgotten to bring the questionnaire package to the interview session, arrangements

were made to obtain the questionnaire. At the close of the interview, each subject was given a debriefing sheet (see Appendix G) and asked if they would like feedback upon completion of the study. Subjects were given their preference regarding whether they wished written or verbal (via telephone) feedback. Appendix F contains the timetable used for these contacts as well as the corresponding activities occurring during each contact. Subjects were debriefed following the interview and receipt of the questionnaire package (see Appendix G).

Measures

As mentioned above, data was collected via both clinical interview and self-report questionnaires and by the use of other collaborative measures (ie. physician feedback on the subject's health status and the use of unplanned leave).

The structured interview solicited demographic data, health related information, incident data on exposure to traumatic stress and information on social support (see Appendix H). The PTSD section of the Diagnostic Interview Schedule was included as part of the interview package.

The Diagnostic Interview Schedule was designed to be used by lay interviewers. The correspondence between the results of the Diagnostic Interview Schedule administered by a lay interviewer and clinical assessment done by a psychiatrist was acceptable (Robins et al., 1981; Robins, Helzer, Radcliffe & Seyfried, 1982). When compared with other diagnostic

interviews, such as the Schedule for Affective Disorders and Schizophrenia, the Diagnostic Interview Schedule yielded favourable results (Hesselbrock, Stanebau, Hesselbrock, Mirkin & Meyeret, 1982). Interrater reliability between lay interviewers and physicians ($r = .81$) and between lay interviewers and trained clinicians ($k = .95$) were favourable (Hesselbrock et al., 1982).

Table 1 lists the data collection instruments used in the questionnaire package. All of the paper and pencil measures have been previously published and have been shown to have acceptable psychometric properties, as discussed below. The measures are found in Appendix I.

Insert Table 1 about here

Table 2 lists the measures used by type of variable.

Insert Table 2 about here

Vulnerability Variables

Demographic information, such as age, length of service, gender, marital status and education, was obtained during the interview.

Positive and negative affect was measured using Watson et al.'s (1988) Positive and Negative Affect Scale (PANAS). The scale asks the respondent to rate 10 adjectives representing

Table 1**List of data collection instruments**

1. Self Control Schedule (SCS)
2. Positive and Negative Affect (PANAS)
3. Correctional Orientation
4. Stress and Stressors
5. Alcohol, nicotine, and caffeine usage questionnaire (ANCQ)
6. Social Support
7. Ways of Coping (WOC)
8. Marlowe-Crowne Social Desirability Scale (MCSD)
9. Impact of Events Scale (IES)
10. Brief Symptoms Inventory (BSI)

Table 2**List of measures by type****VULNERABILITY VARIABLES**

1. Demographic Variables:
 - Years of Service
 - Age
 - Education
 - Marital Status
 - Gender
2. Dispositional Variables:
 - Positive and Negative Affect
 - Learned Resourcefulness
 - Correctional Orientation
3. Stressors
 - Role Problems
 - Perceived Dangerousness
4. Stress
 - Work Stress
 - Job Satisfaction
5. History of Previous Trauma
6. Health Related Behaviors
 - Alcohol, nicotine, and caffeine consumption
 - Hours per week of sleep, work, physical activity

EXPOSURE TO CRITICAL INCIDENTS

1. Frequency and type of exposure (self-report)

COPING AND SOCIAL SUPPORT VARIABLES

1. Social Support:
 - Supervisory support
 - Peer Support
 - Family Support
 - Community Support

Table 2**COPING AND SOCIAL SUPPORT VARIABLES (cont'd.)**

2. Coping Style:
 - Confrontive Coping
 - Distancing
 - Self Control
 - Seeking Social Support
 - Accepting Responsibility
 - Escape/Avoidance
 - Planful Problem Solving
 - Positive Reappraisal

OUTCOME MEASURES

1. Impact of Event (DIS)
2. Current Impact:
 - IES
 - BSI

positive and 10 representing negative affect on a five-point scale ranging from "very slightly" to "extremely" during a specified time period. Subjects in this study were asked to rate themselves over the previous month. Separate scores for positive and negative affect are obtained. The measure has been shown to be both reliable and valid (Watson et al., 1988; Watson & Pennebaker, 1989).

Learned resourcefulness was measured by the Self Control Scale. The Self Control Scale was developed by Rosenbaum (1980) who reports satisfactory reliability and validity information in his book (Rosenbaum, 1990, pp. 16-17). The scale provides a global score with a high score representing high resourcefulness. Normative data were reported in Appendix A of his book (p. 229), and scores range from -108 to +108, with a mean of +25 and a standard deviation of 20.

Correctional orientation was part of a composite questionnaire designed by Cullen and his colleagues specifically for use with police (Cullen, Lemming, Link & Wozniak, 1985) and correctional officers (Cullen, Link, Wolfe & Frank, 1985). The other components of the questionnaire include role problems, perceived dangerousness, work stress, job satisfaction, and supervisor, peer, family and community support. The scale was selected for this study as the item content provides a high level of face validity for use in a criminal justice setting. It was felt that this factor would help to maintain the subject's level of motivation and improve

overall completion rates to the questionnaire package.

Internal consistency range from .66 to .84 (Cronbach's Alpha) for the sub-scales. Reliabilities were consistently strong across both of the studies done by Cullen and his colleagues (Cullen, Lemming, Link & Wozniak, 1985; Cullen, Link, Wolfe & Frank, 1985) suggesting that the scales represent roughly the same thing to different types of criminal justice employees. Items are scored on a seven-point Likert scale ranging from "very strongly agree" to "very strongly disagree". The job satisfaction items required a different response pattern that involved selecting a multiple choice answer. Higher scores represent greater job satisfaction. All items are designed to be easily completed by unsophisticated respondents. In terms of correctional orientation, Cullen, Link, Wolfe and Frank (1985) found that treatment oriented correctional officers were less dissatisfied with their job then were their peers.

An additional measure of dangerousness was considered in that subjects were selected from both maximum and minimum security settings. Minimum security settings do not have fenced enclosures around their perimeters and residents are considered to constitute a lesser threat to public safety.

Any history of previous trauma, including combat, and some health related information was obtained during the interview. van der Kolk (1988) states that there is strong evidence that "prior trauma predisposes adults to develop

full-blown PTSD in response to later life stresses" (p. 281). Z. Solomon (1990) found that some Israeli soldiers who experienced PTSD following the 1973 Yom Kippur war showed reactivated PTSD following the 1983 Lebanon War.

Information regarding military service and combat was obtained for this study as Hughes (1990) found that 21 percent of his sample of Canadian correctional workers had previous military experience. Given that individuals can be employed for CSC until the age of 65, it is possible that some of these individuals may have seen combat in the last years of the Second World War or have had combat exposure in some other setting.

The alcohol, nicotine, and caffeine usage questionnaire (ANCQ) (Hughes & Boland, 1990) was used to gather information on use of these substances.

Exposure to critical incidents

Information on each individual's exposure to traumatic stimuli was gathered during the interview process. In an effort to enhance recall of such events subject's were asked when and where the event occurred and to identify their role during the event. Many of the events identified by the officers were incidents familiar to the author either in a historical context or through personal experience. Officers frequently identified similar incidents. Officers also provide information of when and where an incident occurred and what their role was in the incident thereby increasing

confidence in the reliability of the self report data.

Coping and Social Support Variables

As mentioned above, information on perceived social support was acquired using the measure developed by Cullen and his colleagues (Cullen, Link, Wolfe & Frank, 1985). In their study of correctional officers, supervisory support mitigated job dissatisfaction, family and supervisory support diminished work stress while peer support tended to increase work stress. The authors suggests that this is consistent with research positing that peer relationships are often less than rewarding.

Interview information was obtained regarding actual use of social support during or following a critical event. The use of support was gathered in terms of both "practical" (eg. exchanging a shift, driving the individual home) and "emotional". It is generally thought in the literature on the post-incident debriefing process that emotional support (ie. talking about the thoughts, feelings, etcetera surrounding the incident) minimizes the likelihood of the development of subsequent severe and persistent traumatic reactions (Mitchell & Bray, 1990). Carver et al. (1989) suggests that sources of support are often used as outlets for ventilating one's feelings, a behaviour that in this context is hypothesized to be adaptive.

Coping style was measured using the Ways of Coping, developed by Lazarus and his associates (Folkman, Lazarus,

Dunkel-Schetter, DeLongis & Gruen, 1986). Various versions of this measure have been used in numerous studies (Coyne & Downey, 1991). The Ways of Coping is a 50-item checklist with eight sub-scales: confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving and positive reappraisal. Items are scored on a four-point scale with "0" representing "never" to "3" representing "often".

A number of studies report reliability and validity for the Ways of Coping Scale. Lazarus and his colleagues report internal consistency measures with different samples; coefficient alphas for the subscales ranged from .47 to .74 for two different age samples (Folkman & Lazarus, 1988), .77 to .91 for two groups (depressed & nondepressed persons) (Coyne et al., 1981), and .61 to .79 for a sample of 85 married couples with the wife between the ages of 35 and 45 (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986).

In this latter study (Folkman, Lazarus, Dunkel-Schetter, DeLongis & Gruen, 1986), subjects were measured once a month for six months. The coping variables were estimated across the five measurement occasions (r ranged from .17 to .47). The items were factor analyzed and eight subscales emerged. The authors note that five of the eight scales in this study were "similar in content to those found in the analysis of our two previous data sets.... Each of the three studies also produced several unique factors" (Folkman, Lazarus, Dunkel-

Schetter, DeLongis & Gruen, 1986, p. 995). In spite of these difficulties, the Ways of Coping Scale provides a method of obtaining a measure of an individual's general coping strategies in non-specific situations.

Of additional concern when using the Ways of Coping Scale is social desirability. In a comparison of two different sets of instructions, one being the standard instructions and the other being to respond giving socially desirable responses, Kroner (1986) concluded that social desirability is a possible confounding variable when measuring the coping process using the instrument. In an effort to control for this possible confound, the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960) was included in the questionnaire package.

The Marlowe-Crowne Social Desirability Scale is a 33-item scale and is scored as "true" or "false". It has satisfactory psychometric properties (test-retest reliability over one month: $r = .88$ and internal consistency: alpha coefficients ranging from .73 to .88 over a number of samples) (Paulhus, 1991). The Marlowe-Crowne Social Desirability Scale is a measure of the degree to which one portrays oneself in a overly favourable light.

Outcome Measures

The Impact of Events Scale was developed to measure the current degree of distress related to specific traumatic events (Horowitz & Wilner, 1980). The 15 item Impact of Events Scale has two sub-scales. The intrusion scale is

characterized by troubled dreams/ nightmares, distressing images, thoughts, and feelings. The avoidance scale is characterized by blunted sensation, emotional numbing, conscious denial of the trauma and behavioural inhibition. A principal factor analysis with a varimax rotation, performed by Schwarzwald et al. (1987), yielded two main factors, intrusion and avoidance with good internal consistency (Cronbach's $\alpha = .91$ and Cronbach's $\alpha = .84$ respectively). The internal consistency for the subscales is good, with coefficients ranging from .79 to .92, with an average of .86 and .90 for the intrusion and the avoidance subscales respectively (Corcoran & Fischer, 1987). Test-retest reliability is .87 (Zilberg et al., 1982). The validity of the scale is satisfactory (Schwarzwald et al., 1987; Zilberg et al., 1982). The items are scored on a 4-point (0-3) scale ranging from "not at all" to "often". Normative data is provided for a number of populations (Burge, 1988; Horowitz & Wilner, 1980; Schwarzwald et al., 1987; Weisenberg et al., 1987).

The Brief Symptom Inventory was developed from the longer parent assessment instrument the SCL-90-R (Derogatis & Melisaratos, 1983). The BSI is a 53 item checklist rated on a 5-point scale (0-4) from "not at all" to "extremely". A principle components factor analysis identified nine primary symptom constructs; somatization, obsessive/ compulsiveness, interpersonal sensitivity, depression, anxiety, hostility,

phobic anxiety, paranoid ideation, and psychoticism. Internal consistency for the nine dimensions ranges from .71 to .85 with test-retest reliabilities ranging from .68 to .91 (Derogatis & Melisaratos, 1983; Derogatis & Spenser, 1982). There are three global indices of distress; the General Severity Index, the Positive Symptom Distress Index, and the Positive Symptom Total, with test-retest reliability ranging from .80 to .90.

Normative data has been collected on a variety of populations; psychiatric outpatients (N = 1002), nonpatient adults (N = 719), and nonpatient adolescents (N=2408) (Burge, 1988). Individual test items on both the Impact of Events Scale and the Brief Symptom Inventory have been matched to the DSM-III-R criteria for PTSD (Burge, 1988). A number of studies have demonstrated convergent validity (Derogatis & Melisaratos, 1983; Derogatis & Spenser, 1982).

Two additional sources of information were used in the study to evaluate current clinical impact of exposure to traumatic events. Consent was obtained from each subject requesting permission to contact their physician regarding their general health (see Appendix C). Each subject was asked to provide information regarding his/her use of both planned and unplanned leave in the three months prior to the interview (see Appendix E). Hughes (1990) suggests that measures such as unplanned leave can be construed as measure of outcome related to stress.

CHAPTER 3

Descriptive Analysis

The sample characteristics and the interrater reliabilities (IRR) will be reviewed in this chapter and a descriptive analysis of the principal variables will be given.

Prior to analysis, the potential predictors and the outcome variables were examined through a variety of SPSS/PC programs for accuracy of data entry, missing values, and the fit between their respective distributions and the assumptions of multivariate analysis. Less than .03% of the values were missing across all questionnaire items. The appropriate means were used to replaced the missing values (Tabachnick & Fidell, 1989).

GENERAL CHARACTERISTICS

There were a total of 349 correctional officers employed in the six participating institutions. Seventy-nine percent of the officers worked at Millhaven and Prison for Women. This higher density of officers reflects the need for more inmate supervision in maximum security settings.

Of the sample drawn, eight individuals were on extended sick leave, two had retired, three resigned, two were on maternity leave and two had transferred out of the area. A total of 132 correctional officers were invited to participate in the study. Five refused giving a refusal rate of 3.8%. Of the remaining 127, five decided not to continue after reading the questionnaire; two of these five dropped out of the study

for unexpected medical reasons. The attrition rate was 3.9%. Given the low rates of refusal and attrition, the two areas were of little concern. Visual inspection of the data indicated that neither age, gender nor years of service appeared to be a factor.

Four of the remaining 122, (3.3%) refused to have the questionnaire sent to their physician. The common unsolicited reason given was that they felt their physicians were extremely busy and they did not wish to bother him/her with an additional task.

INTERRATER RELIABILITIES

Three separate areas of the data collection process were rated by one or more independent raters. These were 1) the interview process, 2) the sorting of critical incidents into the eight generic categories of the Diagnostic Interview Schedule, and 3) the coding of the interview data.

The method used to calculate the interrater reliabilities (IRR's) was the same for all three areas. In each case the number of agreements were divided by the sum of the number of agreements plus the number of disagreements and then converted to a percentage $[\text{agreements} / (\text{agreements} + \text{disagreements}) \times 100]$ (Martin & Pear, 1978).

The interview

Because of the nature of their jobs and the often negative perception of the public about prisons, correctional personnel are often suspicious of individuals from outside

agencies. As the second interviewer was unknown to the staff, it was decided that the IRRs would be done using an additional five subjects whose data would not be included in the study. These five subjects were experienced officers (four male and one female) from the correctional officer group but who were not necessary employed in that capacity at the present time.

The second interviewer was an experienced interviewer with a Masters of Education. Training on the use of the interview form was given prior to the IRR sessions. The author interviewed each of the five subjects while the second interviewer simultaneously collected the interview information. The scoring of the interview was very straight forward in that many answers were either yes/no or an amount in response to a "how many ...?". The mean IRR between the two interviewers was 98.8%.

Assigning critical incidents into generic categories

The scoring of the Diagnostic Interview Schedule necessitated the assigning of different types of critical incidents (e.g. having a victim slash in front of you) to one of the generic categories (e.g. saw someone hurt/ killed) identified in the schedule. The Diagnostic Interview Schedule can be found in Appendix H. Twenty-five different types of descriptors of critical incidents were culled from the structured interview and four raters were asked to sort them into the eight categories identified on the interview schedule. Their responses were compared against the author's

in terms of agreements and disagreements. The mean IRR across the four raters was 95%.

Coding the interview

Following the interview process the data was coded for data entry. Twelve (10%) of the cases were randomly selected and independently coded by a second rater. As mentioned above, this was a relatively straight forward process, requiring little judgement, that predominately involved transcribing data to the data entry form. The mean IRR across the two raters was 97%.

SAMPLE CHARACTERISTICS

In terms of security level, 78% of the sample worked in maximum security settings and the remaining 22% came from minimum settings. Twenty-five percent of the subjects currently employed in maximum security facilities had previously been employed in the Special Handling Unit (SHU). The SHU was a unit designed to handle extremely violent and dangerous offenders. The unit was moved to the Prairie Region in 1984. In terms of gender of the inmates of the facility, 75% of the staff were employed in male institutions and twenty-five percent worked in female facilities.

The sample consisted of Correctional Officer I (37%), Correctional Officer II (56%) and Correctional Supervisors (7%). Officers had an average of 9.5 years in their current position with the range being from 8 months to 25 years.

The average length of service was 14 years, ranging from

less than 1 year to 32 years. Subjects had an average of 6.5 years of work experience prior to joining the CSC, the range being from no previous experience to 28 years. Eighteen subjects (15% of the sample) had previous military service and of this sub group 33% (5% of the total sample) had been exposed to combat.

DEMOGRAPHIC VARIABLES

Gender

Males comprised 71% of the sample. This is not surprising given that it is only within the recent past that female staff have been hired as correctional officers for employment in male facilities.

There were some interesting gender differences. Males were exposed to significantly more traumatic events, an average of 32 events versus 16 events for females ($t(120) = 2.92, p < .01$). This is not surprising in that the frequency and the variety and seriousness of violence is greater in male institutions and only nine of the female officers worked in male institutions.

Male were significantly older, with an average age of 43 years versus 33 years for females ($t(120) = 6.12, p < .0001$) and had more years of service, a mean of 17 years ($t(102) = 9.39, p < .0001$), than did females with a mean of 6 years.

Marital Status

In terms of marital status, 15% had never married, 69% were currently married or cohabiting, and 16% were separated,

divorced or widowed.

Age and education

The average age of the subjects was 40 years with a range of from 22 years to 64 years. Less than 5% of the sample had less than a grade 10 education, 37% had completed high school, 37% had some college or university and 11% were university graduates. These findings are consistent with those of Hughes (1990).

DISPOSITIONAL VARIABLES

The measures of personal disposition were perused to assess scale consistency and normalacy of distribution. Means, range of scores and standard deviations (SD) were calculated and where possible compared to existing normative data.

Positive and Negative Affect

Negative affect was relatively low for this sample, with a mean score of 20.2 and a range of 10 to 41. Positive affect was higher with a mean score of 32.0 and a range of 14 to 50. Hughes (1990) reported mean scores of 17.6 (range 10 to 39) and 31.5 (range 14 to 46) respectively. Watson (1988) reported similar results for undergraduate psychology students with means of 15 and 26 respectively. The range of possible scores on each measure runs from 10 to 50. The coefficient alphas (measure of internal consistency) for the present study were .88 and .87 respectively.

