

**PTSD IN CORRECTIONS EMPLOYEES IN
SASKATCHEWAN**

EXECUTIVE SUMMARY

TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF TABLES AND GRAPH	ii
LIST OF APPENDICES	iii
OVERVIEW	1
TRAUMATIC EVENTS IN CORRECTIONAL FACILITIES	4
PTSD IN CORRECTIONS EMPLOYEES IN PERSPECTIVE	7
QUALITY OF LIFE AND PTSD	8
ADDITIONAL CONCERNS ASSOCIATED WITH PTSD IN THE CURRENT SAMPLE	9
CORRECTIONS EMPLOYEES AND THE WORK ENVIRONMENT	11
FUTURE CONSIDERATIONS	13
REFERENCES	15

LIST OF TABLES AND GRAPH

Table/Graph	Page
Table I: Demographic Variables: Age, Employment and Wage	2
Table II: Demographic Variables: Sex, Ethnicity, Job Type, Work Site, Work Status	3
Table III: Number of Employees Reporting a Traumatic Workplace Event	5
Table IV: Traumatic Event Reporting by Corrections Employees Over a Six Month Period	6
Table V: PTSD in a Sample of Corrections Employees in Saskatchewan	7
Table VI: Correlations Between PDS Total Score and the Quality of Life Satisfaction Questionnaire sub-scales: Physical Health and Activities, Household Duties, Work, Feelings, Leisure Time Activities, Social Relations and General Activities	8
Table VII: Workplace Absenteeism and Physician Visits Over a Six Month and One Year Period	10
Table VIII: Comparison of Alcohol Use Between the PTSD Group and Non-PTSD Group	10
Graph I: Work Environment Scale	12

LIST OF APPENDICES

Appendix	Page
Appendix A Demographic & Information Questionnaire	18
Appendix B Description of the Posttraumatic Stress Diagnostic Scale	19
Appendix C Description of the Quality of Life Satisfaction Questionnaire	20
Appendix D Description of the Work Environment Scale	21
Appendix E Description of the Symptom Assessment 45- Questionnaire	22

PTSD in Corrections Employees in Saskatchewan: Executive Summary

Overview

In the spring of 2003 a mail-out survey was sent to all 1,008 corrections employees throughout Saskatchewan. The survey explored the current probable prevalence rate of Posttraumatic Stress Disorder (PTSD)¹ in this population and examined various related factors and associated health issues. Included in the package were: a demographic and exploratory questionnaire (Appendix A), the Posttraumatic Stress Diagnostic Scale (PDS) (Appendix B), seven out of eight sub-scales of the Quality of Life Satisfaction Questionnaire (Q-LES-Q) (Appendix C), the Work Environment Scale (WES) (Appendix D), and the Symptom Assessment -45 Questionnaire (SA-45) (Appendix E).

Two hundred and seventy-one individuals responded to the survey and these constituted the participant base. The participants reported a mean age of 41.78 years and a mean of 12.27 years of work experience (Table I). The sample was primarily Caucasian (83.8%), urban (88.56%), and drawn from the corrections workers job category (72.7%) (Table II).

For the purpose of data comparison employees who responded were divided into groups based on the probability of whether or not they would qualify for a diagnosis of PTSD according to the PDS. Comparisons were then made between the PTSD group and non-PTSD group on numerous factors including: quality of life, work environment perceptions, workplace absenteeism rates, alcohol consumption, and health care use. Additionally, comparisons of some factors were made between the overall corrections sample, those with PTSD only, those without PTSD, normative samples, archival data, and other statistical information. Moreover, the level of violence experienced by corrections employees was investigated.

This study was conducted by Bobbi Stadnyk as partial fulfilment of the requirements for the degree of Master of Arts in Psychology at the University of Regina (U of R) and was supervised by Dr. Katherine Arbuthnott and Dr. Mary Hampton. In addition, Dr. Donald Sharpe and Dr. Regan Shercliffe acted as consultants. Funding was provided by the Legal Inspection Regulatory Component of the Saskatchewan Government and General Employees Union (SGEU).

Information from the survey yields five major areas of concern regarding the degree of violence experienced by Saskatchewan corrections employees, prevalence rates of PTSD within the sample, and the effects of the disorder on participants.

- ❖ Nearly 80% of corrections employees reported experiencing a traumatic event in the workplace. Moreover, the average number of events personally experienced over six months was almost three per employee. Means were calculated for the number of events witnessed over the same time frame and were determined to be five per employee. The degree of exposure to violence reported by these workers was much greater than that found in other population studies both in Canada and the U.S. (Gannon, Marie, 2001; Duhart, 2001).
- ❖ 25.8% of employees reported symptom levels of PTSD suggesting a probable clinical diagnosis of the disorder. The prevalence rate of the disorder in this group of workers was found to be in excess of both lifetime² and current³ prevalence rates found in other studies (American Psychological Association, 2000; Kessler, Sonnega, Bromet, Hughes & Nelson, 1995; Robins & Reiger, 1991).

¹ A diagnosis of PTSD can only be made in a clinical setting. Self-report instruments are used to screen for probable cases

² The number of people who have ever had the disorder

³ The number of people who have the disorder at the time of a particular study

- ❖ The quality of life in the PTSD group of employees was significantly lower than for the non-PTSD group. The differences between the two groups were significant in the seven sub-scales of the Q-LES-Q that were used.
- ❖ Employees with PTSD experienced problems in multiple domains. They were more depressed, had more somatic complaints, used more alcohol, missed more work, and used more health care resources than those without PTSD.
- ❖ Corrections employees with PTSD had significant disturbances, when compared to those without PTSD, with regard to their perception of the work environment. Difficulties included increased negative perceptions of workplace relationships with both coworkers and supervisors.

The findings in this study are noteworthy because the vast majority of corrections employees (79.3%) are experiencing or witnessing traumatic events (frequently multiple episodes) while in the workplace. In addition, the prevalence rate of probable PTSD found in participants in this survey (25.8%) is comparable to what has been identified in other high risk populations including combat veterans (Kulka, et.al., 1988), prisoners of war (Kluznick, Speed, Van Valkenburg & Magraw, 1986), disaster survivors (Schlenger, et al, 2002), and emergency service personnel (Cudmore, 1996; Wagner, Heinrich & Ehert, 1998). Participants who reported elevated PTSD symptoms also reported significantly increased physical, social, and psychological sequela. Furthermore, excessive workplace absenteeism and disproportionate health care use was found in these individuals. The societal cost is extensive and the personal cost inestimable in employees who have PTSD.

Since PTSD frequently remains undiagnosed it is probable that the vast majority of effected employees and their physicians are unaware of the presence of the disorder. These individuals may not be receiving treatment or may be receiving inappropriate treatment and may therefore be remaining symptomatic over a long period of time.

Table I

Demographic Variables: Age, Employment and Wage

	RANGE	MEAN (SD)
AGE	21 - 63	41.78 (10.19)
EMPLOYMENT (YRS.)	.08 - 28	12.27 (8.39)
WAGE (Overall sample)	7,000 - 92,000	46,395 (10,848)
WAGE (Full-time)	25,00 – 85,000	49,062 (8,796)
WAGE (Part-time)	7,000 - 92-000	41,283 (12,337)

Table II

Demographic Variables: Sex, Ethnicity, Job Type, Work Site, Work Status		
	Frequency	Percentage
Sex		
Male	124	45.8
Female	132	48.7
Not Identified	15	5.5
Ethnicity		
Caucasian	227	83.8
Aboriginal	32	11.8
Asian	4	1.5
Not Identified	8	3.0
Job Type		
Probation Officer	20	7.4
Nurse	18	6.6
Corrections Worker	197	72.7
Supervisor	12	4.4
Kitchen/Maintenance	12	4.4
Clerical	4	1.5
Instructor	2	.8
Not Identified	6	2.2
Worksite		
Rural	3	1.1
Urban	240	88.56
Not Identified	28	10.7
Work Status		
Full-Time Employees	179	66.1
Part-Time Employees	89	33.2
Not Identified	3	1.1

Traumatic Events in Correctional Facilities

It is difficult to access information concerning the number of traumatic events that take place within correctional work environments in Saskatchewan. This is partially due to the fact that a computer accessible central registry for tracking incidents currently does not exist. Information that was made available informally through Saskatchewan Government and Federal Government agencies suggests that violence is on the rise in many Canadian correctional facilities including Saskatchewan. Employee self-report information concerning the pervasiveness of such events corroborates government provided statistical data.

