**An Investigation of the Impact of Chronic Work Stress
and Critical Incidents on Correctional Staff
and the Factors that Moderate it**

by

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Abstract

Work related stress is increasingly recognized as one of the most serious occupational health hazards (Cummins, 1990; Spielberger & Reheiser, 1995). The effects of job stress include health-related problems, absenteeism, decreases in productivity, long-term disability, burnout and high staff turn-over rates. It has been suggested that the correctional environment is one of the most stressful work environments due to the inclusion of exposure to critical incident stress in conjunction with normal work stress. While the impact of work stress has been studied in the correctional environment (e.g, Lariviere, 2000, Milson, 1999; Rosine, 1992), the scope has been limited to generic work stress measures that do not reflect the nature of the stress that individuals working in a correctional environment are exposed to. The present study explored the types of stressors that correctional staff are exposed to, the perceived impact that these stressors have, and the psychological and physiological impact of being exposed to these stressors. Overall, correctional staff are exposed to a number of stressors that included both workplace systemic stress, offender generated violent incidents and critical incidents. Exposure to these stressors has a negative impact on both the mental and physical health of staff which is reflected in the outcome measures. Psychological well being and social support are found to buffer the effects of stress, particularly under conditions of high stress.

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To my parents, who always asked "are you done yet?" Well, finally I can say "yes"

Lastly, I would like to dedicate this to all the people who work in the field of corrections.

Introduction

Work related stress is increasingly recognized as one of the most serious occupational health hazards (Cummins, 1990; Spielberger & Reheiser, 1995). The effects of job stress include health-related problems, absenteeism, decreases in productivity, long-term disability, burnout and high staff turn-over rates.

Nationwide surveys indicate that 11 million workers report health-endangering levels of work-stress (Sauter, Murphy & Hurrell, 1990). Specifically, 25% reported multiple stress-related illnesses, 69% reported reduced productivity and 53% reported work as their greatest source of stress. Elkin and Rosch (1990) estimated that 54% of all worker absences are in some way stress related. Karasek and Theorell (1990) indicated that overall costs to U.S. industries exceed \$150 million per year when medical costs, lost work and industrial accidents are combined. Wright and Smye (1996) estimated that the overall cost to U.S. business and industry of stressed and demoralized employees is over \$150 billion per year. More recently, Statistics Canada (2001) reported that the direct costs of workplace stress and health challenges translated into 70 million workdays missed by Canadian employees for personal reasons (e.g., illness, disability, personal and family responsibilities) in the year 2000.

Some areas of employment are more stressful than others. For example, working in the field of corrections has been identified by a number of researchers (e.g., Brodsky, 1982; Cheek, 1983, 1984; Cheek & Miller, 1983) as a highly stressful occupation with unusually high negative consequences to health and adjustment. Similar sentiments have recently been expressed by Fisher (2000) who stated that "working in the field of corrections carries an additional set of challenges that are not encountered in other fields...corrections professionals are also at risk for routine exposure to incidents of direct and indirect threat, trauma and abuse" (p.6). Others have also depicted the correctional work environment as one that is dangerous. For example, Ross (1981) stated:

"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 impact of this stress contributes to both physical and mental health problems. For example, in her study on the impact of critical incidents on correctional officers, Rosine (1992) reported that 17% of 122 correctional officers interviewed met the DSM III criteria for PTSD and one-third had physical health problems that were attributed to workplace stress, as defined by their physicians. To bring these numbers into context, it is important to recognize that, at that time, only 1% of the general population met the DSM III criteria for PTSD compared to the 20% of Vietnam veterans who met the DMS III diagnostic criteria for PTSD (Heltzer, Robins & McEvoy (1987). Furthermore, Rosine (1992) reported that

57% of the officers who did not meet the diagnostic criteria for PTSD presented with a variety of PTSD symptoms that varied in number and severity. Rosine (1991) also reported that 42% of the correctional officers reported that they had sought professional help for traumatic stress related health problems. Other psychological problems include depression and, relatedly, an increased risk for suicide. For example, recently, Stack and Tsoudis (1997) reported that institutional correctional officers had a 39% higher risk for suicide than the rest of the working age population.

Although most research on correctional stress has been conducted with correctional officers, a number of studies (e.g., Cheek, 1983; Finn, 2000; Larivierre, 2000; Mailloux & Serin, 2001; Ouimet, 1999) have shown that other correctional staff, such as psychologists and case management officers are involved in serious incidents. Furthermore, Larivierre (2000) reported that case management officers were the most stressed and that all other correctional staff reported equal levels of stress. Combined these studies demonstrate the need to examine the impact of critical incidents and chronic work stress in all correctional staff.

In the present study, the type of stressors that are encountered and their impact were examined across all Correctional Service of Canada staff in the Pacific region who are working in institutional settings. In addition, the factors that moderate the impact of these stressors were investigated. The following

sections review the literature on stress and critical incident stress, the types of stressors that correctional staff are exposed to, reactions to critical incidents and moderators of stress that include individual risk factors, coping, psychological well being and social support.

Definitions of Stress

Stress or stressor refers to any environmental, social, or internal demand that requires the individual to readjust his/her usual behavior patterns (Holmes and Rahe, 1967). As stressors accumulate, an individual's ability to cope or readjust can be overtaxed, depleting their physical or psychological resources, which in turn, increases the probability that illness, injury, or disease or that psychological distress or disorder will follow (Brown & Harris, 1978; Dohrenwend & Dohrenwend, 1974; Lazarus & Folkman, 1984; Pearlin, 1989). The term "stress reaction" refers to the state of physiological or emotional arousal that usually, but not inevitably, results from the perception of stress or demand. Theory generally holds that stressors motivate efforts to cope with behavioral demands and with the emotional reactions that are usually evoked by them (Lazarus and Folkman, 1984).

Alternatively, researchers have suggested that stress is a process. For example, Pearlin and Schooler (1981) have argued that stress is a process through which individuals confront sources of stress, attempt to

adapt to them using personal and social resources and that they may consequently develop more or less enduring health problems as a result of this process. Similarly, Dohrenwend and Dohrenwend (1981) suggested that the element which makes an event stressful is the fact that it entails change.

An important factor that both Lazarus (1969) and Pearlin and Schooler (1981) initially neglected was the role of individual appraisal of the situation. Thus, in 1984, Lazarus and Folkman redefined stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his/her resources and endangering his/her well being" (p.19). Together, these definitions suggest that the factors that constitute an event being labelled stressful are changes in the environment, the individual's appraisal of the situation, and the person's perceived ability to cope with the environment through the utilization of resources, such as social support.

A number of researchers (e.g., Cohen & Williamson, 1991; Kessler, Price and Wortman, 1985; Thoits, 1983) have demonstrated a relationship between the experience of one or more negative life events and subsequent physical morbidity, mortality, symptoms of psychological distress and psychiatric disorder. Thoits (1983) demonstrated that events that were negative or threatening and major or highly disruptive

precipitated psychological distress and more serious forms of psychiatric disorders (e.g., anxiety, depression). Thus, Thoits (1995) emphasized the importance of using multiple outcomes (e.g., physical and mental health) in studying the effects of stress.

The Complex Stress Model

Most recently, Fisher (2000) proposed a new model of stress which directly relates to her research in Corrections, entitled The Complex Stress Model (see Figure 1). The model integrates research from a number of different research areas including, job stress, burnout, workplace sociocultural stress, Post Traumatic Stress Disorder (PTSD), and secondary or vicarious trauma. The model incorporates Fisher's personal experience as a clinician working with high risk service providers.

Fisher's (2000) Complex Stress Model differentiates between two primary sources of stress: those arising from the workplace itself [Factor 1: Workplace Systemic Stress], and those arising from the population with whom the correctional professional is working with (e.g., offenders, parolees, families, victims, etc.) [Factor 2: Workplace Traumatic Stress].

Fisher (2000) stated that Factor 1: Workplace Systemic Stress can be separated into three primary factors:

- 1) **Job Stress:** This factor describes the impact of long term exposure to systemic stressors such as scarce resources, pay issues, conditions of

work, role stress, interpersonal conflict, dysfunctional management styles, etc.

- 2) **Burnout:** Prolonged Exposure to external stress can lead to burnout which has severe impact on the individual's physical, psychological, emotional and functional abilities.
- 3) **Sociocultural stress:** This refers to the workplace effects of negative and hostile cultural attitudes. In particular, the issues of discrimination and sexual harassment in the workplace are now seen as very costly, damaging and stressful to workers and their colleagues.

The second factor of the model is Workplace Traumatic Stress. Fisher (2000) stated that Workplace Traumatic Stress results from contact with the corrections population. In the Complex Stress Model, Fisher identified two types of traumatic experiences:

- 1) **Primary Traumatic Stress:** This refers to the effects on the person of experiencing first-hand traumatic experiences (e.g., assault, threats of violence).
- 2) **Secondary Traumatic Stress (Vicarious Trauma):** This refers to the impact of dealing with traumatic material second hand. It describes the effects of hearing about traumatic, violent and distressing events, and/or of witnessing others being subjected to traumatic experiences.

The long term effects of such second-hand exposure are now

recognized as placing workers at risk for a range of serious traumatic stress effects.

Fisher noted that the relative risk for a critical stress reaction is dependent on a number of static and dynamic factors. Static factors include client type (in this case inmates), work place setting (security level) and work role (occupation type). Dynamic factors revolve around the person and moderate the effects of both workplace systemic stress and critical incidents. These include personal life stress, relationships with co-workers and others (social support), available supervision and consultation, coping skills and strategies, sense of control of environment.

The current study examined the types of stressors that Fisher identified in the Complex Stress Model and its association with physical and mental health problems as well as the role of the static and dynamic factors have in moderating these effects. The next section reviews the types of critical incidents and workplace systemic stress that correctional staff are exposed to.

Critical Incidents

A primary source of stress for individuals working in corrections is exposure to critical incidents or what Fisher (2000) refers to as Workplace Traumatic Stress.

A critical incident refers to a traumatic environmental event that threatens the safety and security of an individual. Although it is not possible to predict all events that will cause critical incident stress reactions, the following incidents have been shown to have a high probability of affecting staff (Hazzan, 1993; Mitchell & Bray, 1990; Rosine, 1992):

- Line of duty death or serious injury of a colleague
- Suicide or attempted suicide by an inmate or colleague
- Excessively violent incidents (e.g., assaults, murders, rapes, incidents involving a great deal of blood)
- Serious injury or death of an inmate
- Mass casualty events
- Events with unusual or disturbing sights, sounds, smells (e.g., riots, burning flesh, body parts)
- Threats to staff or staff's family safety
- Working in potentially dangerous situations (e.g., riot)
- Excessive or unusual media interest or coverage
- Situations where everything goes wrong and there is a negative outcome

- Events that “shouldn’t have happened”- which go against the staff member’s world
- Any other event that evokes unusually strong reactions in those involved in the event

Prevalence Rates of Critical Incidents in Corrections

The prevalence rates of some of the more serious critical incidents in federal corrections in Canada are known. A recent report on major security incidents by Menard (2001) indicated that, in general, most major incidents occur at very low rates. More specifically, the overall rate in the last 5 years has ranged from 5.3 incidents per 1000 offenders to a high of 6.8 incidents per 1000 offenders. With respect to specific incidents, the following information was available: In the last 5 years, no staff have been murdered, 13 staff were assaulted, 22 inmates were murdered (none in fiscal year 2000/2001), 218 offenders were assaulted, 56 offenders committed suicide, 16 major inmate fights, and 46 major disturbances. These figures were based on major security incidents reported to National Head Quarters (NHQ) and recorded in the Offender Management System (OMS) as of March 31, 2001. In light of the information source, these figures are likely underestimates because not all security incidents are recorded in OMS. In addition, the information provided only lists the most serious incidents (e.g., completed suicides) and does not list less serious incidents (e.g., attempted suicides).

Rosine (1992) examined the types of incidents that correctional officers in federal corrections in the Ontario region were exposed to during their careers. Table A presents the percentage of correctional officers who were exposed to the different types of incidents.

Table A. Percentage of correctional officers exposed to critical incidents from Rosine's (1992) study

Incident	Percent
Physical Assault of Other	84
Riots	65
Completed suicide	58
Been physically assaulted	46
Murders	45
Suicide attempts	44
Other (accidents on the job, life threatening letters or phone calls)	41
Potential to shoot another	40
Slashing	35
Hostage taking	34
Been taken hostage	9

More than one-half of the correctional officers had seen the physical assault of another individual, had been involved in a riot or had seen an offender after he committed suicide. In addition, a number of correctional officers had witnessed

an inmate being murdered, suicide attempts by offenders or had been involved in hostage situations.

While Rosine's study explored the impact of these major incidents, a number of serious incidents or factors were not included. For example, being pricked by a needle during a search which creates possible exposure to Hepatitis C, HIV or AIDs, level of threat (e.g. "I'm going to punch you out" vs. "When I get out, I'm coming after you and your family") ; degree of violence in the witnessing or experiencing of an assault (e.g. push/shove vs being stabbed); being investigated for an incident in which there was "use of force". In addition, chronic stressors, such as understaffing, harassment and communication problems also have impact on correctional staff. Lastly, all correctional staff are exposed to a number of stressors, and even if not directly involved, (e.g., in the case of a riot) are impacted by the stressor.

Lusignan (1999) explored the rates of victimization in 167 case management officers,¹ working in federal institutions, and 14 case management officers working at the Institut Phillippe Pinel, who work with violent clients within the forensic and psychiatric settings. Participants were asked to describe two events that he/she experienced directly, two incidents that happened to co-workers and one event that he/she witnessed. Almost two thirds (64%) of the events that staff

¹ Case management officers are currently referred to as Institutional Parole Officers.

reported involved direct violence and threats of violence accounted for an additional 11%.

The security level of the institution can also play a role in the level of exposure to critical incidents. For example, Light (1991) examined 694 cases of assaults involving an inmate and a staff member in New York Prisons. Most (82.3%) of the assaults occurred at maximum security facilities while only 15.3% occurred in medium security facilities and 2.3% occurred at minimum security facilities. Light (1991) reported that the majority of the incidents did not result in serious injury.

More recently, Ouimet (1999) examined the number and type of disciplinary infractions incurred by offenders in Quebec's provincial system in 1996. During this time period, a total of 8,554 disciplinary infractions were incurred. Of those, only 792 (9.3%) involved physical violence and 1,137 (13.2%) involved threats or the use of offensive language, while the remaining disciplinary infractions were for general rule breaking (e.g., non-compliance, possession of unauthorized items). Of the 792 disciplinary infractions that involved physical violence, 162 (20%), involved an altercation between an offender and a staff member. The majority of these incidents involved correctional officers, while a minority were incurred by other staff members including four members of the medical staff, one parole commissioner, one telephone repairman and one psychologist. The specific types of violence included, use of force to over-power an offender (18%), threats (18%), hitting walls, aggressiveness and invitation to fight (16%), the

offender throwing himself at staff (16%), blows, scuffles, bites (11%), pushing or shoving (11%), throwing objects (10%), spitting (7%), intervening in fights between offenders (4%) and scuffles between offenders and staff (3%). These results are consistent with Light's (1991) finding in that only a small percentage of assaults involving an offender and a staff member resulted in serious injury to the staff member.

Most recently, Mailloux and Serin (2001) reviewed all 33 hostage taking/forcible confinement incidents that occurred over an 11 year period (December 1989 to December 2000) in Federal correctional facilities. In total, there were 46 victims, 16 men and 30 women. It was noted that victims occupied various positions at the time of the incidents. The victims included, 13 administrative staff, 8 parole officers, 6 correctional officers, 6 non-CSC employees, 3 teachers, 3 nurses, 3 psychologists and one librarian. These findings demonstrate the need to examine the impact of incidents across all staff.

One area of research on the impact of critical incident stress that has been neglected is the cumulative effect of exposure to multiple incidents. Fisher (2000) noted that continuous, long-term exposure to traumatic material can begin to effect an individual's perception of themselves and their world in fundamental ways. However, this has yet to be studied in a correctional setting.

Another area of research that has only recently received attention is the impact of secondary/vicarious trauma. The issue of secondary/vicarious trauma began receiving attention in the late nineteen eighties and mid-nineties, particularly in the field of trauma therapy (Figley, 1983). Treatment of survivors of trauma had become widespread and practitioners and researchers were recognizing the personal toll this type of work was having on them. It was noted that many therapists were exhibiting symptoms of PTSD, despite not being exposed to primary trauma, hence the term secondary trauma was coined. Figley (1993) defined secondary traumatic stress as “ the natural consequent behaviors and emotions resulting from knowing about a traumatizing event experienced by a significant other—the stress resulting from helping or wanting to help a traumatized or suffering person” The premise is that if a person holds the capacity for empathy, he or she will experience distress when hearing about dreadful things that have happened to others. Thus secondary trauma has also been defined as “the cost of caring” (Figley, 1995).

Significant rates of secondary/vicarious trauma have been found in law enforcement professionals, rape researchers, emergency workers and hospital staff (Follette, Polusny & Milbeck, 1994; Dyregrov & Mitchell, 1992; Genest, Levine, Ramsden & Swanson, 1990; Lyon, 1993; Raphael & Wilson, 1994). Fisher (2000) noted that corrections staff are often exposed to the types of material that results in secondary trauma. The stories of the inmates, parolees,

and their families, the accounts of their offences, and the ongoing stories of abuse and intimidation-are frequently traumatic, violent, brutal and tragic.

It should be noted that the physiological and psychological symptoms associated with PTSD from primary trauma are the same for individuals exposed to secondary/vicarious trauma. Figley (1993) outlined the distinctions between primary and secondary traumatic stress disorder. The distinctions are outlined in the table below.

Primary	Secondary
A. Stressor	A. Stressor
Experienced an event outside the range of usual that would be markedly distressing to almost; an event such as:	Experienced an event outside the range of usual that would be markedly distressing to almost; an event such as:
1. Serious threat to self	1. Serious threat to Traumatized Person (TP)
2. Sudden destruction of one's environment	2. Sudden destruction of TP's environment
B. Reexperiencing Trauma Event	B. Reexperiencing Trauma Event
1. Recollections of event	1. Recollections of event/ TP
2. Dreams of event	2. Dreams of event/TP
3. Sudden reexperiencing of event	3. Sudden reexperiencing of event/TP
4. Distress at reminders of event	4. Distress at reminders of TP/event

C. Avoidance/Numbing of Reminders	C. Avoidance/Numbing of Reminders
1. Efforts to avoid thoughts/feelings	1. Efforts to avoid thoughts/feelings
2. Efforts to avoid activities/situations	2. Efforts to avoid activities/situations
3. Psychogenic amnesia	3. Psychogenic amnesia
4. Diminished interest in activities	4. Diminished interest in activities
5. Detachment/estrangement from others	5. Detachment/estrangement from others
6. Diminished affect	6. Diminished affect
7. Sense of foreshortened future	7. Sense of foreshortened future
D. Persistent Arousal	D. Persistent Arousal
1. Difficulty falling/staying asleep	1. Difficulty falling/staying asleep
2. Irritability or outbursts of anger	2. Irritability or outbursts of anger
3. Difficulty concentrating	3. Difficulty concentrating
4. Hypervigilance for self	4. Hypervigilance for TP
5. Exaggerated startle response	5. Exaggerated startle response
6. Physiologic reactivity to cues	6. Physiologic reactivity to cues

Other Sources of Stress in the Correctional Environment

Fisher (2000) noted, there are two types of work stress that correctional staff are exposed to, workplace traumatic stress (as discussed above) and workplace systemic stress. This section explores the types of workplace systemic stress that correctional staff are exposed to.

Finn (2000) identified sources of stress, other than workplace traumatic stress, among correctional officers, most of which can be generalized to all correctional staff. These sources of stress include organizational related conditions such as, understaffing, overtime, shift work and supervisor demands. Finn also included work-related sources of stress such as inmate demands and manipulations and problems with co-workers. In addition to these sources of stress, people working in corrections are faced with a poor public image.

Finn (2000) noted that understaffing can create different kinds of stress, such as lack of time to complete required tasks, working at high speed for prolonged periods of time, an inability to get time off for special occasions or family crisis, and the need for extensive overtime among remaining staff. All of these stressors can and do occur to all correctional staff. Although their research was not done with correctional staff, Brown and Cooper (1996) examined occupational stress among senior police officers. Five-hundred senior police

officers filled out a 61-item stress scale. The top 10 stressors for the senior police officers were related to the organizational structure (similar to Fisher's workplace systemic stress) and included staff shortages, high turnover rates, insufficient finances or resources, lack of consultation/ communication and too much paperwork. These findings are similar to Finn's (2000) identified stressors for correctional officers.

Some researchers (e.g. Barr, 1984; Karger, 1981) have also argued that a source of stress for human service providers stems from the struggle that occurs between the need to promote well being for clients and trying to cope with the policies and structures in the human delivery system that tend to stifle empowerment and well being.

Although, the rate of actual inmate violence towards staff is quite low, the perception of danger, would seem to be an important source of psychological stress. Chronic exposure to such perceived danger, even when successfully avoided has an impact on physical and mental health (Holt, 1993). This is reflected in Finn's (2000) research, where it was reported that correctional officers identified the threat of inmate violence against staff as a source of stress more frequently than any other single feature of their occupation. These results demonstrate the importance of examining perceived and actual threats among correctional staff.

Offender demands and manipulations have also been identified as a source of stress. Finn (2000) noted that many officers find the constant demands and attempts at manipulation by offenders to be stressful (e.g., asking for cigarettes, extra food). When an offender is successful at a manipulation, the situation becomes more stressful. It should be noted that offenders not only try to manipulate correctional officers, they also try to manipulate case management teams, kitchen staff, psychologists, healthcare staff, chaplaincy and administrative staff. The stressful effects of being manipulated by an offender are just as devastating for these staff as they are for correctional officers.

Other staff members have also been identified as a source of stress. For example, Marston (1993) reported that 22% of staff viewed other staff as creating more stress than any other single factor. The following four conditions appear to precipitate stress among coworkers: (1) burned out coworkers repeatedly venting their frustrations to their coworkers; (2) officers competing for limited choice assignments; (3) apprehension that coworkers will refuse to back them up in a confrontation with offenders, are too inexperienced to know how to help out, or do not have the physical or emotional strength to be effective and (4) inappropriate officer behavior towards offenders (e.g., being too friendly, bringing in contraband, using unnecessary force).

Finn also interviewed lieutenants² within the state department. These are the officers who supervise all of the officers and keep management apprised of incidents when they occur. These officers reported that they make the critical decisions and are the highest ranking person for two out of three shifts during the week and on the weekends, yet, on Monday morning, “someone is Monday morning quarterbacking you”, your decisions are scrutinized and they can be life and death decisions.

While most of the research has focussed on front-line staff, it is important to recognize that managers also experience a significant level of stress. Wardens, deputy wardens, and other prison administrators have to be available 24 hours a day, 7 days a week, carrying pagers and cell phones. Stressful issues that management contend with include adversarial labor relations, staff hostility or mistrust, pressure from central administration, political scapegoating, and media exposure. In addition, top-level administrators are reluctant to share their feelings of uncertainty, helplessness or inadequacy with anyone for fear of appearing weak, incompetent or indecisive (Finn, 2000).

Summary

Fisher (2000) indicated that there are two sources of stress that correctional staff are exposed to: workplace traumatic stress and workplace systemic stress. A review of the literature indicates that critical incidents occur in all security settings

² A lieutenant in a state prison is a correctional supervisor in Canadian federal corrections.

to staff occupying a variety of positions. The nature of the incidents range from being verbally threatened, to witnessing violent incidents and/or seeing dead bodies. Exposure to secondary trauma has recently received recognition as having a similar impact on individuals as on those that have experienced the trauma directly.

As noted earlier, Fisher (2000) also identified workplace systemic stress as a having a negative outcome on staff. Workplace systemic stress includes understaffing, overtime, dealing with unrealistic demands of staff and inmates, and communication problems.

Both workplace systemic stress and workplace traumatic stress impact staff. The next section review the literature on the reactions to these types of stressors.

Reactions to Stress and Critical Incidents

The study of traumatic stress in the workplace is a relatively new area of research. In the 1980's clinicians began to recognize that public safety personnel were presenting with symptoms of PTSD. As a function of their responsibilities, emergency and public safety personnel are exposed to a number of extremely unusual and traumatic events. A number of researchers (e.g., Brodsky, 1982; Cheek, 1983; Cheek, 1984; Cullen, Link, Wolf & Frank, 1985; Rosine, 1992) suggested that this chronic, or sometimes acute, exposure to critical incidents contributed to, if not caused, a number of physical, behavioral, emotional, and cognitive difficulties in front-line personnel.

In their review of the literature on responses to trauma, Rundell, Ursano, Holloway and Silberman (1989) found that reactions to trauma range from little or no reaction to a variety of psychiatric disorders. For purposes of this study, the following reactions to stress and critical incidents will be discussed, Critical Incident Stress Reactions (CISR), Post Traumatic Stress Disorder (PTSD), burnout and health related problems.

Critical Incident Stress Reactions

Critical incident stress reactions (CISR) are the unpleasant thoughts, feelings and emotions experienced both during and after a critical incident (Rosine, 1995). CISR reactions can be physical, cognitive, emotional or behavioral and can occur during the incident and/or immediately after the incident and/or sometime later. The duration of the symptoms can be short (a few hours/day) or for a prolonged period of time (e.g., weeks, months).

Most individuals exposed to a critical incident will experience some stress reactions, but these are usually temporary and subside within a few days or weeks. For example, Mitchell (1985) reported that more than 86% of emergency personnel will experience either an acute or delayed stress reaction post-incident with symptoms subsiding over time. With respect to corrections, Rosine (1992) reported that 74% of correctional officers reported symptoms post-incident.

PTSD

A more severe form of stress reaction is referred to as Post Traumatic Stress Disorder (PTSD). According to the DSM-IV-TR (2000),

“the essential feature of PTSD is the development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or threatened death or serious injury; or other threat to one’s physical integrity; or witnessing an event that involves death injury; or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate”.

In addition, the person's response to the event must involve intense fear, helplessness or horror.

A constellation of symptoms are associated with PTSD. The symptoms include persistent re-experiencing of the traumatic event, persistent avoidance of the stimuli associated with the trauma, numbing of general responsiveness and symptoms of increased arousal. In addition to these symptoms, in order to meet the diagnostic criteria for PTSD, the symptoms have to last for more than one month and the disturbance must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

The severity, duration, and proximity of an individual's exposure to the traumatic event are the most important factors affecting the likelihood of developing this disorder (APA, 2000).

From an epidemiological perspective, PTSD occurs in approximately 8% of the adult population in the United States (APA, 2000). Interestingly, this is considerably higher than the 1% prevalence rate that was reported in the DSM III. This increase is likely due to the inclusion of secondary/vicarious trauma as part of the diagnostic criteria for PTSD.

Research on the impact of critical incidents on correctional staff is limited. However, available research indicates that all correctional staff are

exposed to serious incidents and the physical and emotional impact can be serious. In addition, as noted in the DSM IV-TR, secondary or vicarious trauma also has negative psychological effects. The following studies explored these issues.

Using the DSM III-R criteria for PTSD, Rosine (1992) reported that 17% of the correctional officers in her study met the diagnostic criteria for PTSD, compared to only 1% of the general population. In addition, 57% of the officers reported some PTSD symptoms. Post incident symptoms included sleep disturbances (51%), nightmares (43%), intensification of their symptoms when exposed to reminders of the event (32%), difficulty concentrating (30%), avoidance of activities that aroused recollections of the event (30%) a numbing general responsiveness (22%), and flashbacks (15%).

Lusignan (1999) explored the rates of victimization in 167 case management officers³ working in federal institutions and 14 case management officers working at the Institut Phillippe Pinel who work with violent clients within the forensic and psychiatric settings. Participants were asked to describe two events that he/she experienced directly, two incidents that happened to co-workers and one event that he/she witnessed. Almost two thirds (64%) of the events involved direct violence

³ Case management officers are currently referred to as Institutional Parole Officers.

and threats accounted for additional 11%. The impact of these events was quite severe as the overall prevalence rate of PTSD was 16%. Of those who met the criteria for PTSD, 83% were directly victimized and 17% were indirectly victimized (also known as vicarious trauma). These results are consistent with the DSM IV-TR which indicates that the closer one is to a traumatic incident, the more likely he/she will develop PTSD. It also demonstrates the impact of secondary trauma as almost one-fifth of the PTSD cases only had indirect exposure to a traumatic incident.