Learned Resourcefulness

On the measure of resourcefulness, correctional officers were not atypical when compared with the general population. The mean score on this measure was 27.3 with a SD of 23.7. Rosenbaum (1990) cites a mean of 25 and a SD of 20 for his normative sample. The score range is from -108 to +108. Coefficient alpha (internal consistency) for the present study was .81.

Social Desirability

The mean and SD for the Marlowe-Crowne Social Desirability scores were comparable to those given in Paulhus (1991). See Table 3 for the means and SD of five selected samples. These comparisons suggest that correctional workers are not atypical with reference to the degree to which they wish to portray themselves in a favourable light. Coefficient alpha (internal consistency) was .81.

Insert Table 3 about here

STRESS RELATED VARIABLES AND CORRECTIONAL ORIENTATION

Stressors refer to sources of discomfort and are represented in this study by role problems (the perception of ambiguous or conflicting expectations), dangerousness (the degree to which the environment is perceived to be dangerous), and previous serious negative life events. The stress variables in this study, those factors that reflect the

Table 3

Means and SD of Marlowe Crowne Social Desirability (MCSD) scores for selected samples.

Population	N	Mean	SD
College Students	300	15.5	4.4
College Students	100	13.3	4.3
College Students	100	15.5	4.6
Peace Corps Volunteers	650	16.3	6.6
Present Sample	121	17.5	5.7

psychological discomfort resulting from exposure to stressors, are work stress and job dissatisfaction.

Table 4 presents the coefficient alphas for the stress related variables with comparisons to two other samples of criminal justice employees. The strong reliabilities across the three samples lend confidence that the scales are valid and reliable for use in a correctional setting.

Insert Table 4 about here

The mean for this sample on the correctional orientation scale was 58.2 and SD was 17.3. The maximum possible score on the scale was 112. The mean for role problems was 23.1 (SD = 5.8), dangerousness 27 (SD = 5.5), work stress 25.2 (SD = 7.9), and job dissatisfaction 10.4 (SD = 2.9). The maximum score attainable on each scale was 112, 35, 35, 42 and 16 respectively. There was a normal distribution of scores for each of the four variables.

Serious Negative Life Events

During the course of their adult lives, 97% of the subjects in this study had experienced a serious negative life event, such as death in the family, serious illness or injury to oneself or a family member. See Table 5 for a breakdown, by serious life event, of the number of officers exposed to such incidents.

Table 4

Reliabilities for scales measuring stress, stressors and correctional orientation.

Scales	Current Study	Correctional Officers ^a	Police Officers ^b
Correctional Orientation	.89	.81	*
Role Problems	.69	.66	.75
Dangerousness	.80	.78	.64
Work Stress	.87	.74	.78
Job Dissatisfaction	.78	.84	*

* Not included in study

^a Cullen, Link, Wolfe & Frank Study (1985)

^b Cullen, Lemming, Link & Wozniak Study (1985)

Insert Table 5 about here

Serious life events were summed to provide a global score for use in subsequent analysis. The mean for the global score across all subjects was 2.9 events with a SD of 1.8.

HEALTH RELATED BEHAVIOURS

Information was gathered on a number of health-related and lifestyle behaviours that are considered to potentiate the negative effect of stress. The lack of exercise, consumption of caffeine and nicotine, inadequate sleep and/or relaxation, and excessive use of alcohol (Everly, 1989; Hanson, 1986; Mitchell & Bray, 1990) are considered to be maladaptive in coping with traumatic stress.

Physical Exercise

In term of physical exercise, 76% of the subjects reported spending time each week in some form of strenuous physical activity (range 1-40 hours/week). The mode was 4 hours per week ($n = 19$) with a second peak at 7 hours per week ($n = 12$). The mean across all subjects was 7.25 hours per week. A study by Stephens and Craig (1990) found that

one-third of Canadians are classified active according to their total energy expenditure. One-half were active with sufficient frequency and duration to benefit their health, and 80% are defined as active based on the time they spend on physical recreation (p. 3).

Table 5**Percentage of officers exposed to serious life events.**

Event	Frequency of Event			Range
	0	1	1>	
Serious Injury to Self	74%	25%	1%	0 - 3
Serious Illness to Self	72%	25%	3%	0 - 3
Death in Family	37%	51%	12%	0 - 5
Serious Injury in Family	75%	21%	4%	0 - 3
Serious Illness in Family	46%	51%	3%	0 - 2
Serious Financial Problems	77%	23%	0	0 - 1
Other Serious Life Events*	80%	18%	2%	0 - 4

* A previous divorce was often cited in this category.

Nicotine Consumption

Forty-seven percent of the subjects in this study were smokers, an additional 35% were ex-smokers and 18% had never smoked. The modal number of cigarettes smoked per day was from 21 to 25 and reflected the smoking habits of 38% of smokers. These findings were consistent with those of Hughes (1990) and the general population where 38% of Canadian adult males are reported to smoke between 11 and 25 cigarettes per day (Adrian, Jull & Williams, 1988).

Caffeine Consumption

Subjects were asked about caffeine consumption. Coffee was the most frequent form of caffeine consumption at 84%, followed by colas at 55% and tea at 37%. Consumption was combined, using a relative average caffeine content for each of the beverages to produce a total caffeine consumption score (Hughes, 1990; Hughes & Boland, 1990). An eight ounce cup of coffee was considered to contain 100 mgs. of caffeine and an eight ounce cup of tea and a ten ounce can of cola were each considered to have a caffeine content of 50 mgs. The mean caffeine consumption for all subjects was 549 mgs. or the equivalent of 5.5 standard 8-ounce cups of coffee per day. The distribution was bimodal with consumption peaking at 300 mg. per day (n=15) and 450 mg. per day (n = 13).

Caffeine-induced organic mental disorder has been recognized as a DSM III classification. The essential features of the disorder are restlessness, nervousness,

excitement, insomnia, flushed face, diuresis and gastrointestinal complaints. Symptoms are dose related and may occur at levels as low as 250 mg. per day (Hughes & Boland, 1990). James and Stirling (1983) called this disorder Caffeinism and defined it as the habitual daily intake in excess of 500 mg. Consumption at this level is considered potentially damaging to health.

Sleep and Hours of Work

The average number of hours of sleep per week was 46.5 or six and a half hours per night. The range was from 18 hours to 68 hours per week.

Consistent with the findings of Hughes (1990) only 9% of this sample reported working more than two or more overtime shifts per week. Twenty-four percent reported working one overtime shift while the remaining 67% reported working little or no overtime. Some officers commented that in years past they had worked a lot of overtime but by choice did not do so any more. A minority said that if more overtime were available they would work a significant amount more than they do at present.

Alcohol Consumption

Sixteen percent of the subjects in this study were abstainers with an additional 29% being occasional drinkers and 55% consuming alcohol on one or more days per week. Beer was the most frequently consumed alcoholic beverage with 50% of the subjects identifying it as their preferred beverage.

The average consumption of alcohol across all subjects was 7.7 standard drinks per week, a standard drink being equal to 12 oz. of beer, 5 oz. of wine, 1.5 oz. of spirits. Adrian, Jull and Williams (1988) report that the alcohol consumption rate for all Canadians over the age of 15 years is 11.6 standard drinks per week. The distribution of alcohol consumption was skewed toward the low end of the scale. Some officers indicated that they had significantly reduced their alcohol consumption in recent years.

Male officers consumed significantly more alcohol than did female officers with males consuming an average of 9.5 standard drinks per week and female consuming an average of 3.3 standard drinks per week ($t(120) = 2.60, p < .05$).

EXPOSURE TO TRAUMATIC EVENTS

Information was gathered on correctional officers' exposure to job related traumatic events. These events frequently involve exposure to serious injury and/or death, multiple casualties, unusual sights, sounds and circumstances, first hand knowledge of the victim(s) as well as threats to their own safety and security. See Table 6 for a description of the types of exposure and the percentage of officers exposed to each type of event.

Insert Table 6 about here

The data for all traumatic events were summed to provide

Table 6

Percentages of officers exposed to traumatic events.

Event	Frequency of Event					Range
	0	1	2	3	3>	
Suicide Attempts	56%	16%	6%	5%	17%	0 - 50
Completed Suicides	42%	21%	15%	10%	12%	0 - 10
Murder	55%	14%	10%	4%	17%	0 - 24
Hostage Takings	66%	17%	9%	5%	3%	0 - 5
Been Taken Hostage	91%	7%	2%	0	0	0 - 2
Potential to Shoot Another *	60%	16%	12%	7%	5%	0 - 20
Been Physically Assaulted	54%	18%	9%	4%	15%	0 - 20
Seen the Physical Assault of Another	16%	16%	10%	8%	50%	0 - 50
Riots **	35%	25%	13%	7%	20%	0 - 12
Slashing	64%	6%	1%	3%	26%	0 - 50
Other ***	59%	29%	6%	6%	0	0 - 3

* This category included aiming the gun at another as well as actually firing. The criterion was the officer's belief that he would have to shoot.

** This category included events involving a complete range well as the entire institution

*** This category included events such as serious accidents while on the job and receiving life threatening letters or phone calls.

a global score for use in subsequent analysis. Only two officers had not been exposed to a job related traumatic event. The mean number of exposures across all officers was 27.9 (SD of 28.9, range 0 - 122). While these numbers seem high it is important to remember that higher security institutions have long histories of violent incidents and most correctional officers have spent some or all of their careers working in these highly volatile environments. In this study all officers working in minimum security had previously been employed in a higher level security facility within the Correctional Service of Canada.

Officers often referred to events that were known to the author. Officers frequently corroborated one another's description of events. It is the author's opinion that the data may reflect an underestimate of exposure rates as officers were often reluctant to remember these psychologically painful events. In fact, a number of officers commented that it was difficult and painful to retrieve the unpleasant memories as they made every effort to consciously suppress associations and memories of traumatic events. This is consistent with McFarlane's (1988) finding that reporting of incidents decreased as symptomology abated.

Sixty-one percent of officers reported that they received injuries at work (see Table 7) and 43% of these injuries resulted in time off work of one week or more (see Table 8).

Insert Table 7 about here

Insert Table 8 about here

COPING AND SOCIAL SUPPORT VARIABLES

Coping

The Ways of Coping Scale has eight subscales dealing with different styles of coping. These are confrontive coping, distancing, self-control, seeking social support, accepting responsibility, escape-avoidance, planful problem-solving and positive reappraisal.

The distributions of scores on all of the coping subscales were normally distributed. Means, SDs, score maximums, and alphas can be found in Table 9. Folkman and Lazarus (1988) reported alphas on the scales ranging from .47 to .74 in one study and .53 to .76 in another.

Insert Table 9 about here

Social Support

Support was broken down into four difference areas; supervisor support, peer support, family support and community support.

The maximum scores possible for supervisor support, peer

Table 7**Percentages of officers physically injured at work.**

Frequency of Injury					Range
0	1	2	3	3>	
39%	16%	10%	15%	20%	0 - 25

Table 8

Percentages of officers off work for more than one week due to an injury.

Number of Times off Work for More than One Week					
0	1	2	3	3>	Range
57%	21%	11%	9%	2%	0 - 10

Table 9

Means, SD, maximum scores and coefficient alphas for the Ways of Coping Scale subscales.

	MAXIMUM SCORE	MEAN	SD	ALPHA
Confrontive Coping	18	10.2	2.7	.56
Distancing	18	10.1	3.0	.56
Self-Control	21	14.0	3.1	.58
Seeking social Support	18	10.3	2.9	.62
Accepting Responsibility	12	6.9	2.1	.60
Escape-Avoidance	24	9.8	4.1	.68
Planful Problem- Solving	18	12.7	2.6	.64
Positive Reappraisal	21	10.3	3.9	.77

support, family support and community support were 42, 35, 42 and 42 respectively, the mean scores for this sample were 19.8 (SD = 7.2), 19.6 (SD = 5.7), 30.2 (SD = 8.9) and 29.0 (SD = 6.9) respectively. Coefficient alphas (internal consistency) were supervisor support .76, peer support .66, family support .87, and community support .72. The distributions of all four scales were normal.

OUTCOME MEASURES

In this study there are two levels of outcome that are of interest, the first being the trauma impact at the time of the event and the second being any long term residue from exposures; in other words, current clinical impact.

Impact of the traumatic event

PTSD had occurred for several officers in non correctional related events. Two percent of officers experienced combat related PTSD during their previous military service, one percent suffered PTSD following serious personal accidents, and one percent met PTSD criteria after exposure to an accident in which others were harmed. These data were not included in subsequent analyses as the focus of this study was on occupationally related traumatic stress in a correctional environment.

When examining the data collected on incidents occurring in the correctional environment, 28% of the officers reported experiencing no symptoms. As mentioned above, only two percent of officers had had no exposure to traumatic events in

the correctional work environment. In other words, 26% of exposed officers did not experience symptoms of traumatic stress post incident.

At the other end of the continuum, 17% of the officers in this study had experienced symptoms severe enough to meet the DSM III criteria for PTSD. This is significantly higher than the one percent level found in the general population and is approaching the 20 percent found in Vietnam veterans wounded in battle (Helzer et al., 1987). In 81% of the cases, their symptoms dissipated in less than three years. For the remaining group their symptoms took three years or longer to abate. Anecdotally, most officers indicated that they continued to perform their duties during these periods, an indication that adaptation is possible even in the presence of severe stress.

The remaining 57% of the officers presented a variety of symptoms varying in number and severity. Post incident symptoms for all officers were as follows; 43% of the officers experienced nightmares, 15% flashbacks, 22% a numbing of general responsiveness, 43% an exaggerated startle response, 3% survivor guilt, 51% sleep disturbances, 30% difficulty concentrating, 30% avoidance of activities that aroused recollections of the event, and 32% intensification of their symptoms when exposed to reminders of the event. This total exceeds 100% because one individual may have experienced more than one type of symptom. Symptom scores were summed to

produce a single global symptom score and this score was used in subsequent analyses.

Each officer provided descriptive information on the nature of the each incident that precipitated any personal symptoms as well as a subjective rating of the personal impact of the incident. Ninety four percent of the officers who had experienced symptoms post incident rated the personal impact of one or more of these events as having had a severe impact, 2% rated them as little or no impact and 4% as moderate. Given the very small groups of individuals who perceived a low or moderate level of threat, it was not possible to examine the hypothesis of a curvilinear relationship in which very low level of stress and very high levels or extended stress decreased the role of personality on psychological outcomes (Tabachnick & Fidell, 1989).

Forty seven percent of the officers reported that their families had been indirectly affected by the traumatic events to which the officers were exposed. Anecdotally, they indicated that their families were affected by their mood swings, irritability and general anxiety following the traumatic events. Many officers commented that they did not discuss the traumatic incidents with their families as they did not wish to worry them. Additionally, officers wished to shield their families from the institutional violence they encountered both directly and indirectly.

Following a traumatic incident, 62% of officers reported

speaking to someone post incident while 10% reported not discussing the incident with anyone. Twenty seven percent of people reported receiving unsolicited emotional support and 5% received some form of practical support.

Current Clinical Impact

The Brief Symptoms Inventory and the Impact of Events Scale were used to assess current clinical impact of prior exposure to traumatic events.

Coefficient alphas for the subscales were psychoticism .74, hostility .84, somatization .83, phobic anxiety .81, paranoid ideation .81, depression .90, obsessive-compulsiveness .89, anxiety .88, and interpersonal sensitivity .79.

Three global scores for the Brief Symptom Inventory, the General Severity Index, the Positive Symptom Total and the Positive Symptom Distress Index, were calculated. The mean General Severity Index was .62 with a SD of .58. The mean Positive Symptom Total and the Positive Symptom Distress Index were 20.12 (SD = 14.37) and 1.40 (SD = .58) respectively as can be seen in Table 10. Table 10 also provides normative data on the three scales on three separate adult samples. The mean scores for this sample are somewhat elevated when compared to the non patient normative data.

Insert Table 10 about here

Table 10

Scales of the Brief Symptoms Inventory (BSI): means and SD for three adult normative samples.

Scale	(N = 179) Non-patient normal		(N = 1002) Psychiatric outpatient		(N = 310) Psychiatric inpatient		(N=121) Current Study	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
GSI	.30	.31	1.32	.72	1.37	.86	.62	.58
PSDI	1.29	.40	2.14	.61	2.16	.74	1.40	.58
PST	11.45	9.20	30.80	11.63	31.60	13.40	20.12	14.37

GSI General Severity Index

PSDI Positive Symptom Distress Index

PST Positive Symptom Total

The Impact of Events Scale has two subscales; the intrusive scale and the avoidance scale. The range of scores on the intrusive scale is from 7 to 28 and from 8 to 32 on the avoidance scale. The scores for this sample ranged from 7 to 28 and from 8 to 30 respectively. A comparison of this sample with two different samples can be seen in Table 11. Coefficient alphas for the intrusive scale and the avoidance scale were .93 and .89 respectively.

Insert Table 11 about here

Health Measures

Forty two percent of the officers in this study indicated that they had sought professional help for a traumatic stress-related health problem. Their physicians reported that 34% of the officers currently suffered from a stress related problem that requires medical attention.

Of the 34% of officers, identified by their doctors as having a stress related problem, 18% were considered by their doctors to have a serious problem, 78% a moderate problem, and 9% a mild problem. For 41%, their physicians considered the problem serious enough to interfere with daily living and 59% required medication. These findings were generally lower than those of Hughes (1990).

For half of those currently suffering from a stress-related health problem, their doctors indicated that it was

Table 11.

Means and SD on the intrusion and avoidance subscales of the Impact of Event Scale (IES) for three samples.

Scale	(N = 35) Out-patients*		(N = 37) Volunteers**		(N = 121) T h i s sample	
	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
Intrusion	21.02	7.9	13.5	9.1	16.45	6.45
Avoidance	20.80	7.9	9.4	9.6	16.72	6.27

* seeking treatment to help cope with death of parent

** who had a recently deceased parent

related to exposure to a traumatic event. The return rate for the doctor questionnaires was 81% (n = 95).

The physician ratings deal with the present manifestation of a stress related health problem serious enough to warrant medical intervention. Only 42% of the officers indicated that they had sought professional help. It is likely that only those with the most severe difficulties discussed their symptoms with their doctors. Officers accept many of the traumatic stress symptoms as an occupational hazard and perceive acknowledging them as a sign of weakness. Further, it has only been within the past five or so years that the impact on personnel of exposure to traumatic events and its concomitant stress have been discussed in settings such as corrections. Such information has not been widely disseminated and many officers are still very reluctant to acknowledge any personal effects from such events for fear of a negative reaction by peers and/or management. For these reasons and the reduction of the sample size, the physician's rating were excluded from subsequent analyses.

Unplanned Leave

Sixty three percent of the officers had taken unplanned leave in the three months prior to the interview. The mode or highest frequency of unplanned leave was two days during the quarter. The distribution was extremely skewed and there were several very extreme cases. Given the large number of officers not using unplanned leave and the skewness of the

distribution the scores were collapsed into three groups; those taking no leave, those taking one or two days, and those taking three or more days.

SUMMARY

The sample of correctional officers covered a broad range of ages, education and experience. They were comparable to members of the general population on the dispositional measures and health related behaviours. There were several gender differences that were generally reflective of the age differences between the two groups.

The personnel in this study have been exposed to a wide range and significant number of job related traumatic events. The impact of such exposure has manifested itself in a number of stress related ways, yet the officers continued to perform their jobs even in the presence of a variety of symptoms. This is a credit to the adaptability of correctional personnel even in situations of extreme stress.