- Corrections workers are often by the nature of their work victims of or witnesses to acts of violence. In addition, they experience an element of vicarious traumatization through witnessing and hearing about the aftermath of aggression in both victims and perpetrators of violent acts.
- Traumatic incidents are common in Canadian correctional institutions and over the last ten years assaults, suicides and attempted suicides in these environments have remained consistently high. Statistics provided by Corrections Canada Statistical Services for this study confirm an increase in violence in adult correctional facilities in Ontario and show that although there has been some fluctuation between 1991/92 and 2001/02 assault-related misconducts, for the most part, have continued to escalate (Underhill, 2003).
- In Ontario facilities the average daily population in 1991/1992 was 7,344 in 2001/2002 it was 7,849. There were 3,471 assault-related misconducts in 1991/1992 and 4,253 assault-related misconducts in 2001/2002. This means that between 1991/1992 and 2001/2002 there was a 6.43% increase in the average daily population in Ontario facilities while at the same time there was an approximate 22.5% rise in yearly assault-related misconducts (Underhill, 2003).
- Informal statistics that were provided for the Province of Saskatchewan by Corrections and Public Safety substantiate a similar trend in two major correctional centres in Saskatchewan and no change for a third location. At the Saskatoon Correctional Centre inmate assaults and fights virtually doubled between 2001 and 2002 rising from 63 to 124 (96.83%) during that period. During the same time the inmate daily population increased very little going from 291 in 2001 to 306 in 2002 (a 5.15% increase) (Government of Saskatchewan, Corrections and Public Safety, 2003).
- Similarly, between 2000-2001 and 2002-2003 violent incidents at the Prince Albert Correctional Centre increased over 100% going from 15 incidents in 2001-2002 to 39 incidents in 2002-2003 (a 160% increase). Over the same time the daily inmate population went from 264 in 2001-2002 to 269 in 2002-2003 (a 1.9% increase) (Government of Saskatchewan, Corrections and Public Safety, 2003).
- Considerably fewer incidents were reported at the Pine Grove Correctional Centre. At this facility there were nine violent incidents in 2001-2002 and eight incidents in 2002-2003 (a decrease of 11%). Meanwhile, the average daily inmate population went from 63 in 2001-2002 to 73 in 2002-2003 (a 15.87% increase). (Government of Saskatchewan, Corrections and Public Safety, 2003).
- Experiencing a traumatic event within the work environment was reported by 79.3% ($n = 215$) of the sample (Table III). These rates fluctuated within different work groups with a high of 86.3% ($n = 170$) of corrections workers reporting an event (Table IV).

- Those who reported experiencing, witnessing or hearing about a traumatic event tended to have had multiple experiences (Table IV). Each employee experienced, witnessed or heard about an average of 17.7 (nearly 3 per month per person) traumatic incidents over a six month time period.
- The mean number of incidents personally experienced over six months was 2.9 per person. In other words, this would equate to one traumatic event personally experienced by each employee every second month.
- Employees witnessed and heard about more events than they experienced. They reported witnessing an average of 4.99 traumatic events per employee over the preceding six months and hearing about 9.77 events per employee over the same time frame.
- The National Crime Victimization Survey conducted by the U.S. Department of Justice examined violence in the American workplace between 1993-1999. The researchers concluded that police officers had the highest rates of victimization reporting 261.8 incidents per year per thousand persons (Duhart, 2001). This rate is much lower than what was reported by corrections employees in Saskatchewan.

Table III

Number of Employees Reporting a Traumatic Workplace Event		
	Frequency	Percent
Total Sample Reporting	270	99.63
Yes	215	79.3
No	49	18.1
Don't Know	5	1.8
Corrections Workers	197	100
Yes	170	86.3
No	23	11.7
Don't Know	4	2.0

Table IV

	Trauma events experienced 6 months	Trauma events witnessed 6 months	Trauma events heard about 6 months
Overall Sample N	185	170	159
Mean	2.92	4.99	9.77
S.D.	4.17	8.46	14.85
*CW's N	143	136	120
Mean	3.27	5.42	11.50
S.D.	4.14	9.02	16.51
**RPN's N	14	13	12
Mean	3.07	5.69	5.75
S.D.	6.44	6.94	4.49
***PO's N	9	6	10
Mean	.44	2.00	1.40
S.D.	.53	4.90	1.78
Supervisors N	8	6	4
Mean	2.75	3.67	6.00
S.D.	3.12	4.59	3.16
****K&M N	8	7	7
Mean	.50	.43	3.57
S.D.	1.07	1.13	3.55

*CW = Corrections Worker

**RPN = Registered Psychiatric Nurse

***PO = Probation Officer

****K&M = Kitchen & Maintenance

PTSD in Corrections Employees in Perspective

- PTSD is a mental disorder that is triggered by a traumatic event.
- Certain jobs have been identified as placing employees at increased risk for developing PTSD. Studies have shown that police officers (Robinson, Sigman & Wilson, 1997), fire fighters (Lange, Lange & Cabaltica, 2000), corrections employees (Corrections Services Canada, 1992), military personnel (Schlenger, Fairbank, Jordan, & Cadwell, 1999) and emergency medical workers (Cudmore, 1996) have all reported increased prevalence rates of PTSD.
- The current probable prevalence rate of PTSD in corrections workers in this study was 25.8% (Table V).
- Two of the largest epidemiological studies conducted in the U.S. the Epidemiological Catchment Area Study (ECA) and the National Comorbidity Survey (NCS) found the current prevalence rate of PTSD to be 1.9% and 3.6%, respectively, in the general American population (U.S. Department of Health and Human Services, 1999).
- Community based studies of American adults reveal an 8% lifetime prevalence rate of PTSD (American Psychiatric Association, 2000).
- In the Canadian workplace the fastest growing category of long-term disability claims are those filed due to psychiatric problems (Canadian Mental Health Association, 2002).
- Up to one third of those who develop PTSD will continue to be symptomatic at a clinical level after 10 years (Lange, Lange & Cabaltica, 2000).
- Chronic PTSD leads to intrapersonal (e.g. violent behaviour) (Baker & Alfonso, 2003) and interpersonal difficulties (e.g. family dysfunction) (Beckham, 1998).

Table V

PTSD In a Sample of Corrections Employees in Saskatchewan		
	Frequency	Percent
No PTSD	162	59.8
PTSD (Work Related)	42	15.5
PTSD (Non-Work Related)	28	10.3
PTSD (Overall Rate)	70	25.8
PDS Not Completed	39	14.4
Total	271	100.0

Quality of Life and PTSD

- In order for a person to derive enjoyment from their daily life they must feel satisfaction in numerous critical areas of functioning. The World Health Organization's description of health is one of an optimal quality of life that includes physical, mental, and social components. It serves as a reminder that true wellness of a person does not exist within a single dimension, but is multi-faceted, dynamic and holistic. WHO defines optimal health as: "A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 2001).
- For those who suffer from a mental disorder quality of life is often poor and is a major area of concern (Atkinson & Zibon, 1996; Becker, Diamond & Sainford, 1993). When an individual ceases to do well and begins to exhibit symptoms of pathology either physically or mentally the consequences can be far reaching and can cause difficulty in social, biological, personal and economic areas of functioning (World Health Organization, 2001).
- Studies have confirmed a relationship between increased PTSD symptoms and a decrease in quality of life (Amir & Lev-Weisal, 2003; Eisenman, Gelberg, Liu & Shapiro, 2003; Kalafee & Adib, 2000; Rapaport, Endicott & Clary, 2002; Warshaw et. al. 1993).
- Participants in the PTSD group in this study reported a decrease in quality of life in all seven of the Q-LES-Q sub-scales used (Table VI) (Physical Health and Activities, Subjective Feelings of Well-Being, Work, Household Duties, Leisure Time Activities, Social Relationships and General Activities) compared to the non-PTSD group. These results suggest that symptomatic employees are experiencing impairment in their ability to enjoy or take pleasure in numerous critical areas of functioning.