Lusignan (1999) also examined the impact that these experiences had in their professional practice. A number of case management officers (CMO) reported that they were concerned about not being fair with other offenders and that they wanted to avoid the offenders who victimized them. Lusignan concluded that "the impact of victimization on worker's clinical practice suggested more awareness of research to explore" (p.38). One of the shortcomings of this study relates to the participation rates. Initially, 271 CMOs were asked to participate, however only 167 (61%) participated. The lowest response rate was from CMO's who worked in a maximum security facility, which represent the institutions that are most likely to have serious incidents involving violence. Thus, the rates presented here are likely underestimates of rates of violence. The impact, particularly levels of PTSD may also be an underestimate, as maximum

security institutions are more likely to multiple incidents which would also involve multiple staff.

Seidman and Williams (1999) used the Offender Management System (OMS) to identify 52 survivors of forcible confinements and hostage takings that occurred between 1985 and 1995. They were able to contact 32 (62%) of the individuals involved and of these, 27 (84%) participated in the study. One third of the survivors were correctional officers, while the remainder survivors were a psychologist, clerk, teachers and librarians. The most frequently expressed emotions were shock, anxiety, frustration, vulnerability, humiliation and isolation. The authors pointed out that incidents such as forcible confinements and hostage taking are rare occurrences, with an average of about four per year. Thus, the results are not generalizable to prison staff in general. Further, these incidents do not occur in isolation of other serious incidents and the combination of less serious incidents and these incidents may have a greater impact. Also of concern is the lack of information on the 50% (27) of the survivors who did not participate in the study because they could not be located or they refused to participate.

More recently, Lavack-Pambruns (2002) examined whether nurses working at a correctional setting are at risk for developing PTSD symptomatology. Using a sample of 77 federal corrections nurses from

the Prairies region, it was found that the frequent and distressing events revolved around offender's verbal abuse. Correctional nurses are frequently exposed to traumatic events and are at risk for developing PTSD. In fact, utilising the impact of events scale, 37% of the sample of nurses showed a stress reaction. It is also interesting to note that these nurses scored higher on the global severity index of the Brief Symptom Inventory (BSI) than the non-patients who were rated when the BSI was validated, suggesting that these nurses are experiencing significant levels of psychological distress.

Overall, existing research on the prevalence rate of PTSD among correctional staff exposed to critical incidents is significantly higher than the general population. Results from existing studies also point to the need to explore the impact that incidents have on staff.

Predicting who develops PTSD following a critical incident has not been examined in a correctional setting. However, inferences from combat research can be made. In terms of type of combat, and its relation to the development of PTSD, several researchers have suggested that being wounded is one of the most harmful stressors that a soldier can experience while in combat (e.g., Foy et al., 1987). Other studies of combat veterans have found that the degree of combat exposure, involvement in atrocities, and being wounded, are also predictive of poorer

adjustment (Barrett & Mizes, 1988; Breslau & Davis, 1987; Foy et al., 1987; Haley, 1974; Helzer, Robins, McEvoy, 1987; Hendan & Haas, 1984; Van Putten & Yager, 1984).

Palikas and Coben (1987) replicated these findings when they compared marines who were wounded to marines who were not wounded in the Vietnam war. They found that marines wounded in Vietnam were at a significantly increased risk for having a psychiatric disorder. Although these results were expected, closer examination of the data revealed a somewhat different picture. For example, the prevalence of situational maladjustment was 3.2% for the wounded and 1.9% for the non-wounded. The prevalence of nervousness and debility was .3% versus .1% respectively. The similarities suggest that while being wounded is associated with increased distress, other combat experiences also cause a significant level of distress. This is further supported by the work of Solomon, Benbenishty and Mikulincer (1988), who found that no single combat experience was found to have a significant relation to PTSD.

More recently, a great deal of research has spawned out of the Persian Gulf War. Despite the fact that the Persian Gulf War was believed to have few adverse consequences for military personnel, anecdotal and clinical reports from soldiers suggest that the soldiers were exposed to a number of traditional and novel stressors (Wolfe, Brown & Kelley, 1993). Perconte,

Wilson and Pontius (1993) examined the incidence of war-related psychological distress among Persian Gulf War veterans. Compared to non-deployed groups, combat deployed groups reported higher mean scores on the Mississippi Scale for combat related PTSD, the Beck Depression Inventory (BDI), and the General Symptom Index (GSI) of the Symptom Checklist (SCL90). A war stress rank order relationship was found with Mississippi scores and GSI scores, but not BDI scores, which suggested that the higher the level of stress, the higher the Mississippi and GSI scores were.

Wolfe et al. (1993) conducted a study with 2,344 Gulf War Veterans to determine the effects of combat exposure. Utilising the Mississippi scale for combat related PTSD, they found that 4% of men and 9% of women scored above the 89 point cut-off necessary to meet criteria for the diagnosis of PTSD. The mean score for the sample was 62.3 with a standard deviation of 13.5. They found a moderate but significant relationship between the number of combat items endorsed and the PTSD checklist total. What made this study interesting is that demographics not previously studied were also investigated. The demographics found to be predictive of poorer psychological outcome included: (1) gender, (2) lack of college education, (3) low non-officer rank, and (4) marital separation or dissolution.

When the combat scale was factor analysed, it was found that exposure to the grotesque, and extensive contact with the dead and dying, contributed the most to psychological symptomatology. This finding is consistent across other studies and other stressors (Green, Lindy, Grace, & Glesser, 1989; Ursano and McCarroll, 1990; Yehuda, Southwick & Giller, 1992). Together, these findings of this study substantiated the notion that in order for a valid model of post-trauma outcome to be developed, one has to look at the social, environmental, and personal characteristics of an individual (Wolfe et al., 1993).

Individuals who have PTSD also often have a concurrent disorder. Rundell et al. (1989) report ranges of estimates of the frequency with which individuals with PTSD have currently received one of the following diagnoses: alcoholism (41-80%), substance abuse (16-50%), depression (8-72%), anti-social personality (3-40%), social phobia (up to 50%) and bipolar disorder (10-25%). With respect to correctional staff, Rosine (1992) reported that the correctional officers in her study had significantly higher scores on the general severity index, positive symptom distress index and the positive symptom total on the Brief Symptom Inventory (BSI) compared to a non-patient normal sample. These studies show the importance of examining multiple indices of adjustment.

Summary

Two of the most common reactions to exposure to traumatic incidents are critical incident reactions and Post Traumatic Stress Disorder (PTSD).

PTSD symptoms include nightmares, flashbacks, intrusive images of the traumatic event, heightened arousal and difficulties concentrating. Using the most current criterion for PTSD as outlines in the DSM IV-TR, the prevalence rate is 8% for the general population.

Rosine (1992) found a PTSD prevalence rate of 17% in the correctional officers that she interviewed. Similarly, Lusignan (1999) found a 16% prevalence rate of PTSD in his sample. These findings suggest that the impact of critical incidents can be severe and needs to be explored further.

Rosine also reported that 57% of the officers she interviewed had some PTSD symptom which would likely impair their ability to work, with one possible impact being increased burn out. The next section reviews the literature on burnout.

Burnout

In addition to the development of psychopathology, chronic work stress and critical incidents can also lead to burnout. While job stress describes the stresses associated with the workplace, burnout can be seen as the clinical result of the prolonged and gradual exposure to job stress (Courage & Williams, 1986). The concept of burnout was introduced in the 1970s by Freudenberger (1974) and Maslach (1976).

A review of the literature indicates that there are three common definitions of burnout. Freudenberger (1980) defined burnout as “a state of fatigue or frustration brought about by devotion to a cause, way of life, or a relationship that failed to produce the expected reward.” In 1982, Maslach defined burnout as “a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur within individuals who do “people work” of some kind. It is assumed to be progressive over time and accelerates as a consequence of increased client contact. Maslach views burnout as a failure to cope successfully with the chronic stress of client contact. The contact is considered to be stressful because it centers on emotionally charged problems that are often very difficult or impossible to solve. More recently, Pines and Aronson (1988) defined burnout as a “state of physical, emotional, and mental exhaustion caused by long term involvement in emotionally demanding situations.

Maslach and Jackson (1981) identified three dimensions of burnout, emotional exhaustion, depersonalization and lack of personal accomplishment. Emotional exhaustion refers to the situation where workers become worn out and are unable to give of themselves on a psychological level. Depersonalization refers to the development of negative, cynical attitudes and feelings towards clients. A lack of personal accomplishment refers to the tendency of workers to evaluate their work negatively and to feel that their objectives are not being met.

Although there is some variability in the definition of burnout, a common theme in the description of burnout is that it is the end result of a process in which highly motivated individuals lose their spirit. Consistent with Maslach and Jackson (1981), Pines (1993) suggested that burnout occurs most often among those who work with people and results from emotional stress that arises during the interaction with them. It was further suggested that burnout can only be experienced by people who entered their careers with high ideals, motivation and commitment.

Burnout occurs frequently and across a number of professions including physicians (Hosmer Mawardi, 1983; Pines, 1981), nurses (Pines, 1992), managers (Etzion, Kafry, & Pines, 1982; Hallsten, 1990), police officers (Jones, 1981; Maslach & Jackson, 1985; Rogers 1994), teachers (Maslach & Pines, 1977; Sakharov & Farber, 1983), lawyers (Maslach & Jackson, 1978), social

workers (Jayarantne & Chess, 1983; Pines & Kafry, 1978), mental health workers (Pines & Maslach, 1978) psychotherapists (Farber, 1983) and sex offender therapists (Ellerby, 1998).

Burnout is frequently accompanied by physical, emotional, behavioral problems and interpersonal problems (Freudenberger, 1990; Kahill, 1986; Ross, 1993; Ryan, 1990). Physical symptoms include physical exhaustion, headaches, backaches, stomach problems, insomnia, colds and flu. Other physical symptoms that can occur include flare-ups of pre-existing medical disorders (e.g., diabetes, high blood pressure, asthma), and muscular pain. In addition, there are increases in the consumption of products such as alcohol, caffeine, tobacco, over the counter medication, prescription and illicit drugs. Increased consumption of these products can have deleterious effects on the physical and mental health of the individual.

Emotional symptoms include problems such as chronic fatigue, anger, impatience, irritation, depression, anxiety, lack of motivation, feeling overwhelmed, helpless, guilt and emotional/spiritual depletion. From an existential viewpoint, burn out is also related to the loss of the emotional meaning of work.

Behavioral problems include frequent use of alcohol, drugs, tobacco or food, aggression, callousness, pessimism, defensiveness and cynicism. Interpersonal

problems include difficulties empathizing with clients, inability to concentrate focus on others, withdrawing from clients and co-workers, reluctance to socialize, difficulties getting to work and loss of intimacy with family and friends.

Burnout has negative effects for both the individual experiencing it and the organization in which the individual works. For the individual, burnout is accompanied by a constellation of physical, emotional and attitudinal symptoms (Pines, 1993). Physical symptoms lead to an increase in the use of sick leave and employee absenteeism. The latter of which puts extra strain on the individual(s) who have to work overtime to cover the missed shifts or do extra work.

While the impact of physical symptoms can be seen readily (e.g., absenteeism due to sick leave), the impact of emotional symptoms is more subtle. Emotional symptoms tend to be reflected in the individual's attitude towards work, which Pines (1993) refers to as attitudinal symptoms. Attitudinal symptoms include negative and cynical attitudes towards work, clients, colleagues, supervisors and the organization as a whole. Pines indicated that these negative attitudes can lead to feelings of isolation and increase conflicts among staff members and between staff and administration.

Within the context of the work environment, signs of burnout include low morale, absenteeism (especially sick leave), tardiness, a decrease in the average length

of stay on the job, high job turnover, increased accidents on the job and poor performance (Pines, 1993). Maslach and Pines (1979) pointed out that there could also be a decrease in the quality of services delivered to the people who need it the most. In the case of corrections, this means that the offenders are most likely to be affected, which in turn can result in an increase in the number of complaints and/or grievances filed against staff.

Interestingly, a number of researchers (e.g., Cox, 1990; Golembiewski, 1982; Pines, 1982; Winbust, 1990) have shown that organizations that are similar in function, structure, size and resources can have different levels of worker burn-out. The degree of burnout depends on such factors as work relationships, availability of social support, degree of autonomy, manageability of the workload, and bureaucratic and administrative interference in the workplace (Pines, 1993).

Variables that facilitate or prevent the burn-out process can be grouped into four factors, psychological, physical, social and organizational (Pines, 1982).

Psychological factors include aspects of the job that affect worker's emotional well-being (e.g., sense of meaning and opportunities for personal growth) as well as cognitive stimulation (e.g., variety, underworked or overworked). Physical factors include the physical environment (over crowding, noise levels) and the flexibility to change. Social factors include relationships between coworkers and between coworkers and supervisors. Organizational factors include bureaucratic hassles, administrative rules and regulations and role conflict. Kanner, Kafry and

Pines (1978) indicated that in order to help workers effectively cope with feelings of burnout, organizations need to minimize stressful work features and maximize positive work features.

Within the context of corrections, there are some indicators that correctional staff occupying a variety of positions are experiencing burnout. For example, Rosine (1992) reported that 63% of the correctional officers in her study had taken unplanned leave in a period of three months. Given that increased sick leave is associated with burnout, it is possible to make an inference that at least some of the officers were experiencing burnout.

In his study on burnout and compassion fatigue in the providers of sex offender treatment, Ellerby (1998) reported that 31% of the 690 treatment providers scored in the high range for emotional exhaustion and 44% scored in the high range for depersonalization. Overall it was noted that about one fifth of the treatment providers were in the moderate to high risk range for burnout and approximately half were high risk for compassion fatigue.

Summary

Burnout has three components: emotional exhaustion, depersonalization and a decrease in a sense of personal accomplishment. Burnout has a widespread impact on both the individual and the organization that he/she works for. As

noted, both PTSD and burnout can impact a person's physical health. The next section reviews the literature on the impact of stress on physical health.

Physical Health

As noted earlier, stressful events not only impair psychological health, they have also been implicated in the development of numerous health problems. Among the factors affecting individual vulnerability to all types of disease, the following have been highlighted by recent research: recent and early life events, chronic stress and allostatic load, personality, psychological well being, health attitudes, and behavior (Fava and Sonino, 2000). Fava and Sonino (2000) noted that events and situations in a person's life which are meaningful to him or her may be followed by ill health, this is a common clinical observation. For example a number of studies (e.g., Sonino & Fava, 1998; Sonino, Fava and Boscaro, 1993) have substantiated the link between life events and endocrine conditions, cardiovascular disease (Rozanski, Blumenthal & Kaplan, 1999) and asthma (Wright, Rodriguez & Cohen, 1998). This section reviews the literature on the relationship between stress and physical health problems.

Sibai, Armenian and Alam (1989) found objective health differences associated with traumatic exposure. They found that individuals exposed to war related stress had more severe coronary disease.

Shalev, Bleich and Ursano (1990) compared 50 combat veterans with chronic PTSD with 48 matched controls combat veterans without PTSD. Both groups were evaluated on symptom reports, physical examination and laboratory tests. The PTSD group reported more symptoms but did not differ on the objective test (physical exam and lab tests). However, adverse health practices such as smoking, alcohol use, and deregulation of food intake, were significantly more frequent among the PTSD groups.

McFarlane, Atchinson, Rafalowicz and Papay (1994) noted that physical complaints are associated with PTSD. They reported that firefighters with PTSD had statistically higher rates of cardiovascular, respiratory, musculoskeletal and neurological symptoms than firefighters who did not have PTSD.

In their review of the literature, Friedman and Schnurr (1995) concluded that there is good evidence for increases in self-reported health problems, morbidity, service utilization and mortality following exposure to trauma.

Recently, Schnurr, Spiro, Aldwin and Stukel (1998) examined the relationship between exposure to traumatic events and physical health problems over three decades, among a sample of male veterans as part of the Boston VA Normative Age Study. They found that veterans who experienced both combat related traumatic events and non-combat related traumatic events reported a significant increase in reported health problems.

More recently, Wagner, Wolfe, Rulnitsky, Proctor and Erickson (2000) examined the relationship between PTSD symptoms assessed immediately upon returning from the Gulf war and self reported health problems 18 to 24 months later in a sample of 2301 Gulf War veterans. The presence of PTSD symptoms was predictive of self-reported health problems over time, even after the effects of combat exposure were removed from the analyses. The authors concluded that the findings provide further support for the notion that the psychological response to a stressor impacts health outcomes.

The inconsistencies between self-reported health problems and actual physical examination reports have led some researchers (e.g., Solomon, Mikulincer and Kotler, 1987) to speculate that PTSD symptoms may lead to an increase in behaviors that could compromise health such as alcohol and drug use. There appears to be some support for this speculation. Recently, McDonald, Wells, and Wild (1999) examined the extent to which a large number of occupations are associated with alcohol and drug problems. They found that individuals exposed to dangerous conditions, which would increase the risk for PTSD, drank more frequently and were more likely to use other substances than those who were not exposed to dangerous conditions.

To date, there has only been one study that examined the relationship between the types of stressors that correctional staff are exposed to and the impact it has

on their physical health. Rosine (1992) reported that 42% of the correctional officers indicated that they had sought professional help for traumatic stress related health problems. Their physicians reported that 34% of the correctional officers suffered from stress related problems that required medical attention. Of these officers, 18% were considered to by their doctors to have a serious problem, 78% a moderate problem and 9% a mild problem. For 41%, the problems were considered serious enough to interfere with daily living and 59% required medication. The physicians also indicated that one half of the stress related health problems that the officers were experiencing stemmed from exposure to a traumatic event.

Although a direct relationship between experienced stress and health issues was not examined in the 1996 CSC staff survey, it is possible to make an inference based on the results of the health and lifestyle section of the survey and stress. In the 1996 survey, Robinson, Lefaive and Muirhead (1996) reported that 52% of the staff reported that they were feeling stressed about their job. With respect to their physical health, 50% of the staff reported that they use over-the-counter painkillers, and 25% reported using ant-acids. Of some concern is the reported use of alcohol among correctional staff which was 85% with 8% reported having had more than 5 drinks on one occasion 10 or more times in the last 3 months, suggesting that some staff may have a significant drinking problem.

Summary on Health

A number of studies have shown a relationship between the experience of traumatic incidents and subsequent physical illness . A number of studies have also shown that exposure to traumatic incidents can have a negative impact on health behaviors, particularly with respect to tobacco, alcohol and illicit drug use. Results from Rosine's (1992) study and the 1996 CSC staff survey suggest that staff working for CSC may be experiencing stress related illness. However, this issue needs to be explored further with a variety of staff and a number of different stressors.

Summary of Impact on Stressors

Research has shown that exposure to critical incidents has been associated with CISR, PTSD and physical health problems. It can also impair one's ability to work and may be associated with burnout. A limited number of studies on correctional staff suggest that the prevalence rate of PTSD among correctional staff may be twice as high as it is in the general population. The burnout rate is also higher for correctional treatment providers compared to non-correctional treatment providers. A number of variables (e.g., coping, social support and psychological well being) have been shown to buffer the effects of stress. As Fisher (2000) noted, there are a number of static and dynamic factors that moderate the effects of stress. The next section reviews the literature on moderating variables.

Moderators of Stress

There are a number of variables that are thought to influence the degree to which exposure to traumatic stimuli impact on an individual, namely, traumatic experience risk factors, individual risk factors, coping, social support and psychological well being. This section reviews the literature on these moderators of stress.

Traumatic Experience Risk Factors

Traumatic risk factors identified as important in mediating the psychological reactions to stress include the degree of terror and horror experienced, the unexpectedness of stressors, continued threat before and after the disaster, the ratio of loss to availability of resources, potential for prolonged alteration of the post-disaster environment, whether the disaster was natural versus man-made, and the cultural or symbolic aspects of the event (Baum & Davidson, 1985; Bolin, 1985; Green, 1985).

The severity of the injury sustained and the dangerousness of the incident have been found to increase the risk of developing PTSD (Abenhaim, Dab & Salmi, 1992; Bownes, O'Gorman & Sayers, 1991). The frequency with which individuals are exposed to trauma is also predictive of PTSD. For example, van der Kolk, MacFarlane & Weisaeth (1996) reported that repeated exposure to

trauma is more likely to overwhelm the individual's coping responses than a single experience. Furthermore, the intensity and duration of the traumatic event has been found to increase the risk for developing PTSD (Basoglu et al. 1994; Goldberg et al., 1990; McFall, MacKay, & Donovan, 1991).

Individual Risk Factors

The literature on individual differences prior to exposure to trauma is quite controversial, with some studies indicating that pre-trauma characteristics are unimportant (Barrett & Mizes, 1988; Foy et al., 1987) while other studies indicate that they are important (McFarlane, 1988). Kolb (1987) suggested that a history of earlier trauma may predict poorer adjustment to subsequent traumatic events. It may be that traumas have a cumulative effect. It may also be that the successful resolution of one traumatic event may predict better adjustment to a subsequent, different type of trauma (Silver, Wortman, & Klos, 1982). Some of the individual risk factors that have been examined are age, gender, education and experience. Below is a brief review of these variables.

Age. The relationship between age and work stress has yielded contradictory results. For example, Lasky, Gordon, and Srebalus (1986) found a significant positive relationship between officer age and reported levels of work stress with older officers reporting feeling more stressed than younger officers. In contrast, Gernstein, Topp and Correll (1987) reported that age was unrelated to stress levels as measured by total

exhaustion scores and number of bad day scores. However, others (e.g., Lindquist & Whitehead, 1986; Blau, Light & Chamlin, 1986) have reported that older officers adapt to the correctional environment and report lower levels of stress than younger officers. In a study on correctional officer stress, Milson (1999) reported that there was no relationship between age and job stress.

Gender. The relationship between gender and work stress has also yielded contradictory results. In their study on stressors in correctional officers, Cullen, Link, Wolfe and Frank (1985) found that female officers reported significantly higher levels of work stress than male officers. In contrast, Gross, Larson, Urban and Zupan (1994) reported that female and male officers experienced similar levels of stress as measured by self-reported questionnaires and blood pressure, an objective measure of stress. Hurst and Hurst (1997) examined gender differences in mediation of severe occupational stress among correctional officers. Their results indicated that, although male and female officers cope with stress in different ways, there was no difference in how they were affected by occupational stress in terms of emotional exhaustion, depersonalization and personal accomplishment. However, Baum and Grunberg (1991) reported that women are more likely than men to experience overload and burnout, due primarily to the multiple conflicting demands on time and

resources. In a study on correctional officer stress, Milson (1999) reported that there was no relationship between gender and job stress.

Education. The relationship between education and reported stress levels are also mixed. A number of studies have shown that there is no relationship between education level and stress. For example, Blau, Light and Chamlin (1986) reported that correctional officers with little or much education did not differ in terms of rated stress levels. Similarly, Lasky, Gordon and Srebalus (1986) found that educational level was unrelated to reported levels of stress. Likewise, Linquist and Whitehead (1986) reported that education level did not significantly predict job stress.

However, other studies have shown that there is a relationship between education and stress. For example, Grossi and Berg (1991) showed that officers with more education tend to be more satisfied and less stressed by their work. In contrast, Robinson, Porporino and Simourd (1997) showed that correctional officers who obtained some post-secondary education were more stressed than university graduates and officers who had completed high school. Consistent with Robinson et al. (1997), in his study on correctional officer stress, Milson (1999) reported that there was a negative relationship between education and job stress.

Correctional Job Experience. Results on the relationship between experience on the job and stress have also been mixed. Some researchers (e.g. Lasky, Gordon & Srebalus, 1986; Cullen et al. 1985) reported that years of experience was positively related to job stress, while others (e.g., Dignam, Barrera & West, 1986; Gerstein, Top & Correll, 1987; Milson, 1999) found no significant relationship between length of employment and job stress. More recently, Grossi, Keil and Vito (1996) reported that experience had a significant positive effect on role stress, but was not related to work stress.

Summary

Research on individual risk factors such as age, gender, education and experience have yielded mixed results. The findings of the studies listed above studies listed above are limited in generalization because they have only examined these relationships with correctional officers, used generic work stress measures and did not utilize specific outcome measures (e.g., PTSD measure).

Neuroticism

A number of researchers have examined the role of personality features as mediators on the effects of stress and subsequent development of a variety of psychological disorders (e.g., McCranie and Brandsma, 1988; Park, 1998; Van Os, Park & Jones, 2001). Specifically, the trait of neuroticism has been associated with negative outcomes. It has been found that people scoring high

on neuroticism tend to experience negative emotions such as anxiety, depression and anger and are likely to appraise stressful situations as threats rather than challenges (Costa & McCrae, 1985; Eysenk, 1982; Gallagher, 1990). Below is a brief review of the neuroticism literature in relationship to negative outcome from exposure to occupational stress.

Hills and Norvell (1991) examined the relationship among stress measures and the specific consequences of stress (burn out, physical health symptoms and job satisfaction) in a sample of 234 male highway patrol officers. They hypothesized that hardiness and neuroticism would moderate the relationship between stress and its consequences. They found that neuroticism exerted a moderating influence on three relationships: (1) between the report of intensity of daily hassles and emotional exhaustion, (2) between the report of perceived stress and physical symptoms, and (3) between attitudes towards court matters and the report of total job satisfaction. Overall, it was found that neuroticism was positively related to reports of physical illness, emotional exhaustion and negatively related to job satisfaction.

McCrainie and Brandsma (1998) assessed whether vulnerability to burnout among physicians is associated with personality tendencies and subsequent exposure to the intrusive stress of the practice of medicine. To do this, a prospective design using Minnesota Multiphasic Personality Inventory (MMPI) profiles from when the 440 doctors entered medical school was used to predict

scores on a tedium scale (a measure of burnout). They found that higher burnout scores were correlated with low self-esteem, feelings of inadequacy, dysphoria, obsessive worry, passivity, social anxiety and withdrawal from others. They also found small but significant positive correlations between neuroticism, inadequacy and psychoticism and burnout. None of the demographics or practice characteristics were associated with burnout.

Volrath and Torgerson (2000) studied eight personality types with unique combinations of Neuroticism, Extraversion and Conscientiousness in a sample of 683 university students. It was found that personality types containing low neuroticism and high conscientiousness featured the most favorable profile of stress and coping whereas types containing high neuroticism with low conscientiousness showed high vulnerability to stress and poor coping.

More recently, Van OS, Park and Jones (2001) examined the association between cognitive ability, neuroticism and mental illness as a predisposing factors to experiencing depressogenic stressful life events. Childhood measures of neuroticism and cognitive ability were available for a birth cohort of 5,362 individuals. At ages 36 and 43 years, mental state and occurrence of stressful life events in the previous year were assessed. The results showed that higher levels of neuroticism increased the likelihood of experiencing stressful life events in adulthood. It was concluded that part of the association between neuroticism

and mental health may be the result of the neurotic-driven exposure to depressogenic stressful life events.

Summary

In general persons high in neuroticism tend to experience negative emotions and distress regardless of level of stress (Bolger and Schilling, 1991; Watson and Clark, 1984). Higher scores on neuroticism has been found to be related to physical health problems, burnout and job dissatisfaction among patrol officers (Hills and Norvell, 1991). With regard to coping, it has been shown that persons high in neuroticism engage in passive and maladaptive ways of coping (McCrae and Costa, 1986).

Social Support Systems.

Social support usually refers to the functions performed for the individual by significant others, such as family members, friends, and co-workers. Significant others can provide instrumental, informational and/or emotional assistance (House and Kahn, 1985). Social support has also been defined as "a process through which help is provided to or exchanged with others in an attempt to facilitate one or more adaptational goals" (Cohen, Gordon & Gottlieb, in press).

There has been increasing appreciation within psychology of the fundamental importance of warm, trusting and supportive interpersonal relationships for well-being. So important is relatedness that some theorists have defined relatedness as a basic human need that is essential for well-being (Baumeister & Leary, 1995; Deci & Ryan, 1991) and some have suggested that having stable, satisfying relationships is a general resilience factor across the lifespan (Mikulincer & Florian, 1998). The importance of social support following stressful events has been demonstrated in a number of studies. Below is a brief review of the moderating effects of social support on stress and traumatic events.

McFarlane and Yehuda (1996) reported that individuals who are able to access and use their social support network immediately after a traumatic

event are generally more resilient, and seem to suffer for briefer periods of time and experience less severe PTSD symptoms.

Emotional support appears to be most valued when it comes from family and friends; information may be viewed as intrusive if offered by significant others, but is welcomed from professional sources (e.g., other staff).

Certain forms of encouragement and advice may be most valued if offered by other survivors (Dunkel-Shutter, 1984; Hatfield, 1981; Shinn et al., 1984; Thoits, 1986). Generally, relationships that facilitate expression of thoughts and feelings regarding the traumatic event will have a more positive effect than those that reinforce denial or numbing by minimizing or invalidating the survivor's experience (Dunkel-Schetter, 1984; Figley & Sprenkle, 1978; Lehman et al., 1986; Solomon, 1986). Hence, a dysfunctional family or peer support system could be an added stress.