CHAPTER 4

Preliminary Analyses

In this chapter the relationships among the predictor and outcome variables will be examined. The resultant correlational matrix is shown in Appendix J. First, the outcome variables will be addressed followed by a discussion regarding the potential predictor variables.

As path analysis using regression techniques was the analytic strategy used to evaluate the model of traumatic stress discussed in the Introduction it was necessary to create composite variables for the various components of the traumatic stress model. A detailed description of the decision process leading to the generation of the composite factors will be provided.

OUTCOME MEASURES

Trauma Impact

Trauma impact was measured by the global score representing the number of traumatic stress symptoms officers experienced post incident. One case was identified as a univariate outlier. The case was assigned a raw score that was one unit higher than the next most extreme score in the distribution (Tabachnick & Fidell, 1989). The case was retained as the officer has continued to function at work even in the face of an extreme number of symptoms demonstrating the same adaptive qualities as the other members of the sample. In other words, the officer is a member of the population of

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functioning personnel not the population of personnel on long term sick leave.

Current Clinical Impact

Current clinical impact was measured using the Brief Symptoms Inventory, the Impact of Events Scale and unplanned leave.

The nine subscales of the Brief Symptoms Inventory were highly correlated with one another as can be seen in Table 12. Similarly the clinical scales, the General Severity Index, the Positive Symptom Total and the Positive Symptom Distress Index, were also highly inter-related (see Table 13). Of the three clinical scales, the General Severity Index is considered to be the most sensitive (Derogatis & Spencer, 1982). It was decided because of the high inter-correlations between the various subscales and the reported sensitivity of the General Severity Index that it alone would be retained for further analysis.

Insert Table 12 about here

Insert Table 13 about here

The intrusion and the avoidance subscales of the Impact of Events Scale were significantly correlated with one another ($r = .81$, $p < .01$). The intrusion scale is concerned with

Table 12

Correlation among the subscales of the Brief Symptoms Inventory.

	PSY	HOS	SOM	POB	PAR	DEP	OC	ANX
HOS	.68**							
SOM	.67**	.63**						
POB	.65**	.62**	.65**					
PAR	.67**	.67**	.50**	.56**				
DEP	.81**	.72**	.71**	.70**	.69**			
OC	.68**	.73**	.62**	.65**	.69**	.77**		
ANX	.76**	.79**	.76**	.77**	.69**	.85**	.79**	
IS	.60**	.72**	.56**	.67**	.65**	.713**	.73**	.70**

** $p < .01$

HOS Hostility
 SOM Somatization
 POB Phobic Anxiety
 PAR Paranoid Ideation
 DEP Depression
 OC Obsessive-Compulsiveness
 ANX Anxiety
 IS Interpersonal Sensitivity

Table 13

Correlation among the Brief Symptoms Inventory global scales.

	General Severity Index	Positive Symptom Total
Positive Symptom Total	.93**	
Positive Symptom Distress Index	.70**	.57**

* $p < .05$ ** $p < .01$

the degree of encroachment of the incident into the individual's emotional/psychological life while the avoidance component assesses the degree to which the individual is exercising cognitive control over the intrusion.

As would be expected the General Severity Index, the intrusion scale and the avoidance scale were highly correlated with one another ($r = .60$, $p = .01$, $r = .53$, $p = .01$) and were positively associated with symptoms of traumatic stress ($r = .44$, $p = .01$, $r = .44$, $p = .01$, $r = .38$, $p = .01$ respectively).

The use of unplanned leave was associated with elevated scores on the intrusion subscale of the Impact of Events Scale ($r = .29$, $p < .01$).

To obtain a single outcome measure of current clinical impact for use in the path analysis, the General Severity Index, the avoidance and the intrusion subscales of Impact of Events Scale, and unplanned leave were combined using a principal components analysis with a single factor extraction (Tabachnick & Fidell, 1989). The factor matrix and final statistics of the clinical impact factor score can be found in Appendix K.

DEMOGRAPHIC VARIABLES

There was concern regarding confounding of variables that might influence the strength of the outcome measures. As discussed in the introduction, there is evidence that demographic variables influence health related measures.

Hughes (1990) found a confounding effect between age and years of service, and age and prior experience in his study of correctional officers. However, in this study, the demographic variables was not significantly correlated with any of the outcome measures.

There was a negative correlation between education and years of service ($r = -.63$, $p < .01$) and as suggested by Hughes, this reflects recent Correctional Services of Canada hiring policies that emphasize increased educational requirements for correctional officer positions.

Not surprisingly, age was significantly positively associated with years of service ($r = .78$, $p < .01$) and previous experience ($r = .58$, $p < .01$). Also with increasing age an individual was more likely to have had more serious negative life events ($r = .36$, $p < .01$) and more exposure to traumatic events ($r = .41$, $p < .01$). Education was negatively associated with exposure to traumatic events ($r = -.45$, $p < .01$) which may suggest that in some circumstances, such as a confrontation, officers with more education may be able to identify a potentially dangerous situation and defuse it before it escalates into a serious incident where someone is injured.

Prior experience outside of the CSC was not significantly related to any of the potential predictor variables other than age and educations. Prior experience was positively associated with age ($r = .58$, $p = .01$) and negatively

associated with education ($r = -.34$, $p = .01$) a situation that likely reflects CSC recent practice of hiring new university graduates. Given the amount of redundant information among age, previous experience and current experience and the lack of correlation of any of the demographic variables with any of the outcome measures, it was decided that of the three, age alone would be included in the composite vulnerability factor (Tabachnick & Fidell, 1989). Age was selected because experience useful in dealing with traumatic stress can be gleaned in situations other than the work environment.

Marital status was not significantly related to any of the other potential predictors nor to any of the outcome variables. It was excluded from the subsequent composite variable.

There were a number of significant correlations between gender and other potential predictors but with none of the outcome variables (can be seen in Appendix H). Female staff represented less than 30% of the sample and 74% (or 21% of the total sample) worked with female offenders only. There was concern that such uneven splits in a dichotomous variable would threaten subsequent multivariate analysis (Tabachnick & Fidell, 1989). Gender was therefore not included in the subsequent vulnerability factor.

DISPOSITIONAL VARIABLES

Negative affect was associated with all the measures of outcome as can be seen in Table 14. Clearly, given the

psychological nature of negative affect (Watson & Pennebaker, 1989), it plays an important role when examining psychological health following exposure to trauma. The identified characteristics of negative affect such as distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery, and afraid represent the clinical self statements made by clients suffering from exposure to trauma (Everly, 1989; Everly, 1990; Mitchell & Bray, 1990). When examining traumatic stress the role played by negative affect is as a trait variable that influences vulnerability in exposure to traumatic events rather than as a confound associated with measures of physical health. Negative affect was not used as a control variable in this study but rather included as a vulnerability factor.

Insert Table 14 about here

Concerning a positive attitude toward correctional work, the findings of this study were consistent with those of Cullen, Link, Wolfe and Frank (1985) in that those officers with a more positive orientation reported greater job satisfaction ($r = .41, p < .01$). A positive correctional orientation was negatively associated with work related stress ($r = -.38, p < .01$), increased perception of danger on the job ($r = -.27, p < .05$), and increased role definition problems ($r = -.39, p < .01$). These findings lend support to the

Table 14

Correlations of negative affect with the outcome measures.

	Negative Affect
Traumatic Stress Symptoms	.35**
General Severity Index	.68**
Avoidance	.39**
Intrusion	.50**
Unplanned Leave	.28*

* $p < .05$ ** $p < .01$

suggestion that a human service/treatment orientation helps to moderate stress.

STRESS RELATED VARIABLES

Role problems, that is defining one's job as having ambiguous or conflicting expectations, were inversely related to the amount of supervisor support ($r = -.57, p < .01$) and peer support ($r = -.33, p < .01$) reported by the subjects. It was also positively associated with the amount of work stress ($r = .56, p < .01$), and job dissatisfaction ($r = .38, p < .01$) the individual experienced.

Dangerousness was positively correlated with work stress ($r = .51, p < .01$) and job dissatisfaction ($r = .28, p < .05$) and negative related to supervisor support ($r = -.37, p < .01$). Dangerousness and role problems were positively correlated ($r = .35, p < .01$) with one another.

Work stress and job dissatisfaction were strongly associated with each other ($r = .60, p < .01$) and with a number of the outcome measures (see Appendix H).

HEALTH RELATED BEHAVIOURS

The six health related variables (sleep, nicotine, alcohol, caffeine, physical exercise, and hours of work) were relatively independent of one another as can be seen in Table 15. Not surprisingly smoking was positively correlated with caffeine consumption.

Insert Table 15 about here

Table 15

Intercorrelations of health related variables.

	Sleep	Nicotineconsumption.....	Alcohol	Caffeine	Physical Exercise
Nicotine	-.15				
Alcohol	-.12	.00			
Caffeine	-.15	.34**	-.02		
Physical Exercise	-.16	.11	.15	.12	
Hours of Work	-.13	.07	.05	.04	-.10

** $p < .01$

For use in the subsequent path analysis, the demographic, dispositional variables and health related behaviours were combined into a single factor score representing general vulnerability. A principal component analysis with a single factor extraction was used. Information on the factor matrix and the final statistics for the vulnerability factor can be found in Appendix K.

COPING VARIABLES

Hughes (1990) collected information on the coping behaviours that correctional staff used in a variety of stressful situations. He found a noticeable lack of correlation among the various strategies. Officers demonstrated high levels of coping efficacy and did not use confrontive coping, avoidance, distancing, and reactive behaviour in 77%, 72%, 48% or 80% of the time respectively.

In the present study there was a significant association between a number of the different coping strategies (see Table 16). It appears that officers in this study were using more confrontive coping, avoidance, distancing, and reactive behaviour currently than when Hughes collected his data. The differences found between the two studies may reflect the fact that this study was restricted to security officers while the Hughes' sample included other types of front line personnel as well as security officers.

Insert Table 16 about here

Table 16

Correlations among specific coping styles.

	CONF	DIST	SELF	SEEK	RESP	ESC	PLAN
DIST	.21						
SELF	.18	.40**					
SEEK	.46**	.12	-.03				
RESP	.45**	.25*	.17	.49**			
ESC	.41**	.30**	.24*	.14	.41**		
PLAN	.25*	.08	.37**	.31**	.27*	-.14	
REAP	.18	.25*	.07	.45**	.46**	.10	.33**

* $p < .05$ ** $p < .01$

CONF Confrontive coping
 DIST Distancing
 SELF Self-Control
 SEEK Seeking Social Support
 RESP Accepting Responsibility
 ESC Escape-Avoidance
 PLAN Planful Problem-Solving
 REAP Positive Reappraisal

An alternate explanation may be in the differing methods of collecting the information. In the Hughes study, officers were asked to verbally describe how they dealt with an actual situation from their own lives. In this study, officers were asked to identify, via a paper and pencil questionnaire, the frequency with which they would use different strategies in non specified stressful situations. The differences may lie between their perception of their behaviour and their actual behavioural output.

Folkman and Lazarus (1988) suggest that confrontive coping and planful problem-solving reflect primarily problem-focused functions while distancing, self-control, accepting responsibility and positive reappraisal focus primarily on emotional functions. Seeking social support serves both functions by assessing both informational and emotional support. The clinical literature does not indicate that any particular proactive coping style is superior to another but rather points out that the use of avoidance behaviour in the form of suppression or denial of a problem is not only ineffective but in fact is a disadvantageous strategies (Everly, 1989; Everly, 1991; Mitchell, 1983; Mitchell, 1987; Mitchell, 1988; Mitchell & Bray, 1990, van Goethem, 1986). This premise is supported in this study in that escape/avoidance was the only coping measure that was significantly associated with the outcome measures. It is for this reason that escape-avoidance was the coping measure used in the

subsequent path analysis. It should be noted that avoidance behaviour here represents a different strategy than the avoidance measured by the Impact of Events Scale. In the former situation, avoidance is a coping style used to deny one's feelings, emotions and experience where in the latter it is a measure of the effectiveness of trying to prevent intrusive thoughts related to a specific event, in other words, the effectiveness of thought stopping techniques.

SOCIAL SUPPORT

Table 17 presents the correlations for the various measures of social support, work stress and job dissatisfaction. All forms of support were significantly negatively correlated with work stress and, with the exception of peer support, with job dissatisfaction. These findings lend support to the postulate that social support helps to ameliorate work related stress.

Insert Table 17 about here

As discussed in the Introduction no particular form of social support has been identified as superior to another, therefore all types of support were included in the composite variable. A factor score was generated to create the composite variable of the four different types of social support (Tabachnick & Fidell, 1989). A principal components analysis with a single factor extraction was used and the

Table 17

Correlations amongst measures of support, work stress and job dissatisfaction.

	SSUPPORT	PSUPPORT	FSUPPORT	CSUPPORT
PSUPPORT	-.33**			
FSUPPORT	.13	.26*		
CSUPPORT	.16	.09	.27*	
WORKSTRE	-.50**	-.21*	-.29**	-.22*
JOBDIS	-.35**	-.11	-.37**	-.36**

* p < .05

** p < .01

PSUPPORT Peer Support
 FSUPPORT Family Support
 CSUPPORT Community Support
 WORKSTRE Work Stress
 JOBDIS Job Dissatisfaction

resultant factor score of support was used in the path analysis. See Appendix K for the factor matrix and the final statistics for the social support factor. The new composite score showed a significant negative correlations with current clinical impact ($r = -.43$, $p < .01$).

SUMMARY

Social desirability will be controlled for in subsequent analyses as a potential confound. A measure of current clinical impact was generated by producing a single factor measure using the avoidance and intrusion subscales of the Impact of Event Scale, the General Severity Index of the Brief Symptoms Inventory and unplanned leave. The demographic, dispositional, stress related and health related variables, were collapsed into a single factor variable representing vulnerability. Similarly all forms of social support were combined to produce a social support factor. Finally, as clinical knowledge has identified that adopting a strategy of denial and/or repression of both emotion and symptomatology is a dysfunctional style of coping when dealing with traumatic stress, escape/avoidance alone was used in the path analysis.

CHAPTER 5

Path Analysis

Path analysis allows the decomposition of correlations amongst variables thereby facilitating the interpretation of their relationships and the pattern of the effect of one variable on another. A path coefficient indicates the degree to which the criterion variable is affected by the predictor variable. In this study, causal flow is considered to be unidirectional and a path coefficient is notated as p_{31} and indicates the degree to which variable 1 affects variable 3 (Asher, 1976; Heise, 1975; Pedhazur, 1982). When variables in a causal model are expressed in standardized form and the assumptions of path analysis are met (see Pedhazur, 1982 and Asher, 1976,), path coefficients are the standardized regression coefficients (betas) obtained in regression analysis.

Hierarchical multiple regression was selected as the most appropriate method for this study as it allowed control over the potential confounding variable prior to entering the variables of theoretical interest (Tabachnick & Fidell, 1989). The variable that needs to be controlled for is given priority entry and those following are entered as a block and evaluated in terms of their contribution over and above that of the control variable.

Standardized Regression Coefficient

Social desirability was entered into a hierarchical

multiple regression equation to control for potential confounding prior to entering the components of the traumatic stress model. The appropriate component variables in the model were then regressed on each of the outcome measures. In other words, vulnerability, number of exposures to traumatic events, coping style, and social support were regressed on the trauma impact, and vulnerability, trauma impact, coping style and social support were regressed on current clinical impact.

In this study the causal flow in the traumatic stress model is hypothesized to be unidirectional thus a dependent variable in stage one of the path analysis (eg. trauma impact) can become an independent variable in the next stage of the model (Pedhazer, 1982). Tables 18 and 19 provide a summary of the hierarchical regression equations for the trauma impact at time of exposure and current clinical impact respectively. The corresponding standardized regression coefficients (betas) were then entered as path coefficients into the model (Pedhazur, 1982).

Insert Table 18 about here

Insert Table 19 about here

Path Coefficients

For ease of communication each component of the model

Table 18

Summary of hierarchical regression equations for the trauma impact, controlling for social desirability.

Predictor	<u>R²</u>	Increase <u>in R²</u>	<u>F</u> for increase ^a	Beta
Social Desirability ^b		.03	.03	3.31
<u>Equation 1</u>				
Number of exposures, escape/avoidance				.19*
social support and vulnerability				.29**
				.04
				.25*
	.24	.21	8.11***	

^a For the control step, df = 1, 119; for equation 1 df = 5, 115.

^b This variable was entered as the first step of the equation.

* $p < .05$

** $p < .01$

*** $p < .001$

Table 19

Summary of hierarchical regression equations for current clinical impact, controlling social desirability.

Predictor	R ²	Increase in R ²	F for increase ^a	Beta
Social Desirability ^b		.05	.05	6.84*
<u>Equation 1</u>				
Trauma Impact,				.24**
escape/avoidance				.21*
social support and				-.12
vulnerability				.34 ***
	.46	.41	21.84***	

^a For the control steps, df = 1, 119; for equation 1 df = 5, 115.

^b This variable was entered as the first step of each equation.

* p < .05

** p < .01

*** p < .001

has been assigned a numerical label such that vulnerability is 1, escape/avoidance is 2, social support is 3, number of exposures to traumatic stress is 4, trauma impact is 5, and current clinical impact is 6. Figure 2 provides a visual summary of the path coefficients. As can be seen in Figure 2 the paths from social support to both outcome variables were non significant and made little or no contribution to the overall explanation of either immediate or long term impact of exposure to traumatic events.

Insert Figure 2 about here

Social support may play a role in reducing the effects of exposure to trauma but this study was unable to demonstrate such a link. As mentioned in the introduction the lack of social support in times of trauma have been linked to the development of psychological distress, however the retrospective nature of this study did not allow the evaluation of social support at the time of exposure to the traumatic stimuli. In terms of current clinical functioning, it may be that the strong simple correlation between social support and current clinical impact reflects an important relationship that is being masked by negative affect in the vulnerability factor.

Social support has been identified in occupational settings as being associated with a reduction in work related stress

Figure 2. Path coefficients for the traumatic stress model.

and similar findings occurred in this study however it may be that the intensity of traumatic stress and its corresponding distress are such that benefits gained under conditions of general stress are not generalized to traumatic stress. This would be particularly true for correctional officers where discussing psychological problems would potentially be seen as showing signs of weakness. On the basis of this rationale and the non-significance of the paths between social support and the two levels of outcome the variable social support was deleted from the model.

The variables in the reduced model were then regressed on each of the outcome variables. That is vulnerability, escape/avoidance and number of exposures to traumatic events were regressed on trauma impact. Similarly vulnerability, escape/avoidance and trauma impact were regressed on current clinical impact. A summary of the resultant regression equations can be found in Tables 20 and 21 respectively.

Insert Table 20 about here

Insert Table 21 about here

The standardized regression coefficients were entered as path coefficients in the reduced model of traumatic stress. As can be seen in Figure 3 all path coefficients remained

Table 20

Summary of hierarchical regression equations for trauma impact, controlling for social desirability in the reduced model of traumatic stress.

Predictor	R ²	Increase in R ²	F for increase ^a	Beta
Social Desirability ^b		.03	.03	3.31
<u>Equation 1</u>				
Number of exposures,				.19*
escape/avoidance				.29**
vulnerability				.24*
	.24	.21	8.11***	

^a For the control step, df = 1, 119; for equation 1 df = 4, 116.