Table VI

Correlations Between PDS Total Score and the Quality of Life Satisfaction Questionnaire sub-scales: Physical Health and Activities, Household Duties, Work, Feelings, Leisure Time Activities, Social Relations and General Activities

	Physical Health and Activities	Household Duties	Work	Feelings	Leisure Time Activities	Social Relations	General Activities
PDS Total	-.568**	-.428**	-.340**	-.599**	-.329**	-.442**	-.594**
Physical Health and Activities		.547**	.499**	.741**	.415**	.543**	.756**
Household Duties			.547**	.672**	.344**	.511**	.667**
Work				.700**	.300**	.543**	.647**
Feelings					.452**	.718**	.882**
Leisure Time Activities						.442**	.455**
Social Relations							.774**

* Correlation is significant at the 0.01 level (2-tailed)

Additional Concerns Associated With PTSD in the Current Sample

- Exposure to violent events is associated with an increased risk of developing PTSD (O'Brien, 1998).
- It is recognized that there is a relationship between violence within the workplace and employee absenteeism (Canadian Initiative on Workplace Violence, 2000).
- Symptoms associated with PTSD contribute to work-place absenteeism, illness, and social isolation (Hidalgo & Davidson, 2000).
- The cost of PTSD, in terms of lost productivity when left untreated was estimated to surpass that of all other anxiety disorders (Greenberg et.al., 1999).
- It has been estimated that up to 80% of those with PTSD suffer from some type of co morbid disorder, including depression, generalized anxiety disorder, panic disorder, and substance abuse (Lange, Lange & Cabaltica, 2001).
- PTSD has also been associated with more physical complaints including respiratory, cardiovascular, musculoskeletal, and neurological (McFarlane, Atchison, Rafalowicz & Papay, 1994), as well as anemia, back pain, arthritis, kidney disease, and eczema (Weisberg et. al., 2002).
- Greenberg et.al. (1999) created a human capita model of anxiety disorders to examine their societal cost. They found that the highest health care service rate use was ascribed to panic disorder and PTSD with PTSD cost exceeding that of all other anxiety disorders
- When corrections employees in this study were divided into two groups, a PTSD group and a non-PTSD group, it was found that the number of work days missed was nearly double over the previous six month period and nearly triple over the previous one year period for the PTSD group. Self-reports of workplace absenteeism indicate that the non-PTSD group missed an average of 7.76 days over six months and 13.01 days over one year while the PTSD group missed an average of 18.06 days over six months and 37.01 days over one year.
- In 2002 the average worker in Saskatchewan missed 7.8 days over that one year period because of personal illness (Sask Trends Monitor, 2003). The PTSD group in this study missed nearly five times more work in a one year period than the provincial average.
- The PTSD group in this study saw their physicians almost twice as often in a six month period and over twice as often in a one year period than did the non-PTSD group.
- Employees with PTSD reported being significantly more distressed by all five physical symptoms on the SA-45 (muscle soreness, hot or cold spells, numbness or tingling in parts of the body, weakness in parts of the body and feelings of heaviness in the arms or legs. They also reported significantly more distress with headaches, chest pains and pain in the lower back.
- The PTSD group drank almost twice as many alcoholic beverages per month as the non-PTSD group (Table VIII).

Table VII

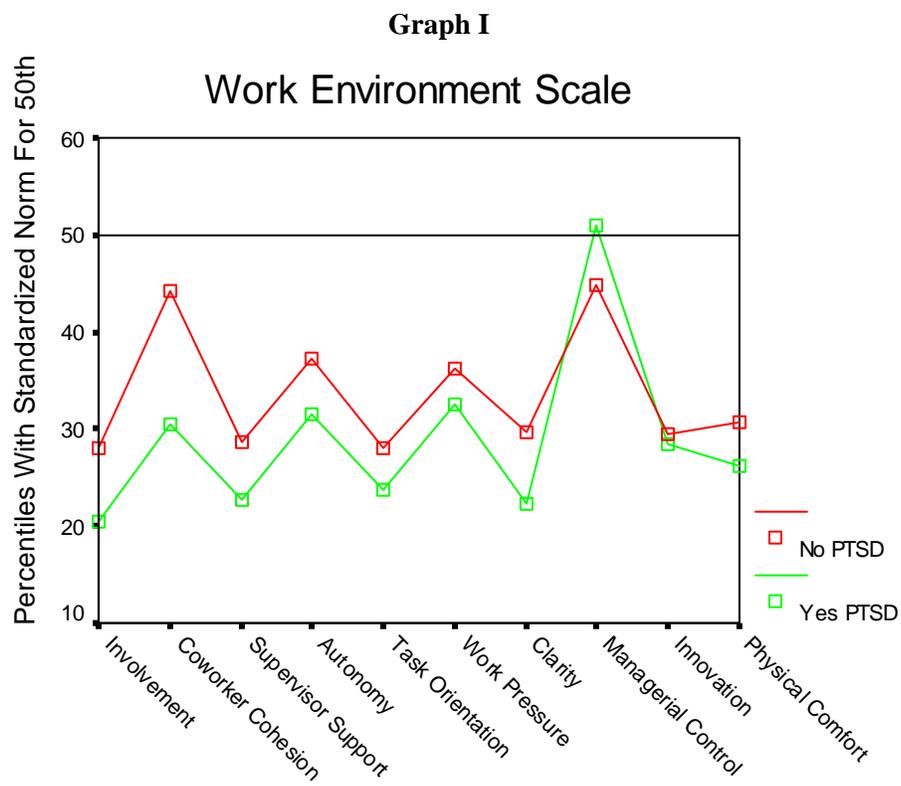
Workplace Absenteeism and Physician Visits Over a Six Month and One Year Period				
	Work Missed in 6 Months	Work Missed in 1 Year	Physician Visits in 6 Months	Physician Visits in 1 Yr
Overall Sample				
Valid N	238	236	231	239
Missing	33	35	40	32
Mean	10.77	20.31	2.49	4.81
Non-PTSD Group				
Valid N	144	143	140	145
Missing	18	19	22	17
Mean	7.76	13.01	2.05	3.64
PTSD Group				
Valid N	59	57	58	56
Missing	11	13	12	14
Mean	18.06	37.01	3.97	7.77

Table VIII**Comparison of Alcohol Use Between the PTSD Group and Non-PTSD Group**

	PTSD	N	Mean
Drinks per month	PTSD Group	64	15.4348
	Non-PTSD Group	150	8.1620

Corrections Employees and the Work Environment

- Form R of the WES has been used by consultants, clinicians and program evaluators to help employees describe their work environment at a particular time (Moos, 1994).
- The following information has been extracted from the WES (Moos, 1994). The 10 sub-scales of the WES form three dimensions:
 - A) Relationship Dimensions: 1. Involvement 2. Coworker Cohesion 3. Supervisor Support
 - B) Personal Growth Dimensions: 1. Autonomy 2. Task Orientation 3. Work Pressure
 - C) System Maintenance and Change Dimensions: 1. Clarity 2. Managerial Control 3. Innovation 4. Physical Comfort
- The results of this study suggest that correctional employees may be experiencing significant and serious problems in all three dimensions.
- In the Relationship Dimensions employees report dissatisfaction with supervisors and management and feel that they have not been supportive or encouraging. In relating to fellow employees the non-PTSD group is somewhat below average in terms of perceptions of co-worker mutual friendliness and support while the PTSD group is well below average sensing that they have very little support from their co-workers. Overall there was a low concern for and commitment to the job.
- In Personal Growth Work Dimensions employees were not encouraged to make their own decisions and be self-sufficient and they reported a lack of planning and efficiency within the work place. Employees felt that demands and time pressure in terms of workload, deadlines and a sense of urgency were low.
- The systems maintenance and Change Dimensions were also problematic. There was very little understanding of what was expected in daily routines with an accompanying belief that rules and policies were not adequately communicated. There was little emphasis on innovation, change or new ways of doing things. The physical atmosphere was not perceived as pleasant to work in. The extent to which management used rules and procedures to control employees was reported within the average range.
- In nearly all areas of the WES employees from the PTSD group have a more negative view of the work environment.