If support is inadequate following trauma, the risk for pathological adjustment is accentuated (Barrett & Mizes, 1988; Card, 1987). Ironically, the traumatic event or the impact of the event frequently disrupts the social network at the very time that it is needed (Lyons, 1989; Solomon, 1986). An example of a traumatic event disrupting the social network would be severe injury or death of members of the social support network. In other cases, the distress of the survivor may cause others to withdraw (Shinn, Lehman & Wong, 1984). This may be viewed as a situation

wherein the effect of the trauma itself disrupts the social network. A frequent complaint made by survivors is that sometimes the social network seems to disappear after the acute phase of the injury has passed (Slater & Rubenstein, 1987). The survivor's coping skills, social competence, and perceptions often affect the utilization of support (Becker, 1988; Coyne & DeLongis, 1986).

In an occupational setting, the reaction of peers, and/or supervisors, may serve to define the severity of the traumatic incident (Solomon, 1986). Workplace support from supervisors, (Burke & Greenglass, 1996; Cheuk, Wong & Rosen, 1994) co-workers, and colleagues (El-Bassel, Gutman, Bargal & Su, 1998; Parker & Kulik, 1995) have been identified as powerful moderators of workplace stress as have friends (Brown & O'Brien, 1998).

With respect to research in a correctional setting, 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).

Social support can act as a moderator for feelings of burnout as well. Maslach (1976) argued that support at work is an important moderator of

burnout because opportunities to discuss problems allow fellow workers to offer support, advice, and the awareness that one is not unique in experiencing problems. More recent research has shown that those individuals most vulnerable to burnout had low social support, while those most resistant had the greatest levels of social support (Brown and O'Brien, 1998; Burke and Greenglass, 1985). In particular, four sources of social support have been demonstrated as most important in the prevention of burnout: supervisors, co-workers and colleagues, partner or significant other and friends and family.

In a study on correctional officer stress, Rosine (1992) reported that all forms of social support were significantly negatively correlated with work stress and job dissatisfaction. Rosine concluded that this finding lends support to the postulate that social support helps to ameliorate work related stress. However, when social support was put into a path model, it had no impact on the reduction of the impact of stress. Rosine subsequently speculated that the benefits of social support which are gained under general stress may not generalize to traumatic stress. Alternatively, the measure of social support utilized in the study may not have been sensitive enough to capture the moderating role that social support may play in buffering the effects of traumatic stress.

Most recently, Thoits (1995) reviewed the literature on social support and indicated that three major conclusions about the effects of social support can be drawn. First, measures of social integration are directly and positively related to mental and physical health, including lower mortality, but social integration does not buffer the physical or emotional impacts of major life events or chronic difficulties in people's lives. Second, perceived emotional support is associated directly with better physical and mental health and usually buffers the damaging physical and mental health impacts of major life events and chronic strains. Third, the simplest and most powerful measure of social support appears to be whether a person has an intimate, confiding relationship or not. Cohen and Willis (1985) found that having a confidant significantly reduces the effects of stress experiences on physical and psychological outcomes.

An individual confronting stressful circumstances may be more likely to experience stress-related growth and thriving if they possess relatively strong social resources and current life situations. For example, Park, Cohen and Murch (1996) found that social support, particularly individuals' satisfaction with their support, was moderately positively related to reports of stress-related growth from the negative event. Park (1998) posited that social support may enable people to interpret the stressful experience in less threatening ways because of the positive background context. Lepore, Silver, Wortman and Wayment (1996) speculated that social

support may also provide opportunities for individuals to discuss and process the event, decreasing its aversiveness and possibly enabling people to make meaning and identify positive aspects. Similarly, Norris & Kaniasty (1996) suggested that social support may reduce the appraisal of threat in a situation.

The importance of assessing social support has been suggested by research that has linked high levels of social support to positive health outcomes (Cohen & Syme, 1985; Cohen, 1988; Uchino, Cacioppo & Kiecolt-Glaser, 1996). Health outcomes associated with social support include decreased susceptibility to disease, lower cardiovascular reactivity (Kamarck, Manuck & Jennings, 1990), enhance immune function (Jemmott & Magliore, 1988), lower rates of mortality (Barkman & Syme, 1979; Blazer, 1982) and increase psychological well being (Lambert, Lambert, Klipple and Mewshaw, 1990).

The perception or belief that emotional support is available appears to be a much stronger influence on mental health than the actual receipt of social support (Dunkel-Schetter & Bennett, 1990; Norris & Kaniasty, 1996; Wetherington & Kessler, 1986). In studies that have examined both perception and actual availability, the perception of support seemed to be a better predictor of health outcomes than the actual receipt of support (Cohen & Willis, 1985; Cohen & Hoberman, 1983; Wetherington &

Kessler, 1986). For example, individual perceptions of support availability, rather than received support, have been shown to be associated with less depressive affect (Cohen, Sherrod & Clark, 1988), less distress and psychopathology (Procidano & Heller, 1983) and more effective adjustment to stressful life events (Wetherington & Kessler, 1986).

Ryff, Singer, Wing and Love (2001) reviewed evidence that positive relationships with others predicted physiological functioning and health outcomes, including the secretion of oxytocin, which is associated with positive mood and stress relief. Their view is also supported by Uchino, Uno and Holt-Linstad (1999) who showed that social support influences mortality via changes in the cardiovascular, endocrine and auto-immune systems.

Summary

Numerous studies have shown a negative relationship between social support and outcome measures that include burnout, PTSD, and physical health. Specifically, it is thought that social support serves as a buffer to the effects of stressful events. The literature on the role of social support in a correctional setting is scarce and limited to correctional officers.

Coping

The study of coping with trauma and other stressful experiences focuses on people's responses to these trying circumstances, in terms of their attempts to both alleviate their distress and to solve or resolve the problematic conditions that tax or exceed their resources (Lazarus & Folkman, 1984).

Coping strategies consist of behavioral and/or cognitive attempts to manage specific situational demands which are appraised as taxing or exceeding one's ability to adapt (Lazarus and Folkman, 1984). Coping is considered to be one of the moderating variables that accounts for the relationship between stressful events and outcome measures of distress and adaptation (Cohen, 1980, Folkman and Lazarus, 1988; Folkman, Lazarus, Gruen and DeLongis, 1986; Hamilton & Fagot, 1988; Litt, 1988; McCammon, Durham, Allison & Willimason, 1988; Moos, 1984; Steptoe, 1989). 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.

One of the most influential theories of coping is that of Lazarus and a number of colleagues (Folkman & Lazarus, 1988; Folkman, Lazarus, Gruen and DeLongis, 1986; Folkman, Lazarus, Pimley and 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 and DeLongis, 1986, p. 572). Two processes, cognitive appraisal and coping, are seen as mediating the stressful person-environment relationship and subsequent outcomes.

Appraisal is a two-part process. The first stage is a 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. Subsequent to this appraisal, secondary appraisal occurs. During this stage the individual determines what response choices will either prevent or minimize harm and maximize benefit. The individual then implements some form of behavioral and/or cognitive coping that will effect some change in the person's internal state and /or the external environment. Thus, coping is defined as the cognitive, behavioral and affective efforts extended to manage the internal and external demands of stressful person environment interactions.

Folkman, Lazarus, Gruen and DeLongis (1986) identified eight coping styles: confrontive, distancing, self-controlling, seeking social support, accepting responsibility, escape-avoidance, planful problem solving and positive reappraisal. Below is a definition of each of the coping styles.

- (1) Confrontive: describes aggressive efforts to alter the situation and suggest some degree of hostility and risk-taking.
- (2) Distancing: describes cognitive efforts to detach oneself and to minimize the significance of the situation.
- (3) Self-controlling: describes efforts to regulate one's feelings and actions
- (4) Seeking Social Support: describes efforts to seek informational support, tangible support and emotional support
- (5) Accepting Responsibility: acknowledges one's own role in the problem with a concomitant theme of trying to put things right.
- (6) Escape-Avoidance: describes wishful thinking and behavioral efforts to escape or avoid the problem.
- (7) Planful Problem-solving: describes deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to problem solving.
- (8) Positive Reappraisal: describes efforts to create positive meaning by focussing on personal growth. It also has a religious dimension.

The style of coping used by individuals is determined by the context of the threat and by an appraisal regarding the likelihood of influencing the outcome of the encounter.

The propensity of an individual to use a particular coping style has shown some success in predicting health outcomes. The coping styles utilized by workers, whether focussed on altering the situation or managing intra-

psychic distress (Folkman & Lazarus, 1988), appears to influence the extent to which workers will experience illness, emotional exhaustion, and dissatisfaction with their jobs (Bhagat, Allie & Ford, 1995). In their longitudinal study of community-dwelling adults who experienced a low-point in their lives, Aldwin, Sutton and Lachman (1996) reported that the use of problem focussed coping was positively related to experiencing positive outcomes, whereas using escapism was negatively related to experiencing positive outcomes.

Overall, problem focussed coping has been shown to be related to lower incidents of illness, emotional exhaustion, depersonalization, greater feelings of personal accomplishments, work satisfaction (Bhagat et al., 1995), stronger feelings of self-efficacy and mastery (Greenglass, 1995). Conversely, emotion focused coping has been shown to be related to greater feelings of depersonalization (Bhagat et al., 1995), depression, stress and emotional isolation (Greenglass, 1993).

With respect to the utilization of coping strategies, a number of studies indicate that individuals typically use multiple tactics when coping with major life events or ongoing strains (Billings, Cronkite & Moos, 1983; Folkman & Lazarus, 1980; Stone & Neale, 1984). Folkman and Lazarus (1980) reported that in 98% of 1300 stressful episodes, subjects used both problem and emotion focussed coping strategies. These findings

supported their notion that there are usually two sources of stress that need to be dealt with, the situational demand and the individual's emotional response to those demands.

A number of researchers (e.g., Billings, Cronkite & Moos, 1983; Folkman & Lazarus, 1980, McCrae, 1984; Menaghan & Merves, 1984) have indicated that stressors that are appraised as more severe evoke a greater number of coping responses. In general, problem focussed coping is more likely to be used when the situational demands are appraised as controllable, while emotion focussed coping strategies are more likely to be used when the situation demands are appraised as uncontrollable (Billings, Cronkite & Moos, 1983; Folkman & Lazarus, 1980, Stone & Neale, 1984; Thoits, 1991).

In a study on correctional officer stress, Rosine (1992) reported that correctional officers used a variety of coping strategies. Consistent with other studies on coping, Rosine reported that the only coping strategy that was significantly negatively associated with outcome was escape/avoidance.

Summary of Coping

Overall, planful problems solving has been associated with positive outcomes in a number of studies (Bhagat et al. 1995, Rosine , 1992). In

contrast, the use of escape-avoidance coping in response to stress has been associated with a variety of negative psychological outcomes (e.g., PTSD, burnout) and health problems. One variable that may influence the type of coping utilized is psychological well being. The next section reviews the literature on psychological well being.

Psychological Well Being

Well being is a complex construct that concerns optimal experience and functioning (Ryan, 2001). Cowen (1991) suggested that wellness should be defined not simply as the absence of psychopathology, but instead as an array of positive aspects of functioning that are promoted by the attainment of strong attachment relationships, the acquisition of age-appropriate cognitive, interpersonal, and coping skills, and exposure to environments that empower the person.

The current research on well-being has been derived from two general perspectives, the hedonic approach and the eudaimonic approach. The hedonic approach focuses on happiness and defines well-being in terms of pleasure attainment and pain avoidance (Kahneman, Diener & Schwartz, 1999). In contrast, the eudaimonic approach focuses on meaning and self-realization and defines well-being in terms of the degree to which a person is fully functioning (Waterman, 1993). For the purpose of this dissertation, the eudaimonic

approach to well-being will be used as it lends itself well to the conceptual notion of psychological well being as moderator of stressful life events.

Waterman (1993) stated that the eudaimonic approach to well-being calls upon people to live in accordance with their true self. Eudaimonia occurs when people's life activities are most congruent or meshing with deeply held values and are holistically or fully engaged. Under these circumstances people feel intensively alive and authentic, a state Waterman referred to as Personal expressiveness (PE). PE is associated with being challenged and exerting effort.

Most recently, Ryff and Singer (1998, 2000) have explored the question of well-being in the context of developing a lifespan theory of human flourishing. They describe well being as "the striving for perfection that represents the realization of one's true potential" (Ryff, 1995, p.100). Ryff & Keyes (1995) presented a multidimensional approach to the measurement of Psychological Well Being (PWB) that taps into six distinct aspects of human actualization: autonomy, personal growth, self-acceptance, purpose in life, environmental mastery and positive relationships with others. These six constructs define PWB both theoretically and operationally and they specify what promotes emotional and physical health (Ryff & Singer, 1998).

Ryff and Singer (1996) explained the clinical relevance of PWB from a treatment perspective. The concept of PWB is based a number of different theories that

include Maslow's theory of self-actualization, Roger's theory of the fully functioning person, Jung's theory of individuation and lifespan development perspective which emphasize the different challenges that are confronted at various phases of the life cycle (e.g., Erikson's-psychosocial change model). The authors noted that all of these theories of the psychologically healthy adult have similar core characteristics that Ryff (1989) used to develop the six dimensions of PWB. There are six dimensions of PWB, (1) self-acceptance, (2) environmental mastery, (3) positive relations with others, (4) purpose in life, (5) personal growth, and (6) autonomy. Below is a brief description of each of the dimensions and the theoretical relevance of each of the six dimensions.

Self-acceptance is defined as a central feature of mental health as well as a characteristic of self-actualization, optimal functioning, and maturity. A person with high self acceptance possesses a positive attitude towards the self; acknowledges and accepts multiple aspects of self including good and bad qualities; feels positive about past life experiences and decisions. Lifespan theories also emphasize the acceptance of one's self and one's past life. Therefore, holding a positive attitude towards oneself emerged as a central characteristic of positive psychological functioning.

Positive relations with others has been emphasized as important to psychological functioning. A person scoring high on positive relations with others has warm, satisfying, trusting relationships with others, is concerned about the welfare of

others, is capable of strong empathy, affection, and intimacy and understands the give and take of human relationships. The ability to love is viewed as a central component of mental health. Self-actualizers are described as having strong feelings of empathy and affection for all human beings and as capable of greater love, deeper friendship, and more complete identification with others.

Autonomy has also received considerable attention in the literature. A person high in autonomy is self determining and independent, is able to resist social pressures to think and act in certain ways, regulates behavior from within, and evaluates self by personal standards. The fully functioning person is described as having an internal locus of evaluation.

Environmental mastery refers to the individual's ability to choose or create environments that are suitable to his/her psychic conditions. A person high in environmental mastery has a sense of mastery and competence in managing the environment, controls complex arrays of external activities, makes effective use of surrounding opportunities, and is able to choose or create contexts suitable to personal needs and values. Lifespan developmental theory describes environmental mastery as the ability to manipulate and control complex environments. Successful aging also emphasizes the extent to which the individual takes advantage of environmental opportunities. Combined, these perspectives suggest that active participation in and mastery of the environment

are key ingredients in an integrated framework of positive psychological functioning.

Purpose in life is defined in the mental health profession as the ability to find purpose and meaning in life. A person scoring high on purpose in life, has goals in life has a sense of directedness, feels there is meaning to both present and past life experiences, holds beliefs that give life purpose, and has aims and objectives for living. The definition of maturity also emphasizes clear comprehension of life purpose, a sense of directedness, and intentionality.

Lifespan development theorists refer to a variety of changing purposes or goals in life, such as being productive and creative or achieving emotional integration in later life. Thus, a person who functions positively has goals, intentions, and a sense of direction, all of which contribute to the feeling that life is meaningful.

Personal growth is defined as the ability to continue to develop one's potential to grow and expand as a person. A person scoring high on personal growth has a feeling of continued development, sees self as growing and expanding, is open to new experiences, has a sense of realizing one's potential, sees improvement in self and behavior over time and is changing in ways that reflect more self knowledge and effectiveness. The need to actualize oneself and realize one's potential is central to clinical perspectives on personal growth. Openness to experience, for example, is a key characteristic of the fully functioning person.

Lifespan development theorists also emphasize continued growth and the facing of new challenges to tasks at different periods of life.

Ryff and Singer (1996) posited that the examination of PWB has four implications for psychotherapy research that can be generalized to psychological research in general. One, it can be used for evaluating the effectiveness of treatment. The authors noted that understanding the positive in patients' lives provides a more complete picture of their overall functioning, and therefore a more comprehensive analyses of treatment effectiveness.

Second, knowledge of psychological well being provides insight and direction regarding the factors that influence the occurrence of mental disorders. The authors suggested that the explanatory task is broadened to encompass how the presence of the negative as well as the absence of the positive work together to influence mental health.

Third, examining the positive and negative aspects of PWB also has implications for understanding recovery from psychological dysfunction (Fava, 1996).

Feelings of mastery and self regard, the possession of quality relations with others, the capacity to set goals for living, and a sense of self-realization may play critical roles in the process of regaining mental health.

Lastly, the implication of the study of well-being is that knowledge of positive mental health poses new directions for the age-old quandaries about how the mind and body are connected. The focus would be to examine the functional as opposed to the dysfunctional.

Wellbeing is a major component of quality of life (Bech, Gudex, Staehr, 1996; Fava, 1990), and is now attracting attention in role of treatment of affective disorders (Bech & Angst; 1996; Pyne, Patterson, Kaplan et al.; 1997; Schonfeld, Verboncoeur, Fifer et al.; 1997). Well being appears to be important in the assessment of recovery from affective disorders and the impact of residual symptomatology (Fava, 1996).

An association between PWB and affective disorders has been demonstrated. Recently, Rafanelli, Park, Ruini, Ottolini, Cazzaro and Fava (2000) evaluated the differential characteristics of instruments assessing psychological distress and well being in remitted patients with affective disorders and their responsiveness to further treatment. Compared to the healthy control group, patients with affective disorders scored significantly lower on all dimensions of PWB. With respect to the impact of treatment, changes in the PWB were associated with decreased scores on the Clinical Interview for Depression.

PWB has also been shown to influence the individual's perception of events. Lyubomirsky and Tucker (1998) demonstrated that characteristically happy

people tend to construe the same life events and encounters more favorably than unhappy people. Further, Lyubomirsky and Ross (1999) showed that individuals who have high subjective well-being tend to cast events and situations in a more positive light, to be less responsive to negative feedback, and to more strongly denigrate opportunities that are not available to them. The authors suggested that people high in subjective well-being may have attributional styles that are more self-enhancing and enabling, which in turn could contribute to the relative stability of their happiness.

An association between health status and well-being has also been established. For example, Ryff and Singer (2000) used both empirical and case study evidence to underscore how various dimensions of eudaimonic living yield positive effects on health, such as better auto-immune functioning. In particular, the dimension of positive relationships with others was critical to the promotion of health-related processes.

Summary of PWB

PWB consists of six distinct aspects of human actualization: autonomy, personal growth, self-acceptance, purpose in life, environmental mastery and positive relationships with others. Increased PWB has been associated with decreased symptomatology in affective disorders and improved health. However, its role as a protective factor has not been examined with a working age non-clinical population.

Limitations of Existing Research

Research on correctional stress is plagued by four methodological limitations. First, most of the research has been conducted only with correctional officers, while other correctional staff have been neglected. However, a review of the literature clearly indicates that all correctional staff feel stressed about their jobs (Lariviere, 2000), correctional officers are not the most stressed group and that other occupational groups are exposed to critical incidents and are affected by stressful encounters in the correctional setting.

A second limitation are the stress measures utilized in the studies. Typically, a generic measure of work stress is used, the most common is by Cullen et al. (1989). These generic questionnaires typically ask respondents to rate how they are feeling on a likert-type scale that includes questions such as “ When I’m at work I often feel tense or uptight” or “I usually feel that I am under a lot of pressure when I am at work”. While these provide a global index of the level of stress that staff may be experiencing, they provide no information about the source of the stress, or the frequency with which individuals are experiencing the different types of stressors.

On a related matter, Holt (1993) suggested that direct measures of stress (e.g., does anything about work upset you?) runs up against the need of many persons to maintain a public posture of toughness. Holt hypothesised that this "toughness" accounts for the anomalous fact that men in more objectively rigorous, physically demanding and dangerous jobs often deny any stress, yet exhibit the highest rates of stress disease.

A third limitation of the existing research is that when a source of stress in a correctional setting is examined, there is an over-emphasis on rarely occurring incidents (e.g., hostage-takings, sexual assaults). While these experiences are extremely stressful, most staff have not/will not experience these events.

A fourth limitation of the existing research is that the incidents are examined in isolation of each other. Thus, knowledge about the cumulative effect of being exposed to a critical incident (e.g., assault) and being chronically stressed by less serious incidents (e.g, being sworn at on a daily basis) is non-existent.

In summary, previous correctional stress research has focussed on one group of staff (correctional officers), sensational incidents that occur infrequently, the use of generic stress measures, and the examination of incidents in isolation of each other, rather than cumulatively. In the

present study, these limitations were addressed by using all correctional staff and through the use of an Exposure to Correctional Stress questionnaire that addresses both critical incidents and chronic stressors. This measure was developed by the author in conjunction with correctional staff occupying various positions.

Purpose of the Current Study

The purpose of the current study is to explore the types of stressors that correctional staff are exposed to, the perceived impact that these stressors have, and the psychological and physiological impact of being exposed to these stressors. In addition, the role that dynamic factors such as coping styles, social support, and psychological well being have in moderating the impact of these stressors is examined.

Hypotheses

General Hypothesis

1. The nature and frequency of stressors that correctional staff are exposed to will vary by the security level of the institution with staff working in a maximum security facility being exposed to more stressors than staff working in lower security settings.
2. Consistent with Fisher's (200) model, the total number of correctional stressors experienced will be positively related to PTSD, burnout, and number of physical health symptoms.
3. There will be a cumulative effect of stress with the number of negative life events endorsed and the number of correctional stressors endorsed being positively related to PTSD, burnout and physical health.
4. Ratings of degree of psychological impact of the correctional stressors will be positively related to scores on PTSD, burnout and physical health symptoms.
5. Consistent with prior research, gender, education, age and experience will be related to the perceived impact of the stressor, such that those who are male, older, have more experience and are educated will report being less effected by stressors than younger, female staff with less experience.
6. Consistent with prior research neuroticism will be positively related to the experience of negative life events, the experience of correctional stressors,

higher perceived negative effects of correctional stress and negatively related to positive life events.

7. Higher levels of perceived support will be related to lower levels of PTSD, burnout and physical health symptoms.
8. Higher scores on all dimensions of psychological well being will be negatively related to scores on PTSD, burnout and physical health symptoms.
9. The use of avoidance style coping techniques will be negatively related to scores on PTSD, burnout and physical health symptoms.

With respect to the moderating variables and relative risk for developing PTSD, Burnout and health problems as outlined by Fisher

1. It is expected that higher scores on all dimensions of psychological well being will moderate the negative effects of correctional stressors, such that individuals exposed to a higher number of stressors who have high psychological well being scores will have lower psychopathology scores (e.g., lower PTSD, physical health symptoms, burnout) than individuals exposed to a higher number of stressors who have low psychological well being scores.
2. It is expected that higher scores on social support will moderate the negative effects of correctional stressors, such that individuals exposed to a higher number of stressors who have high levels of social support will have lower psychopathology scores (e.g., lower PTSD, physical health symptoms, burnout) than individuals exposed to a higher number of stressors who have low levels of social support.

3. It is expected that the use of escape-avoidance coping strategies will moderate the negative effects of correctional stressors, such that individuals exposed to a higher number of stressors who use escape-avoidance coping strategies will have higher psychopathology scores (e.g., lower PTSD, physical health symptoms, burnout) than individuals exposed to a higher number of stressors who don't use escape-avoidance of coping strategies.

Potential Implications

An increased understanding of the types of stress that correctional staff are exposed to and how they are affected by various aspects of their job has the potential to raise awareness of the difficulties inherent in this type of work and may increase attention to issues such as training, appropriate client care, and staff self-care. Information on the sources of stress and the variables that moderate the distress can also be utilized to identify and develop the most appropriate training, supervision, job design, and support resources for individuals who take on the challenge of working with an offender population.

Chapter II: Method

The current study was correlational in nature and there was no direct manipulation of the independent variables. The dependent variables were Post-Traumatic Stress Disorder, Burn-out and Physical Health problems. The independent variable was exposure to stressful events in corrections. The moderating variables are the number of negative and positive life events, social support, coping and psychological well being.

Subjects

727 employees of the Pacific Region of Correctional Service of Canada, who work in federal institutions were asked to participate in the study. Of these, 38% (278) staff members returned the surveys. Two of the returned surveys did not have any completed questionnaires and were not used for the study. This left a final sample of 276.

Measures

Demographics. A demographic questionnaire was administered to all participants. It consisted of questions regarding, age, job title, marital status, education, and prior correctional experiences. Information from these questions was primarily used for descriptive data for the sample population and for occupational comparisons. (see attached Appendix B)

Stress Measures

Exposure to Stress Questionnaire for Correctional Staff (ESQCS). The ESQCS was developed by Gal (2001) specifically for this study. It is a 50-item self-report measure on which respondents indicate which events happened to them during their correctional careers, and how frequently they experienced these events in the last 12 months. Respondents also indicated the perceived impact of these events had on them on a 4-point likert-type scale (1) none, (2) mild, (3) moderate and (4) high (see Appendix C).

The scale was developed on the basis of existing research (e.g., Rosine, 1992), the author's personal experience from working in a correctional setting, and consultation with staff at various levels (correctional officers, correctional supervisors, psychology, management).

Life Experiences Survey The Life Experiences Survey (Sarason, Johnson, and Siegel, 1978), was designed for the measurement of life changes and it also allows for separate assessment of positive and negative life experiences. The LES is a 50-item self-report measure on which respondents indicate which events happened to them within the past year. The LES contains a list of 47 events, as well as 3 blank spaces for subjects to endorse an event which was not listed that they may have experienced. The format of the LES asks subjects to rate the desirability

of events that they have experienced. The ratings are on a 7-point Likert type scale ranging from extremely negative (-3) to extremely positive (+3) (Sarason et al., 1978).

Test-retest reliability over a period of five to six weeks with undergraduate introductory psychology students is .64 (Sarason et al., 1978). It is important to keep in mind that within a period of five to six weeks a variety of different events could have been experienced, thus effecting the test-retest reliability of the measure. Numerous validity tests have been conducted utilizing the LES with clinical and non-clinical populations. The total negative change scores correlate significantly and in a positive direction with state and trait anxiety ($r=.46, p < .001$) in a group of Navy personnel. Similarly, a correlation of .24 ($p < .05$) between negative life change and anxiety as measured by the Multiple Affect Adjective List in a sample of college students. A significant positive correlation was found between negative life change and the scores on the Beck Depression Inventory ($r = .24, p < .05$). The findings indicated that the LES is a valid measure (Sarason et al., 1978) (see Appendix D).

Although the scale is typically used to assess total life change, for the purpose of this study, only number of positive and negative events will be used to determine existing non-correctional stress levels for correctional staff.

Outcome Measures

The PENN Inventory for Post Traumatic Stress Disorder The PENN inventory for PTSD (Hammarberg, 1992) is a 26 item self-report measure of severity of PTSD. It provides a total continuous score that ranges from 0 to 78. A cut-off score of 34 or higher is indicative of PTSD. Each item of the PENN is comprised of 4 sentences, which are modelled after the Beck Depression Inventory, and the sentences have a score that ranges from 0 to 3. An example is provided below:

- 0 I have not experienced a major trauma in my life.
- 1 I have experienced one or more traumas of limited intensity.
- 2 I have experienced very intense and upsetting traumas.
- 3 The traumas I have experienced were so intense that the memories of them intrude on my mind without warning.

Over a 5-day period the test-retest reliability of the PENN is .96. It has an internal consistency Cronbach Alpha of .94. Ninety percent of patients who were clinically diagnosed with PTSD were identified by the PENN correctly. Correlations between the PENN and the Mississippi scale for combat related PTSD is .85. Hammarberg (1992) reported a 97% hit rate, which means that out of 97 cases identified, 2 were false positives and one was a false negative. Hammarberg (personal communications) reported that in a sample of 172 cases where individuals were diagnosed

with PTSD, 164 (95%) were identified correctly using the PENN, which indicates a high level of sensitivity. Out of 82 individuals without a diagnosis of PTSD, the PENN correctly identified 73 (89%) which indicates that it has a high level of specificity. Combined, the above studies conducted by Hammarberg (1992), illustrate high, concurrent validity, internal consistency and discriminant validity (see Appendix E).