^b This variable was entered as the first step of the equation.

* p < .05

** p < .01

*** p < .001

Table 21

Summary of hierarchical regression equations for current clinical impact, controlling for social desirability in the reduced model of traumatic stress.

Predictor	R ²	Increase in R ²	F for increase ^a	Beta
Social Desirability ^b		.05	.05	6.84*
<u>Equation 1</u>				
Trauma Impact,				.24**
escape/avoidance				.22*
vulnerability				.41***
	.46	.41	21.84***	

^a For the control steps, df = 1, 119; for equation 1 df = 4, 116.

^b This variable was entered as the first step of the equation.

* $p < .05$

** $p < .01$

*** $p < .001$

significant in the reduced model.

Insert Figure 3 about here

Goodness of Fit

The traumatic stress model is an overidentified model in that one or more paths are hypothesized to have no direct effect on other variables (Pedhazer, 1982; Specht, 1975). For example, the number of exposures to traumatic incidents are hypothesized to have no direct effect on current clinical impact. "Test of overidentified models are performed by using properties of the observed and the reproduced correlation matrices among the variables under consideration" (Pedhazur, 1982, p. 618). Determinants of these matrices are employed to calculate a χ^2 (chi squared) with the degrees of freedom (df) equal to the number of paths hypothesized as equal to zero (Pedhazur, 1982; Specht, 1975).

A significant χ^2 at a prespecified level of α leads to rejection of the null hypothesis and it is concluded that the model does not fit the data. The larger the probability associated with the χ^2 , the better the fit of the model to the data (Pedhazur, 1982, p. 618).

For recursive models, that is causal flow is unidirectional, χ^2 can be obtained directly from the estimates of the residual path coefficients (Specht, 1975).

The goodness of fit is Q where

Figure 3. Path coefficients for the reduced traumatic stress model.

* $p < .05$ ** $p < .01$ *** $p < .001$

$$Q = 1 - R^2 / 1 - M$$

and R^2 is the R^2 of the predictor variables with the outcome variables [$R^2 = 1 - (1 - R^2_1)(1 - R^2_2) \dots (1 - R^2_i)$] and M is calculated as R^2 but some of the paths (those hypothesized as equal to zero) have been deleted. Q may vary between zero and one and the closer Q is to one the better the model fits the data.

In this model

$$R^2 = 1 - (1 - R^2_{5.124})(1 - R^2_{6.1245})$$

$$R^2 = 1 - (.872)^2(.734)^2$$

$$R^2 = .5904$$

and

$$M = 1 - (1 - R^2_{5.124})(1 - R^2_{6.125})$$

$$M = 1 - (.872)^2(.740)^2$$

$$M = .5835$$

Solve for Q

$$Q = (1 - .5904)/(1 - .5835)$$

$$Q = .983$$

In this model Q equals .983 indicating a very good fit of the model to the data.

Q is tested for significance using W where W is distributed as an approximated χ^2 distribution with df equal to d , and d is the number of overidentified restrictions (paths hypothesized as equal to zero). The equation for the calculation of W is as follows:

$$W = - (N - d) \log_e Q$$

For the reduced model of traumatic stress $\underline{W}$ equalled 2.006 with 3 df. The obtained χ^2 has a probability greater than .50. The null hypothesis was not rejected.

CHAPTER 6

DISCUSSION

The present study was designed to evaluate the role of personal and environmental variables in terms of impact upon the person following exposure to traumatic incidents.

Path analysis showed that personal vulnerability, use of escape/avoidance as a coping style, and the number of exposures to traumatic incidents were all predictive of trauma impact at the time of the event whereas social support had little utility as a predictor of outcome. When looking at current clinical impact, personal vulnerability, an escape/avoidance coping style, and previous trauma impact were all predictors of current difficulties. Again, social support had little predictive power.

VULNERABILITY

These data support the use of a dynamic traumatic stress model as a paradigm for evaluating both immediate and long term impact following trauma exposure. The findings support the existing clinical literature that identifies personal vulnerability as a risk factor at the time of traumatic exposure as well as placing the individual at long term risk for continued clinical difficulties (Everly (1989; 1990; Mitchell & Bray, 1990; Milulincer, Z. Solomon & Benbenishty, 1988).

Dispositional and stress related variables were the major contributors to personal vulnerability. This is in keeping

with Milulincer et al.'s (1988) suggestion that personality predispositions make some soldiers more vulnerable than others to post trauma stress and Everly's (1989) postulation that stress related variables influence functioning following traumatic exposure.

Personality variables are generally considered to be stable over time. However, given the retrospective nature of this study, it is difficult to ascertain whether the stress related variables were at the same level at time of exposure as they were currently. One of the questions that needs to be answered is, are stress related variables a cause or an effect of trauma exposure. In all likelihood there is a cumulative and circular effect between the general stress inherent in the work setting and occupationally based traumatic stress. In other words, work place stress exists specific to the environment which puts the employee at risk. Then there is a critical incident causing traumatic stress which exacerbates work place stress levels thereby increasing the individual's vulnerability to subsequent exposure to traumatic stimuli. This concept is supported in the general stress literature. Lazarus, Delongis, Folkman and Gruen (1985) postulate that an individual's "vulnerability influences both appraisal of the external threat and the coping responses, which in turn have their own impact on the situation and its reappraisal" (p. 109).

COPING STYLE

When considering coping responses, Hartsough (1988) hypothesizes that in situations of extreme stress a relatively uniform stress response occurs. This suggests that variations in proactive coping styles would have little influence. In this study it was escape/avoidance, or the absence of a proactive coping style, that was predictive of both immediate and long term difficulties. A parallel can be found in the general stress literature, where Holahan and Moos (1986) demonstrated that a disinclination to use avoidance as a coping strategy provided protection from the negative consequences of life stress. The findings suggest that in situations of extreme stress avoidance is not only ineffective as a coping style but is maladaptive.

SOCIAL SUPPORT

Contrary to other studies a relationship between social support and the outcome variables was not supported. As mentioned earlier, this may be due to the retrospective nature of this research. In other words, current social support may have decreased from the level that was available post incident.

Barrett and Mizes (1988) suggest that trauma symptoms may decrease the amount of social support an individual receives rather than social support affecting a decrease in trauma symptoms. The findings of Keane et al. (1985) offer support for this perspective in that they found that veterans with

PTSD experienced a significant decline in social support over time. This decline was both quantitative and qualitative in nature. Interestingly, social support for the comparison groups remained relatively stable across time.

Another important note regarding social support is that the social support measure used in this study reflected the individual's subjective perception of social support rather than its objective existence. Some researchers argue that perceived social support is what is important (Henderson, Byrne & Duncan-Jones, 1981) while others suggest that this confounds the objective nature of social support with personal attributes that affect perception (L.H. Cohen et al., 1988). Z. Solomon and Flum (1988) suggest that individuals experiencing traumatic stress symptoms tend to construe interpersonal relationships with work peers, friends and family members as less than adequate. It may be that individuals experiencing traumatic stress, because they do not perceive themselves as having support, do not use their social support network. This premise is consistent with the clinical reports that individuals suffering from traumatic stress tend to withdraw and isolate themselves from friends and family (Everly, 1991; Mitchell & Bray, 1990).

In this study, social support was not significantly related to trauma impact nor to current clinical functioning. The measures of social support were taken during the same time frame as the measures of current clinical impact. The strong

simple correlation between the two variables suggests that social support is an important variable in terms of current clinical outcome. However the association between social support and current clinical impact was not maintained when the other predictor variables were entered into the regression equation. It may be that its importance is being masked by the effect of negative affect. An alternative explanation is that social support does not play a major role in traumatic stress. It may be that the nature and content of traumatic events are so distressing that officers are unable to discuss them with friends and loved ones or when attempting to talk of their experience friends and family are overwhelmed by the content of the discussion. In terms of peers, the need to present a "macho image" would impede the discussion of personal symptomatology. For social support to be a factor in reducing the impact of traumatic stress it may require both a knowledgeable support person and a knowledgeable consumer.

Looking at the general stress literature, Hughes (1990) measured both emotional and practical support. Contrary to other studies which measured social support potentially available to the subject, Hughes assessed the type of support actually used in specific situations. He did not find a predictive relationship between social support and various health or adaptation measures.

The findings of this study and the Hughes study are in contrast to a substantial number of studies (eg. Billings &

Moos, 1982; Holahan & Moos, 1986) that show an association between social support and better adaptation.

NUMBER OF EXPOSURES TO TRAUMATIC INCIDENTS

The model predicted that an increase in the number of exposures to traumatic incidents would lead to a corresponding increase in post traumatic stress symptoms. Similarly, the greater the number of traumatic stress symptoms the greater the likelihood of current clinical impact. These findings were confirmed. In other words, the more exposures to critical incidents the more symptoms the individual was likely to have and the more likely s/he would be experiencing difficulty now. This is in direct contradiction to the conventional belief held by many staff and managers within corrections that the more traumatic incidents individuals are exposed to the more hardened they become to such events and the less affected they are by the events.

INTERVENTIONS WITHIN THE WORKPLACE

The above findings regarding the role of frequency of exposure coupled with the finding of the deleterious effect of using an escape/ avoidance coping strategy lends support to the need to initiate prevention techniques following a critical incident. The goal of such interventions is to protect and support personnel while minimizing the likelihood of the development of the traumatic stress response syndrome.

The Critical Incident Stress Management (CISM) model (Mitchell & Bray, 1990) appears to be the most relevant to a

correctional environment. The model was developed for use with emergency and public safety personnel. The model indicates that defusing and/or debriefing techniques be implemented following a critical incident. The dynamics of each situation dictate the choice of the specific intervention technique. The defusing may be a one on one or a group process while the debriefing is a group process.

The defusing/ debriefing process decreases the likelihood that the individual will continue to deny his/her symptomatology and it will legitimize the revealing of such symptoms in a supportive environment. The defusing/debriefing process leads to the normalization of the person's experience and facilitates their adjustment post incident. Inoculation techniques in the form of pre-education are also an important component of the prevention strategies used in the management of traumatic incidents.

Pre-education on the effect of traumatic stress, methods of stress reduction, early identification of problems and prevention techniques can further help to reduce long term clinical impact. Early identification of problems and subsequent treatment can greatly decrease the likelihood of development of long term problems as well as minimizing short term symptoms (Everly, 1989; 1990; Mitchell & Bray, 1990).

Responsibility for preventing the long term problems from exposure to traumatic incidents cannot reside with management alone. Staff must take responsibility for their own well

being and practice stress prevention techniques such as eating properly, getting adequate sleep and exercise, reducing nicotine and caffeine consumption, controlling alcohol consumption, and ensuring a balance between the amount of overtime they do and their personal lives (Hanson, 1985). Further, participation in pre-education training and in post incident defusings and debriefings are the responsibility of individual staff members. As mentioned above, individuals who recognize traumatic stress symptoms early and seek help immediately greatly reduce potential problems.

LIMITATIONS OF THE STUDY

A number of methodological and conceptual problems place certain limitations on the conclusions of this study. The first is the retrospective nature of the study. It is difficult to infer causal ordering from such studies. The retrospective assessment of both personal and social resources make it difficult to ascertain the actual level at the time of the trauma exposure. Unfortunately, this is the case in most research on traumatic events (Z. Solomon & Flum, 1988).

The second limitation is that the measure of coping used in this study was the individual's habitual repertoire of coping responses. It reflects the individual style but does not provide information about the particular characteristics of the events the person subjectively recalls when answering the questionnaire nor his/her subjective appraisal of those events. Folkman and Lazarus (1988) suggest that coping

responses are linked to both subjective appraisal of an event and the objective characteristics of the event. "To investigate such complex processes would necessitate more sophisticated research designs, which include control over events, appraisal, and coping strategies" (Z. Solomon et al., 1988, p. 284), a situation that is extreme unlikely in the investigation of trauma.

A third problem involves the conceptualization of escape/avoidance as a coping style. Escape/avoidance may reflect an expression of traumatic stress symptomatology rather than a contributing factor. Individuals exposed to extreme trauma may be overwhelmed by the event and excessively engage in denial and avoidance as a defense mechanism.

Fourthly, the majority of the measures used in this study were self-report. The extent to which subjects can accurately recall past events and the degree to which they are willing to report their attitudes and behaviour limit the generalizability of these findings. As mentioned in the introduction eyewitness testimony literature proposes that free recall is the most accurate method of information gathering of past events. However there is still the issue of the degree to which the individual is willing to share the information particularly psychologically distressing information.

The strengths of the study are in its reasonably large sample size and its role as an initial investigation of the

effects of traumatic stress in a highly volatile occupational setting such as corrections.

Generalizability of the present results to the wider literature on traumatic stress may be challenged on the basis that correctional officers are different from other populations. However, the descriptive data does not suggest that this group of correctional officers are substantially different from other North Americans on the various dispositional and health related variables.

IMPLICATIONS FOR FUTURE RESEARCH

There is a need for longitudinal studies that look at the effects of exposure to trauma with high risk occupational groups over the course of time. Longitudinal studies could evaluate the effects of single versus multiple exposures and answer the question, "Is the effect of multiple exposures circular?" For example, do repetitive exposures cause an increase in maladaptive health related behaviour which then increases subsequent vulnerability to the next traumatic event? A further question is, "What is the role of exposures on stress related variables?". Do repetitive exposures increase an individual's perception of danger, of job dissatisfaction, of role problems, and overall work stress? Future research should also examine the effect of low threat versus high threat situations where there is an objective measure as well as a subjective measure of the level of threat in the situation. Of additional interest is the introduction

of prevention strategies and their effectiveness.

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APPENDIX A

DIAGNOSTIC CRITERIA FOR POST-TRAUMATIC STRESS DISORDER (PTSD)
from the
Diagnostic and Statistical Manual
of Mental Disorders - Revised (DSM-III-R)

- A. The person has experienced an event that is outside the range of usual human experience and would be markedly distressing to almost anyone, e.g., serious threat to one's life or physical integrity; serious threat or harm to one's children, spouse, or other close relatives and friends; sudden destruction of one's home or community; or seeing another person who has recently been, or is being, seriously injured or killed as the result of an accident or physical violence.
- B. The traumatic event is persistently reexperienced in at least one of the following ways:
- (1) recurrent and intrusive distressing recollections of the event (in young children, repetitive play in which themes or aspects of the trauma are expressed)
 - (2) recurrent distressing dreams of the event
 - (3) sudden acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative [flashback] episodes, even those that occur upon awakening or when intoxicated)
 - (4) intense psychological distress at exposure to events that symbolize or resemble an aspect of the traumatic event, including anniversaries of the trauma
- C. Persistent avoidance of stimuli associated with the trauma or numbing of general responsiveness (not present before the trauma), as indicated by at least three of the following:
- (1) efforts to avoid thoughts or feelings associated with the trauma
 - (2) efforts to avoid activities or situations that arouse recollections of the trauma
 - (3) inability to recall an important aspect of the trauma (psychogenic amnesia)
 - (4) markedly diminished interest in significant activities (in young children, loss of recently acquired developmental skills such as toilet training or language skills)
 - (5) feeling of detachment or estrangement from others
 - (6) restricted range of affect, e.g., unable to have loving feelings
 - (7) sense of a foreshortened future, e.g., does not expect to have a career, marriage, or children, or a long life

DIAGNOSTIC CRITERIA FOR POST-TRAUMATIC STRESS DISORDER (PTSD)
(cont'd)

- D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by a least two of the following:
- (1) difficulty falling or staying asleep
 - (2) irritability or outbursts of anger
 - (3) difficulty concentrating
 - (4) hypervigilance
 - (5) exaggerated startle response
 - (6) physiologic reactivity upon exposure to events that symbolize or resemble an aspect of the traumatic event (e.g., a woman who was raped in an elevator breaks out in a sweat when entering any elevator)
- E. Duration of the disturbance (symptoms in B,C, and D) of at least one month. (pg. 250)

APPENDIX B

**CORRECTIONAL WORKERS AND CRITICAL INCIDENT
Consent Form**

We would like your assistance in a research study being done by Lois Rosine, M.A., presently on educational leave from her position of Psychologist at Bath Institution, and Don Andrews, Ph.D. of the Department of Psychology, Carleton University, Ottawa. The study is designed to find out how correctional officers exposed to critical incidents during the course of their jobs, cope with these events. We hope this information will assist in better staff training and assistance following such incidents and will increase management and staff awareness of the particular coping strategies.

Your name has been randomly selected from a list of C01, C02 and Correctional Supervisors currently employed at one of the Kingston area federal institutions. We would like your agreement to participate in the study which will include a confidential interview (approximately 1 - 2 hours) and completion of some questionnaires (approximately 1.5 hours).

We need to identify the information which you give us so that we can match the questionnaires with the interview information. We will do this using a number, and the only list that connects numbers with names will be kept in a secure place by the researchers. Under no circumstances will information on an individual be made available to C.S.C. or any other third party. Any report will contain only group data so an individual's responses can not be identified. Records will be stored away from government property and C.S.C. will not be informed of who or who has not taken part in the study. Of course, you may cease participation at any time or refuse to answer any particular question. Should we need further information we ask your permission to contact you in the future.

If you have any complaints or concerns you may contact Dr. D. Andrews (613-788-2662) or Dr. Wm. Jones (613-564-4312), Chairman of the Department of Psychology, Carleton University, Ottawa.

My signature below indicates that I have read and understand the above information and that I consent to participate in this research.

Date: _____

The interviewer will also sign to guarantee the conditions above.

APPENDIX C

CONSENT FORM FOR PHYSICIAN

Lois Rosine
Box 111
Bath, Ontario

Dear Dr.

Mr/Ms. _____ has agreed to participate in a study concerning occupational stress being conducted by myself and Dr. Don Andrews of Carleton University, Ottawa. Mr/Ms. _____ has given us permission to contact you regarding his general health status.

We would greatly appreciate your responding to the questions on the attached page and returning it to the above address as soon as possible in the enclosed envelope.

If you have any questions or concerns, please contact me at 384-3750 or Dr. Andrews, Department of Psychology, Carleton University, Ottawa, K1S 5B6 or phone 613-788-2662.

Thank you for your cooperation and kind assistance.

Consent signature

Date

Lois Rosine, M.A.

APPENDIX D

Name: _____

DOB: _____

Subject Number: _____

HEALTH INFORMATION

1. Does your patient have a stress related problem that requires medical attention? Yes No

2. How serious is this problem?

Very
mild

1

2

3

moderate

4

5

6

Very
Serious

7

3. Does this problem interfere with activities of daily living for your patient? Yes No

4. Does this condition require medication?

Yes No

5. Was this condition related to exposure to some traumatic event? Yes No

If yes, please explain

APPENDIX E

1
2
3

LEAVE INFORMATION

No. _____

The following questions deal with your general state of health and satisfaction with your job. Please try to be as honest as possible. It is not my intent to assess you personally but rather to look at the trends and patterns of responses of a large group of correctional officers.

Please do not put your name on this questionnaire. Thank you.

1. How many days of personal leave (including vacation, sick, F.R.R., I.O.D., compensation time) have you taken off work during the past three months?

_____ days

2. How many of those days were because of pre-planned activities such as family or personal vacations, scheduled medical or dental appointments, surgery, with a lawyer, etc.?