Future Considerations

- The findings of this study could be used as the basis for discussions related to the recommendation of or the putting into practice methods intended to decrease workplace violence. Furthermore, they could be used in creating educational strategies designed to assist employers and employees in recognizing PTSD.
- Timely identification of the disorder and treatment of the individual would decrease the probability of the disorder becoming chronic and subsequently more difficult to treat (Doyle, Foa, Keane & Marshall, 2001). With early symptom management both quality of life and ability to function in employees with PTSD could be improved. Prevention of mental health problems and early treatment of symptoms lowers societal cost and personal distress related to psychiatric disability (American Psychological Association, 2003).
- Violence information that was provided by provincial and federal government agencies with regard to correctional facilities was unclear in that statistics for the same location and time period differed in some cases. Clarification of incidents and how they are reported is required.
- Improved recognition of the workplace problems faced by corrections workers, particularly as they relate to violence, should be considered, possibly in the form of the development of a provincial central registry of workplace incidents. With the development of such a registry employers and employees will have a method that enables them to easily and quickly review occurrences and in so doing define what constitutes the parameters of violent events in this unique milieu. A formal classification of definitions would make possible the implementation of a standardized method of recording incidents. This would also facilitate simplification of methods used to access both specific and general information concerning work-related violence. Ultimately this information could be used in the characterization, classification and mapping of trends related to violence in Saskatchewan correctional facilities.
- Employers and unions have previously taken the initiative with regard to well-being in the areas of human rights, workplace safety, and employee assistance programs. The findings in this study suggest that interest in employee well-being must be extended to mental health issues including (without limiting to) the allocation of funds and resources that would allow for ongoing education and therapy for workers who suffer psychological injuries in the workplace.
- In addition, it is imperative to understand the evolution of the individual trauma history within the context of the cumulative effects of repeated exposure to critical or violent situations. Consideration must be given to the potential that multiple incidents have for psychiatric repercussions either immediately following any one of a series of incidents or considerably later than any one of the events within a succession.

- Many participants in this study have sub-clinical levels of PTSD and may, in fact, be suffering from considerable dysfunction. Dysfunctional behaviour, workplace absenteeism and quality of life are factors that should be studied in those who have sub-clinical levels of the disorder.
- Many of the participants in this study when asked about the number of traumatic workplace events that they had experienced did not answer this question with numerical values but instead stated that they chose not to think about them. This suggests certain possibilities. First, they may not be coping with the events and the response may suggest the presence of avoidance and numbing symptoms, and secondly, that they are probably not reporting such events in primary care settings. Employees need to be encouraged to be aware of the importance of workplace trauma and the potential impact this could have on their mental and physical health. In any workplace training regarding employee traumatization an emphasis must be placed on the necessity of reporting of events to primary care physicians. In addition, health care professionals who come in contact with these employees must be apprised of the significance of recognizing and defining client trauma histories and the relationship this would have to treatment plans and client referrals.

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APPENDIX A
DEMOGRAPHIC INFORMATION SHEET

Please do not provide your name in order to assure anonymity. This information will be used to assist in understanding the psychological, physical, emotional, and social experiences of corrections workers.

Age: _____

Gender: Male____ Female____

Ethnicity: Caucasian____ First Nations/Metis____ Asian____ Hispanic____ East Indian____ African-American____ Other ____ If other please specify: _____

Marital Status: Single____ Married____ Widowed____ Divorced____ Common-law____

Do you have children: YES____ NO____ Ages: _____

Approximate personal income per year: _____

Corrections Work History: Amount of time employed in corrections: Number of months____ Years____

Job classification: _____

Where in your facility do you work? _____

Are you employed: full time____ Part time____ Average number of hours worked per week: _____

Approximate number of work days you have missed due to illness over the last four months: _____

Approximate number of physician visits you have had over the last six months: _____

Have you experienced a traumatic event in the workplace? Yes____ No____

If yes to above were you provided with debriefing? Yes____ No____

Were you satisfied with the debriefing? Yes____ No____

If debriefed approximately how long after the event? Number of: Hours____ Days____ Weeks____

Following the event(s) did you feel that any of the following were supportive of you? Co-workers Yes____ No____ members of management Yes____ No____ family members Yes____ No____ others e.g. (clergy or friends) Yes____ No____

Over the last six months how many violent workplace incidents (related to your work environment): Have you personally experienced____ Witnessed____ Heard about____

Over the length of your career approximately how many traumatic workplace incidents do you feel that you have: experienced____ witnessed____ heard about____ Of these how many involved violence? _____

Do you have access to an employee assistance program? Yes____ No____

Have you used your workplace employee assistance program? Yes____ No____

If yes to above were you satisfied with this program? Yes____ No____

Do you smoke? Yes____ No____ If yes number of cigarettes per day____

Do you drink alcoholic beverages? Yes____ No____ Number per day____ week____ month____

Do you use recreational drugs? Yes____ No____ How often? _____

If yes to above which drugs do you use? _____

Are you taking prescription medication? Yes____ No____ if yes how many prescription medications? _____

Please use back of this sheet for any comments that you might have. Your opinions are valuable to this study.

APPENDIX B
DESCRIPTION OF THE POSTTRAUMATIC STRESS DIAGNOSTIC SCALE

The Posttraumatic Stress Diagnostic Scale. The Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995) was used to measure the presence and severity of PTSD symptoms.

The PDS is a 49-item self-reporting scale that was developed to assist in the diagnosis of Posttraumatic Stress Disorder using the DSM-IV criteria for PTSD (Foa, 1995). It has proven to be useful in specific populations for estimating PTSD prevalence rates. The PDS can be completed in 10-15 minutes and an eighth grade reading level is considered necessary. Participants rate frequency of symptom experience on a 4-point rating scale in questions 22-38. Symptom severity is then defined in terms of cut-off scores as follows: 10 or less = mild, 11–20 = moderate, 21-35 = moderate to severe and 36 or more = severe. The level of impairment is determined according to responses given in items 41 through 49 which asks individuals to identify areas of their lives in which they have experienced impairment. Calculations are made as follows: zero yes responses = no impairment, 1-2 yes responses = mild, 3-6 yes responses = moderate and 7-8 yes responses = severe. A yes response to question 49 alone would also constitute severe impairment. The PDS has shown good validity and reliability.

The normative sample was recruited from Veterans Administration hospitals, emergency and trauma centres, ambulance corps, residential rehabilitation centres, anxiety disorder and PTSD clinics, Fire halls, and women's shelters located within the USA. Items 22-38 (used to assess symptom severity) had a calculated Chronbach alpha of .92. The symptom severity score was determined to be highly correlated with other measures including the Beck Depression Inventory (BDI) (.79) and the Impact of Event Scale (IES) Intrusion and Avoidance scales (.80 & .66 respectively) indicating convergent validity. Re-administration of the test was conducted with 110 participants at an average interval of 16.1 days to determine test-re-test reliability. Good agreement was indicated by a kappa of .74 (Foa, 1995).

APPENDIX C
DESCRIPTION OF THE QUALITY OF LIFE SATISFACTION QUESTIONNAIRE

The Quality of Life Satisfaction Questionnaire. (Q-LES-Q) (Endicott, et al., 1993). The Q-LES-Q was “designed to enable investigators to easily obtain sensitive measures of the degree of enjoyment and satisfaction experienced by subjects in various areas of daily functioning” (Endicott, et al., 1993, p. 321). It is a 93 item self-report instrument consisting of eight sub-scales that assist the participant in examining their ratings of quality of life in a variety of areas including: 1) physical health/activities, 2) feelings, 3) work, 4) household duties, 5) school/course work, 6) leisure time activities, 7) social relations, 8) general activities. - The sub-scale based on school/course work was not included in the package for this study and so was not used in any evaluations. All other sub-scales were used in analyzing the effect of PTSD symptoms on quality of life.