More recently, Seragg, Grey, Lee, Young and Turner (2001) provided normative data for the PENN inventory for men and women who were referred to a specialist outpatient clinic following a range of traumatic events ($n=80$). Compared to clinician ratings of PTSD, the PENN showed a sensitivity level of .90. However, the specificity level was only .67 suggesting that the PENN may be over diagnosing. The authors suggested that it be used as a screening tool for PTSD.

Burnout

The Maslach Burnout Inventory: Human Services Survey (MBI-HSS) was created by Maslach and Jackson (1981). It is a 22-item self-report measure that evaluates the experience of burnout among human service providers involved in interactions with clients that are centred on the clients' problems (psychological, social or physical). There are three subscales, emotional exhaustion (EE, feelings of being emotionally overextended and exhausted by one's work), depersonalization (DP, an

unfeeling and impersonal response towards the recipients of one's service, care, treatment or instruction) and personal accomplishment (PA, feelings of competence and successful achievement in one's work with people). Respondents indicate how frequently they experience the statements on the measure on a 7-point likert-type scale ranging from never (0) to everyday (6). The scores for each of the sub-scales are considered separately, and, as a result, three separate scores are computed for each respondent. Higher scores on the EE and DP sub-scales correspond with higher degrees of burnout while lower scores on the PA scale are associated with higher degrees of burnout. Test-retest reliability for the sub-scales are: EE=.82; DP=.60 and PA=.80. Reliability coefficients (Cronbach alphas) for the sub-scales are .90, .79, and .71, respectively .

Physical Health

A list of physical health problems that were identified in the literature as being associated with increased levels of stress was compiled. These problems include high blood pressure, heart disease, diabetes, ulcers, headaches, and back pain. Staff were asked if they had any of the health problems on the list. In addition, the frequency with which staff use over-the-counter medications (e.g. heartburn relievers, headache medication) and used substances (e.g., nicotine, alcohol) was examined (see Appendix F).

Moderating Variable Measures

Psychological Well Being Scale (PWBS). The PWBS (Ryff, 1989) consists of six subscales that measure dimensions of psychological well being. The six dimensions are: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self acceptance (a description of these dimensions is presented below). Each scale consists of 9 items that are responded to on a 6-point likert scale (1) strongly disagree, (2) moderately disagree, (3) slightly disagree, (4) slightly agree, (5) moderately agree and, (6) strongly agree. Higher scores indicate high self ratings on the dimensions assessed (see Appendix G).

A. Autonomy : Internal consistency (coefficient alpha)= .83

High Scorer: is self determining and independent, able to resist social pressures to think and act in certain ways, regulates behavior from within, evaluates self by personal standards.

Low Scorer: is concerned about the expectations of others and important decisions, conforms to social pressures to think and act evaluations of others, relies on judgements of others to make in certain ways.

B. Environmental Mastery: Internal consistency (coefficient alpha)= .86

High Scorer: has a sense of mastery and competence in managing the environment, controls complex array of external activities, makes effective use of

surrounding opportunities, and is able to choose or create contexts suitable to personal needs and values.

Low Scorer: has difficulty managing everyday affairs, feels unable to change or improve surrounding context, is unaware of surrounding opportunities, and lacks sense of control over external world.

C. Personal Growth: Internal consistency (coefficient alpha)= .85

High Scorer: has a feeling of continued development, sees self as growing and expanding, is open to new experiences, has sense of realizing one's potential, sees improvement in self and behavior over time, and is changing in ways that reflect more self knowledge and effectiveness.

Low scorer: has a sense of personal stagnation, lacks sense of improvement or expansion over time, feels bored and uninterested with life, and feels unable to develop new attitudes or behaviors.

D. Positive Relations with Others: Internal Consistency (coefficient alpha)= .88

High Scorer: has warm, satisfying, trusting relationships with others, is concerned about the welfare of others, capable of strong empathy, affection and intimacy, and understands the give and take of human relationships.

Low Scorer: has few close, trusting relationships with others, finds it difficult to be warm, open and concerned about others, is isolated and frustrated in interpersonal relationships, and not willing to make compromises to sustain important ties with others.

E. Purpose in Life: Internal Consistency (coefficient alpha)= .88

High Scorer: has goals in life and a sense of directedness, feels there is meaning to present and past life, holds beliefs that give life purpose, and has aims and objectives for living.

Low Scorer: lacks a sense of meaning in life, has few goals of aims, lacks sense of direction, does not see purpose of past life, and has no outlook or beliefs that give life meaning.

F. Self Acceptance: Internal Consistency (coefficient alpha)= .91

High Scorer: possesses a positive attitude towards the self; acknowledges and accepts multiple aspects of self including good and bad qualities; and feels positive about past life.

Low Scorer: feels dissatisfied with self; is disappointed with what has occurred in past life; is troubled about certain personal qualities, and wishes to be different than what one is.

The scales demonstrate high internal consistency and reliability with alphas ranging from .86 to .93 and temporal reliability from .81 to .88. The scales also correlated modestly and positively with extant measures of positive functioning (e.g., self-esteem, life satisfaction, internal control) and negatively with extant measures of negative functioning (e.g., depression, powerful others), thereby demonstrating convergent and discriminant validity (Ryff and Singer, 1996). Recent data from a national probability sample (Ryff & Keyes, 1995) supported, via, confirmatory factor analyses the six factor structure. More recently, Rafanelli

et al. (2000) also demonstrated the sensitivity of the PWB scales in patients with affective disorders.

Coping

Ways of Coping (WOC) is a measure designed to identify different coping styles and was developed by Folkman, Lazarus, Dunkel-schetter, DeLongis & Gruen (1986). It is a 50-item checklist and has eight subscales that are described below:

- (1) Confrontive: describes aggressive efforts to alter the situation and suggests some degree of hostility and risk-taking.
- (2) Distancing: describes cognitive efforts to detach oneself and to minimize the significance of the situation.
- (3) Self-controlling: describes efforts to regulate one's feelings and actions
- (4) Seeking Social Support: describes efforts to seek informational support, tangible support and emotional support
- (5) Accepting Responsibility: acknowledges one's own role in the problem with a concomitant theme of trying to put things right.
- (6) Escape-Avoidance: describes wishful thinking and behavioral efforts to escape or avoid the problem.
- (7) Planful Problem-solving: describes deliberate problem-focused efforts to alter the situation, coupled with an analytic approach to problem solving.
- (8) Positive Reappraisal: describes efforts to create positive meaning by focussing on personal growth. It also has a religious dimension.

Each item is scored on a four-point scale with “0” representing “never” to “3” representing often. Internal consistency alphas range from .47 to .74. Test re-test reliabilities ranged from .17 to .47 across 5 different occasions. It is important to note that people’s coping responses will vary from one situation to another and can change over time (see Appendix H)

Social Support

Sense of Social Support (SSS). THE SSS was developed by Dolbier and Steinhardt (2000). It is a 21-item scale designed to measure the quality and quantity of social support. Respondents indicate how true an item is of them on a 4-point likert scale ranging from 0 (not at all true) to 3 (completely true). Six of the items are negatively worded to control for the general tendency to agree or disagree with items regardless of their content. Chronbach alphas were .87 for a corporate sample and .84 for a university sample. Convergent validity of the SSS was demonstrated by significant positive relationships between the SSS and hardiness and approach style coping. Divergent validity was demonstrated by inverse relationships to perceived stress, avoidance coping and symptoms of illness. The scale’s concurrent validity was supported by significant correlation with the social provisions scale and the interpersonal support evaluation list. Test-retest reliability was .91 (see Appendix I).

Neuroticism Scale: is a ten-item scale developed by Goldberg (1999) that provides an indication as how neurotic an individual is. Respondents indicate how accurately each statement reflects their behavior and/or feelings on a 5-point likert-type scale with 1 being inaccurate and 5 being very accurate. The scale is part of the International Personality Item Pool (2001) developed by Goldberg in 1999. The Chronbach alpha is .86 It correlated .87 with it's original scale.

Self-Deception Scale: is a ten-item scale developed by Goldberg (1999) that provides an indication as how much self-deception an individual is using. Respondents indicate how accurately each statement reflects their behavior and/or feelings on a 5-point likert-type scale with 1 being inaccurate and 5 being very accurate. The scale is part of the International Personality Item Pool (2001) developed by Goldberg in 1999. The scale was used to control for socially desirable responding that is common in pencil and paper tests. The Chronbach alpha is .80. It correlated .90 with its original scale.

Procedure

An E-mail was sent to the various union representatives (UCCO [correctional officers], PSAC-USGE [IPOs, administrative], and PIPS [healthcare, psychology]. The E-mail identified who I am, the purpose of the project and included a 5-page description of the project which included the measures that were to be used and anticipated results. All three unions responded favourably.

After receiving approval from all three unions, it was necessary to obtain approval from the Pacific Regional Management Committee (P-RMC). I approached the warden at Mountain Institution, Alex Lubinev, who was also the head of the Regional Learning Committee about presenting the project to RMC. Mr. Lubinev presented the nature and purpose of the study at an RMC meeting in August and I received final approval from Roger Brock (Assistant Deputy Commissioner) at the end of August.

Initially, I intended to approach staff at each of the institutions in the Pacific region. Unfortunately, in September 2002, an announcement regarding the status of William Head Institution's security level change from medium to minimum security occurred. The change resulted in some staff becoming unemployed, some staff being deployed to other institutions, and some retiring early. In addition, the inmate population

profile changed and selecting appropriate offenders to remain at William Head Institution while forcing others offenders to move to another institution was quite stressful on staff involved in the decision process. These changes would result in increased stress for most staff working at William Head Institution. From a psychological perspective, the writer felt it was inappropriate to ask staff to fill out a questionnaire about stress. From a research perspective, the resulting stress from the change represented a large confounding variable that could not be controlled for that would likely influence the results.

Prior to going to each of the other institutions, a letter was sent to the warden's assistant requesting a brief meeting with the warden to discuss the project, and any concerns that they may have about the project, and to obtain permission to come to the institution and collect data. All of the wardens agreed to let me collect data at their respective institutions.

Prior to being provided with a copy of the questionnaires, staff were told the purpose of the project. In addition, they were told that: (1) Participation is voluntary; (2) It is anonymous and that they are not to put any identifying information on the questionnaire; (3) It will take approximately 1 to 1.5 hours to complete; (4) After they have completed the questionnaire, they will be asked to seal the envelope and place it in a locked box at the front gate of the institution; (5) Only I will have access to the lock on the

box and I will be the only one handling the questionnaires, and (6) They will receive a copy of the results. A week after they were given a copy of the questionnaire, the warden's assistant sent a reminder email on my behalf to all staff requesting that they complete the questionnaire and place it in the box at the front gate. I collected the boxes from each of the institutions approximately two weeks after the questionnaires were distributed.

In an effort to remove a possible order effect, there were four versions of the package of questionnaires. The packages were distributed randomly to staff. There were no statistically significant differences on any of the measures between the 4 versions (see appendix J). Due to less than 10% of missing cases for any one variable, missing cases were excluded from the analyses.

Results

Characteristics of the Sample

Table 1 presents the demographic information of the sample. There was an equal distribution of male and female respondents. More than half (58%) of the respondents were over the age of 40. Over two thirds (69%) were married. The sample was relatively well educated with 17% having completed a college degree, 20% finished a University Bachelor's degree and 10% having completed a Master's or Ph.D.

Table 1
Demographics of the Sample

Demographic	Frequency	Percentage
Gender		
Male	137	51.5
Female	129	48.5
Age Group		
18-24	12	4.3
25-29	34	12.3
30-34	32	11.6
35-40	38	13.8
41-45	44	15.9
46-49	32	11.6
50-54	49	17.8
55-59	26	9.4
60-64	9	3.3
Marital Status		
Single	44	16.1
Married/common-law	190	69.3
Separated/divorced	39	14.2
Widowed	1	.4
Level of Education		
Some high school	4	1.4
High school graduate	44	15.9
Some college	48	17.4
College graduate	47	17.0
Some university	51	18.5
Bachelor's degree	55	19.9
Graduate degree (MA, Ph.D.)	27	9.8

Table 2 presents the past and current occupations of the sample. The sample's current occupation status is representative of the Pacific region, with a slight over representation of psychologists.

Table 2

Occupations of the Sample

Occupation	Past		Current	
	Frequency	Percentage	Frequency	Percentage
Correctional Officer	145	53.9	113	41.2
Correctional Supervisor	3	1.1	17	6.2
Institutional Parole Officer	16	5.9	21	7.7
Unit Manager	2	.7	8	2.9
Program deliverer/work supervisor	9	3.3	15	5.5
Nurse	14	5.2	13	4.7
Psychologist	15	5.6	22	8.0
Chaplain/elder	5	1.9	4	1.5
Teacher/principle	4	1.5	4	1.5
Maintenance/kitchen staff	4	1.5	4	1.5
Administrative (CR-AS3)	41	14.8	40	14.6
Project manager (AS4-AS5)	6	2.2	3	1.1
Management (AWMS/DWW)	5	1.9	10	3.6

Table 3 presents the work characteristics of the sample. Over one third (36%) were relatively inexperienced with less than 5 years in the service, while 15% had twenty or more years in the service. Twenty-three percent of the sample volunteered either as a member of the Institutional Emergency Response Team (IERT), a Critical Incident Stress Management (CISM) peer, and/or as an Employee Assistant Program (EAP) peer.

Table 3
Work Characteristics of the Sample

Characteristic	Frequency	Percentage
Years Worked		
Less than 5 years	99	35.9
5 to 9 years	51	18.5
10 to 14 years	35	12.7
15 to 19 years	50	18.1
20 to 24 years	25	9.1
25 years or more	16	5.8
Current Level of Security		
Minimum	32	11.7
Medium	123	45.1
Maximum	67	24.5
Multi-level	51	18.7
Past Level of Security		
Minimum	9	3.4
Medium	117	44.3
Maximum	104	39.4
Multi-level	34	12.9
IERT member	11	4.0
CISM peer	35	12.8
EAP peer	16	5.8

Stressors Experienced by Correctional Staff

On average, correctional staff were exposed to 16.2 stressors, with a standard deviation of 8.8 stressors. Table 4 presents the types of stressors that correctional staff experienced in order from most frequent to least frequent. The most common stressors were being sworn at (85.6%), concerns about the safety and well being of other staff (83.5%), lack of communication (82.6%), being called names (79.7%), and dealing with unrealistic demands of management (78.1%).

Correctional staff also reported experiencing a number of stressors that have been identified in the literature as being psychologically harmful. These stressors include being threatened (64.6%), witnessing an offender after a beating (57.6%), being assaulted (24%), cleaning up after an offender attempted suicide (21%), being stalked (19.9%), seeing a dead offender (17.7%), having bodily fluids thrown at you (12.2%) and witnessing a friend get killed in an altercation or riot (1%).

Consistent with Fisher's (2002) model, workplace systemic stress also ranked highly as a source of stress for staff. The most common workplace systemic stressors were concerns about the safety and well being of staff (83.5%), lack of communication (82.6%), dealing with unrealistic demands of management (78.1%), dealing with unrealistic expectations of staff (69.3%), being second

guessed by co-workers (59.6%), and being harassed by another staff member (44%).

Table 4

Types of Stressors Correctional Staff Experience

Stressor	Frequency	Percentage
Being sworn at	232	85.6
Concerns about safety /well being of staff in general	222	83.5
Lack of communication	223	82.6
Called names	216	79.7
Dealing with unrealistic expectations of management	211	78.1
Dealing with unrealistic expectations of inmates	197	73.0
Dealing with unrealistic expectations of staff	187	69.3
Verbally threatened	175	64.6
Walking into the unknown	171	62.0
Felt there was insufficient staff for institution	162	60.2
Being second guessed by coworkers	161	59.6
Witnessed an offender after a beating	156	57.6
Verbal threat with physical gesture	142	52.4
Found shanks or other weapons during searches	137	50.6
Potential of losing control of the situation	135	50.0
Been harassed by a staff member	120	44.3
During critical incidents, have you felt/been out of communication	116	43.0
Unable to transfer an offender to another facility	111	41.3
Been the subject of an investigation	95	35.2
Fear of investigation	94	34.8
Had an offender you worked with, reoffend while on conditional release	93	34.4
Witnessed an offender being beaten	93	34.3

Had non-toxic objects thrown at you	74	27.3
At institution during riot	71	26.2
Had to use your PPA	66	24.4
Been pushed or shoved	65	24.0
Put out cell fires	63	23.2
Inhaled smoke from putting out cell fires	62	22.9
Clean up offender after an attempted suicide	57	21.0
Stalked by an offender	54	19.9
Saw a dead offender after a completed suicide	48	17.7
Physically assaulted without a weapon	45	16.6
Involved in riot control	45	16.6
Witnessed a coworker beaten up	43	15.9
Received threatening letters or phone calls	41	15.1
Had a friend taken hostage	34	12.6
Other (see list of others on following page)	34	12.7
Had bodily fluids thrown at you	33	12.2
Witness a close friend beaten up in altercation or riot	25	9.6
Physically assaulted with a weapon	20	7.4
Involved in hostage negotiations	19	7.0
Accidentally pricked by a needle/ other sharp object	18	6.6
Bitten by an offender	8	3.0
Taken hostage	5	1.8
Witness a co-worker killed in altercation or riot	2	.7
Had a close friend killed in altercation or riot	2	.7
Fired a weapon that resulted in injury to an offender	0	0
Fired a weapon that resulted in injury to staff	0	0
Fired a weapon that resulted in death	0	0
Sexually assaulted by an offender	0	0

At the end of the ESQCS, there was a blank category in which staff could identify other sources of stress that they have experienced but were not on the list. Upon reviewing the list, other sources of stress were divided into four categories, offender related, management related, procedural /policy related and staff related. Table 5 presents the comments that fall under each of the categories.

Table 5

List of Other Comments by Category

Offender	Management	Procedural/policy	Staff
Inmate overdose	Management not caring about staff	Shiftwork	Having co-workers go through riots
Did CPR on a dead inmate	Managers jumping to conclusions based on erroneous information or non-existent information	Called to institution for emergency	Seeing staff provoke inmates
Saw offender attempt suicide and pumping out blood from slashed area	Unethical management	Introduction of new procedures	Harassment
Inmate accidental death (x2)	Problems with management	Lack of security equipment	Lazy staff
Offenders claim that they love you	Harassment by management	Finding a gun	Witnessing coworkers overworked
Catcalls from inmates (x2)	Management showing no compassion for staff but showing it for inmates	Scene control for murdered inmate	
Witnessed an inmate escape	Management not listening to staff concerns	Constant supervisor changes	
Inmate overdosed and died	Management lying		
Death of an offender that worked with			
Watching an inmate getting stabbed			
Sensational incident by inmate on caseload			

Stress Level by Occupation

As noted earlier, on average, correctional staff experienced an average of 16 different stressors. Table 6 presents the mean number of stressors experienced by occupational group. Examination of the table reveals that those individuals who occupy middle management positions (correctional supervisors (M=24) and unit managers (M=27) experience the highest level of stress while those who occupy administrative positions experience the least amount of stress (M=8).

Table 6

Mean Number of Stressors Experienced by Occupation

Occupation	Mean	SD
Administration	8.2	6.9
Psychologist	12.3	6.8
Nurse	13.8	5.7
Program Facilitator	13.9	6.8
Institutional Parole Officer	17.1	8.2
Management	17.6	7.5
Correctional Officer	19.0	7.6
Correctional Supervisor	24.1	9.7
Unit Manager	26.8	7.3

Table 7 presents the type of stress experienced by occupation. Workplace systemic stress (e.g., being called names, communication problems) was listed as a source of stress for all staff. None of the occupational groups were excluded from experiencing violent incidents caused by inmates. Overall, individuals in middle management (unit managers and correctional supervisors) were exposed to more work place systemic stressors, inmate violence and traumatic incidents than other staff. Conversely administrative staff were exposed to the least amount of stressors.

Table 7

Type of Stressors Experienced by Occupation

Stressor	CX	CS	IPO	UM	PF	NU	PS	ADM	MGT
Being sworn at	95.5	94.1	90.5	100	73.3	100	73.3	55.5	88.9
Called names	93.6	88.2	90.5	100	73.3	84.6	68.2	37	88.9
Verbally threatened	79.1	88.2	66.7	100	60.0	53.8	50.0	25.1	66.7
Verbal threat with physical gesture	60.9	76.5	31.9	100	26.7	53.8	50.0	28.3	44.4
Received threatening letters or phone calls	10.0	29.4	28.6	62.5	6.7	23.1	13.6	8.7	22.2
Stalked by an offender	18.2	41.2	28.6	37.5	26.7	15.4	18.2	13.0	11.1
Been harassed by a staff member	41.8	47.1	52.4	87.5	60.0	61.5	27.3	37.0	55.6
Been pushed or shoved	29.1	52.9	19.0	75.0	20.0	23.1	4.5	8.7	22.2
Had to use your PPA	29.1	47.1	28.6	62.5	20.0	23.1	13.6	8.7	24.2
Physically assaulted without a weapon	18.2	47.1	14.3	75.0	20.0	15.4	4.5	2.2	16.7
Physically assaulted with a weapon	8.2	23.5	9.5	37.5	0	0	4.5	2.2	7.4
Had non-toxic objects thrown at you	37.3	47.1	26.6	75.0	13.3	30.8	0	8.7	27.1
Had bodily fluids thrown at you	13.6	29.4	14.3	25.0	0	7.7	4.5	5.5	22.2
Bitten by an offender	2.7	0	0	12.5	0	7.7	0	6.5	0
Witnessed an offender being beaten	47.3	70.6	19.0	75.0	20.0	23.1	13.6	8.7	33.3

Note. CX= Correctional Officer, CS= Correctional Supervisor, IPO= Institutional parole officer, UM= Unit Manager, PF= Program Facilitator, NU = Nurse, PS = Psychologist, ADM= Administration and MGT= Management

	CX	CS	IPO	UM	PF	NU	PS	ADM	MG
Witnessed an offender after a beating	72.1	76.5	71.4	75.0	40.0	46.2	50.0	19.6	44.4
Clean up offender after an attempted suicide	29.1	47.1	14.3	25.0	6.7	53.8	9.1	2.2	11.1
Saw a dead offender after a completed suicide	21.8	47.1	4.8	50.0	6.7	15.4	9.1	4.3	33.3
Witnessed a coworker beaten up	19.1	47.1	0	50.0	6.7	23.1	13.6	2.2	22.2
Witness a close friend beaten up in altercation or riot	17.3	17.6	0	0	0	0	4.5	4.3	11.1
Witness a co-worker killed in altercation or riot	1.8	0	0	0	0	0	0	0	0
Had a close friend killed in altercation or riot	.9	0	0	0	6.7	0	0	0	0
At institution during riot	22.7	58.8	33.3	75.0	13.3	7.7	22.7	21.7	33.3
Involved in riot control	22.7	35.3	9.5	62.5	0	0	9.1	4.3	33.3
Put out cell fires	36.4	58.8	4.8	37.5	0	15.4	0	6.5	33.3
Inhaled smoke from putting out cell fires	35.5	52.9	9.5	37.5	0	7.7	9.1	4.3	33.3
Found shanks or other weapons during searches	80.0	82.4	42.9	100	40.0	7.7	9.1	13.0	11.1
Accidentally pricked by a needle or other sharp object	12.7	5.9	4.6	12.5	6.7	0	0	0	0
Taken hostage	4.5	0	0	0	0	0	0	0	0
Involved in hostage negotiations	7.3	5.9	9.5	25.0	0	7.7	13.6	0	25.0

	CX	CS	IPO	UM	PF	NU	PS	ADM	MGT
Had a friend taken hostage	11.8	17.6	9.5	12.9	6.7	15.4	27.3	8.7	12.5
During critical incidents, have you felt/been out of communication	53.6	47.1	38.1	50.0	66.7	0	27.3	26.1	25.0
Walking into the unknown	83.6	88.2	61.9	75.0	40.0	51.5	50.0	26.1	62.5
Potential of losing control of the situation	55.5	76.5	57.1	75.0	73.3	38.5	40.9	13.0	87.5
Concerns about safety /well being of staff in general	95.5	88.2	81.0	100	73.3	69.2	77.3	56.5	87.5
Dealing with unrealistic expectations of inmates	78.2	82.4	81.0	87.5	86.7	84.6	77.3	34.8	87.5
Dealing with unrealistic expectations of staff	67.3	88.2	81.0	87.5	66.7	69.2	72.7	58.7	87.5
Dealing with unrealistic expectations of management	84.5	88.2	90.5	75.0	73.3	61.5	72.7	60.9	87.5
Lack of communication	88.2	94.1	90.5	87.5	80.0	69.2	59.1	76.1	62.5
Being second guessed by coworkers	59.1	82.4	81.0	75.0	53.3	61.5	36.4	50	75.0
Fear of investigation	47.3	58.8	33.3	62.5	33.3	15.4	22.7	6.5	37.5
Been the subject of an investigation	43.6	70.6	33.3	62.5	20.0	23.1	18.2	5.5	87.5
Felt there was insufficient staff for institution	74.5	88.2	66.7	75.0	60.0	30.8	40.9	34.8	25.0
Unable to transfer an offender to another facility	45.5	70.6	61.9	75.0	26.7	23.1	59.1	2.2	75.0

Impact of Stress 111

Had an offender you worked with, reoffend while on conditional release	28.2	47.1	52.4	87.5	53.3	30.8	45.5	13.0	25.0
Other	12.7	5.9	28.6	12.5	26.7	15.4	4.5	6.5	0

Perceived Effect of Stressors

In addition to identifying the sources of stress that they experience, correctional staff were asked to rate the effect that each stressor they experienced had on them. Table 8 presents the perceived effects of each of the stressors as rated by the correctional staff.

As would be expected, those events identified in the literature as being psychologically harmful/traumatic were the stressors that correctional staff rated as having moderate to high effects on them. Not surprisingly, the death of a co-worker/close friend was rated as most stressful (100%), followed by being assaulted (84%), witnessing co-workers beaten up (80%), and seeing a dead offender after a completed suicide (77%)

Workplace systemic stress were also perceived as having a particularly negative effect. These stressors included communication problems during critical incidents (78%), problems with communication in general (72%), potential of losing control of a situation (77%), and being harassed by another staff member (77%).

Table 8
Perceived Effect of Stressors

Stressor	None	Mild	Moderate	High	N
Being sworn at	19.0	53.5	23.0	4.4	226
Called names	18.1	51.0	24.8	6.2	210
Verbally threatened	7.7	36.3	44.0	11.9	168
Verbal threat with physical gesture	7.2	27.5	45.7	19.6	138
Received threatening letters or phone calls	2.4	34.1	29.3	34.1	41
Stalked by an offender	1.9	32.7	42.3	23.1	52
Been harassed by a staff member	6.0	17.2	34.5	42.2	116
Been pushed or shoved	4.8	31.7	44.4	19.0	63
Had to use your PPA	4.8	30.2	42.9	22.2	63
Physically assaulted without a weapon	0	17.1	41.5	41.5	41
Physically assaulted with a weapon	16.7	0	27.8	55.6	18
Had non-toxic objects thrown at you	7.0	49.3	22.5	21.1	71
Had bodily fluids thrown at you	3.2	25.8	32.3	38.7	31
Bitten by an offender	0	12.5	25.0	62.5	8
Witnessed an offender being beaten	8.9	35.6	33.3	22.2	90
Witnessed an offender after a beating	20.4	48.3	19.0	12.2	147
Clean up offender after an attempted suicide	5.5	45.5	36.4	12.7	55
Saw a dead offender after a completed suicide	2.3	20.5	45.5	31.8	44
Witnessed a coworker beaten up	0	10.0	35.0	55.0	40
Witness a close friend beaten up in altercation or riot	4.0	20.0	20.0	56.0	25

Stressor	None	Mild	Moderate	High	N
Witness a co-worker killed in altercation or riot	0	0	50	50	2
Had a close friend killed in altercation or riot	0	0	0	100	2
At institution during riot	4.3	21.4	37.1	37.1	70
Involved in riot control	4.4	17.8	37.8	40.0	45
Put out cell fires	8.1	43.5	32.3	16.1	62
Inhaled smoke from putting out cell fires	8.3	45.0	36.7	10.0	60
Found shanks or other weapons during searches	25.4	50.0	16.4	8.2	134
Accidentally pricked by a needle or other sharp object	0	16.7	33.3	50.0	18
Taken hostage	0	20.0	40.0	40.0	5
Involved in hostage negotiations	11.1	44.4	22.2	22.2	18
Had a friend taken hostage	0	17.6	32.4	50.0	34
During critical incidents, have you felt/been out of communication	3.6	18.8	38.4	39.3	112
Walking into the unknown	3.6	26.0	40.8	29.8	169
Potential of losing control of the situation	3.1	19.8	44.3	32.8	131
Concerns about safety /well being of staff in general	1.8	25.6	43.4	29.2	219
Dealing with unrealistic expectations of inmates	13.5	48.4	28.1	9.9	192
Dealing with unrealistic expectations of staff	3.3	42.5	34.4	19.7	183
Dealing with unrealistic expectations of management	3.8	27.9	34.1	34.1	208
Lack of communication	1.8	26.7	41.9	29.5	217
Being second guessed by coworkers	4.5	34.2	36.1	25.2	155
Fear of investigation	9.5	32.6	30.5	27.4	95

Stressor	None	Mild	Moderate	High	N
Been the subject of an investigation	9.8	25.0	32.6	32.6	92
Felt there was insufficient staff for institution	1.3	23.2	38.1	37.4	155
Unable to transfer an offender to another facility	8.3	37.0	36.1	18.5	168
Had an offender you worked with, reoffend while on conditional release	18.7	51.6	22.0	7.7	91
Other	0	5.9	29.4	64.7	34

Outcome Measures

Post Traumatic Stress Disorder

Scores on the PENN inventory ranged from 1 to 63 with a mean score of 22.2 and a standard deviation of 10.2. This is higher than Hammaberg's (1992) sample of non-patients (M=15; SD= 8.3).