_____ days

APPENDIX F

TIMETABLE OF CONTACTS

Time 1: INITIAL CONTACT

Date: _____

Subject Code Number: _____

Subject Name: _____

Phone Number: _____ (work)
_____ (home)

Given questionnaire package: YES____ NO____

General consent form signed: YES____ NO____

Upcoming interview

Date: _____

Time: _____

Location: _____

Time 2: CONFIRMATION OF INTERVIEW

Date: _____

reminded to bring questionnaire YES____ NO____

Time 3: INTERVIEW SESSION

Questionnaires returned: YES____ NO____

Structured Interview: YES____ NO____

Completed Leave Information: YES____ NO____

Consent form for physician: YES____ NO____

Time 4: NEED FOR FOLLOW-UP YES____ NO____

Date to contact: _____

Time 5: FEEDBACK YES____ NO____

WRITTEN _____ TO: _____

VERBAL _____ PHONE: _____

APPENDIX G

DEBRIEFING

I would like to thank you very much for having participated in the study. The following is a brief summary of how the information you have provided me with will be used and what the long term goals of the study are.

There is a growing awareness in the field of psychology about the effects on individuals of both chronic and acute exposure to unusual events such as hostage takings, riots, assaults, suicides, and other equally unpleasant events. These events have been defined as critical incidents. There are a number of people, who by virtue of the type of work they do, that are exposed to critical incidents. These occupational groups included police officers, fire fighters, ambulance drivers, emergency medical personnel, disaster workers, and correctional officers. To date there has been no research done specifically with correctional personnel looking at the effects of exposure to critical incidents.

The purpose of this study is to find out how correctional officers, who are exposed to critical incidents during the course of their jobs, deal with the events.

The interview and the questionnaire package will produce information about the thoughts, feelings, opinions and experiences of correctional officers. Specifically, the interview questions will provide information about the types and number of critical incidents officers are exposed to as well as their perception of the significance of these events. The various questionnaires that were completed will provide data on:

1. the stress and stressor officers experience;
2. the type of social support they perceive they have both at work and at home;
3. the ways in which they view their jobs and their feelings about correctional work;
4. the types of coping strategies they use,
5. the amount of caffeine, nicotine and alcohol they use;
6. the hours of sleep, work, and physical activity they get; and
7. the effects, if any, on them of exposure to critical incident both at the time of the incident and now.

All of the above information will be combined across all the officers in the study. It is this combined data that is of interest. As noted in the consent form, any report done following this study will contain only group data, no one individual's responses will be identified.

The above information will be statistically analyzed to provide a better understanding of the impact of critical incidents in correctional settings. It is hoped that what is learned about correctional officers and critical incidents will assist in the development of better staff training methods to teach officers more effective coping strategies to deal with such events, increase management awareness of the impact on staff of these events, aid clinicians in helping

those individuals who are experiencing difficulties following incidents, and help to facilitate the establishment of structured prevention strategies within the Correctional Service.

Should you have any questions or if you wish to talk with me, I can be reached at 384-3750.

IF NO 1'S IN COLUMNS FOR 7-12, SKIP TO A.
IF 1'S IN 7-12, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

13 After (EXAMPLE), did you find that you avoided
situations or activities that might remind
you of it?
CODE AND REPEAT FOR ALL CIRCLED NUMBERS. THEN GO TO A.

A. Have you had any (other) experience so horrible
that afterwards you would avoid
any activities or situations that reminded
you of it?

NO... (SKIP TO C.1A)... 0
YES... (GO TO B)... 1

B. What (other) experience have you had that
caused you to avoid activities or situations
that would remind you of it? Anything else?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE.

PERSONALLY EXPERIENCED OR VIEWED:

	NO	YES
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT—OWN	0	1
4. ACCIDENT—VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER
THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL
DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

STRUCTURED INTERVIEW

Subject number _____ Inst. _____ Level min__ 1
 med__ 2
 max__ 3

1. Years in C.S.C. _____

2. DOB _____ (age _____)

Present position _____

How long have you been doing this job? _____

Previous work experience:	Occupation	Years
	_____	_____
	_____	_____
	_____	_____
	_____	_____

3a). What grade did you complete in school? _____

less than Grade 10 ____1 / Grade 10-11 ____2 / High Sch ____3 /
 some College/Univ ____4 / College grad ____5 / Univ. grad. ____6

3b). Marital Status _____

Never Married ____1/ Married ____2/ Sep ____3 /
 Divorced ____4/ Widowed ____5/ Cohabit ____6

4. I would like to get some idea of how you normally spend your time. In a typical week how much time would you spend:

a) at work _____ b) sleeping _____
 watching TV, reading, listening to music _____
 c) exercising or strenuous physical activity _____
 hobbies/sports/volunteer/club activities _____
 family activities _____
 socializing with friends/extended family/colleagues
 outside work (exclude team sports where socializing is
 incidental) _____

d) Do you consider yourself to be overweight? No(0) Yes(1)

e) Have you ever been injured at work? No(0) Yes(1)

f) Have you been injured more than once? times _____

g) Have you ever been off work for more than 1 week due to an injury? No(0)
 Yes(1)

What was the injury? _____

5. In your adult life (after age 19) have any of the following events occurred in your personal/family life:

			Your Age
A major injury to yourself?	No (0)	Yes (1)	_____
A major illness yourself?	No (0)	Yes (1)	_____
A death in your immediate family?	No (0)	Yes (1)	_____
Serious injury in immediate family?	No (0)	Yes (1)	_____
Serious illness in immediate family?	No (0)	Yes (1)	_____
A major financial problem?	No (0)	Yes (1)	_____
Other (explain _____)	No (0)	Yes (1)	_____

5. Total Serious Life Events Score _____

I would like to talk to you about some of the events you may have experienced in your job.

6. During the course of your employment have you ever been exposed to:

a suicide? _____ No (0) Yes (1)
 when _____ where _____
 what was your role? _____

a murder _____ No (0) Yes (1)
 when _____ where _____
 what was your role? _____

a hostage taking _____ No (0) Yes (1)
 when _____ where _____
 what was your role? _____

potentially having to shoot another _____ No (0) Yes (1)
 when _____ where _____
 what was your role? _____

being assaulted _____ No (0) Yes (1)
 when _____ where _____
 what was your role? _____

16

FOR 1'S IN 7-13 , CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

How old were you when (EXAMPLE) happened?

AGE

1. COMBAT (1)	____	____
2. COMBAT (2)	____	____
3. ACCIDENT—OWN	____	____
4. ACCIDENT—VIEWED	____	____
5. PHYSICAL ATTACK ON SELF (1)	____	____
6. PHYSICAL ATTACK ON SELF (2)	____	____
7. SAW SOMEONE HURT/KILLED (1)	____	____
8. SAW SOMEONE HURT/KILLED (2)	____	____
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	____	____
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	____	____
11. WITNESSED CLOSE CALL (1)	____	____
12. WITNESSED CLOSE CALL (2)	____	____
13. DISASTER: FLOOD	____	____
14. DISASTER: TORNADO OR SERIOUS STORM	____	____
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE: (1)	____	____
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE: (2)	____	____
17. OTHER TRAUMA OR OTHER EPISODE (1)	____	____
18. OTHER TRAUMA OR OTHER EPISODE (2)	____	____

IF NO 1 IN 7 COLUMN A OR B, SKIP TO A.
 IF 1 IN 7 COLUMN A OR B, CIRCLE NO. OF CORRESPONDING
 LINE(S) AND ASK FOR EACH:

8 After (EXAMPLE), did you lose the ability to care about other people
 or lose interest in things you used to enjoy? CODE AND REPEAT
 FOR ALL CIRCLED NUMBERS, THEN GO TO A.

A. Did you have any (other) horrible experience
 that caused you to lose the ability to care about
 other people or lose interest in things you used
 to enjoy?

NO ... (SKIP TO 9) ... 0
 YES ... (GO TO 8) 1

B. What (other) horrible experience made you lose in-
 terest in people or things you used to care about?
 Anything else?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE

PERSONALLY EXPERIENCED OR VIEWED:

	<u>NO</u>	<u>YES</u>
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT-OWN	0	1
4. ACCIDENT-VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER
 THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL
 DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
 (2) 1

IF NO 1'S IN COLUMNS FOR . 7 . OR . 8 , SKIP TO A.
IF 1'S IN . 7 A OR B, OR . 8 , CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

9

Did (EXAMPLE) make you jumpy and easily startled afterwards, so that ordinary noises and movements would make you jump or put you on guard? CODE AND REPEAT FOR ALL CIRCLED NUMBERS, THEN GO TO A.

A. Have you had any (other) horrible experience that made you jumpy and easily startled afterwards, so that even ordinary noises or movements around you would make you jump or put you on guard?

NO ..(SKIP TO 10) .. 0
YES ..(GO TO B) 1

B. What (other) frightening or horrible experience affected you that way, making you jumpy and easily startled? Any others?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE

PERSONALLY EXPERIENCED OR VIEWED:

	NO	YES
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT—OWN	0	1
4. ACCIDENT—VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

IF NO 1'S IN COLUMNS FOR 7 - 9, SKIP TO A.
IF 1'S IN 7 - 9, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

10 After (EXAMPLE), did you have trouble sleeping—either trouble falling asleep, staying asleep or waking up too early?
CODE AND REPEAT FOR ALL CIRCLED NUMBERS, THEN GO TO A.

A. Did you ever have trouble sleeping because of any (other) horrible experience—either trouble falling asleep, staying asleep or waking up too early?

NO...(SKIP TO 11) ... 0
YES...(GO TO B) 1

B. What (other) kind of experience caused you to have trouble sleeping? Any others?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE

PERSONALLY EXPERIENCED OR VIEWED:

	NO	YES
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT—OWN	0	1
4. ACCIDENT—VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

IF NO 1'S IN COLUMNS FOR 7-10, SKIP TO A.
IF 1'S IN 7-10, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

11

After (EXAMPLE), did you feel ashamed of still being alive?
CODE AND REPEAT FOR ALL CIRCLED NUMBERS. THEN GO TO A.

A. Did you ever have any (other) humiliating
experience that made you feel ashamed of
still being alive after it was over?

NO... (SKIP TO 12) 1...0
YES... (GO TO 8)1

B. What (other) experience made you feel
ashamed of still being alive afterwards?
Any others?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE .

PERSONALLY EXPERIENCED OR VIEWED:

	<u>NO</u>	<u>YES</u>
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT—OWN	0	1
4. ACCIDENT—VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER
THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL
DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

IF NO 1'S IN COLUMNS FOR 7-11 .. SKIP TO A.

IF 1'S IN 7-11, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

12 After (EXAMPLE), did you become unusually forgetful
or have trouble concentrating?
CODE AND REPEAT FOR ALL CIRCLED NUMBERS, THEN GO TO A.

A. Have you had any (other) horrible
experience that made you become unusually
forgetful or have trouble concentrating?

NO ... (SKIP TO 13) ... 0
YES .. (GO TO 8) 1

B. What (other) kind of experience did you
have that caused you to become forgetful
or have trouble concentrating? Anything else?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE .

PERSONALLY EXPERIENCED OR VIEWED:

	<u>NO</u>	<u>YES</u>
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT-OWN	0	1
4. ACCIDENT-VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL /TACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV., MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER
THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL
DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

IF NO 1'S IN COLUMNS FOR 7-12, SKIP TO A.
IF 1'S IN 7-12, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

13 After (EXAMPLE), did you find that you avoided situations or activities that might remind you of it?
CODE AND REPEAT FOR ALL CIRCLED NUMBERS. THEN GO TO A.

A. Have you had any (other) experience so horrible that afterwards you would avoid any activities or situations that reminded you of it?

NO... (SKIP TO **C1A**)... 0
YES... (GO TO 8)... 1

B. What (other) experience have you had that caused you to avoid activities or situations that would remind you of it? Anything else?

ENTER EXAMPLE ON UNUSED LINE AND CIRCLE.

PERSONALLY EXPERIENCED OR VIEWED:

	NO	YES
1. COMBAT (1)	0	1
2. COMBAT (2)	0	1
3. ACCIDENT—OWN	0	1
4. ACCIDENT—VIEWED	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1
11. WITNESSED CLOSE CALL (1)	0	1
12. WITNESSED CLOSE CALL (2)	0	1
13. DISASTER: FLOOD	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

C.1A IS THERE AT LEAST ONE 1 IN COLUMNS FOR 7-12 ?

NO ... (SKIP TO 15) ... 0
YES ... GO TO 14 1

14

FOR 1'S IN 7-12, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

When you were in a situation that reminded you of (EXAMPLE),
did you find that any of the problems you had got worse,
problems like (LIST BOLDED PHRASES CODED FOR
THAT EXAMPLE IN 7-12A)?

CODE AND REPEAT FOR EACH CIRCLED NUMBER.

PERSONALLY EXPERIENCED OR VIEWED:

	NEVER REMINDED	NO	YES
1. COMBAT (1)	6	0	1
2. COMBAT (2)	6	0	1
3. ACCIDENT-OWN	6	0	1
4. ACCIDENT-VIEWED	6	0	1
5. PHYSICAL ATTACK ON SELF (1)	6	0	1
6. PHYSICAL ATTACK ON SELF (2)	6	0	1
7. SAW SOMEONE HURT/KILLED (1)	6	0	1
8. SAW SOMEONE HURT/KILLED (2)	6	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	6	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	6	0	1
11. WITNESSED CLOSE CALL (1)	6	0	1
12. WITNESSED CLOSE CALL (2)	6	0	1
13. DISASTER: FLOOD	6	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	6	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	6	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	6	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	6	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	6	0	1

19. IF READING, TV, MOVIES, ILLNESS, NERVOUS BREAKDOWN, BAD NEWS OTHER
THAN SUDDEN DEATH/SERIOUS INJURY OF LOVED ONE, OR WITNESSED NATURAL
DEATH, CIRCLE 1 HERE BUT DO NOT COUNT AS A TRAUMATIC EXPERIENCE.

RECORD EXAMPLE HERE: (1) 1
(2) 1

(7-14). Total Number of Reported Symptom Score _____

FOR 1'S IN COLUMNS FOR 7-13, CIRCLE NO. OF CORRESPONDING LINES
AND ASK FOR EACH:

15

Did you tell a doctor about the problem(s) you had after (EXAMPLE)?

CODE IN COLUMN I. IF NO, ASK A. IF YES, GO TO B.

A. Did you tell any other professional about these problems you had after (EXAMPLE)?

CODE IN COLUMN II, AND ASK B.

B. Did you take medication more than once because of these problems you had after (EXAMPLE)?

CODE IN COLUMN III, AND ASK C.

C. Did the problems you had after (EXAMPLE) interfere with your life or activities a lot?

CODE IN COLUMN IV, AND GO TO NEXT CIRCLED NUMBER (OR 16).

	DOCTOR I.		A. II.		B. III.		C. IV.	
	NO	YES	NO	YES	NO	YES	NO	YES
1. COMBAT (1)	0	1	0	1	0	1	0	1
2. COMBAT (2)	0	1	0	1	0	1	0	1
3. ACCIDENT—OWN	0	1	0	1	0	1	0	1
4. ACCIDENT—VIEWED	0	1	0	1	0	1	0	1
5. PHYSICAL ATTACK ON SELF (1)	0	1	0	1	0	1	0	1
6. PHYSICAL ATTACK ON SELF (2)	0	1	0	1	0	1	0	1
7. SAW SOMEONE HURT/KILLED (1)	0	1	0	1	0	1	0	1
8. SAW SOMEONE HURT/KILLED (2)	0	1	0	1	0	1	0	1
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	0	1	0	1	0	1	0	1
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	0	1	0	1	0	1	0	1
11. WITNESSED CLOSE CALL (1)	0	1	0	1	0	1	0	1
12. WITNESSED CLOSE CALL (2)	0	1	0	1	0	1	0	1
13. DISASTER: FLOOD	0	1	0	1	0	1	0	1
14. DISASTER: TORNADO OR SERIOUS STORM	0	1	0	1	0	1	0	1
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1	0	1	0	1	0	1
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1	0	1	0	1	0	1
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1	0	1	0	1	0	1
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1	0	1	0	1	0	1

15. Total Severity of Symptoms Score _____

16 FOR 1'S IN 7-13 ., CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

How old were you when (EXAMPLE) happened?	AGE
1. COMBAT (1)	<input type="text"/> <input type="text"/>
2. COMBAT (2)	<input type="text"/> <input type="text"/>
3. ACCIDENT-OWN	<input type="text"/> <input type="text"/>
4. ACCIDENT-VIEWED	<input type="text"/> <input type="text"/>
5. PHYSICAL ATTACK ON SELF (1)	<input type="text"/> <input type="text"/>
6. PHYSICAL ATTACK ON SELF (2)	<input type="text"/> <input type="text"/>
7. SAW SOMEONE HURT/KILLED (1)	<input type="text"/> <input type="text"/>
8. SAW SOMEONE HURT/KILLED (2)	<input type="text"/> <input type="text"/>
9. RECEIVED THREAT OR HAD CLOSE CALL (1)	<input type="text"/> <input type="text"/>
10. RECEIVED THREAT OR HAD CLOSE CALL (2)	<input type="text"/> <input type="text"/>
11. WITNESSED CLOSE CALL (1)	<input type="text"/> <input type="text"/>
12. WITNESSED CLOSE CALL (2)	<input type="text"/> <input type="text"/>
13. DISASTER: FLOOD	<input type="text"/> <input type="text"/>
14. DISASTER: TORNADO OR SERIOUS STORM	<input type="text"/> <input type="text"/>
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE: (1)	<input type="text"/> <input type="text"/>
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE: (2)	<input type="text"/> <input type="text"/>
17. OTHER TRAUMA OR OTHER EPISODE (1)	<input type="text"/> <input type="text"/>
18. OTHER TRAUMA OR OTHER EPISODE (2)	<input type="text"/> <input type="text"/>

17 FOR 1'S IN 7-13, CIRCLE NO. OF CORRESPONDING LINES AND ASK FOR EACH:

How soon after (EXAMPLE) did you start to have the problems we talked about?

	SAME DAY	THAT WEEK	THAT MONTH	W-IN 3 MOS	W-IN YEAR	W-IN 2 YRS	> 3 YRS
1. COMBAT (1)	1	2	3	4	5	6	7
2. COMBAT (2)	1	2	3	4	5	6	7
3. ACCIDENT-OWN	1	2	3	4	5	6	7
4. ACCIDENT-VIEWED	1	2	3	4	5	6	7
5. PHYSICAL ATTACK ON SELF (1)	1	2	3	4	5	6	7
6. PHYSICAL ATTACK ON SELF (2)	1	2	3	4	5	6	7
7. SAW SOMEONE HURT/KILLED (1)	1	2	3	4	5	6	7
8. SAW SOMEONE HURT/KILLED (2)	1	2	3	4	5	6	7
9. RECEIVED THREAT OR HAD CLOSE CALL (1) ...	1	2	3	4	5	6	7
10. RECEIVED THREAT OR HAD CLOSE CALL (2) ..	1	2	3	4	5	6	7
11. WITNESSED CLOSE CALL (1)	1	2	3	4	5	6	7
12. WITNESSED CLOSE CALL (2)	1	2	3	4	5	6	7
13. DISASTER: FLOOD	1	2	3	4	5	6	7
14. DISASTER: TORNADO OR SERIOUS STORM ...	1	2	3	4	5	6	7
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	1	2	3	4	5	6	7
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	1	2	3	4	5	6	7
17. OTHER TRAUMA OR OTHER EPISODE (1)	1	2	3	4	5	6	7
18. OTHER TRAUMA OR OTHER EPISODE (2)	1	2	3	4	5	6	7

18 FOR 1'S IN 7-13 . CIRCLE NO. OF CORRESPONDING
LINES AND ASK FOR EACH:

For how many days, weeks months or years did you
continue to have any of these problems at least a
few times a week because of (EXAMPLE)?