Ratings in Q-LES-Q are based on a 5-point scale. Seven of the scales use “not at all” = 1 to “frequently or all the time” = 5. Higher scores indicate an increase in enjoyment. The 8th scale (General Activities) uses “very poor” = 1 to “very good” = 5. Test-retest reliability was established in a sample of inpatients ($n = 54$) with the resulting alpha range of .63 - .89. Convergent validity was assessed through comparisons with the SCL-90 depression sub-scale. A group of patients seeking help for depressive symptoms ($n = 89$) were administered both scales. Correlations ranged from -.29 (Household Duties) to -.74 (Physical Health) suggesting that while the severity of depression rose enjoyment of life declined (Endicott, Nee, Harrison, Blumenthal, 1993). Alpha was used to measure internal consistency of the Q-LES-Q in a sample ($n = 83$) of inpatients. Items of sub-scales were found to be highly internally consistent with a range of .90 (General Activities) to .96 (Work).

APPENDIX D

DESCRIPTION OF THE WORK ENVIRONMENT SCALE

The Work Environment Scale (WES) is a social climate scale consisting of 10 sub-scales that were designed to measure the actual, preferred, and expected social environments of work settings (Moos, 1994). For the purposes of this study the real form is being utilized to help employees describe the actual work environment. The sub-scales examine Relationship Dimensions (Involvement, Co-worker Cohesion, Supervisor Support), Personal Growth Dimensions (Autonomy, Task Orientation, Work Pressure), and System Maintenance and Change Dimensions (Clarity, Managerial Control, Innovation, Physical Comfort).

For this study only the 3 relationship dimensions (Involvement, cohesion and support) were considered for analysis. Level of employee commitment to the job was measured using the Involvement sub-scale, employee perceptions of co-worker friendliness and support was measured using the Coworker Cohesion sub-scale and the perception of management support of employees and encouragement of employee support of one another was measured by using the Supervisor Support sub-scale.

The sub-scales of Normative data were established for 8,146 employees from general work groups and health related work groups. Test-retest reliability was calculated by administering the test to the same group of employees ($n = 75$) twice in a one month period. The range was from .69 (Clarity) to .83 (Involvement). The WES has been extensively utilized to focus on the determinants and outcomes in work milieus. Findings in these studies have supported the construct, concurrent and predictive validity of the WES (Moos, 1993).

APPENDIX E
DESCRIPTION OF THE SYMPTOM ASSESSMENT -45 QUESTIONNAIRE

The Symptom Assessment-45 Questionnaire (SA-45) (Strategic Advantage, Inc., 2000) was used to measure levels of psychopathology in nine domains. For the purposes of this study only results for three of the sub-scales were considered and these were: Somatization (scores on the Somatization sub-scale), Paranoid Ideation (scores on the Paranoid Ideation sub-scale) and Depression (scores on the Depression sub-scale).

The SA-45 is a 45 question self-report measure designed to measure psychiatric symptomatology by using five questions encompassing nine domains (anxiety, hostility, obsessive-compulsivity, phobic anxiety, somatization, depression, interpersonal sensitivity, paranoid ideation, and psychoticism). Indices for Global Severity and Positive Symptom total can also be calculated. It was developed for use with individuals over 13 years of age and takes approximately 10 minutes to complete. Symptom severity is rated on a five-point Likert scale with a range of “not at all” = 0 to “extremely” = 5. This scale has been extensively used and has a normative database consisting of over 18,000 persons. Group specific normative data is provided for males and females as well as for inpatients and non-patients.

Internal consistency reliability was evaluated for each of the nine sub-scaled using

Chronbachs alpha. In adult samples ranges were from .71 (Psychoticism, in a follow-up sample) to .92 (Depression, in a termination sample). Test-retest reliability was established in a non-clinical group of adults (n = 60) who were tested one to two weeks apart. Reliability coefficients ranged from .42 (Anxiety) to .88 (Somatization). Statements on the SA-45 were derived from the Symptom Checklist-90 (SCL-90) and were designed to maintain the symptom domain integrity. When compared using adult and adolescent inpatient samples the correlations on domains were .95 or higher with the exception of Psychoticism (correlation = .88-.90) indicating good convergent validity.

HAVE YOU EXPERIENCED A TRAUMATIC WORKPLACE EVENT?

	Frequency	Percent
Total Sample		
Yes	215	79.3
No	49	18.1
Don't Know	5	1.8

POSTTRAUMATIC STRESS DISORDER, VIOLENCE AND QUALITY OF LIFE IN
SASKATCHEWAN CORRECTIONS WORKERS

A Thesis

Submitted to the Faculty of Graduate Studies and Research

In Partial Fulfilment of the Requirements

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by

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Abstract

The purpose of this study was to determine PTSD prevalence rates in a sample of Saskatchewan corrections workers and to investigate the relationship between PTSD, incidents of violence, quality of life, workplace absenteeism, and debriefing.

Posttraumatic Stress Disorder (PTSD) can develop following the witnessing of, hearing about, or experiencing of a traumatic event. PTSD symptoms decrease quality of life (Rapaport, Endicott & Clary, 2002) and can be a factor in high rates of workplace absenteeism (Greenberg *et al.*, 1999). Traumatic incidents are common in Canadian correctional institutions and over the last ten years assaults, suicides and attempted suicides in many facilities have increased; however, little research exists that documents psychological responses to these traumatic events.

For the purposes of this study in May of 2003 a mail-out survey was sent to 1,008 corrections employees throughout Saskatchewan. 79.3% of respondents (n=271) reported personally experiencing a traumatic event while at work. In addition, they reported personally experiencing a mean of 2.93 such incidents per person over a six month period indicating a high exposure to violence in the work environment. Prevalence rates of PTSD in the sample were 25.8%, which is in excess of both lifetime (American Psychological Association, 2000) and current prevalence rates (Kessler *et al.*, 1995, Robins & Reiger, 1991) in the general population. Participants who reported symptoms at a level suggesting a diagnosis of PTSD also reported lower quality of life in all seven sub-scales of the Quality of Life Satisfaction Questionnaire (Q-LES-Q) (Endicott, Nee, Harrison & Blumenthal, 1993), and reported missing significantly more work in a one year period than those who did not qualify for such a diagnosis according to the PDS.

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TABLE OF CONTENTS

	Page
ABSTRACT	ii
ACKNOWLEDGEMENTS	iii
POST DEFENSE ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	viii
LIST OF APPENDICIES	ix
INTRODUCTION	1
Context	1
Purpose of the Study	3
1. LITERATURE REVIEW	3
1.1 PTSD Overview	3
1.2 Diagnostic Criteria	5
1.3 A Brief History of PTSD	8
1.3.1 Pre-20 th Century	8
1.3.2 Wars	9
1.4 The DSM Evolution of PTSD	11
1.4.1 Pre-DSM-III	11
1.4.2 DSM-III	11
1.4.3 DSM-III-R	12
1.4.4 DSM-IV	13
1.4.5 DSM-IV-TR	13
1.5 Epidemiology and Chronicity	14

1.6 Quality of Life and PTSD	17
1.7 At Risk Populations	19
1.7.1 Disasters	20
1.7.2 PTSD and Crime	23
1.7.3 PTSD and Accidents	25
1.7.4 War Veterans	27
1.7.5 High-risk Occupations	28
1.8 Critical Incident Stress Debriefing and PTSD	31
1.9 Corrections Workers	35
1.10 Hypotheses	39
1.10.1 Hypothesis 1	40
1.10.2 Hypothesis 2	40
1.10.3 Hypothesis 3	40
1.10.4 Hypothesis 4	40
2. METHOD	41
2.1 Participants	41
2.2 Procedure	41
2.3 Instruments	42
2.3.1 Questionnaire	42
2.3.2 Scales	43
2.3.2.1 The Posttraumatic Stress Diagnostic Scale	43
2.3.2.2 The Quality of Life Satisfaction Questionnaire	45
3. RESULTS	47
3.1 Data Analysis	47