Overall, 11.8% of the sample met the criteria for PTSD as indicated by the PENN Inventory, which is approximately 4% higher than the general population.

However, as seen in Figure 1, the percentage of staff who met the criteria for PTSD varied from a low of 6.0% for individuals currently work in a multi-level facility, to a high of 18.2% for people currently working in a maximum security facility ($\chi^2 = 4.34$, NS).

Figure 1. Percentage of staff who met the criteria for PTSD by security level.

Although only a small number of staff met the criteria for a diagnosis of PTSD, 86% (n=237) of the correctional staff reported that they have experienced a traumatic incident. Thus, core PTSD symptoms were examined. Core PTSD symptoms include: heightened arousal (e.g., feeling jumpy/uptight), experiencing flashbacks, nightmares, difficulty sleeping, difficulty concentrating, and intrusive thoughts about a traumatic incident. Table 9 presents the percentage of correctional staff who reported experiencing one or more of the core PTSD symptoms.

Table 9

Percentage of Staff Experiencing Core PTSD Symptoms

Symptom	Percent	N
Feel jumpy and uptight	76.1	210
Reminders of past trauma make me feel anxious	66.3	183
I experience flashback of past traumatic experiences	43.8	121
Having difficulty concentrating	34.1	94
Have nightmares	25.0	69
Difficulty sleeping	55.0	152
Intrusive memories	67.8	187

One quarter of the sample reported that they were experiencing at least one of the core PTSD symptoms. With respect to hyper-arousal, over three quarters of the staff (76.1%) reported feeling jumpy and uptight. Anxiety and flashbacks were also quite common, with two thirds of the sample reporting that reminders of past traumas make them feel anxious, while just under one half of the sample (43.8%) reported which they experience flashbacks. Additionally, 67% of the sample reported that they experience intrusive memories of traumatic experiences that they have encountered. With regard to sleeping difficulties, more than half of the sample reported that they experienced difficulties sleeping and one fourth reported that they have nightmares.

Burnout

Burnout is comprised of three dimensions, emotional exhaustion, depersonalization and personal accomplishment. Each dimension is divided into high, moderate, and low. For the exhaustion and depersonalization dimension, a higher score is indicative of burnout while a low score on personal accomplishment is indicative of burnout. The percentage of staff in each burnout category is presented in Table 10. Just over one fourth (28.3%) of the staff scored in the high range for emotional exhaustion and one third (33.5%) scored in the high range for depersonalization. However, most staff (79.4%) felt that they were still accomplishing positive objectives in their job.

Table 10

Percentage of Staff in Each Category of the Burnout Dimensions

	Emotional Exhaustion	Depersonalization	Personal Accomplishment
Low	43.5	40.7	5.4
Moderate	28.3	25.9	15.2
High	28.3	33.5	79.4

The means and standard deviations for the three sub-scales of the MBI are summarized in Table 11, and the observed results are compared to normative data for a large group of mental health service providers and other human service providers (e.g., probation officers) (Maslach and Jackson, 1981) and a sample of sex offender clinicians (Ellerby, 1998). The current sample of correctional staff scored similarly to the human services providers studies by Maslach and Jackson (1981) and Ellerby (1998).

Table 11

Comparisons Between the MBI Sample and the Current Sample on Each Dimension of Burnout

Occupation and MBI scores	MBI-Sample (Maslach and Jackson, 1981)		Sex Offender Clinicians (Ellerby, 1998)		Pacific Correctional Staff	
	M	SD	M	SD	M	SD
Mental Health^a						
EE	16.9	8.9	17.4	9.4	18.1	11.0
Dp	5.7	4.6	7.7	4.9	6.9	5.1
Pa	30.9	6.4	40.4	5.4	15.2	7.9
Other^b						
EE	21.4	8.1			20.4	12.4
Dp	11.1	6.2			10.7	7.6
Pa	36.4	7.0			22.9	9.8

Note. a. Mental health providers in the Maslach and Jackson study include psychologists, psychiatrists, counselors and mental health staff. Ellerby's sample includes sex offender treatment providers in the United states and Canada. The Pacific correctional staff includes psychologists, program facilitators and nurses. b. Other in the Maslach and Jackson study include legal aid attorneys, police officers, probation officers, ministers, librarians and agency administrators. The Pacific correctional staff includes correctional officers, correctional supervisors, institutional parole officers, unit managers and management.

Burnout by Security Level

Figure 2 presents the emotional exhaustion rates by current security level. As the security level increased, so did the rates of individual who scored high on emotional exhaustion. The percentage of staff who were in the high range for emotional exhaustion ranged from about one fifth for the staff working in minimum and multi-level security institutions, to a high of 37% for the staff working in a maximum security environment ($\chi^2 = 13.12, p < .05$).

Figure 2. Rates of emotional exhaustion by security level

Figure 3 presents the depersonalization rates by current security level. As the security level increased, so did the rate of individuals who scored high on depersonalization. The percentage of staff who were in the high range for

depersonalization ranged from 23%, for staff working in multi-level security, to a high of 48% for the staff working in a maximum security environment ($\chi^2 = 11.45$, $p < .08$).

Figure 3. Rates of depersonalization by security level

There was little variation in the rates of personal accomplishment. As noted earlier, most staff felt that they were accomplishing positive objectives in their jobs. As would be expected, staff working a maximum security environment reported the lowest rates of high personal accomplishment at 76%, compared to 84% for staff working at the multi-level facility.

Burnout Rates Across Occupations

There were significant differences in the rates of emotional exhaustion by occupation ($\chi^2 = 38.2, p < .01$) and the results are presented in Table 12. Unit managers had the highest rate of emotional exhaustion (62.5%), followed by institutional parole officers at 47.6%, while the rate for other frontline staff ranged from 25-30%. Administrative staff have the lowest rate of emotional involvement with offenders and not surprisingly had the lowest rate of high emotional exhaustion at 14.3%.

Table 12
Rates of Emotional Exhaustion by Occupation

	Emotional Exhaustion		
	Low	Moderate	High
UM	12.5	25.0	62.5
IPO	14.3	38.1	47.6
NU	69.2	0	30.8
MGT	30.0	40.0	30.0
CX	40.5	31.5	27.9
PS	63.6	9.1	27.3
CS	47.1	29.4	23.5
PF	33.3	46.7	20.0
ADM	59.5	26.2	14.3

Note. CX= Correctional Officer, CS= Correctional Supervisor, IPO= Institutional parole officer, UM= Unit Manager, PF= Program Facilitator, NU = Nurse, PS = Psychologist, ADM= Administration and MGT= Management.

There were significant differences in the rates of depersonalization by occupation ($\chi^2 = 58.3, p < .001$) and the results are presented in Table 13. It is interesting to note that while unit managers had the highest rate of emotional exhaustion, they had one of the lowest rates of depersonalization (12.5%), while correctional officers had the highest rate of depersonalization at 50.9%. About one third of the correctional supervisors and institutional parole officers scored in the high range for depersonalization. None of the managers scored high on depersonalization.

Table 13

Rate of Depersonalization by Occupation

	Depersonalization		
	Low	Moderate	High
CX	21.8	27.3	50.9
CS	47.1	17.6	35.3
IPO	33.3	33.3	33.3
NU	46.2	30.8	23.1
ADM	56.8	21.6	21.6
UM	25.0	62.5	12.5
PF	60.0	26.7	13.3
PS	68.2	22.7	9.1
MGT	80.0	20.0	0

Note. CX= Correctional Officer, CS= Correctional Supervisor, IPO= Institutional parole officer, UM= Unit Manager, PF= Program Facilitator, NU = Nurse, PS = Psychologist, ADM= Administration and MGT= Management

Physical Health

Physical health was examined by asking about the presence or absence of health conditions, use of cigarettes and alcohol, physical activity and use of over the counter and prescribed medication. Table 14 presents the health behaviors of the sample. The majority of the sample (77.1%) were non-smokers and of those who did smoke, most (89.1%) smoke a pack of cigarettes or less a day. In contrast, the majority of the sample (79.2%) reported that they drink alcohol. Most (86.6%) drink three times or less a week. Of greater concern is the 27.2% of the sample who reported drinking 5 or more drinks on 4 or more occasions in the last three months, suggesting that they may have a problem with alcohol.

On a positive note, most of staff (70.9%) reported that they participate in physical activity on a regular basis. The majority (73.1%) saw the doctor between one and five times in the last year. Of some concern is the finding that nearly one fifth of the sample (17.8%) saw the doctor six or more times in the past year suggesting that they may be experiencing significant health problems. Nine percent of the sample had not seen the doctor at all.

Table 14

Health Behaviors of the Sample

Health Indicators-habits	Frequency	Percentage
Smokers	63	22.9
Half a pack	29	45.3
1 pack a day	28	43.8
More than 1 pack per day	7	10.9
Drinkers	217	79.2
Drank more than 5 drinks in the last 3 months		
Never	101	46.5
Once	31	14.3
2 to 3 times	26	12.0
4 to 6 times	22	10.1
7 to 9 times	14	6.5
10 times or more	23	10.6
In average week, number of days consumed alcohol		
Less than once a week	91	41.9
Once a week	48	22.1
2 to 3 times per week	49	22.6
4 to 6 days per week	19	8.7
Everyday	10	4.6
Frequency of working out		
Never	80	29.1
2 times per week	78	28.4
3 to 6 times per week	96	34.9
Daily	21	7.6

Number of doctor visits in the last year	Frequency	Percentage
None	25	9.1
1 to 2 times	119	43.3
3 to 5 times	82	29.8
6 to 9 times	33	12.0
10 times or more	16	5.8

Table 15 presents the use of non-prescription medication by the sample. Twenty-seven percent of the sample reported using painkillers at least once a week. About one fifth of the sample reported that they used ant-acids at least once a week. Most staff (81.5%) reported that they do not use anti-histamines.

Table 15

Use of Non-prescription Medication

Medication	Rarely/Never		Once a month		Once a week		Daily	
	F	%	F	%	F	%	F	%
Pain killers	115	41.7	85	30.8	53	19.2	22	8.0
Ant-acids	186	67.6	34	12.4	30	10.9	25	9.1
Anti-histamines	225	81.5	28	10.2	9	3.3	13	4.7

On average, staff reported that they have 1.5 ($SD = 1.8$) medical conditions, the nature of which are presented in Table 16. The most common ailments were back pain (42.9%) and migraines (32.4%). The use of anti-depressants and stress leave was also quite high at 18.3% for both. It should be noted that 100 staff endorsed either stress leave and/or use of anti-depressants and of these, only 19 staff endorsed both items, which indicated that the percentage of staff who are feeling stressed enough to have to go on stress leave or take medication for depression and/or anxiety is actually 32%.

Table 16
Medical Conditions of the Sample

Medical Condition	Frequency	Percentage
Back pain	118	42.9
Migraines/ bad headache	89	32.4
Use of anti-depressant/ anti-anxiety drug	50	18.3
Stress leave	50	18.3
High blood pressure	28	10.2
High Cholesterol	30	10.9
Diabetes	17	6.2
Ulcer	13	4.7
Heart condition	4	1.5

Health Conditions by Security

The number of health problems that correctional staff experienced varied by the security level that they have experience working in ($F(2,268) = 4.59, p < .01$), with staff who have worked in a maximum security facility having the highest number of health problems ($M = 1.72, SD = 1.41$), compared to average of 1.2 ($SD = 1.27$)

for those staff who work in a medium security facility. Table 17 presents the types of medical conditions across security levels. The only statistically significant difference in reported health conditions across security level was in the use of anti-depressant or anxiolytics, which was two and half times higher for staff who have worked in maximum security facility. Although it is not statistically significant, it was observed that staff who worked in a maximum security facility had higher rates of stress leave, diabetes, ulcer, high cholesterol, and back pain suggesting that the increased stress that staff working in a maximum security institution experience also takes a toll on their physical health.

Table 17

Type of Health Condition by Security Level

	Maximum	Medium	Multi-level	χ^2
Use of anti-depressant/ anti-anxiety drug	24.6	13.4	10.0	6.4*
Stress leave	24.6	12.6	16.7	5.7
High blood pressure	12.6	5.8	16.7	4.7
Diabetes	8.4	4.2	6.7	1.8
Ulcer	5.9	4.2	0	2.0
High Cholesterol	14.3	8.3	10.0	2.2
Heart condition	2.5	0	3.3	3.4
Back pain	47.1	40.0	40.0	1.4
Migraines/ bad headache	32.8	30.8	33.3	.132

* $p < .05$

Health Condition by Occupation Type

Although there was no significant difference in the number of health problems across the occupational groups ($F(8,268) = .922, ns$), there was considerable variability in the types of medical conditions experienced by the occupational groups. Table 18 presents the type of medical conditions that are prevalent among the different occupations. Nearly three quarters (73%) of the program facilitators had been on stress leave, which is significantly higher than any of the other occupational groups. Though not statistically significant, program facilitators also had the highest use of anti-depressants/anxiolytics (33.3%) followed by correctional supervisors (29.4%). Correctional supervisors also had the highest rate of high cholesterol (23.5%) and back pain (64%).

Table 18

Health Condition by Occupation Type

	CX	CS	IPO	UM	PF	NU	PS	ADM	MGT	χ^2
Use of anti-depressant/ anti-anxiety drug	13.6	29.4	23.8	12.5	33.3	23.1	9.1	21.3	10.0	10.7
Stress leave	16.2	6.3	19.0	12.5	73.3	15.4	13.6	14.9	20.0	34.2***
High blood pressure	14.3	5.9	4.8	25.0	0	15.4	4.5	6.4	10.0	9.2
Diabetes	9.8	11.8	0	12.5	13.3	0	0	2.1	0	11.1
Ulcer	6.3	5.9	0	0	0	0	4.5	6.4	0	4.6
High Cholesterol	13.4	23.5	9.5	0	6.7	7.7	9.1	6.4	10.0	6.8
Heart condition	2.7	0	0	0	0	0	0	0	0	
Back pain	42.9	64.7	33.3	37.5	26.7	53.8	50.0	40.4	30.0	12.9
Migraines/ bad headache	29.5	41.2	28.6	25.0	40.0	38.5	27.3	40.4	20.0	4.4

*** $p < .001$

Examining the Role of Security and the Experience of Stressors

It was hypothesized that individuals working at a higher level of security would experience significantly more stressors than individuals working at lower security institutions. The omnibus test of main effect of security level was significant, $F(2,275) = 12.5, p < .001$ and accounted for 8% of variance as indicated by the adjusted R^2 . Post-hoc Bonferroni tests indicated that staff working in a maximum security setting had higher mean stress scores than individuals working in a medium or multi-level security facility. The means and standard deviations for each level of security are presented in Table 19. On average, staff who worked in a maximum security facility experienced 5 more stressors than staff working in lower security institutions.

Table 19

Mean and Standard Deviations on the Stress Score by Security Level

	M	SD
Maximum	19.2	9.1
Medium	14.2	7.6
Multi-level	13.0	8.7

Table 20 presents the percentage of staff who experienced each stressor by security level. Overall, staff who worked in a maximum security level setting were more likely to experience both workplace systemic stress and traumatic stress. They were statistically more likely to have experienced 20 of the stress items. Specifically, they were more likely to be called names, be threatened, assaulted, involved in riots, have communication problems during critical

incidents and deal with unrealistic demands of management and be subjected to an investigation.

Table 20

Percentage of Staff Who Experienced Each Stressor by Security Level

Stressor	Security Level			χ^2
	Multi-level	Medium	Maximum	
Being sworn at	83.3	81.8	90.4	3.7
Called names	66.7	75.2	87.8	9.53**
Verbally threatened	60.0	55.4	75.7	10.9**
Verbal threat with physical gesture	50.0	42.1	64.3	11.8**
Received threatening letters or phone calls	13.3	10.7	20.0	4.0
Stalked by an offender	16.7	21.5	19.1	.4
Been harassed by a staff member	46.7	39.7	47.8	.4
Been pushed or shoved	23.3	14.9	33.9	11.7**
Had to use your PPA	13.3	20.7	30.4	5.2
Physically assaulted without a weapon	16.7	9.1	24.3	9.9**
Physically assaulted with a weapon	0	4.1	12.2	8.3**
Had non-toxic objects thrown at you	23.3	21.5	34.8	5.5
Had bodily fluids thrown at you	0	5.0	22.6	22.0***
Bitten by an offender	0	1.7	5.2	3.6
Witnessed an offender being beaten	30.0	22.3	47.8	17.3***
Witnessed an offender after a beating	43.3	52.9	66.1	7.0*

Clean up offender after an attempted suicide	33.3	10.7	29.6	15.2***
Saw a dead offender after a completed suicide	16.7	14.9	21.7	1.9
Witnessed a coworker beaten up	23.3	5.8	25.2	17.7***
Witness a close friend beaten up in altercation or riot	16.7	5.8	12.2	4.5
Witness a co-worker killed in altercation or riot	1.7	0	0	2.6
Had a close friend killed in altercation or riot	1.7	0	0	2.6
At institution during riot	3.3	13.2	47.0	43.7***
Involved in riot control	3.3	9.1	28.7	20.6***
Put out cell fires	13.3	12.4	37.4	22.49***
Inhaled smoke from putting out cell fires	10.0	9.9	40.0	33.4***
Found shanks or other weapons during searches	33.3	50.4	55.7	4.8
Accidentally pricked by a needle or other sharp object	0	7.4	7.0	2.3
Taken hostage	0	0	4.3	6.7*
Involved in hostage negotiations	6.7	3.3	11.3	5.6
Had a friend taken hostage ⁴	20.0	5.8	18.3	9.6**
During critical incidents, have you felt/been out of communication with senior staff	36.7	35.8	51.3	6.2*

⁴ The reason this higher for the multi-level facility was because approximately 9 months prior to data collection a female staff member was taken hostage and assaulted in her office.

Walking into the unknown	60.0	56.7	73.0	7.1*
Potential of losing control of the situation	33.3	52.5	51.3	3.7
Concerns about safety /well being of staff in general	80.0	82.5	83.5	.2
Dealing with unrealistic expectations of inmates	60.0	69.2	79.1	5.5
Dealing with unrealistic expectations of staff	66.7	65.8	74.8	2.4
Dealing with unrealistic demands of management	46.7	74.2	90.4	28.7***
Lack of communication	70.0	81.7	86.1	4.3
Being second guessed by coworkers	46.7	55.0	67.8	6.4*
Fear of investigation	20.0	32.5	40.9	5.0
Been the subject of an investigation	20.0	28.3	46.1	11.5**
Felt there was insufficient staff for institution to run safely/properly	43.3	64.2	60.9	4.4
Unable to transfer an offender to another facility	30.0	40.8	45.2	2.3
Had an offender you worked with, reoffend while on conditional release	16.7	39.2	33.0	5.5
Other	6.7	15.8	10.4	2.6

Note. ** $p < .01$ *** $p < .001$. N 's are in brackets.

The Relationship Between Stress and Outcome Measures

It was hypothesized that the numbers of stressors experienced would be positively related to the scores on the PENN inventory, the MBI, and the number of reported health problems. Partial correlations between the number of stressors and outcome measures, after controlling for self-deception, showed moderate to strong positive relationships and are presented in Table 21. The only exception was the personal accomplishment domain of the MBI, which showed no relationship with the number of stressors.

Table 21

*Partial Correlation Between Number of Stressors and Outcome Measures
Controlling for Self-Deception*

	Total number of stressors
PTSD	.36 *** (263)
Number of physical health conditions	.24 *** (264)
Emotional exhaustion	.42 *** (262)
Depersonalization	.42 *** (256)
Personal accomplishment	-.05 (250)

Note. *** $p < .001$. N 's are in brackets.

Combining Negative Life Events and Work Stress

It was hypothesized that the combination of negative life events and work stress would be positively related to the outcome measures. Partial correlations between the number of negative life events and work stressors, after controlling for self-deception, showed a strong positive relationship and are presented in Table 22. It should be noted that the correlations became somewhat stronger when negative life events were included. The increases ranged from .06 for the work stress-health relationship to .1 for the work stress- PTSD relationship. This is likely due the nature of negative life events (e.g., car accidents, death of loved one, illness etc.) There was also an increase in the work stress relationship and burnout. Higher exposure to negative life events would make one more susceptible to feelings of emotional exhaustion and a negative attitude towards being around others. The only exception was the personal accomplishment domain of the MBI which showed no relationship with the number of stressors.

Table 22

Partial Correlations between the Cumulative Effect of Work Stressors and Negative Life Events and Outcome Controlling for Self Deception

	Total number of work stressors and negative life events
PTSD	.46*** (251)
Number of physical health conditions	.30*** (252)
Emotional exhaustion	.51*** (249)
Depersonalization	.51*** (244)
Personal accomplishment	-.01 (239)

Note. ** $p < .01$ *** $p < .001$. *N*'s are in brackets.

The Relationship between Perceived Impact of Stressors and Outcome Measures

It was hypothesized that an individual's perception of the effect of stressors would be related to the outcome measures. A perceived effect score was derived by summing the effect scores and dividing it by the number of stressors that the staff experienced. Partial correlations between perceived effect of stress and each of the outcome measures, after controlling for self-deception showed moderate to strong positive relationships and are presented in Table 23. The largest relationship was between perceived effect and the emotional exhaustion component of the MBI ($r = .41, p < .001$), while moderate relationships were found with the Penn Score ($r = .35, p < .001$) and number of physical health problems ($r = .31, p < .001$).

Table 23

*Partial Correlations Between Rating of Psychological Impact and Outcome
Controlling for Self Deception*

	Rating of psychological impact of stressor
PTSD	.35*** (254)
Number of physical health conditions	.31*** (255)
Emotional exhaustion	.41*** (253)
Depersonalization	.27*** (248)
Personal accomplishment	.13* (243)

Note. * $p < .05$ ** $p < .01$ *** $p < .001$. *N*'s are in brackets.

Demographics Predictive Value in the Perception of Stress

It was hypothesized that those who are male, older, have more experience and are educated, will report being less effected by stressors than younger individuals with less experience. To test this hypothesis, multiple regression was used. Each variable was entered as a separate step in the regression analyses for perceived impact of stress. Due to the correlations between the independent variables, a diagnostic test for collinearity was conducted. The results indicated that all of the variables were at acceptable minimum tolerance levels (Stevens, 2002) and the Variance Inflation Factors (VIF) were also at acceptable levels (Myers, 1990; Stevens, 2002) and are presented in Table 25.

The model specified in the hypothesis accounted for 3.9% of the variance in the perceived impact of stress ($F= 3.58, p <.007$) suggesting that demographic variables are not very predictive of the perceived impact. The only variable that was significant was years worked, which accounted for 5% of the variance.

Table 24

Summary of Regression Analyses for Variables Predicting Perceived Impact of Stress

Variable	B	Se B	B	p
Gender	.09	.0741	.077	NS
Age group	-.03	.020	-.1231	NS
Education level	-.031	.021	-.092	NS
Years worked	.09	.027	.255	.001

Table 25

Multi-Collinearity Diagnostic Test Results

Variable	Tolerance	VIF
Gender	.980	1.02
Age group	.642	1.56
Education level	.976	1.02
Years worked	.644	1.55

Neuroticism and Stress

It was hypothesized that neuroticism would be positively related to the experience of negative life events, the experience of correctional stress, and higher perceived negative effects of correctional stress and negatively related to positive life events. To test this hypothesis a partial correlation between neuroticism and the stress measures, after controlling for self deception was conducted and is presented in Table 26. The hypothesis was partially confirmed. There was no relationship between the experience of positive life events and neuroticism. There was a strong positive relationship between the experience of negative life events and neuroticism. While there was no relationship between the experience of correctional stressors and neuroticism, there was a strong positive relationship between neuroticism and the perceived impact that the correctional stressors had on staff.

Table 26

Partial correlations between neuroticism and stress controlling for self-deception

	Neuroticism
Positive Life events	-.03
Negative Life events	.41***
Total Correctional stressors	.11
Perceived effect of correctional stressors	.37***

The Relationship Between Social Support and Outcome Measures

It was hypothesized that social support would be negatively related to each of the outcome measures. To test this hypothesis a partial correlation between social support and the outcome measures, after controlling for self deception, was conducted and is presented in Table 27. The strongest relationship was between social support and the Penn score for PTSD ($r = -.46$, $p < .001$), while the remainder outcomes showed small to moderate significant effects.

Table 27

Partial Correlations Between Perceived Support and Outcome Controlling for Self Deception

	Perceived support
PTSD	-.46*** (267)
Number of physical health conditions	-.18** (270)
Emotional exhaustion	-.26*** (263)
Depersonalization	-.18 (257)
Personal accomplishment	-.17 ** (251)

Note. ** $p < .01$ *** $p < .001$. N's are in brackets.

The Relationship between Psychological Well Being and Outcomes Measures

It was hypothesized that the overall PWB score, and each dimension of PWB, would be negatively related to each of the outcome measures. To test this hypothesis a partial correlation between PWB and the outcome measures, after controlling for self deception was conducted and is presented in Table 28.

Overall, the total psychological well being score was strongly negatively correlated with all of the outcome measures. The outcome measure that had the strongest relationship with all of the dimensions of PWB was the Penn score for post-traumatic stress disorder. Environmental mastery, positive relations with others, purpose in life, and self acceptance all showed moderate to large negative relationships with all of the outcome measures. Autonomy had the weakest relationship with all of the outcome measures.

Table 28

Partial Correlations Between Psychological Well Being and Outcome Controlling for Self Deception

	PTSD (266)	Physical health (267)	E.E. (263)	Dp. (257)	P.A. (251)
Total PWB	-.61***	-.24***	-.34***	-.28***	-.29***
Autonomy	-.16**	.07	-.11	-.05	-.14*
Environmental Mastery	-.52***	-.19**	-.35***	-.20**	-.21**
Personal Growth	-.33***	-.09	-.11	-.20**	-.33***
Positive Relationships with Others	-.54***	-.22***	-.38***	-.30***	-.20***
Purpose in Life	-.51***	-.27***	-.20***	-.25***	-.28***
Self- acceptance	-.53***	-.29***	-.28***	-.19**	-.14*

Note. EE= Emotional exhaustion Dp= Depersonalization PA= Personal accomplishment.

* $p < .05$ *** $p < .01$ *** $p < .001$. N's are in brackets

The Relationship Between Coping Technique and Outcome Measures

It was hypothesized that problem solving coping techniques would be negatively related to the outcome measures, while avoidance coping techniques would be positively related to all of the outcome measures. To test this hypothesis a partial correlation between each coping technique and the outcome measures controlling for self deception was conducted and is presented in Table 29. The hypothesis was partially confirmed. Planful problem solving showed a small negative relationship with the Penn score for PTSD ($r = -.17, p < .01$) and a moderate relationship with the personal accomplishment dimension of the MBI ($r = -.27, p < .001$). However, there was no relationship with the emotional exhaustion and depersonalization dimension of the MBI or the number of health problems that staff self-reported.

Escape avoidance coping showed moderate to large positive relationships with the Penn score for PTSD ($r = .35, p < .001$), emotional exhaustion ($r = .29, p < .001$) and depersonalization ($r = .22, p < .001$) and showed a small relationship with the number of physical health problems that staff self-reported. Escape avoidance coping was not related to the personal accomplishment dimension of the MBI. Seeking social support showed a moderate negative relationship with personal accomplishment ($r = .27, p < .001$) but did not show any relationship with the other outcome measures. Accepting responsibility did not show any relationships with the outcome measures.