	NEVER THAT OFTEN	<1 WEEK	<1 MONTH	<6 MOS	<1 YEAR	<2 YRS	>2 YRS
1. COMBAT (1)	0	1	2	3	4	5	6
2. COMBAT (2)	0	1	2	3	4	5	6
3. ACCIDENT-OWN	0	1	2	3	4	5	6
4. ACCIDENT-VIEWED	0	1	2	3	4	5	6
5. PHYSICAL ATTACK ON SELF (1)	0	1	2	3	4	5	6
6. PHYSICAL ATTACK ON SELF (2)	0	1	2	3	4	5	6
7. SAW SOMEONE HURT/KILLED (1)	0	1	2	3	4	5	6
8. SAW SOMEONE HURT/KILLED (2)	0	1	2	3	4	5	6
9. RECEIVED THREAT OR HAD CLOSE CALL (1) ..	0	1	2	3	4	5	6
10. RECEIVED THREAT OR HAD CLOSE CALL (2) ..	0	1	2	3	4	5	6
11. WITNESSED CLOSE CALL (1)	0	1	2	3	4	5	6
12. WITNESSED CLOSE CALL (2)	0	1	2	3	4	5	6
13. DISASTER: FLOOD	0	1	2	3	4	5	6
14. DISASTER: TORNADO OR SERIOUS STORM ...	0	1	2	3	4	5	6
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	0	1	2	3	4	5	6
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	0	1	2	3	4	5	6
17. OTHER TRAUMA OR OTHER EPISODE (1)	0	1	2	3	4	5	6
18. OTHER TRAUMA OR OTHER EPISODE (2)	0	1	2	3	4	5	6

18. Total Duration of Symptoms Score _____

19 FOR 1B IN 7-13 .. CIRCLE NO. OF CORRESPONDING
LINES AND ASK FOR EACH:

When was the last time you had any of these problems because of (EXAMPLE)?

	WITH LAST 2 WKS	2 WKS TO < 1 MO	1 MO TO < 6 MOS	6 MOS TO < 1 YR	1 YR +	IF 1 YR + ASK: How old were you then? (ENTER AGE)
1. COMBAT (1)	1	2	3	4	5	<input type="text"/>
2. COMBAT (2)	1	2	3	4	5	<input type="text"/>
3. ACCIDENT-OWN	1	2	3	4	5	<input type="text"/>
4. ACCIDENT-VIEWED	1	2	3	4	5	<input type="text"/>
5. PHYSICAL ATTACK ON SELF (1)	1	2	3	4	5	<input type="text"/>
6. PHYSICAL ATTACK ON SELF (2)	1	2	3	4	5	<input type="text"/>
7. SAW SOMEONE HURT/KILLED (1)	1	2	3	4	5	<input type="text"/>
8. SAW SOMEONE HURT/KILLED (2)	1	2	3	4	5	<input type="text"/>
9. RECEIVED THREAT OR HAD CLOSE CALL (1) ...	1	2	3	4	5	<input type="text"/>
10. RECEIVED THREAT OR HAD CLOSE CALL (2) ..	1	2	3	4	5	<input type="text"/>
11. WITNESSED CLOSE CALL (1)	1	2	3	4	5	<input type="text"/>
12. WITNESSED CLOSE CALL (2)	1	2	3	4	5	<input type="text"/>
13. DISASTER: FLOOD	1	2	3	4	5	<input type="text"/>
14. DISASTER: TORNADO (OR) SERIOUS STORM ...	1	2	3	4	5	<input type="text"/>
15. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (1)	1	2	3	4	5	<input type="text"/>
16. NEWS OF UNEXPECTED DEATH/INJURY OF SOMEONE CLOSE (2)	1	2	3	4	5	<input type="text"/>
17. OTHER TRAUMA OR OTHER EPISODE (1)	1	2	3	4	5	<input type="text"/>
18. OTHER TRAUMA OR OTHER EPISODE (2)	1	2	3	4	5	<input type="text"/>

20. Could you rate the _____ for me on a scale of one to five, in terms of how stressful this was for you at the time of the incident; the higher the number the greater the degree of impact. For example:
 1 would mean the situation had little or no impact on you
 3 - moderate impact; and
 5 - great impact (show ratings scale)

Event #1	_____	impact	_____
Event #2	_____	impact	_____
Event #3	_____	impact	_____
Event #4	_____	impact	_____
Event #5	_____	impact	_____
Event #6	_____	impact	_____
Event #7	_____	impact	_____
Event #8	_____	impact	_____

Total Subjective Assessment of Impact Score _____

21.

- a). Did you turn to a _____ for help or support?

			EVENTS							
			1	2	3	4	5	6	7	8
friend	No (0)	Yes (1)								
spouse	No (0)	Yes (1)								
family	No (0)	Yes (1)								
union member	No (0)	Yes (1)								
professional	No (0)	Yes (1)								

21). Total Support Used Score _____

- b). If yes, what kind of help or support were you seeking?

Practical (0) Emotional (1)

22. Did you receive any help or support that you didn't ask for?

No (0) Yes (1) From whom? _____

If yes what kind?

- a) information or advice _____

- b) tangible help, such as shift trades, time off, help with work tasks, offer to take you home, etc.

- c) emotional support such as listening to you talk, talk of others experience in similar situation, do some activity to

1
little or
no impact

2

3
moderate
impact

4

5
great
impact

help get your mind of the event.

d) organizational help (eg. CISD and/or contact with a psychologist) _____

Code 16a, 17a,b,c,d as practical(-1) or emotional (+1)

(For totals sum 16a, 17a, b, c, d)

Total Practical Support Score _____

Total Emotional Support Score _____

23. Did the event have any effect on members of your family?

Spouse/C/L	No (0)	Yes (1)	How _____
Children	No (0)	Yes (1)	How _____
Parents	No (0)	Yes (1)	How _____
Siblings	No (0)	Yes (1)	How _____

23. Total Impact on Family Score _____

24. Have you ever sought professional assistance for a stress-related health problem? No (0) Y e s (1)

25. Gender: Male (0) Female (1)

26. Would you please fill out the following information sheet.

(Leave _____ - Planned Leave _____ = Unplanned _____)

I have asked you a number of questions. Is there anything that is important to you that I forgot to ask?

Do you have any questions of me?

If you think of anything later or wish to talk to me I can be reached at 384-3750.

Would you like any verbal or written feedback on this study? How will I make the information available to you? (note on FACE SHEET)

APPENDIX I

The Self-Control Schedule

This questionnaire is designed to find out how different people view their thinking and their behavior. A statement may range from very characteristic of you to very uncharacteristic of you.

There are no right or wrong answers. We simply want to know how you feel each statement applies to you.

Please answer every item, and circle only one answer for each item. Use the following code to indicate whether a statement describes your thinking or behavior:

- 3 very uncharacteristic of me, extremely uncharacteristic
- 2 rather uncharacteristic of me, quite uncharacteristic
- 1 somewhat uncharacteristic of me, slightly uncharacteristic
- +1 somewhat characteristic of me, slightly characteristic
- +2 rather characteristic of me, quite characteristic
- +3 very characteristic of me, extremely characteristic

1. When I do a boring job, I think about the less-boring parts of the job and about the reward I will receive when I finish.	-3	-2	-1	+1	+2	+3
2. When I have to do something that makes me anxious, I try to visualize how I will overcome my anxiety while doing it.	-3	-2	-1	+1	+2	+3
3. By changing my way of thinking, I am often able to change my feelings about almost anything.	-3	-2	-1	+1	+2	+3
4. I often find it difficult to overcome my feelings of nervousness and tension without outside help.	-3	-2	-1	+1	+2	+3
5. When I am feeling depressed, I try to think about pleasant events.	-3	-2	-1	+1	+2	+3
6. I cannot help thinking about mistakes I made.	-3	-2	-1	+1	+2	+3
7. When I am faced with a difficult problem, I try to approach it in a systematic way.	-3	-2	-1	+1	+2	+3
8. I usually do what I'm supposed to do more quickly when someone is pressuring me.	-3	-2	-1	+1	+2	+3
9. When I am faced with a difficult decision, I prefer to postpone it even if I have all the facts.	-3	-2	-1	+1	+2	+3
10. When I have difficulty concentrating on my reading, I look for ways to increase my concentration.	-3	-2	-1	+1	+2	+3
11. When I plan to work, I remove everything that is not relevant to my work.	-3	-2	-1	+1	+2	+3
12. When I try to get rid of a bad habit, I first try to find out all the reasons why I have the habit.	-3	-2	-1	+1	+2	+3
13. When an unpleasant thought is bothering me, I try to think about something pleasant.	-3	-2	-1	+1	+2	+3
14. If I smoked two packs of cigarettes a day, I would need outside help to stop smoking.	-3	-2	-1	+1	+2	+3

15. When I feel down, I try to act cheerful so that my mood will change.	-3	-2	-1	+1	+2	+3
16. If I carried the pills with me, I would take a tranquilizer whenever I felt tense and nervous.	-3	-2	-1	+1	+2	+3
17. When I am depressed, I try to keep myself busy with things I like.	-3	-2	-1	+1	+2	+3
18. I tend to postpone unpleasant tasks even if I could perform them immediately.	-3	-2	-1	+1	+2	+3
19. I need outside help to get rid of some of my bad habits.	-3	-2	-1	+1	+2	+3
20. When I find it difficult to settle down and do a task, I look for ways to help me settle down.	-3	-2	-1	+1	+2	+3
21. Although it makes me feel bad, I cannot help thinking about all sorts of possible catastrophes.	-3	-2	-1	+1	+2	+3
22. I prefer to finish a job that I have to do before I start doing things I really like.	-3	-2	-1	+1	+2	+3
23. When I feel physical pain, I try not to think about it.	-3	-2	-1	+1	+2	+3
24. My self-esteem increases when I am able to overcome a bad habit.	-3	-2	-1	+1	+2	+3
25. To overcome bad feelings that accompany failure, I often tell myself that it is not catastrophic and I can do something about it.	-3	-2	-1	+1	+2	+3
26. When I feel that I am too impulsive, I tell myself to stop and think before I do anything.	-3	-2	-1	+1	+2	+3
27. Even when I am terribly angry at someone, I consider my actions very carefully.	-3	-2	-1	+1	+2	+3
28. Facing the need to make a decision, I usually find out all the alternatives instead of deciding quickly and spontaneously.	-3	-2	-1	+1	+2	+3
29. Usually, I first do the things I really like to do even if there are more urgent things to do.	-3	-2	-1	+1	+2	+3
30. When I realize that I am going to be unavoidably late for an important meeting, I tell myself to keep calm.	-3	-2	-1	+1	+2	+3
31. When I feel pain in my body, I try to divert my thoughts from it.	-3	-2	-1	+1	+2	+3
32. When I am faced with a number of things to do, I usually plan my work.	-3	-2	-1	+1	+2	+3
33. When I am short of money, I decide to record all my expenses in order to budget more carefully in the future.	-3	-2	-1	+1	+2	+3
34. If I find it difficult to concentrate on a task, I divide it into smaller segments.	-3	-2	-1	+1	+2	+3
35. Quite often, I cannot overcome unpleasant thoughts that bother me.	-3	-2	-1	+1	+2	+3
36. When I am hungry and have no opportunity to eat, I try to divert my thoughts from my stomach or try to imagine that I am satisfied.	-3	-2	-1	+1	+2	+3

POSITIVE AFFECT NEGATIVE AFFECT SCALE

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past month. Use the following scale to record your answers.

1	2	3	4	5
very	a	moderately	quite	extremely
slightly	little		a bit	
_____	interested		_____	irritable
_____	distressed		_____	alert
_____	excited		_____	ashamed
_____	upset		_____	inspired
_____	strong		_____	nervous
_____	guilty		_____	determined
_____	scared		_____	attentive
_____	hostile		_____	jittery
_____	enthusiastic		_____	active
_____	proud		_____	afraid

3 of/de 3

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- often fail with prisoners is because they are underfunded; if enough money were available, these programs would work. 1 2 3 4 5 6 7
13. My fellow officers often blame each other when things go wrong. 1 2 3 4 5 6 7
14. No one in my family can really understand how tough my job can be. 1 2 3 4 5 6 7
15. The most effective and humane cure to the crime problem in America is to make a strong effort to rehabilitate offenders. 1 2 3 4 5 6 7
16. I like the people who live in my neighbourhood. 1 2 3 4 5 6 7
17. We should stop viewing criminals as victims of society who deserve to be rehabilitated and start paying more attention to the victims of these criminals. 1 2 3 4 5 6 7
18. The rehabilitation of adult criminals just does not work. 1 2 3 4 5 6 7
19. There are so many people telling us what to do here that you never can be sure who is the boss. 1 2 3 4 5 6 7
20. My supervisors often encourage us to do the job in a way that we really would be proud of. 1 2 3 4 5 6 7
21. My fellow officers often encourage each other to do the job in a way that we would be really proud of. 1 2 3 4 5 6 7
22. When my job gets me down, I always know that I can turn to my family and get the support I need to feel better. 1 2 3 4 5 6 7
23. I talk a lot with the people who live in my neighbourhood. 1 2 3 4 5 6 7
24. The rehabilitation of prisoners has proven to be a failure. 1 2 3 4 5 6 7
25. When I'm at work, I often feel tense or uptight. 1 2 3 4 5 6 7
26. The rules and regulations are clear enough here that I know specifically what I can

- and cannot do. 1 2 3 4 5 6 7
27. In my job, a person stands a good chance
of getting hurt. 1 2 3 4 5 6 7
28. All rehabilitation programs have done is
to allow criminals who deserve to be
punished to get off easily. 1 2 3 4 5 6 7
29. My supervisors often encourage the people I work
with if they do their job well. 1 2 3 4 5 6 7
30. My fellow officers often encourage each other to think
of better ways of getting the work done which may
never have been thought of before. 1 2 3 4 5 6 7
31. There is really no one in my family that
I can talk to about my job. 1 2 3 4 5 6 7
32. Not counting guys that I work with, I
have close friends that I can get
together with pretty often. 1 2 3 4 5 6 7
33. The only way to reduce crime in our
society is to punish criminals, not to
try to rehabilitate them. 1 2 3 4 5 6 7
34. A lot of times, my job makes me very
frustrated or angry. 1 2 3 4 5 6 7
35. An inmate will go straight only when he
finds that prison life is hard. 1 2 3 4 5 6 7
36. Most of the time when I am at work, I don't feel
that I have much to worry about. 1 2 3 4 5 6 7
37. Many people don't realize it, but prisons today
are too soft on the inmates. 1 2 3 4 5 6 7
38. I am usually calm and at ease when I am
working. 1 2 3 4 5 6 7
39. There is really not much chance of
getting hurt in my job. 1 2 3 4 5 6 7
40. My supervisors often blame others when
things go wrong, which are possibly not
the fault of those blamed. 1 2 3 4 5 6 7
41. My fellow officers spend hardly any time helping
me work myself up to a better job by showing me
how to improve my performance. 1 2 3 4 5 6 7

42. So long as the inmates I supervise stay quiet and don't cause any trouble, I really don't care if they are getting rehabilitated or cured while they are in here. 1 2 3 4 5 6 7
43. My spouse (or girlfriend/boyfriend) can't really help me much when my job gets me tense. 1 2 3 4 5 6 7
44. I have a friend that live nearby that I can confide in and tell all my problems to. 1 2 3 4 5 6 7
45. My job isn't to help rehabilitate inmates; it's only to keep them orderly so that they don't hurt anyone in here or tear this place apart. 1 2 3 4 5 6 7
46. I usually feel that I am under a lot of pressure when I am at work. 1 2 3 4 5 6 7
47. Keeping the inmates from causing trouble is my major concern while I'm on the job. 1 2 3 4 5 6 7
48. A lot of people I work with get physically injured in the line of duty. 1 2 3 4 5 6 7
49. When my supervisors have a dispute with one of my fellow guards they usually try to handle it in a friendly way. 1 2 3 4 5 6 7
50. It's a good thing that I have my spouse (girlfriend/boyfriend) around when things aren't going well at work. She/he can really understand me and make me feel better. 1 2 3 4 5
6 7
51. Sleep'em, feed'em, and work'em is the best way to handle inmates. 1 2 3 4 5 6 7
52. Not counting my fellow officers, I have friends that will help me out when things are going wrong. 1 2 3 4 5 6 7
53. There are a lot of aspects about my job that can make me pretty upset about things. 1 2 3 4 5 6 7
54. A problem in this profession is that no one really knows what his fellow officers are doing. 1 2 3 4 5 6 7
55. We would be successful if all we taught inmates was a little respect for authority. 1 2 3 4 5 6 7

CIRCLE THE NUMBER OF THE RESPONSE THAT BEST REFLECTS YOUR FEELINGS.

56. All in all, how satisfied would you say you are with your job?

1	2	3	4
not satisfied at all	not too satisfied	somewhat satisfied	satisfied

57. Before we talk about your present job, I'd like to get some idea of the kind of job you'd most like to have. If you were free to go into any type of job you wanted, what would your choice be?

1	2	3
prefer some other job to the job I now have	want to retire and not work at all	keep the job I have now

58. Knowing what you know now, if you had to decide all over again whether to take the job you now have, what would you decide?

1	2	3
decide definitely <u>not</u> to take same job	have some second thoughts about taking my job	decide without hesitation to to take the same job

59. In general, how well would you say that your job measures up to the sort of job you wanted when you took it?

1	2	3
not very much like the job I wanted	somewhat like the job I wanted	very much like the job I wanted

60. If a good friend of yours told you he (or she) was interested in working in a job like yours for your employer, what would you tell him (or her)?

1	2	3
advise my friend against taking this job	have doubts about recommending this job	strongly recommend the job

WAYS OF COPING SCALE

THE FOLLOWING ARE SOME OF THE THINGS PEOPLE DO TO HANDLE STRESS. WHEN YOU EXPERIENCE A STRESSFUL SITUATION HOW FREQUENTLY DO YOU USE ONE OF THESE WAYS TO HANDLE IT? PLEASE CIRCLE THE APPROPRIATE ANSWER.