3.2 General Demographic Characteristics of the Sample	48
3.3 Trauma Related Variables	52
3.3.1 Traumatic Events	52
3.3.2 Debriefing	52
3.3.3 Frequency of Traumatic Event Reporting	52
3.3.4 Absenteeism	56
3.4 Hypotheses	58
3.4.1 Hypothesis 1	58
3.4.2 Hypothesis 2	60
3.4.3 Hypothesis 3	61
3.4.4 Hypothesis 4	63
4. DISCUSSION	64
4.1 Traumatic Events in the Workplace	65
4.2 PTSD Prevalence	68
4.3 PTSD and Workplace Absenteeism	71
4.4 Quality of Life and PTSD	74
4.5 CISD	76
4.6 Limitations of the Study	77
4.7 Significance of the Study	79
4.8 Future Directions	83
REFERENCES	86

LIST OF TABLES

Table	Page
Table 1: Demographic Variables: Age, Employment and Wage	49
Table 2: Demographic Variables: Sex, Ethnicity, Job Type, Work Site and Work Status	50
Table 3: Number of Participants Experiencing a Traumatic Workplace Event	53
Table 4: Availability of, Satisfaction With, and Time of Debriefing	54
Table 5: Reporting of Traumatic Events	55
Table 6: Workplace Absenteeism	57
Table 7: Prevalence of Posttraumatic Stress Disorder (PTSD) in Sample	59
Table 8: Summary of Regression Analysis for Q-LES-Q Sub-scales Predicting an Increase in PDS Total Score	62

LIST OF APPENDICES

Appendix	Page
Appendix A: Ethical Clearance	110
Appendix B: Letter of Consent	112
Appendix C: Letter to Participants (SGEU)	113
Appendix D: Demographic and Exploratory Questionnaire	114

POSTTRAUMATIC STRESS DISORDER, VIOLENCE AND QUALITY OF LIFE IN CORRECTIONS WORKERS

Introduction

Context

Although there is a plethora of information in the psychological literature with regard to Posttraumatic Stress Disorder (PTSD) very little research has been conducted into PTSD in populations of correction workers. Traumatic events take place each and every day and most people do not have a pathological response (Meichenbaum, 1994). For certain individuals, though, the experience acts as a trigger for an abnormal and prolonged cluster of psychophysiological responses that when found together have come to be known as PTSD (APA, 2001). The chances of developing such symptoms increases in those who have a history of prior traumatization (Doyle et.al., 2002) and increases proportionately to trauma severity in cases where an individual may repeatedly experience or witness violent or traumatic incidents (Christopoulos, 2002). Those who work in correctional centres constitute a group of individuals who are exposed to an excessive amount of violence within the workplace both personally and vicariously (Correctional Services Canada, 1992).

PTSD is under-diagnosed and has a high rate of co-morbidity. Those who have the disorder frequently present with other medical and psychiatric complaints, however, they often are not accurately diagnosed (Davidson, 2001). These individuals, therefore, are subjected to increased rates of physical and mental health issues that in turn can affect their quality of life both within and outside of the workplace. Substance abuse problems, interpersonal complications (including family dysfunction), and intrapersonal

disturbances (including violent behaviour) (Beckham, Feldman & Kirby, 1998), are a few of the difficulties that those who have PTSD must contend with in day to day functioning.

Although controversy remains with regard to the effectiveness of early intervention following traumatic exposure, there are numerous studies suggesting that early diagnosis and intervention carry a better prognosis with a decreased likelihood of chronicity (Shalev, Friedman, Foa & Keane, 2000). The cost of the disorder in terms of lost productivity when left untreated may surpass that of all other anxiety disorders (Greenberg et.al., 1999). Moreover, the emotional, psychological, and social cost can be cataclysmic not only to the affected person, but to those who are close to them as well. The prevalence of PTSD increases in direct relation to the number, intensity, and duration of traumatic incidents encountered (Christopoulos, 2002). Symptoms associated with the disorder contribute to work-place absenteeism, illness, and social isolation (Hidalgo & Davidson, 2000). Understandably, PTSD and comorbid psychopathology have been reported to have numerous negative effects on the lives of those who suffer from the disorder (Davidson, 2001).

Traumatic incidents are common in Canadian correctional institutions and over the last ten years assaults, suicides and attempted suicides in these environments have remained consistently high (Underhill, 2003). Corrections workers are often witnesses to acts of violence as well as the associated aftermath in relation to both victims and perpetrators. Researchers have recognized that physical and mental health are adversely affected by PTSD symptoms following exposure to violent stressors (Davidson, 2000; Lambert 2001). In examining occupational stress in corrections personnel, Woodruff (1993) concluded that the average life expectancy of US correctional officers was 65

years old, significantly below that of the national norm suggesting that this occupation may be particularly stressful.

Purpose of the Study

There is a paucity of information concerning the incidence of work-related PTSD symptoms among corrections workers. Accordingly, the associated psychological, physical, social, and work-place implications of these symptoms have been given little investigative consideration. There is a need for further investigation into the prevalence of PTSD symptoms in corrections workers. Inquiry into the psychological and work-related implications of PTSD in this population would yield information that would be a valuable contribution to the body of research. There has been no such study conducted in the Province of Saskatchewan to date. The purpose of this study is to investigate the prevalence of PTSD in a sample of corrections workers in Canada.

1. LITERATURE REVIEW

1.1 PTSD Overview

Posttraumatic Stress Disorder (PTSD) is a serious mental disorder that may develop into a chronic problem and carries with it a high rate of comorbidity. In the US the lifetime PTSD prevalence rate is 8% (APA, 2000) with approximately five million Americans suffering from the disorder during any one year period (National Institute of Mental Health, 2003). It has been estimated that up to 80% of those suffer from some type of comorbid disorder, including depression, generalized anxiety disorder, and substance abuse (Lange, *et al.*, 2001).

The clinical course of PTSD varies and 33% - 47% of those diagnosed with the disorder continue to report symptoms over a year after the triggering event (Davidson,

Hughes & Blazer, 1991). In fact, up to one third of those who are symptomatic at a clinical level will continue to meet the DSM criteria for PTSD after 10 years (Lange *et al.*, 2000). Some individuals, in fact, have reported active symptoms for over 20 years with many eventually becoming permanently disabled. Due to this tendency towards chronicity and the accompanying range of symptom sequela, PTSD has been documented as responsible for a productivity loss of up to three billion dollars in the US workforce each year, putting it ahead of all other anxiety disorders in terms of cost (Davidson, 2001). Although productivity loss statistics are not available for Canada, it would be anticipated that they would be similar on a per capita basis to those found in the U.S. due to the socioeconomic and cultural similarities between the two countries.

Chronic PTSD leads to intrapersonal and interpersonal difficulties in sufferers. Behavioural hostility and blatantly violent actions have been part of the pattern displayed in symptomatic individuals (Beckham *et al.*, 1996). High levels of symptom severity and increased interpersonal violence can act to contribute to the breakdown of relationships thereby compounding the victim's sense of alienation. Problems such as these trigger family adjustment difficulties and contribute to increased levels of stress (Calhoun, Beckham & Bosworth, 2002). Suffering from the disorder is associated with considerable negative consequences for the individual in various domains of quality of life including physical health and the ability to communicate with others and care for oneself (Rapaport, *et al.*, 2002).

Previous researchers have established that certain employees who perform jobs that involve exposure to traumatic situations are at increased risk for developing PTSD (Corrections Services Canada, 1992; Cudmore, 1996; Robinson, *et al.*, 1998; Lange, *et*

al., 2000; Schlenger, *et al.*, 1999). Investigations into the disorder and related issues have centred on quality of life (Rapaort, *et al.*, 2002), lost productivity and absenteeism (Greenberg, *et al.*, 1999; Hidalgo & Davidson, 2000) and critical incident stress debriefing (CISD) (Bledsoe, 2003; van Emmerik *et al.* 2002; Watson *et al.* 2002). Findings suggest that those with PTSD lose a significant amount of their capacity to experience pleasure and satisfaction in all areas of daily living (Amir & Lev-Weisal , 2003; Eisman, *et al.*, 2003; Rapaort, *et al.*, 2002; Warshaw *et al.* 1993) and their ability to attend work and function there as they had previously (Hidalgo & Davidson, 2000).