Table 29

*Partial Correlations Between Type of Coping Techniques and Outcome
Controlling for Self Deception*

	PTSD (270)	Physical health (267)	EE (266)	Dp (260)	PA (254)
Planful problem solving	-.17**	-.02	-.00	-.07	-.27***
Confrontive	.18**	.15*	.20***	.19**	-.12
Seek social support	-.08	.04	.08	-.05	-.27***
Accepts responsibility	.05	.00	.07	-.05	-.07
Self-control	.11	.11	.12	.13*	-.16**
Escape-avoidance	.35**	.14*	.29***	.22***	.07
Distancing	.15**	.17**	.06	.18**	.02
Positive reappraisal	-.15	.05	.04	-.15	-.39***

Note. EE= Emotional exhaustion Dp= Depersonalization PA= Personal accomplishment.
 $p < .05$ *** $p < .01$ ** $p < .001$. N's are in brackets

Psychological Well Being as a Moderator of Stress

It was hypothesized that PWB would be a moderating factor in the effect of stress. Specifically, it was expected that staff exposed to a high level of stress and who had low PWB scores, would score higher on all of the outcome measures than staff exposed to a high number of stressors but had a high PWB score. To test this hypothesis, a 2x2 factorial between-subjects multivariate analyses of variance (MANOVA) was conducted to assess the effects of stress and PWB on the PENN score for PTSD, the Emotional Exhaustion and Depersonalization components of the MBI, and the total health problems. The independent variables were stress level (high and low) and PWB (high and low). Analyses were conducted with the unique SS method (default) to adjust for non-orthogonality. The results using Wilk's Λ showed that the main effect of PWB was significant on the set of DVs ($F(4,248) = 20.62, p < .001, \eta^2_p = .255$), with PWB accounting for a moderate proportion of variability, 25.5% on the set of DVs. Similarly, the results using Wilk's Λ showed that the main effect of stress was significant on the set of DVs ($F(4,248) = 9.21, p < .001, \eta^2_p = .133$), with stress accounting for a smaller proportion of variability, 13.3% on the set of DVs. Conversely, the interaction of stress by PWB ($F(4,248) = .75, p < .56, \eta^2_p = .012$) failed to reach significance on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of PWB was significant on the PENN inventory for

PTSD ($F(1,248) = 79.36, p < .001, \eta^2_p = .245$), the emotional exhaustion ($F(1,248) = 16.15, p < .001, \eta^2_p = .062$) and depersonalization scores ($F(1,248) = 21.42, p < .001, \eta^2_p = .081$) of the MBI, and the total number of health problems ($F(1,248) = 10.14, p < .002, \eta^2_p = .040$). Comparisons of high and low PWB groups showed that staff who scored high on PWB had significantly lower scores on each of the outcome measures and are presented in Table 30.

Table 30

Means of High and Low PWB Groups on Outcome Measures

	Low PWB (S.E.)	High PWB (S.E.)
Penn	27.3 (.81)	17.37 (.78)
Exhaustion	22.72 (1.08)	16.69 (1.04)
Depersonalization	11.97 (.63)	7.91 (.61)
Health problems	1.74 (.13)	1.18 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of stress was significant on the PENN inventory for PTSD ($F(1,248) = 13.15, p < .001, \eta^2_p = .051$), the emotional exhaustion ($F(1,248) = 23.41, p < .001, \eta^2_p = .088$) and depersonalization scores ($F(1,248) = 25.90, p < .001, \eta^2_p = .096$) of the MBI. The main effect of stress in the total number of health problems ($F(1,248) = 4.45, p < .036, \eta^2_p = .040$) showed a similar trend but only approached significance. Comparisons of high and low stress groups showed that staff who scored high on stress had significantly higher scores on each of the outcome measures and are presented in Table 31.

Table 31

Means of High and Low PWB Groups on Outcome Measures

	Low Stress (S.E.)	High Stress (S.E.)
Penn	20.33 (.80)	24.37 (.78)
Exhaustion	16.08 (1.07)	23.33 (1.05)
Depersonalization	7.70 (.63)	12.17 (.61)
Health problems	1.28 (.13)	1.64 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the PWB by stress interaction was not significant on the PENN inventory for PTSD ($F(1,248) = 1.49$, ns , $\eta^2_p = .006$), the emotional exhaustion ($F(1,248) = .33$, $p < ns$, $\eta^2_p = .001$) and depersonalization scores ($F(1,248) = 2.23$, ns , $\eta^2_p = .000$) of the MBI and the total number of health problems ($F(1,248) = .37$, ns , $\eta^2_p = .002$).

A priori hypothesis specified that staff exposed to a high level of stress with low PWB would score higher on all of the outcome measures, than staff exposed to a high level of stress but who scored high on PWB. Thus, the simple effects of PWB groups within each level of stress were conducted. The results using Wilk's Λ showed that the simple effect of PWB within low stress was significant on the set of DVs ($F(1,244) = 7.79$, $p < .001$, $\eta^2_p = .115$), with PWB accounting for a small proportion of variability, 11.5% on the set of DVs. Similarly, the results

using Wilk's Λ showed that the simple effect of PWB within high stress was significant on the set of DVs ($F(1,244) = 13.71, p < .001, \eta^2_p = .185$), with PWB accounting for a moderate proportion of variability, 18.5% on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the simple effect of PWB within low stress was significant on the set on the PENN inventory for PTSD ($F(1,244) = 28.90, p < .001, \eta^2_p = .106$), the emotional exhaustion ($F(1,244) = 10.31, p < .001, \eta^2_p = .041$) and depersonalization scores ($F(1,244) = 9.48, p < .002, \eta^2_p = .037$) of the MBI and the total number of health problems ($F(1,248) = 3.25, ns, \eta^2_p = .013$). Similarly, the simple effect of PWB within high stress was significant on the set on the PENN inventory for PTSD ($F(1,244) = 52.48, p < .001, \eta^2_p = .177$), the emotional exhaustion ($F(1,244) = 6.07, p < .014, \eta^2_p = .024$) and depersonalization scores ($F(1,244) = 12.04, p < .001, \eta^2_p = .013$) of the MBI and the total number of health problems ($F(1,248) = 7.36, p < .007, \eta^2_p = .029$). The means are presented in Table 32. These results suggest that PWB may serve to buffer the effects of stress as the magnitude of the effect of PWB increases under conditions of high stress.

Table 32

Means for Simple Effects

	Low Stress Low PWB	Low Stress High PWB	High Stress Low PWB	High Stress High PWB
Penn	24.6	16.0	30.1	18.7
Emotional Exhaustion	19.5	12.6	25.9	20.8
Depersonalization	9.6	5.7	14.3	10.4
Total Health Problems	1.5	1.1	2.0	1.3

Social Support as a Moderator of Stress

It was hypothesized that social support would be a moderating factor on the effect of stress. Specifically, it was expected that staff exposed to a high level of stress, and who had low social support scores would score higher on all of the outcome measures than staff exposed to a high number of stressors but who had a high social support score. To test this hypothesis, a 2x2 factorial between-subjects multivariate analyses of variance (MANOVA) was conducted to assess the effects of stress and social support on the PENN score for PTSD, the Emotional Exhaustion and Depersonalization components of the MBI, and total health problems. The independent variables were stress level (high and low) and social support (high and low). Analyses were conducted with the unique SS method (default) to adjust for non-orthogonality. The results using Wilk's Λ showed that the main effect of social support was significant on the set of DVs ($F(4,248) = 10.61, p < .001, \eta^2_p = .146$), with social support accounting for a moderate proportion of variability, 14.6% on the set of DVs. Similarly, the results using Wilk's Λ showed that the main effect of stress was significant on the set of DVs ($F(4,248) = 9.96, p < .001, \eta^2_p = .138$), with stress accounting for a moderate proportion of variability, 13.8% on the set of DVs. Conversely, the interaction of stress by social support ($F(4,248) = .32, ns, \eta^2_p = .019$) failed to reach significance on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of social support was significant on the PENN inventory for PTSD ($F(1,248) = 41.31, p < .001, \eta^2_p = .141$), the emotional exhaustion ($F(1,248) = 10.86, p < .001, \eta^2_p = .041$) and depersonalization scores ($F(1,248) = 3.63, ns, \eta^2_p = .014$) of the MBI, and the total number of health problems ($F(1,248) = 7.0, p < .01, \eta^2_p = .027$). Comparisons of high and low social support groups showed that staff who scored high on social support had significantly lower scores on each of the outcome measures and are presented in Table 33.

Table 33
Mean of Social Support Groups on Outcome Measures

	Low Social Support (S.E.)	High Social Support (S.E.)
Penn	25.96 (.85)	18.34 (.82)
Exhaustion	21.77 (1.07)	16.88 (1.04)
Depersonalization	8.87 (.640)	10.56 (.62)
Health problems	1.72 (.12)	1.26 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of stress was significant on the PENN inventory for PTSD ($F(1,248) = 13.93, p < .001, \eta^2_p = .051$), the emotional exhaustion ($F(1,248) = 25.01, p < .001, \eta^2_p = .091$) and depersonalization scores ($F(1,248) = 31.29, p$

$<.001$, $\eta^2_p = .111$) of the MBI, while the total number of health problems ($(F(1,248) = 4.64, p < .032, \eta^2_p = .018)$) approached significance. Comparisons of high and low stress groups showed that, with the exception of health problems which approached significance, staff who scored high on stress had significantly higher scores on each of the outcome measures and are presented in Table 34.

Table 34

Means of High and Low Stress Groups on Outcome Measures

	Low Stress (S.E.)	High Stress (S.E)
Penn	24.34 (.86)	19.99 (.86)
Exhaustion	15.61 (1.07)	23.04 (1.03)
Depersonalization	7.22 (.64)	12.21 (.62)
Health problems	1.30 (.13)	1.67 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the social support by stress interaction was not significant on the PENN inventory for PTSD ($F(1,248) = .883, ns, \eta^2_p = .004$), the emotional exhaustion ($F(1,248) = .433, p < ns, \eta^2_p = .002$) and depersonalization scores ($F(1,248) = 2.21, ns, \eta^2_p = .009$) of the MBI, and the total number of health problems ($F(1,248) = 1.56, ns, \eta^2_p = .006$).

A priori hypothesis specified that staff exposed to a high level of stress with low social support would score higher on all of the outcome measures than staff exposed to a high level of stress but who scored high on social support. Thus,

the simple effects of social support groups within each level of stress were conducted. The results using Wilk's Λ showed that the simple effect of social support within low stress was significant on the set of DVs ($F(1,244) = 4.62$, $p < .001$, $\eta^2_p = .069$), with social support accounting for a small proportion of variability, 6.9% on the set of DVs. Similarly, the results using Wilk's Λ showed that the simple effect of social support within high stress was significant on the set of DVs ($F(1,244) = 7.28$, $p < .001$, $\eta^2_p = .105$), with social support accounting for a small proportion of variability, 10.5% on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the simple effect of social support within low stress was significant on the set on the PENN inventory for PTSD ($F(1,251) = 14.49$, $p < .001$, $\eta^2_p = .005$), and the total number of health problems ($F(1,251) = 7.309$, $p < .007$, $\eta^2_p = .028$). Although not significant, a similar trend was found with the emotional exhaustion ($F(1,251) = 3.35$, ns , $\eta^2_p = .013$) and depersonalization scores ($F(1,251) = .084$, ns , $\eta^2_p = .000$) of the MBI. Similarly, the simple effect of social support within high stress was significant on the set on the PENN inventory for PTSD ($F(1,251) = 28.23$, $p < .001$, $\eta^2_p = .101$) and the exhaustion component of the MBI ($F(1,251) = 8.131$, $p < .005$, $\eta^2_p = .031$). Although not significant, a similar trend was found for the depersonalization scores ($F(1,251) = 5.99$, ns , $\eta^2_p = .023$) of the MBI and the total number of health problems ($F(1,248) = 1.02$, ns , $\eta^2_p = .004$). The means and standard errors are presented in Table 35. These results

suggest that social support may serve to buffer the effects of stress, especially under conditions of high stress.

Table 35

Means of Groups on Outcome Measures

	Low Stress Low Social Support	Low Stress High Social Support	High Stress Low Social Support	High Stress High Social Support
Penn	23.25	16.73	28.72	19.96
Exhaustion	17.6	13.65	25.98	20.1
Depersonalization	7.41	7.04	13.72	10.7
Total Health Problems	1.64	.96	1.79	1.55

Coping Styles as a Moderator of Stress

It was hypothesized that different coping styles would be a moderating factor on the effect of stress. Specifically, it was expected that staff exposed to a high level of stress and who had low problem solving scores would score higher on all of the outcome measures than staff exposed to a high number of stressors but who had a high problem solving score. It was also expected that staff exposed to a high level of stress and who had high escape avoidance scores would score higher on all of the outcome measures than staff exposed to a high number of stressors and but a low escape-avoidance score. To test this hypothesis, a 2x2 factorial between-subjects multivariate analyses of variance (MANOVA) was conducted to assess the effects of stress and coping style on the PENN score for PTSD, the Emotional Exhaustion and Depersonalization components of the MBI and total health problems. The independent variables were stress level (high and low) and coping style (high and low problem solving and escape avoidance). Analyses were conducted with the unique SS method (default) to adjust for non-orthogonality.

Problem Solving

The results using Wilk's Λ showed that the main effect of problem solving was significant on the set of DVs ($F(4, 246) = 5.95, p < .001, \eta^2_p = .088$), with problem solving accounting for a small proportion of variability, 8.8% on the set of DVs. Similarly, the results using Wilk's Λ showed that the main effect of stress was significant on the set of DVs ($F(4,246) = 14.81, p < .001, \eta^2_p = .194$), with stress

accounting for a moderate proportion of variability, 19.4% on the set of DVs. Conversely, the interaction of stress by problem solving ($F(4,246) = 1.732$, ns, $\eta^2_p = .027$) failed to reach significance on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of problem solving was only significant on the PENN inventory for PTSD ($F(1,246) = 18.77$, $p < .001$, $\eta^2_p = .07$). The main effect of problem solving was not significant on the emotional exhaustion ($F(1,246) = 1.736$, $p < .ns$, $\eta^2_p = .007$), depersonalization scores ($F(1,246) = 10.11$, $p < .002$, $\eta^2_p = .039$) of the MBI and the total number of health problems ($F(1,248) = 3.23$, $p < ns$, $\eta^2_p = .013$). Comparisons of high and low problem solving groups showed that staff who scored high on problem solving had significantly lower scores on the PENN inventory for PTSD. There was also a trend for individuals who scored high on problem solving to having lower scores on the other outcome measures. The results are presented in Table 36.

Table 36

Mean of Problem Solving Groups on Outcome Measures

	Low Problem Solving (S.E.)	High Problem Solving (S.E.)
Penn	25.8 (1.01)	20.4 (.73)
Exhaustion	20.8 (1.25)	18.8 (.90)
Depersonalization	11.7 (.72)	8.8(.52)
Health problems	1.7 (.143)	1.35 (.10)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of stress was significant on the PENN inventory for PTSD ($(F(1,246) = 32.22, p < .001, \eta^2_p = .085)$), the emotional exhaustion ($(F(1,246) = 33.23, p < .001, \eta^2_p = .725)$) and depersonalization scores ($(F(1,246) = 41.15, p < .001, \eta^2_p = .142)$) of the MBI, and the total number of health problems ($(F(1,246) = 10.77, p < .001, \eta^2_p = .041)$). Comparisons of high and low stress groups showed that staff who scored high on stress had significantly higher scores on each of the outcome measures and are presented in Table 37.

Table 37

Means of High and Low Stress Groups on Outcome Measures

	Low Stress (S.E.)	High Stress (S.E.)
Penn	19.6 (.90)	26.7 (.86)
Exhaustion	15.3 (1.16)	24.2 (1.07)
Depersonalization	7.4 (.65)	13.1 (.62)
Health problems	1.2 (.13)	1.8 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the problem solving by stress interaction was significant on the PENN inventory for PTSD ($F(1,246) = .5.39, p < .02, \eta^2_p = .021$). The problem solving by stress interaction was not significant for the emotional exhaustion ($F(1,246) = .36, p < ns, \eta^2_p = .001$) and depersonalization scores ($F(1,246) = .82,$

ns , $\eta^2_p = .003$) of the MBI and the total number of health problems ($F(1,246) = 3.036$, ns , $\eta^2_p = .012$).

A priori hypothesis specified that staff exposed to a high level of stress with low problem solving would score higher on all of the outcome measures, than staff exposed to a high level of stress and who scored high on problem solving. Thus, the simple effects of problem solving groups within each level of stress were conducted. The results using Wilk's Λ showed that the simple effect of problem solving within low stress was not significant on the set of DVs ($F(1,244) = .894$, ns , $\eta^2_p = .0014$), with problem solving accounting for little of the variability, 1.4% on the set of DVs. In contrast, the results using Wilk's Λ showed that the simple effect of problem solving within high stress was significant on the set of DVs ($F(1,244) = 7.07$, $p < .001$, $\eta^2_p = .103$), with problem solving accounting for a small proportion of variability, 10.3% on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the simple effect of problem solving within low stress was not significant on the set on the PENN inventory for PTSD ($F(1,249) = 1.9$, $p < ns$, $\eta^2_p = .008$), the emotional exhaustion ($F(1,251) = .248$, ns , $\eta^2_p = .001$), depersonalization scores ($F(1,251) = .247$, ns , $\eta^2_p = .010$) of the MBI and the total number of health problems ($F(1,251) = .001$, $p < ns$, $\eta^2_p = .000$).

In contrast, the simple effect of problem solving within high stress was significant on the set on the PENN inventory for PTSD ($F(1,251) = 23.2, p < .001, \eta^2_p = .085$), the depersonalization component of the MBI ($F(1,251) = 8.75, p < .003, \eta^2_p = .034$), and the total health problems ($F(1,251) = 6.57, p < .01, \eta^2_p = .026$). Although not significant, a similar trend was found for the emotional exhaustion scores ($F(1,251) = 1.92, ns, \eta^2_p = .008$) of the MBI. The means and standard errors are presented in Table 38. These results suggest that under conditions of high stress, the use of problem solving coping styles can serve to buffer the effects of stress.

Table 38
Means of Groups on Outcome Measures

	Low Stress Low Problem Solving	Low Stress High Problem Solving	High Stress Low Problem Solving	High Stress High Problem Solving
Penn	20.8	18.3	30.8	22.5
Exhaustion	15.9	14.8	25.7	22.7
Depersonalization	8.4	6.4	15.0	11.3
Total Health Problems	1.2	1.2	2.1	1.5

Escape Avoidance Coping

The results using Wilk's Λ showed that the main effect of escape-avoidance was significant on the set of DVs ($F(4, 246) = 7.64, p < .001, \eta^2_p = .112$), with escape-avoidance accounting for a moderate proportion of variability, 11.2% on the set of DVs. Similarly, the results using Wilk's Λ showed that the main effect of stress

was significant on the set of DVs ($F(4,246) = 12.02, p < .001, \eta^2_p = .165$), with stress accounting for a moderate proportion of variability, 16.5% on the set of DVs. Conversely, the interaction of stress by escape-avoidance ($F(4,246) = .872, ns, \eta^2_p = .014$) failed to reach significance on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of escape-avoidance was significant on the PENN inventory for PTSD ($F(1,246) = 28.01, p < .001, \eta^2_p = .102$), the emotional exhaustion ($F(1,246) = 6.12, p < .001, \eta^2_p = .024$), depersonalization scores ($F(1,246) = 10.22, p < .001, \eta^2_p = .040$) of the MBI and the total number of health problems ($F(1,248) = 6.92, p < .01, \eta^2_p = .027$). Comparisons of high and low escape-avoidance groups showed that staff who scored high on escape-avoidance had significantly higher scores on the PENN inventory for PTSD, exhaustion, depersonalization and health problems and are presented in Table 39.

Table 39

Mean of Escape-Avoidance Groups on Outcome Measures

	Low Escape-Avoidance (S.E.)	High Escape-Avoidance (S.E.)
PENN	18.9 (.88)	25.2 (.81)
Exhaustion	17.5 (1.1)	21.2 (1.0)
Depersonalization	8.4 (.64)	11.74 (.58)
Health problems	1.2 (.13)	1.6 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the main effect of stress was significant on the PENN inventory for PTSD ($F(1,246) = 19.26$, $p < .001$, $\eta^2_p = .073$), the emotional exhaustion ($F(1,246) = 29.83$, $p < .001$, $\eta^2_p = .108$) and depersonalization scores ($F(1,246) = 36.74$, $p < .001$, $\eta^2_p = .130$) of the MBI, and the total number of health problems ($F(1,246) = 5.95$, $p < .015$, $\eta^2_p = .027$). Comparisons of high and low stress groups showed that staff who scored high on stress had significantly higher scores on each of the outcome measures and are presented in Table 40.

Table 40

Means of High and Low Stress Groups on Outcome Measures

	Low Stress (S.E.)	High Stress (S.E)
Penn	19.4 (.85)	24.7 (.84)
Exhaustion	15.3 (1.05)	23.4 (1.04)
Depersonalization	7.2 (.62)	12.5 (.61)
Health problems	1.2 (.12)	1.6 (.12)

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the escape-avoidance by stress interaction was not significant on the PENN inventory for PTSD ($F(1,246) = .935$, $p < ns$, $\eta^2_p = .004$), the emotional exhaustion ($F(1,246) = .172$ $p < ns$, $\eta^2_p = .001$) and depersonalization scores ($F(1,246) = .47$, ns , $\eta^2_p = .002$) of the MBI and the total number of health problems ($F(1,246) = 2.09$, ns , $\eta^2_p = .008$).

A priori hypothesis specified that staff exposed to a high level of stress with high escape-avoidance would score higher on all of the outcome measures, than staff exposed to a high level of stress but who scored low on escape-avoidance.

Thus, the simple effects of escape-avoidance groups within each level of stress were conducted. The results using Wilk's Λ showed that the simple effect of escape-avoidance within low stress was significant on the set of DVs ($F(1,244) = 3.058$ $p < .017$, $\eta^2_p = .048$), with escape-avoidance accounting for a small amount

of the of the variability, 4.8% on the set of DVs. In contrast, the results using Wilk's Λ showed that the simple effect of escape-avoidance within high stress was significant on the set of DVs ($F(1,244) = 5.478, p < .001, \eta^2_p = .083$), with escape-avoidance accounting for a small proportion of variability, 8.3% on the set of DVs.

Using a Bonferroni correction procedure (critical $\alpha = .0125$), the univariate results showed that the simple effect of escape-avoidance within low stress was significant on the set on the PENN inventory for PTSD ($F(1,249) = 9.26, p < .003, \eta^2_p = .036$) and the depersonalization ($F(1,251) = 7.454, p < .007, \eta^2_p = .029$) component of the MBI. The univariate results showed that the simple effect of escape-avoidance within low stress was not significant on the set of emotional exhaustion scores ($F(1,251) = 2.1, ns, \eta^2_p = .008$) of the MBI and the total number of health problems ($F(1,251) = .70, p < ns, \eta^2_p = .003$).

In contrast, the simple effect of escape-avoidance within high stress was significant on the set on the PENN inventory for PTSD ($F(1,251) = 19.786, p < .001, \eta^2_p = .074$), and the total health problems ($F(1,251) = 8.388, p < .004, \eta^2_p = .033$). Although not significant, a similar trend was found for the emotional exhaustion component of the MBI ($F(1,251) = 4.216, p < .041, \eta^2_p = .034$) and the depersonalization scores ($F(1,251) = 3.189, ns, \eta^2_p = .13$) of the MBI. The means and standard errors are presented in Table 41. These results suggest

that the use of escape-avoidance coping may increase the likelihood of experiencing psychological distress under both low and high conditions of stress.

Table 41

Means of Groups on Outcome Measures

	Low Stress Low Escape Avoidance	Low Stress High Escape Avoidance	High Stress Low Escape Avoidance	High Stress High Escape Avoidance
Penn	16.8	22.0	20.9	28.4
Exhaustion	13.8	16.8	21.3	25.5
Depersonalization	5.5	8.8	11.3	13.5
Total Health Problems	1.1	1.2	1.3	2.0

Psychometric Properties of the Exposure to Stress Questionnaire for Correctional Staff (ESQCS)

The ECQCS was developed by the author for the purpose of conducting this study. As it is a new scale, the psychometric properties were examined.

The total number of stressors that staff experienced ranged from 0 to 39 ($M = 16.2$ $SD = 8.8$). Reliability estimates in the form of Chronbach's alphas were in the acceptable range. The overall coefficient alpha of the total score of the ESQCS ($\alpha = .92$) was acceptable. The split-half reliabilities were .86 for each.

An exploratory Principal Components Analysis was conducted in order to determine whether there were subsets of stress items that are relatively independent of each other. The stress items were subjected to an exploratory Principal Components Analysis with equamax rotation. Components with eigenvalues greater than one were extracted. The results presented in Table 42 show a three-factor solution.

The three-factor solution accounted for 34.3% of the total variance. The first factor (inmate violence) accounted for 23% of the variance. The second factor, which reflected workplace systemic stress, accounted for another 6.4% of the total variance. The third factor was comprised of serious traumatic events and added 4.9% to the variance.

Table 42

Equamax Rotation of the ESQCS

	Loadings		
	Factor 1	Factor 2	Factor 3
Put out cell fires	.712		
Inhaled smoke	.711		
Non-toxic object thrown at you	.662		
Physically assaulted	.631		
Involved in riot control	.588		
Pushed/shoved	.585		
Bodily fluids thrown at you	.576		
Witnessed offender being beaten	.538		
Used PPA	.527		
Assaulted with a weapon	.499		
Clean up after suicide	.489		
Witness co-worker beaten	.477		
Received threatening letters/phone calls	.456		
At institution during riot	.446		
Unrealistic management demands		.645	
Unrealistic inmate demands		.638	
Unrealistic staff demands		.625	

	Factor 1	Factor 2	Factor 3
Called names		.571	
Lack of communication		.558	
Unable to transfer offender		.552	
Potential loss of control		.550	
Sworn at		.533	
Walking into the unknown		.517	
Insufficient staff		.513	
Concern about safety of staff		.499	
Being second guessed		.482	
Saw offender after a beating		.472	
Fear of investigation		.461	
Out of communication during critical incidents		.430	
Offender reoffended		.419	
Taken hostage			.696
Witness death of coworker			.601
Close friend killed			.540
Witness close friend beaten			.537
Friend taken hostage			.524
Saw a dead offender			.420

Note. Factor loadings less than .40 have been suppressed.

Correlations between the components ranged from .34 to .55 suggesting that the factors are different. The correlations are presented in Table 43.

Table 43

Correlations of the factors and the total scale score

	Factor 1	Factor 2	Factor 3
Factor 2	.55	-	-
Factor 3	.49	.34	-
Total	.85	.88	.53

Coefecient alphas were conducted for each of the factors on the ESQCS. The coeffecient alphas ranged from .55 on the serious traumatic events factor, to an.86 on the both the inmate violence factor and systemic work stress factor.

Table 44 presents the means and standard deviations of the three factors. In general, staff reported experiencing workplace systemic stress factors the most, followed by inmate violence. As noted earlier, exposure to serious traumatic events occurs infrequently and is reflected in the data which indicate most staff did not experience a serious traumatic event.

Table 44

Means and standard deviations of the factors of the ESQCS

	Mean	SD	Range
Factor 1	2.9	3.4	0-14
Factor 2	10.0	4.1	0-16
Factor 3	.4	.3	0-6

The total scale score and the individual factors correlated modestly and positively with extant measures of outcome (burnout, PTSD, physical health), thereby demonstrating divergent validity. The correlations are presented in Table 45. Somewhat surprisingly, the experience of critical incidents was not related to the scores on the PENN inventory for post-traumatic stress disorder nor the emotional exhaustion component of the Maslach Burnout Inventory. However, it did show a small positive relationship with the depersonalization score of the Maslach Burnout Inventory and self-reported health problems.

Table 45

Correlations between the factors and outcome measures

	Factor 1	Factor 2	Factor 3	Total
PENN total	.27***	.34***	.07	.36***
Emotional Exhaustion	.28***	.43***	.08	.42***
Depersonalization	.35***	.40***	.12*	.42***
Health	.22***	.20***	.12*	.24***

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

Discussion

The purpose of the current study is to explore the sources of stress that correctional staff are exposed to, the perceived impact that these stressors have, and the psychological and physiological impact of being exposed to these stressors. In addition, the role that dynamic factors such coping styles, social support, and psychological well being have in moderating the impact of these stressors is examined.

Sources of Stress

To examine the sources of stress for correctional staff, the author developed a scale that consisted of fifty items. Staff endorsed whether they experienced the item and what the perceived impact of the stressor had on them. Based on the results of the factor analyses, the scale was broken down into three factors, inmate violence (e.g., seeing an offender being beaten), workplace systemic stress (e.g., being sworn at), and critical incidents (e.g., taken hostage). This finding is consistent with Fisher's (2000) model of stress.