- | | NEVER
0 | RARELY
1 | SOMETIMES
2 | OFTEN
3 |
|--|------------|-------------|----------------|------------|
| 1. Just concentrated on what I had to do next-the next step. | 0 | 1 | 2 | 3 |
| 2. I did something which I didn't think would work, but at least I was doing something. | 0 | 1 | 2 | 3 |
| 3. Tried to get the person responsible to change his or her mind. | 0 | 1 | 2 | 3 |
| 4. Talked to someone to find out more about the situation. | 0 | 1 | 2 | 3 |
| 5. Criticized or lectured myself. | 0 | 1 | 2 | 3 |
| 6. Tried not to burn my bridges, but leave things open somewhat. | 0 | 1 | 2 | 3 |
| 7. Hoped a miracle would happen. | 0 | 1 | 2 | 3 |
| 8. Went along with fate; sometimes I just have bad luck. | 0 | 1 | 2 | 3 |
| 9. Went on as if nothing had happened. | 0 | 1 | 2 | 3 |
| 10. I tried to keep my feelings to myself. | 0 | 1 | 2 | 3 |
| 11. Looked for the silver lining, so to speak; tried to look on the bright side of things. | 0 | 1 | 2 | 3 |
| 12. Slept more than usual. | 0 | 1 | 2 | 3 |
| 13. I expressed anger to the person(s) who caused the problem. | 0 | 1 | 2 | 3 |
| 14. Accepted sympathy and understanding from someone. | 0 | 1 | 2 | 3 |
| 15. I was inspired to do something creative. | 0 | 1 | 2 | 3 |
| 16. Tried to forget the whole thing. | 0 | 1 | 2 | 3 |
| 17. I got professional help. | 0 | 1 | 2 | 3 |

18.	Changed or grew as a person in a good way.	0	1	2	3
19.	I apologized or did something to make up.	0	1	2	3
20.	I made a plan of action and followed it.	0	1	2	3
21.	I let my feelings out somehow.	0	1	2	3
22.	Realized I brought the problem on myself.	0	1	2	3
23.	I came out of the experience better than I went in.	0	1	2	3
24.	Talked to someone who could do something concrete about the problem.	0	1	2	3
25.	Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, and so forth.	0	1	2	3
26.	Took a big chance or did something very risky.	0	1	2	3
27.	I tried not to act too hastily or follow my first hunch.	0	1	2	3
28.	Found new faith.	0	1	2	3
29.	Rediscovered what is important in life.	0	1	2	3
30.	Changed something so things would turn out all right.	0	1	2	3
31.	Avoided being around people in general.	0	1	2	3
32.	Didn't let it get to me; refused to think about it too much.	0	1	2	3
33.	I asked a relative or friend I respected for advice.	0	1	2	3
34.	Kept others from knowing how bad things were.	0	1	2	3
35.	Made light of the situation; refused to get too serious about it.	0	1	2	3
36.	Talked to someone about how I was feeling.	0	1	2	3
37.	Stood my ground and fought for what I wanted.	0	1	2	3

38.	Took it out on other people.	0	1	2	3
39.	Drew on my past experiences; I was in a similar situation before.	0	1	2	3
40.	I knew what had to be done, so I doubled my efforts to make things work.	0	1	2	3
41.	Refused to believe that it had happened.	0	1	2	3
42.	I made a promise to myself that things would be different next time.	0	1	2	3
43.	Came up with a couple of different solutions to the problem.	0	1	2	3
44.	I tried to keep my feelings from interfering with other things too much.	0	1	2	3
45.	I changed something about myself.	0	1	2	3
46.	Wished that the situation would go away or somehow be over with.	0	1	2	3
47.	Had fantasies about how things might turn out.	0	1	2	3
48.	I prayed.	0	1	2	3
49.	I went over in my mind what I would say or do.	0	1	2	3
50.	I thought about how a person I would admire would handle the situation and used that as a model.	0	1	2	3

A.N.C.Q.

- 1) Do you drink alcohol? Yes ____ No ____
- 2) If yes, what alcoholic beverage do you usually drink?
 Beer ____ Wine ____ Hard Liquor ____
- 3) How many days a week on average do you drink?
 7____ 6____ 5____ 4____ 3____ 2____ 1____ 0____
- 4) On average, how much of your customary beverage would you drink on a typical drinking occasion?
 Beer ____ number of 12 oz. bottles
 Wine ____ number of oz.
 Liquor ____ number of oz.
- 5) Are you a smoker ____ ex-smoker ____ non-smoker ____?
- 6) On a typical day in the last week, how many cigarettes did you usually smoke?

None ____	21-25 ____	46-50 ____
1-5 ____	26-30 ____	51-55 ____
6-10 ____	31-35 ____	56-60 ____
11-15 ____	36-40 ____	60+ ____
16-20 ____	41-45 ____	
- 7) Do you smoke cigars or cigarillos? Yes ____ No ____
- 8) If yes, how many do you usually smoke in a day? ____
- 9) On a typical day in the last week, how many of the following did you consume?
 Cups (standard paper cup size, 8 oz.) of
 brewed coffee ____
 instant coffee ____
 decaffeinated coffee ____
 tea ____
 hot chocolate ____
 Cans (10 oz.) of Coke, Pepsi or other colas ____

MARLOWE-CROWNE SOCIAL DESIRABILITY SCALE

LISTED BELOW ARE A NUMBER OF STATEMENTS CONCERNING PERSONAL ATTITUDES AND TRAITS. READ EACH ITEM AND DECIDE WHETHER THE STATEMENT IS TRUE OR FALSE AS IT PERTAINS TO YOU.

1. Before voting I thoroughly investigate the qualifications of all the candidates. T F
2. I never hesitate to go out of my way to help someone in trouble. T F
3. It is sometimes hard for me to go on with my work if I am not encouraged. T F
4. I have never intensely disliked anyone. T F
5. On occasion I have had doubts about my ability to succeed in life. T F
6. I sometimes feel resentful when I don't get my way. T F
7. I am always careful about my manner of dress. T F
8. My table manners at home are as good as when I eat out in a restaurant. T F
9. If I could get into a movie without paying and be sure I was not seen, I would probably do it. T F
10. On a few occasions, I have given up doing something because I thought too little of my ability. T F
11. I like to gossip at times. T F
12. There have been times when I felt like rebelling against people in authority even though I knew they were right. T F
13. No matter who I'm talking to, I'm always a good listener. T F
14. I can remember "playing sick" to get out of something. T F
15. There have been occasions when I took advantage of someone. T F
16. I'm always willing to admit it when I make a mistake. T F

17.	I always try to practice what I preach.	T	F
18.	I don't find it particularly difficult to get along with loud mouthed, obnoxious people.	T	F
19.	I sometimes try to get even, rather than forgive and forget.	T	F
20.	When I don't know something I don't at all mind admitting it.	T	F
21.	I am always courteous, even to people who are disagreeable.	T	F
22.	At times I have really insisted on having things my own way.	T	F
23.	There have been occasions when I felt like smashing things.	T	F
24.	I would never think of letting someone else be punished for my wrong-doings.	T	F
25.	I never resent being asked to return a favour.	T	F
26.	I have never been irked when people expressed ideas very different from my own.	T	F
27.	I never make a long trip without checking the safety of my car.	T	F
28.	There have been times when I was quite jealous of the good fortune of others.	T	F
29.	I have almost never felt the urge to tell someone off.	T	F
30.	I am sometimes irritated by people who ask favours of me.	T	F
31.	I have never felt that I was punished without cause.	T	F
32.	I sometimes think when people have a misfortune they only got what they deserved.	T	F
33.	I have never deliberately said something that hurt someone's feelings.	T	F

IMPACT OF EVENTS SCALE

THINK BACK OVER YOUR CSC CAREER AND RECALL IF YOU HAD ANY EVENT WHILE AT WORK THAT CAUSED YOU TO EXPERIENCE SIGNIFICANT STRESS. BELOW IS A LIST OF COMMENTS MADE BY PEOPLE AFTER STRESSFUL EVENTS. EACH ITEM PLEASE CIRCLE THE NUMBER THAT BEST INDICATES HOW FREQUENTLY THESE COMMENTS WERE TRUE FOR YOU DURING THE PAST MONTH. USE THE FOLLOWING SCALE. IF THEY DID NOT OCCUR DURING THAT TIME PLEASE CIRCLE THE "NOT AT ALL".

	NOT AT ALL	RARELY	SOMETIMES	OFTEN
	0	1	2	3
1. I thought about it when I didn't mean to.	0	1	2	3
2. I avoided letting myself get upset when I thought about it or was reminded of it.	0	1	2	3
3. I tried to remove it from memory.	0	1	2	3
4. I had trouble falling asleep or staying asleep because of pictures or thoughts that came into my mind.	0	1	2	3
5. I had waves of strong feelings about it.	0	1	2	3
6. I had dreams about it.	0	1	2	3
7. I stayed away from reminders of it.	0	1	2	3
8. I felt as if it hadn't happened or it wasn't real.	0	1	2	3
9. I tried not to talk about it.	0	1	2	3
10. Pictures about it popped into my mind.	0	1	2	3
11. Other things kept making me think about it.	0	1	2	3
12. I was aware that I still had a lot of feelings about it, but I didn't deal with them.	0	1	2	3
13. I tried not to think about it.	0	1	2	3
14. Any reminder brought back feelings about it.	0	1	2	3
15. My feelings about it were kind of numb.	0	1	2	3

BRIEF SYMPTOMS INVENTORY

BELOW IS A LIST OF PROBLEMS PEOPLE SOMETIMES HAVE. PLEASE READ EACH ONE CAREFULLY, AND INDICATE ON THE RIGHT, THE NUMBER THAT BEST DESCRIBES HOW MUCH THAT PROBLEM HAS DISTRESSED OR BOTHERED YOU DURING THE PAST MONTH INCLUDING TODAY. CIRCLE ONLY ONE NUMBER FOR EACH PROBLEM. PLEASE CIRCLE THE ITEMS USING THE FOLLOWING SCALE.

NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
0	1	2	3	4

In the past two weeks how much were you bothered by:

1. Nervous or shakiness inside	0	1	2	3	4
2. Faintness or dizziness	0	1	2	3	4
3. The idea that someone else can control your thoughts	0	1	2	3	4
4. Feeling that others were to blame for most of your troubles	0	1	2	3	4
5. Trouble remembering things	0	1	2	3	4
6. Feeling easily annoyed or irritated	0	1	2	3	4
7. Pains in heart or chest	0	1	2	3	4
8. Feeling afraid in open spaces	0	1	2	3	4
9. Thoughts of ending your life	0	1	2	3	4
10. Feeling that most people cannot be trusted	0	1	2	3	4
11. Poor appetite	0	1	2	3	4
12. Suddenly scared for no reason	0	1	2	3	4
13. Temper outbursts that you could not control	0	1	2	3	4
14. Feeling lonely even when you are with people	0	1	2	3	4
15. Feeling blocked in getting things done	0	1	2	3	4
16. Feeling lonely	0	1	2	3	4

17.	Feeling blue	0	1	2	3	4
18.	Feeling no interest in things	0	1	2	3	4
19.	Feeling fearful	0	1	2	3	4
20.	Your feelings being easily hurt	0	1	2	3	4
21.	Feeling that people are unfriendly or dislike you	0	1	2	3	4
22.	Feeling inferior to others	0	1	2	3	4
23.	Nausea or upset stomach	0	1	2	3	4
24.	Feeling that you are watched or talked about by others	0	1	2	3	4
25.	Trouble falling asleep	0	1	2	3	4
26.	Having to check or double check what you do	0	1	2	3	4
27.	Difficulty making decisions	0	1	2	3	4
28.	Feeling afraid to travel on buses, subways or trains	0	1	2	3	4
29.	Trouble getting your breath	0	1	2	3	4
30.	Hot or cold spells	0	1	2	3	4
31.	Having to avoid certain things, places or activities because they frighten you	0	1	2	3	4
32.	Your mind going blank	0	1	2	3	4
33.	Numbness or tingling in parts of your body	0	1	2	3	4
34.	The idea that you should be punished for your sins	0	1	2	3	4
35.	Feeling hopeless about the future	0	1	2	3	4
36.	Trouble concentrating	0	1	2	3	4
37.	Feeling weak in parts of your body	0	1	2	3	4
38.	Feeling tense or keyed up	0	1	2	3	4
39.	Thoughts of death or dying	0	1	2	3	4

40. Having urges to beat, injure or harm someone	0	1	2	3	4
41. Having urges to break or smash things	0	1	2	3	4
42. Feeling very self-conscious with others	0	1	2	3	4
43. Feeling uneasy in crowds	0	1	2	3	4
44. Never feeling close to another person	0	1	2	3	4
45. Spells of terror or panic	0	1	2	3	4
46. Getting into frequent arguments	0	1	2	3	4
47. Feeling nervous when you are left alone	0	1	2	3	4
48. Others not giving you proper credit for your achievements	0	1	2	3	4
49. Feeling so restless you could not sit still	0	1	2	3	4
50. Feelings of worthlessness	0	1	2	3	4
51. Feelings that people will take advantage of you if you let them	0	1	2	3	4
52. Feelings of guilt	0	1	2	3	4
53. The idea that something is wrong with your mind	0	1	2	3	4

Thank you for your time and your cooperation in filling out the questionnaires. I appreciate your help very much.

If you have any questions or wish to talk to me I can be reached at 384-3750.

Lois Rosine

APPENDIX J

CORRELATION MATRIX ***

i

	CISYMPT	BSIGSI	IESINTRU	IESAVOID	UNPLAN	AGE
CISYMPT	1.00	.43**	.45**	.40**	.10	.02
BSIGSI	.43**	1.00	.60**	.53**	.20	-.03
IESINTRU	.45**	.60**	1.00	.81**	.29**	-.01
IESAVOID	.41**	.53**	.81**	1.00	.17	.02
UNPLAN	.10	.20	.29**	.17	1.00	.13
AGE	.02	-.03	-.01	.02	.13	1.00
GENDER	-.10	-.12	-.10	-.12	-.03	-.49**
ED	-.07	.04	.04	.00	-.01	-.59**
YRSER	.15	.04	.11	.19	.10	.78**
PREVEXP	-.15	-.07	-.04	-.10	.08	.58**
MARITAL	-.06	.06	-.10	-.08	.16	.11
PANASNEG	.35**	.68**	.50**	.39**	.28*	.06
MC	-.16	-.32**	-.18	-.12	-.09	.07
SCSSCORE	-.10	-.34**	-.24*	-.16	-.12	-.09
COROR	-.12	-.32**	-.08	-.13	-.18	.04
ROLEPROB	.13	.34**	.24*	.23*	.07	-.08
DANGER	.13	.28**	.25*	.24*	.09	.00
WORKSTRE	.39**	.56**	.52**	.49**	.22*	.01
JOBDIS	.38**	.46**	.32**	.32**	.15	.04
SLES	.21	.26*	.13	.09	.15	.36**
ANCQDPW	.13	.20	.22*	.14	.08	.00
CAFFINMG	.23*	.26*	.15	.15	.10	.05
ANCQ6	.18	.02	.02	.00	.11	.04
SLEEP	-.07	-.08	-.21	-.14	-.06	-.09
EXERPHYS	-.09	-.03	-.14	-.14	-.10	.00
WORK	.11	.00	.07	.08	.08	-.15
CIS	.25*	.14	.21*	.21	.18	.41**
SSUPPORT	-.17	-.32**	-.21	-.19	-.18	.07
PSUPPORT	.01	-.22*	-.14	-.13	-.10	.04
FSUPPORT	-.30**	-.33**	-.28**	-.24*	-.28**	-.15
CSUPPORT	-.08	-.42**	-.13	-.18	-.09	-.08
CONF	.15	.11	.20	.03	.05	.12
DIST	.16	.13	.17	.19	.01	.21
SELF	.15	.20	.15	.22*	-.05	.06
SEEK	-.02	-.13	-.07	-.23*	.04	-.08
RESP	.00	.04	.00	-.03	.05	.05
ESC	.38**	.55**	.38**	.38**	.14	-.05
PLAN	-.02	-.14	-.05	-.03	-.04	.12
REAP	.01	-.14	-.17	-.12	-.11	.13
VULGEN1	.39**	.64**	.48**	.43**	.26*	.13
SOCSUP1	-.21	-.50	-.30	-.29	-.26	-.04
OUTCOM11	.47**	.78**	.92**	.88**	.40**	.01

N of cases: 121

2-tailed Signif: * - .05 ** - .01

*** See page ix of this appendix for the key giving the variable names.

CORRELATION MATRIX (con't)

i

	GENDER	ED	YRSER	PREVEXP	MARITAL
CISYMP	-.10	-.07	.15	-.15	-.06
BSIGSI	-.12	.04	.04	-.07	.06
IESINTRU	-.10	.04	.11	-.04	-.11
IESAVOID	-.12	.00	.19	-.10	-.08
UNPLAN	-.03	-.00	.10	.08	.16
AGE	-.49**	-.59**	.78**	.58**	.11
GENDER	1.00	.42**	-.65**	-.14	.15
ED	.42**	1.00	-.63**	-.34**	-.07
YRSEP	-.65**	-.63**	1.00	.07	.00
PREVEXP	-.14	-.34**	.07	1.00	.07
MARITAL	.15	-.07	.00	.07	1.00
PANASNEG	-.22*	.02	.09	.00	.02
MC	.14	-.06	-.03	.14	-.04
SCSSCORE	.26*	.10	-.12	-.03	.04
COROR	.24*	.12	-.04	.06	.00
ROLEPROB	-.08	-.06	-.05	.01	-.09
DANGER	-.15	-.16	.01	.12	-.03
WORKSTRE	-.17	-.10	.08	.02	-.07
JOBDIS	-.24*	.00	.12	-.08	-.08
SLES	-.11	-.26*	.28*	.21	.06
ANCQDPW	-.24*	-.05	.05	.03	-.16
CAFFINMG	-.05	-.08	.12	-.07	.20
ANCQ6	.03	-.17	.09	.00	-.01
SLEEP	.27*	.24*	-.10	-.18	-.04
EXERPHYS	.00	-.07	-.11	.09	.05
WORK	.06	.05	-.08	-.15	.10
CIS	-.27*	-.45**	.49**	.13	.08
SSUPPORT	.20	.06	.06	-.03	.06
PSUPPORT	.09	-.04	.06	-.02	.04
FSUPPORT	.22*	.05	-.29**	.17	-.03
CSUPPORT	.18	.11	-.19	.10	-.01
CONF	-.03	.05	.07	.12	-.02
DIST	-.05	-.05	.14	.13	.06
SELF	-.04	.01	.13	-.07	-.01
SEEK	.30**	.22*	-.24*	.07	.07
RESP	.14	.21	-.02	-.02	.15
ESC	-.03	.07	.03	-.07	.01
PLAN	.14	.01	.12	-.01	.06
REAP	.29**	.08	.01	.13	.13
VULGEN1	-.35**	-.25*	.19	.08	-.04
SOCSUP1	.26*	.06	-.13	.08	.02
OUTCOM11	-.13	.03	.14	-.06	-.02

N of cases: 121

2-tailed Signif: * - .05 ** - .01

CORRELATION MATRIX (con't)