1.2 Diagnostic Criteria

There are six criteria that must be met in order for an individual to qualify for a clinical diagnosis of PTSD (APA, 2000). A main distinguishing feature of the disorder is that the affected individual must have been exposed to a traumatic event (Criterion A1). Depending on the situation, the event can be personally experienced or witnessed. Symptoms can also occur upon learning that a close associate or relative has had a traumatic experience. The incident must involve the perception of serious harm or actual or threatened death, or the belief that there has been a violation of physical integrity in relation to the self or others. The individual response to the event must include feelings of horror or of helplessness and fear (Criterion A2)

Following the triggering event there are three hallmark clusters of symptoms that must be present. The first of these is re-experiencing of the event through such things as dreams, hallucinations, or feelings that the event is reoccurring (Criterion B). An individual must experience one or more of these symptoms. Event-related thoughts are often intrusive, uncontrollable, and accompanied by high levels of apprehension

(Shipherd & Beck, 1999). Moreover, nightmares associated with reliving the trauma have a tendency to be accurate representations of the event and are perceived as extremely disturbing (Forbes, Phelps & McHugh, 2001).

The second group of symptoms includes those that are related to avoidance and numbing. Individual must experience three or more of these symptoms (Criterion C). Of all three symptom clusters that are found in PTSD, avoidance and numbing symptoms have been investigated least by researchers (Litz, Orsillo, Kaloupek & Weathers, 2000), in spite of the emotional and social impairment they have been reported to cause. Individuals who have these symptoms tend to avoid stimuli that are reminders of the trauma, including people, situations, and places. They may exhibit avoidance behaviours with regard to thoughts, feelings activities, and conversations that trigger memories (APA, 2000). Eventually, individuals may emotionally disconnect from others and cease to function socially (Freeman, 2000).

In addition, integral components of the traumatic incident may not be recollected. The individual may show signs of diminished interest in activities, feel detached from others, and suffer from a sense of impending doom that prevents them from establishing long-term goals and initiating and implementing future plans. They are often unable to enjoy the activities they had formerly taken pleasure in (APA, 2000). In effect, these symptoms can cause withdrawal, leading to alienation and isolation and thereby causing distressing emotional and social consequences (Calhoun *et al.*, 2002).

Finally, symptoms of increased arousal can result in a failure to be able to concentrate or conceptualize, and a related inability to complete tasks. Two or more such symptoms must be present (Criterion D). Difficulties can arise with regard to falling

asleep or staying asleep and the person may exhibit an exaggerated startle response, as well as feelings of irritability and anger (APA, 2000). The potentially serious effects of arousal symptoms such as these have been shown to be severe in certain persons.

Researchers have begun to recognize that there is an increased risk of suicide among those who have PTSD with associated high levels of anger and impulsivity (Kotler, Iancu, Elfroni & Amir, 2001).

For PTSD to be diagnosed the individual's symptoms must have been present for more than one month (Criterion E) and must be severe enough to cause significant interference in a critical area of the person's life (Criterion F). For instance, difficulties in several areas of living may manifest including those related to interpersonal relationships, household duties, leisure activities, or capacity to function effectively in the workplace (APA, 2000). These symptoms can become so severe that they affect the person's ability to enjoy life and to function in a productive manner. On the other hand, even though DSM diagnostic requirements might be met, a person may not experience difficulty with functioning in any area of their life. If this is the case, then they would not qualify for a diagnosis of PTSD.

Specifiers for the onset and duration of PTSD range from acute, where symptoms last less than three months, to chronic, symptoms lasting at least three months. There is also a delayed onset specifier used when symptoms do not appear until at least six months after the traumatic event (APA, 2000). When symptoms of dysfunction are coupled with the high co-morbidity factor the outcome can be one of acute emotional and functional impairment (Lev-Wiesel & Amir, 2001). This impairment is frequently responsible for the disruption of interpersonal communications and relationships that

result in disturbances in family, social, and work environments (Davidson, 2000).

1.3 A Brief History of PTSD

1.3.1 *Pre-20th Century*

Although post-traumatic symptoms were not formally identified as a specific disorder (PTSD) until outlined in the DSM-III they were, none-the-less, known to exist and recognized as problematic to the psychological functioning of individuals long before that time. The potential for individuals who are exposed to severe trauma to endure subsequent wide-ranging symptoms has been well documented since at least the 1800's.

In the 19th century, studies were undertaken to examine the psychological symptoms of railway accident victims who were manifesting symptoms closely resembling PTSD (Trimble, 1981). Although railways had been used to transport goods for quite some time, it wasn't until the early 1800's that they became a popular form of passenger transport. The first day of passenger train access in 1830 was also the day of the first rail related fatality. In spite of this, over the next 20 years there were over 6,000 miles worth of track laid. With more railways came the inevitability of more accidents and the accompanying symptom manifestation of the victims. The speculation about biological causes among medical experts at the time centred on the idea that the physical trauma from the accident was causing injury to the nervous system, resulting in a range of symptoms (Trimble, 1981). Remarkably, there was rarely physical evidence to support the degree of symptom response. This led to arguments that the symptoms were related to a psychological phenomenon akin to hysteria, as opposed to a physical injury. The debate between physicians was prolonged and centred around physical versus psychological causes. The present consensus on such cases supports the psychological

explanation, with many researchers agreeing that the most likely current diagnosis would be PTSD (Harrington, 2003).

Some suggest that the hysteria research carried out by Freud in the latter part of the 1800's may represent the root for the evolution of PTSD (Emery, 1996). Whether or not this is so is open to speculation, Freud was, however, interested in obtaining government funds in order to conduct research into war neurosis, suggesting that he certainly saw a relationship between war trauma and the resulting mental disturbances (Freud, 1955).

At a minimum, a written historical account exists describing trauma induced behaviours and bearing testimony to the long-term recognition of the relationship between stress and psychopathological responses. Although perhaps not as eloquently presented as it was by Shakespeare, this type of extreme response to traumatic events was specifically delineated both medically and from a psychiatric perspective during the numerous wars of the last century.

1.3.2 *Wars*

During WWI it became apparent that some soldiers who were subjected to repeated traumatic events through the course of battle began to show persistent and particular psychological symptoms. The phenomenon was dubbed shell shock, a term that was used exclusively in reference to soldiers. Symptoms included nightmares, fear, and trembling and were primarily attributed to broken blood vessels in the brain caused by being in close proximity to shell explosions (Horowitz, 1986). Physicians documented the associated psychological sequela and attributed it to the acute physical experience of war (Schlenger, Fairbank, Jordan, & Cadwell, 1999).

During WWII this same symptom cluster was dubbed war neurosis and veterans were studied more carefully and often than in any previous war. An important observation was the understanding that psychiatric symptoms were proportional to factors related to particular battles (Schlenger *et al.*, 1999). For instance, symptoms increased as did casualties and the intensity of the situation (O'Brien, 1998). Longitudinal studies yielded information on the evolution and resolution or persistence of war-related mental disorders (Schlenger *et al.*, 1999).

The Vietnam War was the catalyst for recognition of trauma-related psychological symptoms and formal inclusion of this diagnostic category in the DSM. By the end of the Vietnam War it was a well-accepted fact that numerous individuals were returning from battle mentally changed and in many cases suffering from considerable impairment, not only psychologically but emotionally and socially as well. (Saigh & Bremner, 1999). Researchers noted that in addition to symptoms recognized in WWI and WWII veterans, Vietnam veterans were also observed to be experiencing extreme aggression, marital problems, work difficulties (Horowitz, 1986), and sexual dysfunction (Gerrity & Solomon in Marsella, Friedman, Gerrity & Scurfield, 1996). Returning veterans were not well received and, in fact, were often actively and harshly criticized for their involvement in a controversial war (Mosley, 1998). Their treatment after arriving home was different than that of other veterans in this regard (O'Brien, 1998). "Vietnam began to be associated with social problems, poor integration into society, criminal behaviour and mental health problems" (O'Brien, 1998, chap. 1, p. 12).

1.4 The DSM Evolution of PTSD

1.4.1 *Pre-DSM-III*

Before 1980 there was little recognition of long-term psychological effects in response to trauma. Symptoms that developed following a traumatic event were, for the most part, considered to be a short term problem. Both the DSM I (APA, 1952) and the DSM II (APA, 1968) described individuals with long-standing trauma related symptoms as being constitutionally vulnerable (Yehuda, 2003). The DSM-I included a section on Gross Stress Reactions that contained many similarities to the section on PTSD in the DSM-III. However, when the DSM-II was published in 1968 this category was changed to Adjustment Reaction of Adult Life (Horowitz, 1986) and all that remained was a one-line reference to combat and no reference at all to stress (Shemain, 2001). The focus, however, remained on the individual's vulnerability which suggested a predisposition rather than a response to trauma (O'Brien, 1998).