Not surprisingly, a large source of stress for correctional staff stemmed from violent incidents caused by inmates. These violent incidents included putting out cell fires, being pushed/shoved, having bodily fluids thrown at you, cleaning up after an attempted/completed suicide, and being at an institution during a riot. A number of these incidents occur regularly and the impact of these sources of stress can accumulate.

Another source of stress for staff is workplace systemic stress which stems from the institutional routine and other staff. These include unrealistic demands of management and other staff, problems with communication, concerns about the safety of staff and fear of investigation. These sources of stress increase one's susceptibility to the negative impacts of the critical incidents when they occur because at the time that a critical incident occurs, the staff would already be stressed (Fisher, 2000). This was reflected in the number of administrative staff who, despite not being exposed to many violent or critical incidents, had high levels of burnout and PTSD scores.

One possible explanation for the above finding is provided by a number of studies which have shown that employees subjected to high demands but with little control over their work are more likely to suffer from a wide range of negative psychosocial and physical health problems (Karasek & Theorell, 1990; Glass, McKnight & Valdimarsdottir, 1993). The current study supports these earlier findings. In addition, Fisher (2003) suggested that frequent exposure to lower level stressors can sometimes result in more severe long term consequences than infrequent experiences of a high level stressor.

Although less frequent, the last factor, critical incidents was also identified as a source of stress by staff. These incidents include being taken hostage, witnessing the death of a co-worker, close friend beaten, close friend being killed,

friend being taken hostage, and seeing a dead offender. These incidents have been identified as the most traumatic and thus are associated with more negative psychological impact. However, in this study, this was not the case. This is due largely in part because of the little variability in the endorsement of the critical incident stressors, specifically most staff did not experience these items. This needs to be examined further.

Perceived Impact of the Stressors

Correctional staff were asked to rate the effect that each stressor had on them. The sources of stress that had the greatest perceived impact were the death of a co-worker/close friend, being assaulted, witnessing a coworker being beaten, and seeing a dead offender after a completed suicide.

The workplace systemic stress had high perceived negative impacts. In particular, communication problems, the potential loss of control of a situation, being the subject of an investigation, being harassed by another staff member and dealing with unrealistic demands of management were rated as having a moderate to high perceived impact. The overall perception of stressors was positively correlated with all of the outcome measures. This would suggest that the greater the perceived impact of the stressor, the greater impact it had on both physical and mental health.

Exposure to Stress By Security Level

Overall, individuals who had worked in a maximum security facility were exposed to more stressors than individuals who had not worked in a maximum security facility. More specifically, individuals who had worked in a maximum security facility were exposed to more violent incidents (e.g., being in a riot) than individuals who had not worked in a maximum security facility. The impact of increased exposure to these stressors was reflected in the outcome measures. For example, individuals working in maximum security level institution were almost twice as likely to meet the criteria for PTSD as those working in a medium or a minimum facility and almost three times higher than individuals working in a multi-level facility. Similarly, individuals working in a maximum security level institution were twice as likely to be in the high range of emotional exhaustion and depersonalization as those individuals working in lower security level institutions. The results of the PENN inventory and MBI scores are substantiated by the fact that individuals working in maximum security level institution were also two and a half times more likely be on an anti-depressant or anti-anxiety medication compared to individuals working in lower security level institutions.

The impact of exposure to stressors was also reflected in the number of health problems that staff reported. Individuals working in a maximum security level institution had one and half times the number of health problems as individuals working in lower security level institutions. Individuals working in a maximum

security level institution also had higher rates of stress leave, diabetes, ulcer, high cholesterol and back pain.

Psychological and Physical Impact of the Stressors

Increased exposure to stressful events at work was associated with higher scores on the PENN inventory for post-traumatic stress disorder, the emotional exhaustion and depersonalization scores of the Maslach Burnout Inventory, and the total number of health problems.

The negative effect of work stressors was compounded when individuals experienced a high number of personal stressors. The experience of personal stressors makes one more susceptible to the negative effects of work related stress and has been associated with a more negative view of the world (Fisher, 2002).

Social Support and Outcome

A higher level of social support was associated with lower scores on all of the outcome measures with the most marked relationship being with scores on the PENN inventory for PTSD.

In addition to examining the relationship between social support and outcome measures, the role of social support in the prevention of PTSD, burnout and health problem was investigated. Although there was no interaction between social support and stress and the outcome measures, the results of the simple

effects test clearly showed that social support serves as a protective factor for individuals regardless of the level of stress that they are exposed to. Specifically, individuals with high social support scores had lower scores on the PENN inventory for PTSD, the emotional exhaustion and depersonalization scores of the MBI and fewer health problems compared to individuals with low social support scores. The results were more pronounced in the high stress group comparisons.

Psychological Well Being and Outcome

A higher level of psychological well being was associated with lower scores on all of the outcome measures, with the most marked relationship being with scores on the PENN inventory for PTSD. Of the six dimensions of the PWB scale, environmental mastery, positive relations with others, purpose in life and self-acceptance showed the greatest negative relationship with all of the outcome measures. The dimension of autonomy had the weakest relationship with all of the outcome measures.

In addition to examining the relationship between PWB and outcome measures, the role of PWB in the prevention of PTSD, burnout, and health problem was investigated. Although there was no interaction between PWB and stress and the outcome measures, results of the simple effects test clearly showed that PWB serves as a protective factor for individuals regardless of the level of stress that they are exposed to. Specifically, individuals with high PWB scores had lower

scores on the PENN inventory for PTSD, the emotional exhaustion and depersonalization scores of the MBI and fewer health problems compared to individuals with low PWB scores with the results being more pronounced in the high stress group comparisons.

Coping Styles and Outcome Measures

Of the eight different coping styles, only one approach style (confrontive) and two avoidance style approaches (escape-avoidance and distancing) showed any relationship with the outcome measures.

Consistent with previous literature (e.g., Rosine 1990), the use of escape-avoidance coping was associated with increased scores on the measure for post-traumatic stress disorder. The results of the present study also show that the use of escape-avoidance coping is associated with increased scores on the emotional exhaustion and depersonalization dimensions of the MBI. Although small, there was also a relationship between the use of escape-avoidance coping and the number of health problems that staff reported.

The use of planful problem solving was associated with lower scores on the measure for post-traumatic stress disorder. However, there was no relationship between the use of planful problem solving and the emotional exhaustion and depersonalization dimensions of the MBI, or the number of health problems that staff reported.

Although confrontive coping is considered to be a problem solving coping technique, the use of it was associated with increased scores on the measure for post-traumatic stress disorder, the emotional exhaustion and depersonalization dimensions of the MBI and the number of health problems that staff reported. The likely reason for this finding is that the use of confrontive techniques (e.g., expressing anger at the person causing the problem; doing something risky) would likely put other coworkers at risk for harm by inmates. Individuals resorting to the use of these techniques would likely act out their own stress by creating stress in others.

Limitations of the Present Study

The response rate of this survey was only 38%, which was similar to but in line with Lavack-Pambrun's (2000), 42% response rate on correctional nurses..

Although the response rate is lower than the response rate from the staff survey conducted by the Correctional Service of Canada in 1996, which was 68%, the current sample was representative in terms of occupational status and across security levels.

However, there were also notable differences in the methodology. For example, the 1996 staff survey was conducted by an outside firm and staff were provided with an opportunity to complete the survey in a classroom-like setting during their working hours. In addition staff were not asked to sign a consent form that could potentially identify them. In contrast, in the present study, the staff were asked to

complete the survey on their own time. A number of staff refused to complete the survey when they saw the consent form. Although I informed them that I was the only person who would handle the data and that the consent forms went in another box, many staff were concerned that the information would be shared with management. I talked to some union representatives who conveyed the same information to their respective members, but there was still a great deal of mistrust. As a result of the mistrust issue, response rates varied from institution to institution. I had the highest response rates from the institutions where I worked and/or knew staff who could provide me with creditability, and the lowest response rates where I did not know staff.

One other factor that influenced the response rate was the occurrence of critical and serious incidents during the data collection period. For example, at one facility, there was an attempted sexual assault on a female staff member, the following week, there were five assaults on male officers. After these events occurred, I ceased data collection at this facility. At another institution, the Institutional Emergency Response Team (IERT) was called in and I was unable to complete data collection at the facility. There was an escape from another facility. The occurrence of these incidents likely influenced the response rate in a negative manner.

A second limitation of the study is the reliance on self-report measures. The primary concern is self-report bias, which frequently occurs on pencil and paper

tests. However, the self-report bias was controlled for by conducting partial correlations using the self-deception scale. Furthermore, the results from both the PENN inventory for PTSD and the MBI were comparable to the other similar populations (e.g., Ellerby, 1998; Maslach and Jackson, 1981; Rosine, 1992). Future researchers may want to validate the actual number of individual who are experiencing PTSD and/or burnout with clinical interviews.

Another potential problem is response bias. Issues of response bias may account for some of the current findings. It could be speculated that less variance was observed for some scales due to response bias. As well, it could be that only certain groups of staff (i.e., most stressed) were motivated enough to make their views known by way of completing the questionnaires. Alternatively, it is just such a group that may not have bothered to participate in the first place.

Another possible limitation of the study was the measure of job stress employed in the present study. It is important to point-out that the scale was developed specifically for this study as none existed in the literature. However, the scale did show a high level of internal consistency and was validated with the outcome measures.

The retrospective nature of the study makes causal inference difficult. The retrospective assessment of both personal and social resources make it difficult to ascertain the actual level of support when work related stress and trauma

exposure occur. Unfortunately, this is the case in most research on traumatic events (Solomon & Flum, 1988).

The measure of coping used in this study represents the individual's habitual repertoire of coping responses. While it reflects the individual's style of coping, it does not provide information about the particular characteristics of the events the person recalls nor does it represent the person's 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 would include control over events, appraisal, and coping strategies (Solomon et al. 1988), a situation that is unlikely in the investigation of trauma.

Another limitation of the study is its lack of generalizability to all correctional staff in Canada because only staff from the Pacific region were utilized. Results from the 2002 Public Service Employee Survey (Government of Canada, 2002) indicated that, compared to other correctional staff in the country, staff in the Pacific region were less satisfied with their jobs, more likely to feel disrespected at work and more likely to experience harassment. Dissatisfaction with work and being harassed have been associated with increased feelings of burnout (Fisher, 2002) and increased susceptibility to post-traumatic stress disorder.

Furthermore, statistics regarding usage of the Employee Assistance Program

(EAP) across CSC staff, showed that staff in the Pacific region utilized EAP at almost twice the rate of the national average (National 18.3%; Pacific Region: 34.2%) (Pam Scott [EAP/CISM coordinator], personal communications) suggesting that these staff may be experiencing more difficulties than others. Alternatively, these staff may be more willing to attain assistance than staff from other regions.

Implications of Findings and Interventions

Despite the aforementioned methodological limitations, the findings of this study offer valuable information to individuals considering a career in corrections and for the managers supervising correctional staff. Clearly there is a need for the Correctional Service of Canada Pacific region to invest in the staff that work within the institutions. Attending to the needs of the staff has the long range benefits of supporting the staff's emotional wellness, their effectiveness in their respective occupations, and their longevity in the field.

The first step in investing in staff is to provide them with training prior to involving them in direct service delivery with an offender population. Currently, only correctional officers receive training prior to working with the inmate population. It is important that an introduction to the field of corrections provide potential staff with information about the possible personal impacts of working with this population. Currently, staff are only informed of the potential for the experience of critical incidents (e.g., inmate suicides; physical harm) while the day to day happenings (e.g., being sworn at, being threatened) are never talked about.

A second step involves teaching staff how to cope effectively with the stressors that they are exposed to in their work environment. Continuous long-term exposure to traumatic material can affect people's perceptions of themselves and their world in fundamental ways. Thus, the risk for secondary symptoms increases with exposure (Fisher & Abrahamson, 2002; Patterson, 1992).

Ursano, Grieger, and McCarroll (1996) showed that the effects of stress are moderated when individuals feel adequately prepared or trained for anticipated traumatic events. The preparation is thought to increase the person's sense of control, reduce uncertainty and reduce the physiological stress response.

The correlations between the number of stressors experienced and all of the outcome measures (MBI scores, PENN score, physical health problem indicators) were relatively strong and it is important to consider the practical implications of these findings. Managing stress in an organization is difficult when the sources of stress are not readily susceptible to adjustment or manipulation. In this study, the results are somewhat encouraging, as a number of stressors identified, are, to a certain degree, manageable. For example, communication problems can be resolved by designating individuals to relay information when incidents occur. One facility has done this, and the increased communication has been positive.

When staff are stressed, their work can be compromised. The past decade has seen significant gains in the understanding of assessment, programming and utility of the risk, need, responsivity principle (Andrews and Bonta, 1998) with offenders, however, the process can be compromised, if staff are ignored (Tellier and Serin, 2001). Tellier and Serin contend that the selection, training, support and retention are as important to effective corrections as assessment and program strategies are for offenders. Specifically, they stated that poor staff can impeded the impact of even the best programs. The fact that 73% of the program facilitators in the sample had been on stress leave and two thirds of the program facilitators are in the moderate to high level of emotional exhaustion, leaves one wondering how effectively these staff are in providing their respective programs. In a similar vein, over three- quarters of the institutional parole officers and unit managers are emotionally exhausted, which likely impacts their work. Although correctional supervisors and correctional officers are not as emotionally exhausted, their depersonalization scores reflect a cynical negative attitude towards offenders. This appears to be supported by research examining stress level and endorsement for rehabilitation, where a number of researchers have shown that correctional officers who report higher levels of stress have lower levels of endorsement for rehabilitation (e.g., Lariviere & Robinson, 1996; Robinson, Porporino and Simourd, 1993; Simourd, 1997; Tellier and Robinson, 1995).

The implications of the current findings have more severe consequences for individuals working in a maximum security facility where almost half of all the staff are burnt-out and nearly one fifth are experiencing significant levels of psychological distress, as indicated by the Penn inventory for PTSD. A maximum-security facility holds offenders who are mostly high risk and high need and require optimal conditions if rehabilitation programs are going to be effective. This would be difficult to achieve if staff are not psychologically healthy and are feeling burnt out. It is interesting to note that the maximum-security facility also has the highest rate of employee absenteeism.

Teller and Serin (2001) noted that healthy staff is critical to achieving positive correctional results. Similarly, Muldary (1983) indicated that chronic stress can reduce health professionals' commitment to providing high quality health care, and impair individual's ability to concentrate and solve problems. Muldary further stated that prolonged exposure to chronic stress could also lead to the use of substances being employed as a coping mechanism.

Relatedly, there is a concern about the high use of alcohol among the staff who completed this survey. The extent of alcohol abuse among employees working for the Correctional Service of Canada may need to be examined in greater detail. It may be beneficial to have an alcohol and drug awareness program available to all staff.

One possible intervention for the negative effects of stress would be to teach the use of negative mood regulation. Cantanzaro and Mearns (1990) defined Negative Mood Regulation (NMR) as the belief individuals have, that, when they are in a bad mood, they can do something to make themselves better. Recently, Mearns and Mauch (1998) reported that police officers who scored high on NMR used more adaptive coping mechanisms and had lower levels of anger and distress compared to officers who scored low on NMR. They concluded that officers who have a strong belief in their ability to control their negative moods are less likely to experience the harmful effects of job stress and suggested that interventions directed toward raising mood regulation expectancies may help protect officers from the consequences of job stress.

Future Directions

While this research has identified the sources of stress that correctional staff are exposed to, the psychological and physical impact that these stressors have on correctional staff, as well as the role that coping strategies, psychological well-being and social support have in serving as protective factors, there is much more that needs to be done to further the knowledge base in this area.

Firstly, because of the limited research in the area, this study was largely exploratory, descriptive and cross sectional in nature. It would be important to attempt to replicate these findings in a longitudinal research project where the data would be driven by a theoretical position rather than an exploratory one, and

where changes could be tracked over time. This would allow for interventions to occur early on and possibly prevent burnout and the development of PTSD.

As the questionnaires were numerous and required about one hour to complete, some staff did not complete the survey. Future research with this population may be facilitated if the number of measures administered is limited or staff were provided with time to complete the questionnaires during work hours.

Given the high percentage (17%) of staff who are consuming alcohol at high rates, it may be useful to examine the extent of the alcohol problem among correctional staff. One method might be to administer the Short Michigan Alcohol Screening Test [SMAST; Selzer, Vinokaur & VanRoojen (1975)] to all staff. Alcohol and drug awareness programs should be provided to all staff for the purpose of reducing alcohol consumption among staff.

Lastly, Fisher's model of correctional stress appears to be a good reflection of how the two types of stress (critical incidents and workplace systemic stress) affect staff. Thus, an introduction of wellness programs designed specifically for correctional staff, such as that offered by Fisher and Associates (2001) may be beneficial in reducing the psychological distress experienced by correctional staff. The program teaches staff about the types of stress encountered in corrections, how to cope more effectively with these stressors and emphasizes the use of available supports. A recent program evaluation of this program

(Fisher and Associates, 2003) with provincial corrections in British Columbia showed a significant reduction in absenteeism and an increase in job satisfaction. Subsequent to this program being offered in federal facilities, an evaluation examining pre- and post-levels of burnout, PTSD symptoms and leave usage should be conducted.

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Appendix A: Informed Consent Form and Debriefing Information

Informed Consent Form

The purpose of the informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Title of Study: An Investigation of the Impact of Chronic Work Stress and Critical Incident Stress on Correctional Staff and the Factors that Moderate It

Research Personnel: The following people are involved in this research project and may be contacted at any time: Marlo Gal (Principal Investigator, 604-796-1475); Dr. R. Hoge (Faculty Sponsor, 613-520-5773). Should you have ethical concerns about this study then please contact Dr.M. Gick, (Chair, Carleton University Research Ethics Committee for Psychological Research, 613-520-2600, ext. 2664.)

Purpose: The purpose of the current study is to explore the types of stressors that correctional staff are exposed to, the frequency in which they encounter these stressors, the perceived impact that these stressors have, and the psychological and physiological impact of being exposed to these stressors. In addition, the role that coping styles, social support, and psychological well being have in moderating the impact of these stressors will also be examined.

Task Requirements: You will be requested to respond to a number of questionnaires. The questionnaires include the following topics: the types of stress that you are exposed to at work, how you are feeling emotionally and physically, how you feel about yourself and others and how you cope with stress.

Duration and locale: In total, it will take approximately 1 hour to fill out all of the questionnaires. After you have completed the questionnaires, please put them in the envelope and drop them off in the box at the front gate of your institution.

Potential risk/discomfort: Some people may find the recall of some stressors and/or other questionnaires upsetting (e.g., anxious). Your participation is voluntary and you are under no obligation to continue with the study.

Anonymity/confidentiality: The data gathered in this study are confidential and will only be used by researchers associated with this project. The data are also anonymous with respect to your personal identity.

Right to Withdraw: You may withdraw from this study at any time without penalty.

Signatures

I have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and if for any reason, at any time, I wish to leave the experiment, I may do so without having to give an explanation and with no penalty whatsoever. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous with respect to my personal identity. My signature indicates that I agree to participate in the study.

Participant's Signature _____ Date _____

Debriefing

The purpose of the current study is to explore the types of stressors that correctional staff are exposed to, the frequency in which they encounter these stressors, the perceived impact that these stressors have, and the psychological and physiological impact of being exposed to these stressors. In addition, the role that coping styles, social support, and psychological well being have in moderating the impact of these stressors will also be examined.

Research has shown that correctional staff experience some distress from their work environment. The distress from this work environment can have negative effects on physical and mental health. However, studies have shown that proper training and treatment of staff, high levels of social support and general well-being can reduce the negative effects of the stressful environment.

The results of this study will provide a detailed account of the types of stressors that correctional staff are exposed and the frequency in which they are exposed to them, the percentage of correctional staff who are currently suffering from symptoms of Post Traumatic Stress Disorder (PTSD), depression, burnout and physiological problems. The moderating effects of coping styles, psychological well being and social support will provide information on how staff can be better trained to cope with these events and treated when critical incidents occur.

An increased understanding of the types of stress that correctional staff are exposed to and how they are affected by various aspects of their job has the potential to raise awareness of the difficulties inherent in this type of work and may increase attention to issues such as training, appropriate client care and staff self-care. Information on the sources of stress and the variables that moderate the distress can also be utilized to identify and develop the most appropriate training, supervision, job design and support resources for individuals who take on the challenge of working with an offender population.

Your time and participation in this research are greatly appreciated!!

We understand that some of the questions may have been upsetting and/or anxiety provoking. If you are experiencing any distress, please contact myself or your local EAP or CISM team member. The next page provides the names and phone numbers of Employee Assistance Program (EAP) people and all members of the Critical Incident Stress Management (CISM) team members. If you have any questions or concerns about this research, then please feel free to contact Marlo Gal (Principle Investigator, 604-796-4442) or Dr. Hoge (Faculty Sponsor, 613-520-5773). Should you have ethical concerns about this study then please contact Dr. M. Gick, (Chair, Carleton University Research Ethics Committee for Psychological Research, 613-520-2600, ext. 2664.) or Dr. K. Matheson (Chair, Dept. of Psychology, 520-2600, ext.2648).

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Appendix B: Demographics

Demographics

Circle the number that represents you. **DO NOT** put your name or other identifying information on the questionnaires.

1. Gender 1. Male

2. Female

2. Age

1. 18-24	6. 46-49
2. 25-29	7. 50-54
3. 30-34	8. 55-59
4. 35-40	9. 60-64
5. 41-45	10. 65 or older

3. Marital Status

1. Single
2. Married or common-law
3. Separated/ divorced
4. Widowed

4. What is the highest level of education that you have achieved?

1. Some high school	5. Some University
2. High school graduate	6. Bachelor's degree
3. Some college	7. Graduate Degree (MA; Ph.D.)
4. College graduate	

5. How many years have you worked for CSC?

1. Less than 5 years	4. 15-19 years
2. 5 to 9 years	5. 20-24 years
3. 10- 14 years	6. 25 or more years

6. What is your current position?

1. CX1 or CX2
2. Correctional supervisor
3. IPO
4. Unit manager
5. Program deliverer/work supervisor
6. Nurse
7. Psychologist
8. Chaplain
9. Teacher/principle
10. Maintenance (includes kitchen staff)
11. Administrative (CR, AS 1or 2)
12. Project Managers (AS4 to AS6)
13. Management (assistant warden, deputy warden, warden)

7. What was your previous position?

1. CX1 or CX2
2. Correctional supervisor
3. IPO
4. Unit manager
5. Program deliverer/work supervisor
6. Nurse
7. Psychologist
8. Chaplain
9. Teacher/principle
10. Maintenance (includes kitchen staff)
11. Administrative (CR, AS 1or 2)
12. Project Managers (AS4 to AS6)
13. Management (assistant warden, deputy warden, warden)

8. What is the security level of the institution that you are currently working at?

1. Minimum

2. Medium

3. Maximum

9. What is the security level of the institution that you were working at?

1. Minimum

2. Medium

3. Maximum

10. Are you a member of the IERT? 1. Yes 2. No

11. Are you a member of the CISM team? 1. Yes 2. No

12. Are you a member of the EAP? 1. Yes 2. No

Appendix C: Exposure to Stress Questionnaire for Correctional Staff

Exposure to Stress Questionnaire for Correctional Staff

Incident Type	Have you ever		In the last 12 months
	Yes	No	Number of Times. (if daily mark 999)
1) Being sworn at: If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
2) Called names (e.g., goof, bitch): If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
3) Verbally threatened: If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
4) Verbal threat with physical gesture: If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
5) Receiving threatening letters or phone calls : If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
6) Stalked by an offender (e.g., staring, being followed, phone calls): If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
7) Been harassed by another staff member If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
8) Been Pushed/shoved: If yes, rate the effect it has had on you: 2. None 2. Mild 3. Moderate 4. High	1	0	_____
9) Had to use your PPA: If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
10) Physically assaulted without a weapon: If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____
11) Physically assaulted with a weapon: If yes, rate the effect it has had on you: 1. None 2. Mild 3. Moderate 4. High	1	0	_____

12) Had non-toxic objects thrown at you (e.g., food tray):
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
13) Had bodily fluids thrown at you (e.g., urine, saliva, feces):
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
14) Bitten by an offender:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
15) Witnessed an offender being beaten:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
16) Witnessed an offender after a beating:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
17) Clean up offender after an attempted suicide:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
18) Saw a dead offender after a completed suicide:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
19) Witnessed a co-worker beaten up:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
20) Witnessed a close friend beaten up in an altercation/riot:

If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High | 1 | 0 | _____ |
| 21) Witnessed a co-worker get killed in an altercation/riot:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High | 1 | 0 | _____ |
| 22) Had a close friend get killed in an altercation/riot:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High | 1 | 0 | _____ |
| 23) Fired a weapon that resulted in injury to offender(s)
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High | 1 | 0 | _____ |
| 24) Fired a weapon that resulted in injury to staff:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High | 1 | 0 | _____ |

25) Fired a weapon that resulted in death:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
26) At institution during a riot
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
27) Involved in riot control:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
28) Put out cell fires:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
29) Inhaled smoke from putting out cell fires:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
30) Found shanks or other weapons during cell search:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
31) Accidentally pricked by a needle or other sharp object:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
32) Sexually assaulted by an offender:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
33) Taken hostage:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
34) Involved in hostage negotiations:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
35) Had a friend taken hostage:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
36) During critical incidents, have you felt/been out of communication with senior staff in such a manner that you did not know what the status of the rest of institution was:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
37) Walking into the unknown (e.g. offender spinning out, PPA):
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____

38) Potential of losing control of situation:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
39) Concerns about safety/wellbeing of staff in general:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
40) Dealing with unrealistic expectations of inmates:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
41) Dealing with unrealistic expectations of staff:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
42) Dealing with unrealistic expectations of management:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
43) Lack of communication:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
44) Being second guessed by co-workers:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
45) Fear of investigation (e.g., use of force tapes):
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
46) Been the subject of an investigation:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
47) Felt there was insufficient staff for institution to run
safely/efficiently/properly:
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
48) Unable to transfer an offender to another facility (lower
security; mental health facility)
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
49) Had an offender you worked with, reoffend while on conditional
release, that you thought would succeed
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____
50) Other (specify) _____
If yes, rate the effect it has had on you:
1. None 2. Mild 3. Moderate 4. High	1	0	_____

Appendix D: Life Experiences Survey

LIFE EXPERIENCES SURVEY

Listed below are a number of events which sometimes bring about change in the lives of those who experience them (i.e. are stressors). **Please circle only the number of the events which you have experienced in the past year i.e. 14 for a new job.** Then in addition, **please circle your rating of the impact that the event had on you** i.e. -3 would indicate an extremely negative impact while +3 would be extremely positive. 0 would suggest no impact either positive or negative.