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	PANASNEG	MC	SCSSCORE	COROR	ROLEPROB	DANGER
CISYMPT	.35**	-.16	-.10	-.12	.13	.13
BSIGSI	.68**	-.32**	-.34**	-.32**	.34**	.28**
IESINTRU	.50**	-.18	-.24*	-.08	.24*	.25*
IESAVOID	.39**	-.12	-.16	.13	.23*	.24*
UNPLAN	.28*	-.09	-.12	-.18	.07	.09
AGE	.06	.07	-.09	.04	-.08	.00
GENDER	-.22*	.14	.26*	.24*	-.08	-.15
ED	.02	-.06	.10	.12	-.06	-.16
YRSER	.09	-.03	-.12	-.04	-.05	.01
PREVEXP	.01	.14	-.03	.06	.01	.12
MARITAL	.02	-.04	.04	-.01	-.09	-.03
PANASNEG	1.00	-.45**	-.38**	-.31**	.36**	.19
MC	-.45**	1.00	.40**	.10	-.14	-.02
SCSSCORE	-.38**	.40**	1.00	.23*	-.11	-.03
COROR	-.31**	.10	.23*	1.00	-.39**	-.27*
ROLEPROB	.36**	-.14	-.11	-.39**	1.00	.35**
DANGER	.19	-.02	-.03	-.27*	.35**	1.00
WORKSTRE	.57**	-.23*	-.26*	-.38**	.56**	.51**
JOBDIS	.46**	-.37**	-.23*	-.41**	.38**	.28*
SLES	.27*	.00	-.07	-.03	-.10	.11
ANCQDPW	.17	-.02	-.23*	-.14	.12	.15
CAFFINMG	.16	.01	-.16	-.01	-.03	.13
ANCQ6	.10	.05	-.11	-.03	.01	.09
SLEEP	-.13	-.09	.01	.15	-.13	-.20
EXERPHYS	.00	.04	.01	-.07	-.06	.13
WORK	.09	-.04	.05	-.05	.06	.00
CIS	.14	-.10	.01	-.07	.07	.06
SSUPPORT	-.34**	.12	.13	.39**	-.57**	-.37**
PSUPPORT	-.14	.07	.17	.17	-.33**	-.13
FSUPPORT	-.28**	.19	.38**	.15	-.17	-.11
CSUPPORT	-.23*	.17	.24*	.26*	-.23*	-.05
CONF	.27*	-.28**	-.01	.07	.08	.12
DIST	.11	-.08	.09	.01	.05	.07
SELF	.20	-.12	.12	-.02	.17	.11
SEEK	-.09	-.05	.28**	.29**	-.12	-.03
RESP	.10	-.28**	.15	.13	-.08	.09
ESC	.55**	-.48**	-.36**	-.16	.27*	.15
PLAN	-.09	.15	.41**	.13	-.05	.00
REAP	-.24*	.12	.44**	.42**	-.24*	-.14
VULGEN1	.70**	-.30**	-.44**	-.60**	.63**	.57**
SOCSUP1	-.39**	.21	.36**	.37**	-.51**	-.26*
OUTCOM11	.60**	-.23*	-.28**	-.21*	.30**	.29**

N of cases: 121

2-tailed Signif: * - .05 ** - .01

CORRELATION MATRIX (con't)

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	WORKSTRE	JOBDIS	SLES	ANCQDPW	CAFFINMG	ANCQ6
CISYMP	.39**	.38**	.21	.13	.23*	.18
BSIGSI	.56**	.46**	.26*	.20	.26*	.02
IESINTRU	.52**	.32**	.13	.22*	.15	.02
IESAVOID	.49**	.32**	.09	.14	.15	.00
UNPLAN	.22*	.15	.15	.08	.10	.11
AGE	.01	.04	.36**	-.00	.05	.04
GENDER	-.17	-.24*	-.11	-.24*	-.05	.03
ED	-.10	.00	-.26*	-.05	-.08	-.17
YRSER	.08	.12	.28*	.05	.12	.09
PREVEXP	.02	-.08	.21	.03	-.07	.00
MARITAL	-.07	-.08	.06	-.16	.20	-.01
PANASNEG	.57**	.46**	.27*	.17	.16	.10
MC	-.23*	-.37**	.00	-.02	.01	.05
SCSSCORE	-.26*	-.23*	-.07	-.23*	-.16	-.11
COROR	-.38**	-.41**	-.03	-.14	-.01	-.03
ROLEPROB	.56**	.38**	-.10	.12	-.03	.01
DANGER	.51**	.28*	.11	.15	.13	.09
WORKSTRE	1.00	.60**	.07	.22*	.17	.15
JOBDIS	.60**	1.00	-.01	.14	.06	-.06
SLES	.07	-.01	1.00	-.05	.17	.14
ANCQDPW	.22*	.14	-.05	1.00	.00	.04
CAFFINMG	.17	.06	.17	.00	1.00	.34**
ANCQ6	.15	-.06	.14	.04	.34**	1.00
SLEEP	-.22*	.00	-.11	-.14	-.15	-.15
EXERPHYS	.06	-.07	.07	.07	.12	.11
WORK	.04	-.07	.09	.08	.04	.06
CIS	.08	.10	.21	.00	.01	.12
SSUPPORT	-.50**	-.35**	.08	-.17	.03	.01
PSUPPORT	-.21*	-.11	-.04	.07	-.02	.10
FSUPPORT	-.29**	-.37**	-.14	-.04	-.20	-.08
CSUPPORT	-.23*	-.36**	.02	-.02	-.12	.02
CONF	.16	.05	.16	.12	-.01	.10
DIST	.06	.13	.18	.03	-.09	-.08
SELF	.16	.17	.09	-.08	.14	.06
SEEK	-.04	-.06	-.03	-.08	-.21	-.01
RESP	.07	.04	.09	-.12	.03	.09
ESC	.46**	.37**	.07	.15	.09	.11
PLAN	-.08	-.19	-.01	-.15	.03	.12
REAP	-.18	-.22*	.05	-.21	-.02	.00
VULGEN1	.85**	.67**	.21*	.34**	.26*	.22*
SOCSUP1	-.48*	-.46*	-.04	-.07	-.12	.02
OUTCOM11	.60**	.42**	.19	.21*	.22*	.03

N of cases: 121

2-tailed Signif: * - .05 ** - .01

CORRELATION MATRIX (con't)

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	SLEEP	EXERPHYS	WORK	CIS	SSUPPORT	PSUPPORT
CISYMPT	-.07	-.09	.11	.25*	-.17	.01
BSIGSI	-.08	-.03	.00	.14	-.32**	-.22*
IESINTRU	-.21	-.14	.07	.21*	-.21	-.14
IESAVOID	-.14	-.14	.08	.21	-.19	-.13
UNPLAN	-.06	-.10	.08	.18	-.18	-.10
AGE	-.09	.00	-.15	.41**	.07	.04
GENDER	.27*	.00	.06	-.27*	.20	.09
ED	.24*	-.07	.05	-.45**	.06	-.04
YRSER	-.10	-.11	-.07	.49**	.06	.06
PREVEXP	-.18	.09	-.15	.13	-.03	-.02
MARITAL	-.04	.05	.10	.08	.06	.05
PANASNEG	-.13	.00	.09	.14	-.34**	-.14
MC	-.09	.04	-.04	-.10	.12	.07
SCSSCORE	.01	.01	.05	.01	.13	.17
COROR	.15	-.07	-.05	-.07	.39**	.17
ROLEPROB	-.13	-.06	.06	.07	-.57**	-.33**
DANGER	-.20	.13	.00	.06	-.37**	-.13
WORKSTRE	-.22*	.06	.04	.08	-.50**	-.21*
JOBDIS	.00	-.07	-.07	.10	-.35**	-.11
SLES	-.11	.07	.09	.21	.08	-.04
ANCQDPW	-.14	.07	.08	.00	-.17	.07
CAFFINMG	-.15	.12	.04	.01	.03	-.02
ANCQ6	-.15	.11	.06	.12	.01	.10
SLEEP	1.00	-.16	-.13	-.18	.05	.02
EXERPHYS	-.16	1.00	-.11	.10	.02	.14
WORK	-.13	-.11	1.00	.01	-.03	-.09
CIS	-.18	.10	.01	1.00	-.09	.11
SSUPPORT	.05	.02	-.03	-.09	1.00	.34**
PSUPPORT	.02	.14	-.09	.11	.34**	1.00
FSUPPORT	.06	.20	-.01	-.21	.13	.26*
CSUPPORT	-.03	.21*	.03	-.11	.16	.09
CONF	-.08	.11	.19	.11	-.07	-.02
DIST	.01	.06	.10	.18	-.13	-.04
SELF	-.06	.18	-.05	.16	-.15	-.08
SEEK	.17	-.03	.06	-.10	.04	.05
RESP	.10	.14	.08	-.03	.08	.00
ESC	.02	.01	.10	.06	-.19	-.18
PLAN	.09	.06	-.02	.23*	.15	.16
REAP	.22*	.01	-.07	.04	.24*	.09
VULGEN1	-.33**	.10	.07	.19	-.53**	-.22*
SOC SUP1	.04	.22	-.04	-.11	.65**	.69**
OUTCOM11	-.16	-.13	.07	.24*	-.29**	-.19

N of cases: 121

2-tailed Signif: * - .05 ** - .01

CORRELATION MATRIX (con't)

vi

	FSUPPORT	CSUPPORT	CONF	DIST	SELF	SEEK
CISYMPT	.30**	-.08	.15	.16	.15	-.02
BSIGSI	-.33**	-.42**	.11	.13	.20	-.13
IESINTRU	-.28**	-.13	.20	.17	.15	-.07
IESAVOID	-.24*	-.18	.03	.19	.22*	-.23*
UNPLAN	-.28**	-.09	.05	.01	-.05	.05
AGE	-.15	-.08	.12	.21	.06	-.08
GENDER	.22*	.18	-.03	-.05	-.04	.30**
ED	.05	.11	.05	-.05	.01	.22*
YRSER	-.29**	-.19	.07	.14	.13	-.24*
PREVEXP	.17	.10	.12	.13	-.07	.07
MARITAL	-.03	-.01	-.02	.06	-.01	.07
PANASNEG	-.28**	-.23*	.27*	.11	.20	-.09
MC	.19	.17	-.28**	-.08	-.12	-.05
SCSSCORE	.38**	.24*	-.01	.09	.12	.28**
COROR	.15	.26*	.07	.01	-.02	.29**
ROLEPROB	-.17	-.23*	.08	.05	.17	-.12
DANGER	-.11	-.05	.12	.07	.11	-.03
WORKSTRE	-.29**	-.22*	.16	.06	.16	-.04
JOBDIS	-.37**	-.36**	.05	.13	.17	-.06
SLES	-.14	.02	.16	.18	.09	-.03
ANCQDPW	-.04	-.02	.12	.03	-.08	-.08
CAFFINMG	-.20	-.12	-.01	-.09	.14	-.21
ANCQ6	-.08	.02	.10	-.08	.06	-.01
SLEEP	.06	-.03	-.08	.01	-.06	.17
EXERPHYS	.20	.21*	.11	.06	.18	-.03
WORK	-.01	.03	.19	.10	-.05	.06
CIS	-.21	-.11	.11	.18	.16	-.10
SSUPPORT	.13	.16	-.07	-.13	.15	.04
PSUPPORT	.26*	.09	-.02	-.04	-.08	.05
FSUPPORT	1.00	.27*	-.11	.08	-.01	.20
CSUPPORT	.27*	1.00	.19	.02	-.01	.23*
CONF	-.11	.19	1.00	.21	.18	.46**
DIST	.08	.02	.21	1.00	.40**	.12
SELF	-.01	-.01	.18	.40**	1.00	-.03
SEEK	.20	.23*	.46**	.12	-.03	1.00
RESP	.01	.17	.45**	.25*	.17	.49**
ESC	-.30**	-.17	.41**	.30**	.24*	.14
PLAN	.24*	.13	.25*	.08	.37**	.31**
REAP	.19	.30**	.18	.25*	.07	.43**
VULGEN1	-.37**	-.31**	.17	.09	.17	-.22*
SOCSUP1	.65**	.55**	-.02	-.03	-.10	.20
OUTCOM11	-.35**	-.27*	.13	.18	.20	-.15

N of cases: 121

2-tailed Signif: * - .05 ** - .01

CORRELATION MATRIX (con't)

vii

	RESP	ESC	PLAN	REAP	VULGEN1	OUTCOM11
CISYMP	.00	.38**	-.02	.01	.39**	.47**
BSIGSI	.04	.55**	-.14	-.14	.64**	.78**
IESINTRU	-.00	.38**	-.05	-.17	.48**	.92**
IESAVOID	-.03	.38**	-.03	-.12	.43**	.88**
UNPLAN	.05	.14	-.04	-.11	.26*	.40**
AGE	.05	-.05	.12	.13	.13	.01
GENDER	.14	-.03	.14	.29**	-.35**	-.13
ED	.21	.07	.01	.08	-.25*	.03
YRSER	-.02	.03	.12	.00	.19	.14
PREVEXP	-.02	-.07	-.01	.13	.08	-.06
MARITAL	.15	.01	.06	.13	-.04	-.02
PANASNEG	.10	.55**	-.09	-.24*	.70**	.60**
MC	-.28**	-.48**	.15	.12	-.30**	-.23*
SCSSCORE	.15	-.36**	.41**	.44**	-.44**	-.28**
COROR	.13	-.16	.13	.42**	-.60**	-.21*
ROLEPROB	-.08	.27*	-.05	-.24*	.63**	.30**
DANGER	.09	.15	.00	-.14	.57**	.29**
WORKSTRE	.07	.40**	-.08	-.18	.85**	.60**
JOBDIS	.04	.37**	-.19	-.22*	.67**	.42**
SLES	.09	.07	-.01	.05	.21	.19
ANCQDPW	-.12	.15	-.15	-.21	.34**	.22*
CAFFINMG	.03	.09	.03	-.02	.26*	.22*
ANCQ6	.09	.11	.12	.00	.22*	.03
SLEEP	.10	.02	.09	.22*	-.33**	-.16
EXERPHYS	.14	.01	.06	.01	.10	-.13
WORK	.08	.10	-.02	-.07	.07	.07
CIS	-.03	.06	.23*	.04	.19	.24*
SSUPPORT	.08	-.19	.15	.24*	-.53**	-.29**
PSUPPORT	.00	-.18	.16	.09	-.22*	-.19
FSUPPORT	.01	-.30**	.24*	.19	-.37**	-.35**
CSUPPORT	.17	-.17	.13	.30**	-.31**	-.27*
CONF	.45**	.41**	.25*	.18	.17	.13
DIST	.25*	.30**	.08	.25*	.09	.18
SELF	.17	.24*	.37**	.07	.17	.20
SEEK	.49**	.14	.31**	.43**	-.22*	-.15
RESP	1.00	.41**	.27*	.46**	-.01	.01
ESC	.41**	1.00	-.14	.10	.48**	.49**
PLAN	.27*	-.14	1.00	.33**	-.17	-.08
REAP	.46**	.10	.33**	1.00	-.37**	-.17
VULGEN1	-.01	.48**	-.17	-.37**	1.00	.59**
SOC SUP1	.10	-.33**	.27*	.30**	-.56**	-.43**
OUTCOM11	.01	.49**	-.08	-.17	.59**	1.00

N of cases: 121

2-tailed Signif: * - .05 ** - .01

CORRELATION MATRIX (con't)

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	SOCSUP1
CISYMPT	-.21
BSIGSI	-.50**
IESINTRU	-.30**
IESAVOID	-.29**
UNPLAN	-.26*
AGE	-.04
GENDER	.26*
ED	.06
YRSER	-.13
PREVEXP	.08
MARITAL	.02
FANASPOS	.52**
PANASNEG	-.39**
MC	.21
SCSSCORE	.36**
COROR	.37**
ROLEPROB	-.51**
DANGER	-.26*
WORKSTRE	-.48**
JOBDIS	-.46**
SLES	-.04
ANCQDPW	-.07
CAFFINMG	-.12
ANCQ6	.02
SLEEP	.04
EXERPHYS	.22*
WORK	-.04
CIS	-.11
SSUPPORT	.65**
PSUPPORT	.69**
FSUPPORT	.66**
CSUPPORT	.55**
CONF	-.02
DIST	-.03
SELF	-.10
SEEK	.20
RESP	.10
ESC	-.33**
PLAN	.27*
REAP	.30**
VULGEN1	-.56**
OUTCOM11	-.43**
SOCSUP1	1.00

N of cases: 121

2-tailed Signif: * - .05 ** - .01

KEY: VARIABLE NAMES

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CISYMPT	Impact of Events
BSIGSI	General Severity Index of the Brief Symptoms Inventory
IESINTRU	Intrusion sub-scale of the Impact of Events Scale
IESAVOID	Avoidance sub-scale of the Impact of Events Scale
UNPLAN	Unplanned leave
AGE	Age
GENDER	Gender
ED	Education
YRSER	Years of service with Correctional Services of Canada
PREVEXP	Previous work experience
MARITAL	Marital status
PANASNEG	Negative affect
MC	Social desirability
SCSSCORE	Resourcefulness
COROR	Correctional orientation
ROLEPROB	Role problem
DANGER	Dangerousness
WORKSTRE	Work stress
JOBDIS	Job dissatisfaction
SLES	Serious life events
ANCQDPW	Alcohol consumption
CAFFINMG	Caffeine consumption
ANCQ6	Nicotine consumption
SLEEP	Sleep
EXERPHYS	Physical exercise
WORK	Hours of work
CIS	Exposures to traumatic incidents
SSUPPORT	Supervisor support
PSUPPORT	Peer support
FSUPPORT	Family support
CSUPPORT	Community support
CONF	Confrontive coping
DIST	Distancing
SELF	Self-control
RESP	Accepting responsibility
ESC	Escape-avoidance
PLAN	Planful problem-solving
REAP	Positive reappraisal
VULGEN1	Factor score for vulnerability
SOCSUP1	Factor score for social support
OUTCOM11	Factor score for current clinical impact

APPENDIX K

FACTOR SCORE FOR CURRENT CLINICAL IMPACT

- - - - F A C T O R A N A L Y S I S - - - -

Factor Matrix:

	FACTOR 1
IESINTRU	.92425
IESAVOID	.88108
BSIGSI	.78285
UNPLAN	.40259

Final Statistics:

Variable	Communality	* Factor	Eigenvalue	Pct of Var	CumPct
IESINTRU	.85424	*	1	57.5	57.5
IESAVOID	.77630				
BSIGSI	.61285	*			
UNPLAN	.16207	*			

OUTCOM11 REGR FACTOR SCORE

FACTOR SCORE FOR VULNERABILITY

- - - - F A C T O R A N A L Y S I S - - - -

Factor Matrix:

	FACTOR 1
AGE	.12613
ED	-.24744
COROR	-.60217
SCSSCORE	-.44289
PANASNEG	.70443
ROLEPROB	.62899
DANGER	.57377
WORKSTRE	.85252
JOBDIS	.66904
SLES	.21192
ANCQDPW	.33665
CAFFINMG	.25878
ANCQ6	.21660
SLEEP	-.33154
EXERPHYS	.09783
WORK	.06636

Final Statistics:

Variable	Communality	* Factor	Eigenvalue	Pct of Var	Cum Pct
AGE	.01591	* 1	3.42738	21.4	21.4
ED	.06122	*			
COROR	.36260	*			
SCSSCORE	.19616	*			
PANASNEG	.49623	*			
ROLEPROB	.39563	*			
DANGER	.32921	*			
WORKSTRE	.72679	*			
JOBDIS	.44761	*			
SLES	.04491	*			
ANCQDPW	.11333	*			
CAFFINMG	.06697	*			
ANCQ6	.04691	*			
SLEEP	.10992	*			
EXERPHYS	.00957	*			
WORK	.00440	*			
VULGEN1	REGR	FACTOR	SCORE		

FACTOR SCORE FOR SOCIAL SUPPORT

- - - - F A C T O R A N A L Y S I S - - - -

Factor Matrix:

	FACTOR 1
SSUPPORT	.64810
PSUPPORT	.69312
FSUPPORT	.65801
CSUPPORT	.54719

Final Statistics:

Variable	Communality	*	Factor	Eigenvalue	Pct of Var	CumPct
SSUPPORT	.42003	*	1	1.63282	40.8	40.8
PSUPPORT	.48041	*				
FSUPPORT	.43297	*				
CSUPPORT	.29941	*				
SOCSUP1	REGR FACTOR SCORE					

END

24.12.92

FIN