IN THE PAST YEAR

	extremely negative -3			extremely positive +3			
		moderately negative -2			moderately positive +2		
		somewhat negative -1			somewhat positive +1		
			no impact 0				
1. Marriage	-3	-2	-1	0	+1	+2	+3
2. Detention in jail or comparable institution	-3	-2	-1	0	+1	+2	+3
3. Death of spouse or significant other	-3	-2	-1	0	+1	+2	+3
4. Major change in sleeping habits (much more or much less sleep)	-3	-2	-1	0	+1	+2	+3
5. Death of close family member:							
a. Mother	-3	-2	-1	0	+1	+2	+3
b. Father	-3	-2	-1	0	+1	+2	+3
c. Brother	-3	-2	-1	0	+1	+2	+3
d. Sister	-3	-2	-1	0	+1	+2	+3
e. Grandmother	-3	-2	-1	0	+1	+2	+3
f. Grandfather	-3	-2	-1	0	+1	+2	+3
g. other (specify) _____	-3	-2	-1	0	+1	+2	+3
6. Major change in eating habits (much more or much less food intake)	-3	-2	-1	0	+1	+2	+3
7. Foreclosure on mortgage or loan	-3	-2	-1	0	+1	+2	+3
8. Death of close friend	-3	-2	-1	0	+1	+2	+3
9. Outstanding personal achievement	-3	-2	-1	0	+1	+2	+3
10. Minor law violations (traffic tickets disturbing the peace, etc.)	-3	-2	-1	0	+1	+2	+3
11. MALE: wife/girlfriend's pregnancy	-3	-2	-1	0	+1	+2	+3
12. FEMALE: pregnancy	-3	-2	-1	0	+1	+2	+3
13. Changed work situation (different work responsibility/major change in working conditions, hours etc.)	-3	-2	-1	0	+1	+2	+3
14. New job	-3	-2	-1	0	+1	+2	+3
15. Serious illness or injury of close family member:							
a. father	-3	-2	-1	0	+1	+2	+3
b. mother	-3	-2	-1	0	+1	+2	+3
c. sister	-3	-2	-1	0	+1	+2	+3
d. brother	-3	-2	-1	0	+1	+2	+3
e. grandfather	-3	-2	-1	0	+1	+2	+3
f. grandmother	-3	-2	-1	0	+1	+2	+3
g. spouse/significant other	-3	-2	-1	0	+1	+2	+3
h. other (specify) _____	-3	-2	-1	0	+1	+2	+3
16. Sexual difficulties	-3	-2	-1	0	+1	+2	+3
17. Trouble with employer (verbal or written warning, etc.)	-3	-2	-1	0	+1	+2	+3
18. Trouble with in-laws	-3	-2	-1	0	+1	+2	+3
19. Major change in financial status (a lot better or worse off)	-3	-2	-1	0	+1	+2	+3

IN THE PAST YEAR

	extremely negative -3			extremely positive +3			
	moderately negative -2			moderately positive +2			
	somewhat negative -1			somewhat positive +1			
	no impact 0						
20. Major change in closeness of family members (increased or decreased)	-3	-2	-1	0	+1	+2	+3
21. gaining a new family member (through birth, adoption, or member moving in etc)	-3	-2	-1	0	+1	+2	+3
22. Change of residence	-3	-2	-1	0	+1	+2	+3
23. Marital separation from mate (due to conflict)	-3	-2	-1	0	+1	+2	+3
24. Major change in church activities (increased or decrease)	-3	-2	-1	0	+1	+2	+3
25. Marital reconciliation with mate	-3	-2	-1	0	+1	+2	+3
26. Major change in number of arguments spouse/significant other (a lot more or a lot less)	-3	-2	-1	0	+1	+2	+3
27. MALE: change in mate's work outside the home (beginning/ ceasing/ changing job)	-3	-2	-1	0	+1	+2	+3
28. FEMALE: change in mate's work outside the home (beginning, ceasing, changing job)	-3	-2	-1	0	+1	+2	+3
29. Major change in usual type and/or amount of recreation	-3	-2	-1	0	+1	+2	+3
30. Borrowing more than \$10,000	-3	-2	-1	0	+1	+2	+3
31. Borrowing less than \$10,000	-3	-2	-1	0	+1	+2	+3
32. Being fired/laid off from work	-3	-2	-1	0	+1	+2	+3
33. MALE: wife/girlfriend having an abortion	-3	-2	-1	0	+1	+2	+3
34. FEMALE: Having an abortion	-3	-2	-1	0	+1	+2	+3
35. Major personal illness or injury	-3	-2	-1	0	+1	+2	+3
36. Major change in social activities e.g. parties movies, visiting (increased or decreased)	-3	-2	-1	0	+1	+2	+3
37. Major change in living conditions of self or family (new home/remodeling/deterioration of home or neighbourhood)	-3	-2	-1	0	+1	+2	+3
38. Divorce	-3	-2	-1	0	+1	+2	+3
39. Serious injury or illness of close friend	-3	-2	-1	0	+1	+2	+3
40. Son or daughter leaving home (marriage college etc.)	-3	-2	-1	0	+1	+2	+3
41. Ending of formal schooling	-3	-2	-1	0	+1	+2	+3
42. Separation from mate (due to work, travel etc)	-3	-2	-1	0	+1	+2	+3
43. Engagement	-3	-2	-1	0	+1	+2	+3
44. Breaking up with boyfriend/girlfriend	-3	-2	-1	0	+1	+2	+3
45. Leaving home for the first time	-3	-2	-1	0	+1	+2	+3
46. Reconciliation with boyfriend/girlfriend	-3	-2	-1	0	+1	+2	+3
Other recent experiences which have had an impact							
On your life. List below and rate							
47. _____	-3	-2	-1	0	+1	+2	+3
48. _____	-3	-2	-1	0	+1	+2	+3

Appendix E: THE PENN Inventory for Post Traumatic Stress Disorder

THE PENN INVENTORY FOR POST TRAUMATIC STRESS DISORDER

On this questionnaire are groups of statements. Please read each group of statements carefully. Then pick out the one statement in each group which best describes the way you have been feeling during the PAST WEEK, INCLUDING TODAY! Circle the number beside the statement you picked. Be sure to read all the statements in each group before making your choice.

- 1
 - 0 I don't feel much different than most other people my age.
 - 1 I feel somewhat different than most other people my age.
 - 2 I feel so different than most other people my age that I choose pretty carefully who I'll be with and when.
 - 3 I feel so totally alien to most other people my age that I stay away from all of them at all costs.

- 2
 - 0 I care as much about the consequences of what I'm doing than most other people.
 - 1 I care less about the consequences of what I'm doing than most other people.
 - 2 I care much less about the consequences of what I'm doing than most other people.
 - 3 Often I think, "Let the consequences be damned!" because I don't care about them at all.

- 3
 - 0 When I want to do something for enjoyment I can find someone to join me if I want to.
 - 1 I'm able to do something for enjoyment even when I can't find someone to join me.
 - 2 I lose interest in doing things for enjoyment when there's no one to join me.
 - 3 I have no interest in doing anything for enjoyment at all.

- 4
 - 0 I rarely feel jumpy or uptight.
 - 1 I sometimes feel jumpy and uptight.
 - 2 I often feel jumpy or uptight.
 - 3 I feel jumpy or uptight all the time.

- 5
 - 0 I know someone nearby who really understands me.
 - 1 I'm not concerned whether anyone nearby really understands me.
 - 2 I'm worried because no one nearby really understands me.
 - 3 I'm very worried because no one nearby understands me at all.

- 6
 - 0 I'm not afraid to show my anger because it's no worse or better than anyone else's.
 - 1 I'm sometimes afraid to show my anger because it goes up quicker than other people's.
 - 2 I'm often afraid to show my anger because it might turn to violence.
 - 3 I'm so afraid of becoming violent that I never allow myself to show any anger at all.

- 7
 - 0 I don't have any past traumas to feel overly anxious about.
 - 1 When something reminds me of my past traumas I feel anxious but can tolerate it.
 - 2 When something reminds me of my past traumas I feel anxious but can tolerate it.
 - 3 When something reminds me of my past traumas I feel so anxious I can hardly stand it and have no way to tolerate it.

- 8
 - 0 I have not re-experienced a flashback to a trauma event "as if I were there again".
 - 1 I have re-experienced a flashback to a trauma event "as if I were there again" for a few minutes or less.
 - 2 My re-experiencing of a flashback to a trauma event sometimes lasts the better part of an hour.
 - 3 My re-experiencing of a flashback to a trauma event often lasts for an hour or more.

- 9 0 I am less easily distracted than ever.
 1 I am as easily distracted as ever.
 2 I am more easily distracted than ever.
 3 I feel distracted all the time.
- 10 0 My spiritual life provides more meaning than it used to.
 1 My spiritual life provides about as much meaning as it used to.
 2 My spiritual life provides less meaning than it used to.
 3 I don't care about my spiritual life.
- 11 0 I can concentrate better than ever.
 1 I can concentrate about as well as ever.
 2 I can't concentrate as well as I used to.
 3 I can't concentrate at all.
- 12 0 I've told a friend or family member about the important parts of my traumatic experiences.
 1 I've had to be careful in choosing the parts of my traumatic experiences to tell friends or family members.
 2 Some parts of my traumatic experiences are so hard to be understood that I've said almost nothing about them to anyone.
 3 No one could possibly understand the traumatic experiences I've had to live with.
- 13 0 I generally don't have nightmares.
 1 My nightmares are less troubling than they were.
 2 My nightmares are just as troubling as they were.
 3 My nightmares are more troubling than they were.
- 14 0 I don't feel confused about my life.
 1 I feel less confused about my life than I used to.
 2 I feel just as confused about my life as I used to.
 3 I feel more confused about my life than I used to.
- 15 0 I know myself better than I used to.
 1 I know myself about as well as I used to.
 2 I don't know myself as well as I used to.
 3 I feel like I don't know who I am at all.
- 16 0 I know more ways to control or reduce my anger than most people.
 1 I know about as many ways to control or reduce my anger as most people.
 2 I know fewer ways to control or reduce my anger than most people.
 3 I know of no ways to control or reduce my anger.
- 17 0 I have not experienced a major trauma in my life.
 1 I have experienced one or more traumas of limited intensity.
 2 I have experienced very intense and upsetting traumas.
 3 The traumas I have experienced were so intense that memories of them intrude on my mind without warning.
- 18 0 I've been able to shape things toward attaining many of my goals.
 1 I've been able to shape things toward attaining some of my goals.
 2 My goals aren't clear.
 3 I don't know how to shape things toward my goals.

- 19 0 I am able to focus my mind and concentrate on the task at hand regardless of unwanted thoughts.
 1 When wanted thoughts intrude on my mind I'm able to recognize them briefly and then refocus my mind on the task at hand.
 2 I'm having a hard time refocusing my mind on the task at hand.
 3 I'll never be able to cope with unwanted thoughts.
- 20 0 I am achieving most of the things I want.
 1 I am achieving many of the things I want.
 2 I am achieving some of the things I want.
 3 I am achieving few of the things I want.
- 21 0 I sleep as well as usual.
 1 I don't sleep as well as usual.
 2 I wake up more frequently or earlier than usual and have difficulty getting back to sleep.
 3 I often have nightmares or wake up several hours earlier than usual and cannot get back to sleep.
- 22 0 I don't have trouble remembering things I should know.
 1 I have less trouble than I used to remembering things I should know.
 2 I have about the same trouble as I used to remembering things I should know.
 3 I have more trouble than I used to remembering things I should know.
- 23 0 My goals are clearer than they were.
 1 My goals are as clear as they were.
 2 My goals are not as clear as they were.
 3 I don't know what my goals are.
- 24 0 I'm usually able to let bad memories fade from my mind.
 1 Sometimes a bad memory comes back to me, but I can modify it, replace it, or set it aside.
 2 When bad memories intrude on my mind I can't seem to get them out.
 3 I worry that I'm going crazy because bad memories keep intruding on my mind.
- 25 0 Usually I feel understood by others.
 1 Sometimes I don't feel understood by others.
 2 Most of the time I don't feel understood by others.
 3 No one understands me at all.
- 26 0 I have not lost anything or anyone dear to me.
 1 I have grieved for those I've lost and can now go on.
 2 I haven't finished grieving for those I've lost.
 3 The pain of my loss is so great that I can't grieve and don't know how to get started.

Appendix F: Physical Health

The following questions pertain to your general health and positive and negative healthy behaviors.

1. Do you smoke? 1. Yes 2. No (if no goto question 2)

1A. On average, how many cigarettes do you smoke per day?

1. Half a pack per day
2. 1 pack a day
3. More than 1 pack a day

2. Do you drink alcohol? 1. Yes 2. No (if no, goto question 3)

2A. In the last 3 months, how many times did you have 5 or more drinks on one occasion?

1. Never	4. 4 to 6 times
2. Once	5. 7 to 9 times
3. 2 to 3 times	6. 10 or more times

2B. During an average week, on how many days do you consume at least one drink of alcohol?

1. Less than once a week
2. Once a week
3. 2 to 3 days per week
4. 4 to 6 days a week
5. Everyday

3. How frequently do you workout? (e.g., go to the gym, use equipment at home, run, bike ride)

1. Never
2. 2 times per week
3. 3 to 6 times per week
4. Daily

4. How often do you use over the counter painkillers? (e.g., Aspirin, Tylenol, Advil).

1. Rarely or never
2. Once a month
3. Once a week
4. Almost everyday

5. How often do you use over the counter antacids? (e.g., Tums, Roloids, Maalox)

1. Rarely or never
2. Once a month
3. Once a week
4. Almost everyday

6. How often do you use over the counter anti-histamines? (e.g., Seldane, Hismanal)

1. Rarely or never
2. Once a month
3. Once a week
4. Almost everyday

7. Are you currently or have you recently (within the last year) taken any prescription drugs for depression or anxiety (e.g. Paxil, Xanax, Amitriptiline, Trazedone, Prozac) 1. Yes 2. No

8. Have you ever been on stress leave? 1. Yes 2. No

9. Do you have any of the following medical conditions?

A. High blood pressure	1. Yes	2. No
B. Diabetes	1. Yes	2. No
C. Ulcer	1. Yes	2. No
D. High cholesterol	1. Yes	2. No
E. Heart condition	1. Yes	2. No
F. Back pain	1. Yes	2. No

10. How many times have you been the doctor in the last 12 months?

1. None
2. 1 or 2 times
3. 3 to 5 times
4. 6 to 9 times
5. 10 or more times

Appendix G: Psychological Well Being Scale

Psychological Well Being Scale

For each of statements below, fill in the box with the number that best represents how you feel. (1)strongly disagree , (2) moderately disagree, (3) slightly disagree (4) slightly agree (5), moderately agree , (6) strongly agree..

AUTONOMY

- ☐ 1. Sometimes I change the way I act or think to be more like those around me.
- ☐ 2. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.
- ☐ 3. My decisions are not usually influenced by what everyone else is doing.
- ☐ 4. I tend to worry about what other people think of me.
- ☐ 5. Being happy with myself is more important to me than having others approve of me.
- ☐ 6. I tend to be influenced by people with strong opinions.
- ☐ 7. People rarely talk me into doing things I don't want to do.
- ☐ 8. It is more important to me to "fit in" with others than to stand alone on my principles.
- ☐ 9. I have confidence in my opinions, even if they are contrary to the general consensus.
- ☐ 10. It's difficult for me to voice my own opinions on controversial matters.
- ☐ 11. I often change my mind about decisions if my friends or family disagree.
- ☐ 12. I am not the kind of person who gives in to social pressures to think or act in certain ways.
- ☐ 13. I am concerned about how other people evaluate the choices I have made in my life.
- ☐ 14. I judge myself by what I think is important, not by the values of what others think is important.

ENVIRONMENTAL MASTERY

- ☐ 1. In general, I feel I am in charge of the situation in which I live.
- ☐ 2. The demands of everyday life often get me down.
- ☐ 3. I do not fit very well with the people and the community around me.
- ☐ 4. I am quite good at managing the many responsibilities of my daily life.
- ☐ 5. I often feel overwhelmed by my responsibilities.
- ☐ 6. If I were unhappy with my living situation, I would take effective steps to change it.
- ☐ 7. I generally do a good job of taking care of my personal finances and affairs.
- ☐ 8. I find it stressful that I can't keep up with all of the things I have to do each day.
- ☐ 9. I am good at juggling my time so that I can fit everything in that needs to get done.
- ☐ 10. My daily life is busy, but I derive a sense of satisfaction from keeping up with everything.
- ☐ 11. I get frustrated when trying to plan my daily activities because I never accomplish the things I set out to do.
- ☐ 12. My efforts to find the kinds of activities and relationships that I need have been quite successful.
- ☐ 13. I have difficulty arranging my life in a way that is satisfying to me.
- ☐ 14. I have been able to build a home and a lifestyle for myself that is much to my liking.

PERSONAL GROWTH

- ☐ 1. I am not interested in activities that will expand my horizons.
- ☐ 2. In general, I feel that I continue to learn more about myself as time goes by.
- ☐ 3. I am the kind of person who likes to give new things a try.
- ☐ 4. I don't want to try new ways of doing things--my life is fine the way it is.
- ☐ 5. I think it is important to have new experiences that challenge how you think about yourself and the world.
- ☐ 6. When I think about it, I haven't really improved much as a person over the years.
- ☐ 7. In my view, people of every age are able to continue growing and developing.
- ☐ 8. With time, I have gained a lot of insight about life that has made me a stronger, more capable person.
- ☐ 9. I have the sense that I have developed a lot as a person over time.
- ☐ 10. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.
- ☐ 11. For me, life has been a continuous process of learning, changing, and growth.
- ☐ 12. I enjoy seeing how my views have changed and matured over the years.
- ☐ 13. I gave up trying to make big improvements or changes in my life a long time ago.
- ☐ 14. There is truth to the saying you can't teach an old dog new tricks.

POSITIVE RELATIONS WITH OTHERS

- ☐ 1. Most people see me as loving and affectionate.
- ☐ 2. Maintaining close relationships has been difficult and frustrating for me.
- ☐ 3. I often feel lonely because I have few close friends with whom to share my concerns.
- ☐ 4. I enjoy personal and mutual conversations with family members or friends.
- ☐ 5. It is important to me to be a good listener when close friends talk to me about their problems.
- ☐ 6. I don't have many people who want to listen when I need to talk.
- ☐ 7. I feel like I get a lot out of my friendships.
- ☐ 8. It seems to me that most other people have more friends than I do.
- ☐ 9. People would describe me as a giving person, willing to share my time with others.
- ☐ 10. I have not experienced many warm and trusting relationships with others.
- ☐ 11. I often feel like I'm on the outside looking in when it comes to friendships.
- ☐ 12. I know that I can trust my friends, and they know they can trust me.
- ☐ 13. I find it difficult to really open up when I talk with others.
- ☐ 14. My friends and I sympathize with each other's problems.

PURPOSE IN LIFE

- ☐ 1. I feel good when I think of what I've done in the past and what I hope to do in the future.
- ☐ 2. I live life one day at a time and don't really think about the future.
- ☐ 3. I tend to focus on the present, because the future nearly always brings me problems.
- ☐ 4. I have a sense of direction and purpose in life.
- ☐ 5. My daily activities often seem trivial and unimportant to me.
- ☐ 6. I don't have a good sense of what it is I'm trying to accomplish in life.
- ☐ 7. I used to set goals for myself, but that now seems like a waste of time.
- ☐ 8. I enjoy making plans for the future and working to make them a reality.
- ☐ 9. I am an active person in carrying out the plans I set for myself.
- ☐ 10. Some people wander aimlessly through life, but I am not one of them.
- ☐ 11. I sometimes feel as if I've done all there is to do in life.
- ☐ 12. My aims in life have been more a source of satisfaction than frustration to me.
- ☐ 13. I find it satisfying to think about what I have accomplished in life.
- ☐ 14. In the final analysis, I'm not so sure that my life adds up to much.

SELF-ACCEPTANCE

- ☐ 1. When I look at the story of my life, I am pleased with how things have turned out.
- ☐ 2. In general, I feel confident and positive about myself.
- ☐ 3. I feel like many of the people I know have gotten more out of life than I have.
- ☐ 4. Given the opportunity, there are many things about myself that I would change.
- ☐ 5. I like most aspects of my personality.
- ☐ 6. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
- ☐ 7. In many ways, I feel disappointed about my achievements in life.
- ☐ 8. For the most part, I am proud of who I am and the life I lead.
- ☐ 9. I envy many people for the lives they lead.
- ☐ 10. My attitude about myself is probably not as positive as most people feel about themselves.
- ☐ 11. Many days I wake up feeling discouraged about how I have lived my life.
- ☐ 12. The past had its ups and downs, but in general, I wouldn't want to change it.
- ☐ 13. When I compare myself to friends and acquaintances, it makes me feel good about who I am.
- ☐ 14. Everyone has their weaknesses, but I seem to have more than my share.

Appendix H: Ways of Coping Scale

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 with 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

	NEVER 0	RARELY 1	SOMETIMES 2	OFTEN 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

	NEVER 0	RARELY 1	SOMETIMES 2	OFTEN 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

Appendix I: Sense of Social Support Scale

Sense of Social Support

	Not at		Very	
	all true		True	
1. I participate in volunteer/service projects	0	1	2	3
2. I have meaningful conversations with my parents or siblings	0	1	2	3
3. I have a mentor(s) in my life I can go to for support or advice	0	1	2	3
4. I seldom invite others to join me in my social and/or recreational activities	0	1	2	3
5. There is at least one person I feel a strong emotional tie with	0	1	2	3
6. There is no one I can trust to help solve my problems	0	1	2	3
7. I take time to visit with my neighbors	0	1	2	3
8. If a crisis arose in my life, I would have the support I need from family and/or friends	0	1	2	3
9. I belong to a club (e.g., sports, hobbies, support groups)	0	1	2	3
10. I have friends from work that I see socially	0	1	2	3
11. I have friendships that are mutually fulfilling	0	1	2	3
12. There is no one I can talk to when making important decisions in my life	0	1	2	3
13. I make an effort to keep in touch with friends	0	1	2	3
14. My friends and family feel comfortable asking me for help	0	1	2	3
15. I find it difficult to make new friends	0	1	2	3
16. I look for opportunities to help and support others	0	1	2	3
17. I have close friends whom I feel comfortable sharing deeply about myself	0	1	2	3
18. I seldom get invited to do things with others	0	1	2	3
19. I feel well supported by my friends and/or family	0	1	2	3
20. I wish I had more people in my life that enjoy the same interests and activities as I do	0	1	2	3
21. There is no one that shares my beliefs and attitudes.	0	1	2	3

Appendix J: ANOVAs for Order Effect Of Scales

Scale	df	F
PENN Inventory	3	1.09
EE	3	.74
Dp	3	.37
PWB	3	.84
Total stressors	3	2.0
Total Health problems	3	.09
Social support scale	3	2.1

Appendix K: Means and Standard Deviations for All Measures

Measure	Mean	Standard Deviation
Number of positive life events	2.9	2.6
Number of negative life events	4.2	3.7
Penn Inventory	22.3	10.2
Emotional Exhaustion (MBI)	19.8	12.3
Depersonalization (MBI)	10.1	7.3
Personal Accomplishment	21.4	10.0
Self-deception	36.4	6.5
Autonomy (PWB)	39.9	6.0
Environmental Mastery (PWB)	40.0	6.6
Personal Growth (PWB)	42.6	6.8
Positive Relations with Others (PWB)	40.3	8.0
Purpose in Life (PWB)	41.8	6.8
Self-Acceptance (PWB)	39.9	7.6
Planful problem solving	13.3	2.4
Confrontive	10.1	2.4
Seek social support	11.5	2.9
Accept responsibility	6.9	2.1
Self-control	14.2	2.8
Escape-avoidance	10.2	4.4
Distancing	9.4	3.0
Positive Reappraisal	11.0	3.9
Social Support	42.9	10.0
Neuroticism	24.3	7.5
Total ESQCS	16.5	8.6
Total Health problems	1.5	1.4
Total perceived effect	2.4	.6

Appendix L: Correlation Matrix of all Measures

Measure	1	2	3	4	5	6	7
1. Number of positive life events	-						
2. Number of negative life events	.07	-					
3. Penn Inventory	-.06	.53***	-				
4. Emotional Exhaustion (MBI)	-.10	.46***	.51***	-			
5. Depersonalization (MBI)	.08	.39***	.48***	.537***	-		
6. Personal Accomplishment	-.08	.16*	.31***	.06	.19**	-.	
7. Self-deception	-.03	-.28***	-.49***	-.15*	-.29***	-.31***	-
8. Autonomy (PWB)	-.08	-.19**	-.34***	-.18**	-.19**	-.26***	.45***
9. Environmental Mastery (PWB)	.04	-.41***	-.62***	-.40***	-.30***	-.31***	.39***
10. Personal Growth (PWB)	.12	-.18**	-.43***	-.16*	-.27***	-.41***	.33***
11. Positive Relations with Others (PWB)	.04	-.29***	-.62***	-.41***	-.37***	-.29***	.35***
12. Purpose in Life (PWB)	.06	-.37***	-.62***	-.25***	-.34***	-.38***	.43***
13. Self-Acceptance (PWB)	.05	-.39***	-.67***	-.33***	-.33***	-.29***	.56***
14. Planful problem solving	.07	-.14*	-.32***	-.06	-.17**	-.35***	.35***
15. Confrontive	.08	.12	.13*	.18**	.15*	-.13*	.03
16. Seek social support	.05	-.01	-.14*	.06	-.09	-.29***	.11
17. Accept responsibility	.04	.13*	.13*	.09	.00	-.03	-.16**
18. Self-control	.05	.05	.09	.11	.11	.16**	.03
19. Escape-avoidance	-.01	.34***	.45***	.32***	.29***	.16**	-.35
20. Distancing	.11	.14*	.16*	.06	.18**	.06	-.07
21. Positive Reappraisal	.02	-.03	-.24***	-.01	-.22***	-.43***	.23***
22. Social Support	.11	-.27***	-.51***	-.30***	-.24***	-.24***	.23***
23. Neuroticism	-.01	.48***	.67***	.46***	.32***	.32***	-.58***
24. Total ESQCS	.11	.25***	.35***	.40***	.41***	-.02	-.08
25. Total Health problems	-.06	.34***	.39***	.29***	.13*	-.03	-.22***
26. Total perceived effect	-.03	.28***	.41***	.43***	.32***	.18**	-.22***

Measure	8	9	10	11	12	13	14
1. Number of positive life events							
2. Number of negative life events							
3. Penn Inventory							
4. Emotional Exhaustion (MBI)							
5. Depersonalization (MBI)							
6. Personal Accomplishment							
7. Self-deception							
8. Autonomy (PWB)	-						
9. Environmental Mastery (PWB)	.43***	-					
10. Personal Growth (PWB)	.40***	.43***	-				
11. Positive Relations with Others (PWB)	.27***	.59***	.50***	-			
12. Purpose in Life (PWB)	.38***	.63***	.61***	.58***	-		
13. Self-Acceptance (PWB)	.48***	.67***	.52***	.59***	.67***	-	
14. Planful problem solving	.30***	.26***	.31***	.24***	.33***	.39***	-
15. Confrontive	.11	-.04	-.01	.03	.05	-.02	.22***
16. Seek social support	.12*	.17**	.32***	.28***	.32***	.20***	.32***
17. Accept responsibility	-.12*	-.20***	-.08	-.04	.06	-.19**	.16***
18. Self-control	-.01	-.2	.06	.04	-.01	-.00	.38***
19. Escape-avoidance	-.26***	-.42***	-.34***	-.30***	.38***	-.43***	-.19**
20. Distancing	-.80	-.13*	-.14*	-.10	-.25***	-.11	.09
21. Positive Reappraisal	.14*	.07	.33***	.25***	.25***	.15*	.31***
22. Social Support	.22***	.50***	.45***	.71***	.46***	.44***	.20***
23. Neuroticism	-.42***	-.67***	-.36***	-.50***	-.49***	-.67***	-.36***
24. Total ESQCS	-.03	-.21***	-.18***	-.36***	-.21**	-.30***	.02
25. Total Health problems	-.01	-.25***	-.16**	-.27***	-.33***	-.37***	-.10
26. Total perceived effect	-.10	-.27***	-.12	-.27***	-.221***	-.34***	-.08

Measure	15	16	17	18	19	20	21
1. Number of positive life events							
2. Number of negative life events							
3. Penn Inventory							
4. Emotional Exhaustion (MBI)							
5. Depersonalization (MBI)							
6. Personal Accomplishment							
7. Self-deception							
8. Autonomy (PWB)							
9. Environmental Mastery (PWB)							
10. Personal Growth (PWB)							
11. Positive Relations with Others (PWB)							
12. Purpose in Life (PWB)							
13. Self-Acceptance (PWB)							
14. Planful problem solving							
15. Confrontive	-						
16. Seek social support	.38	-					
17. Accept responsibility	.37***	-.25***	-				
18. Self-control	.19**	.15*	-.25***	-			
19. Escape-avoidance	.30***	.03	.45***	.20***	-		
20. Distancing	.09	-.15*	.19**	.39***	.35***	-	
21. Positive Reappraisal	.20***	.45***	.32***	.22***	.06	.05	-
22. Social Support	.11	.32***	.02	.02	-.19**	-.09	-.25***
23. Neuroticism	.06	-.05	.22***	-.04	-.52***	.03	-.11
24. Total ESQCS	.23***	-.05	.06	.19***	.17**	.17**	-.09
25. Total Health problems	.13*	.00	.03	.11	.20***	.18**	-.00
26. Total perceived effect	.14	.08	.10	.06	.33***	-.04	.05

Measure	22	23	24	25	26
1. Number of positive life events					
2. Number of negative life events					
3. Penn Inventory					
4. Emotional Exhaustion (MBI)					
5. Depersonalization (MBI)					
6. Personal Accomplishment					
7. Self-deception					
8. Autonomy (PWB)					
9. Environmental Mastery (PWB)					
10. Personal Growth (PWB)					
11. Positive Relations with Others (PWB)					
12. Purpose in Life (PWB)					
13. Self-Acceptance (PWB)					
14. Planful problem solving					
15. Confrontive					
16. Seek social support					
17. Accept responsibility					
18. Self-control					
19. Escape-avoidance					
20. Distancing					
21. Positive Reappraisal					
22. Social Support	-				
23. Neuroticism	-.41***	-			
24. Total ESQCS	-.25***	.13*	-		
25. Total Health problems	-.22***	.31***	.25***	-	
26. Total perceived effect	-.24***	.42***	.41***	.40	-