A great deal of confusion was generated in the medical and psychiatric communities with regard to the pathological presentation of persons who had suffered various types of trauma. There was little consistency between expert opinions and there was no operational definition of the phenomenon under examination. Information needed to be organized in a cohesive and logical manner (Saigh & Bremner, 1999).

1.4.2 *DSM-III*

Authors of the DSM-III attempted to address the omission of stress reactions from the DSM II and merged the available literature and clinical evidence in order to present a more precise and clearly defined image of the experience of trauma survivors. They establishing a category that outlined related criteria and, as a result, PTSD was codified in

the DSM-III when it appeared in 1980. Introducing PTSD as a DSM category was crucial in acknowledging the significance of traumatic incidents in the evolution of specific trauma-related psychiatric illness (Carlier, Lamberts & Gerson, 2000). Criterion A was defined as “a recognizable stressor that would evoke significant symptoms of distress in almost everyone” and further “is generally outside the range of usual human experience” (APA, 1980, p. 236).

Understanding the link between a traumatic event and its subsequent psychopathology led to clinicians providing medical confirmation of the etiology of the disorder, thereby contributing to the medical legitimization of the suffering of those who were experiencing PTSD. Such recognition cleared the way for individuals to qualify to receive financial compensation in cases of long-term disability.

1.4.3 *DSM-III-R*

Whereas the DSM-III had not defined specific traumatic events under Criterion A the DSM-III-TR detailed what could be included by outlining the following:

“serious threat to one’s life or physical integrity; serious threat or harm to one’s children, spouse, or other close relatives and friends; sudden destruction of one’s home or community; or seeing another person who has recently been, or is being seriously injured or killed as the result of an accident or physical violence”.

(APA, 1987, p. 250)

Other changes included an increase in the number of symptoms in two out of the three symptom categories, allowing for a broader understanding of the breadth of psychological responses that may follow a traumatic event. Although Criterion C was expanded from three to seven symptoms, the requirement threshold also increased from

one symptom to three (Widiger, Frances, Pincus, Ross, First & Davis, 1996).

1.4.4 *DSM-IV*

There were several revisions to the PTSD section in the DSM-IV. One that was particularly salient to the conceptualization of the disorder was omission of the requirement of a triggering event that fell outside of the range of normal human experience. The prerequisite for an event was changed to one of “exposure to a severely threatening experience” (Doyle *et al.*, 2002). Omission of a condition outside the range of normal experience allowed medical professionals to consider the breadth and commonality of an extensive scope of traumatic events in every day life that may cause symptoms of PTSD (Doyle, *et al.*, 2002). This change, however, placed the focus back on the victim’s response to the stressor. In other words, rather than looking at the severity of the stressors, the DSM-IV looks at how the victim perceives and responds to the event. In addition, there was also a revision requiring the need for clinically significant impairment as a result of experiencing a trauma (Saigh & Bremner, 1999).

1.4.5 *DSM-IV-TR*

There were no criteria changes in the DSM-IV-TR. Changes were made however, to, the course of the disorder, the association with general medical conditions, prevalence rates, associated features and comorbidity. There was also the addition of a familial pattern section. None of these changes reflected a reversal with regard to the personal response of the individual following exposure to a stressor and as in the DSM-IV the focus remained on how the individual perceives the event and the affect this has (APA, 2000).

1.5 Epidemiology and Chronicity

The estimated lifetime prevalence rates of exposure to traumatic events vary from 39% (Breslau, Davis, Andreski & Petersen, 1991) to 69% (Norris, 1992) in the overall U.S. population. In Canadian populations, gender differences have been found to range from 74% for men to 81% for women (Stein, Walker, Hazen & Forde, 1997). In the U.S. approximately 5.2 million American adults are known to have PTSD yearly (National Institute of Mental Health, 2002). The prevalence rate for PTSD will depend on a combination of factors such as; the type of incident, proximity to the event, how long the situation lasted, the closeness in temporal terms between the event and the time of testing, a history of repeated trauma exposure, as well as factors inherent to the person or the environment (O'Brien, 1998).

There is a large discrepancy in reports of prevalence rates of PTSD in various populations, not only when the triggering events are diverse but also when triggering events are similar in nature. Of those who have been exposed to natural or man-made disaster, 4%-67% have been reported to develop clinical levels of PTSD (McFarlane & Potts, 1999). In rape victims, the figures have ranged from 30%-80% (Saigh & Bremner, 1999) while 17%-38% of victims of physical assault become symptomatic (Aciernio, Kilpatrick, & Resnick, 1999).

Others experiencing less overtly violent but nonetheless traumatic events also present with an increased prevalence rate. Frombach and Hampton (1999) in a Saskatchewan-based cancer centre study found that 27% of female cancer patients and 10% of adult male cancer patients qualified for a diagnosis of PTSD. PTSD has also been reported in between 9% (National Centre for Post-Traumatic Stress Disorder, 2003)

to 40% (Zatzick, *et al.*, 2002) of motor vehicle accident victims. Such wide ranges are substantiated in populations of war veterans. For example, the American Legion Study, a mail survey, found 1.8% to 15% depending on how PTSD was defined in the questionnaires (Snow, Stellman, Stellman & Sommer, 1988). In other studies of veterans there were much higher prevalence rates ranging between 16.8% (Goldberg, True, Eisen & Henderson, 1990) and 70% (Sutker, Allain & Winstead, 1993).

Traumatic events are recognized as the triggering mechanism in the development of PTSD and once an individual has developed the disorder they may re-experience it more readily at a later date (Penza, Heim & Nemeroff, 2003; Howard & Hopwood, 2003; Resick, 2001). A stressor (even a relatively minor one) is capable of resulting in more serious psychological repercussions when it follows a previous more acute trauma (Heuft, 1999; Macleod, 1994). To complicate the picture, symptoms may wax and wane and an individual who appears to be asymptomatic over a period of time may suddenly begin to re-experience severe and debilitating problems later in life in response to other potentially stressful stimuli (Berthier, Kulisevsky, Benitez & Gironell, 1998; Hilton, 1997). Life stressors, new traumatic occurrences, aging, accidents, and incidents that serve as reminders of the original trauma (including media events) can reactivate previous symptoms (APA, 2000).

This pattern of remission and reactivation of symptoms may lead clinicians to believe that they are dealing with diverse problems over a period of years rather than a prolonged or delayed response to PTSD. Victims, meanwhile, remain symptomatic without receiving an appropriate diagnosis or adequate treatment. Unfortunately, medical professionals and the victims of PTSD may become caught in a cycle of repeated office

visits and unsuitable medical care, thereby causing needless suffering and placing an unnecessary financial strain on health care services (Davidson, 2000).

Despite researchers' having identified the diverse ways that PTSD might manifest as well as the numerous situations that could contribute to its development, it is still often misdiagnosed or simply goes undetected (Brunello *et al.*, 2001). Victims may present at the physician's office with numerous physical and psychiatric symptoms, the etiology of which remains unrecognized. As a result, a large number of people continue to experience difficulties but fail to distinguish the original cause of the problem or appreciate the role of the initial critical incident as a catalyst. A compounding factor that contributes to an already confusing clinical picture is that the disorder may not begin immediately following a traumatic event, but may become apparent only after a latency period (Weisaeth & Eitinger, 1993). Furthermore, PTSD symptoms may abate following a symptomatic period only to reappear in response to seemingly minor or normal life events.

A German researcher concluded that even the natural somatic process of growing older was a major factor in re-establishing symptoms in those who have experienced an earlier critical event. Heuft (1999) concluded that it was possible for elderly persons faced with helplessness induced by age related processes to experience a reactivation of PTSD more than 30 years after the original trauma. Similarly, Berthier (1998) found two cases in which minor head injury was determined to be responsible for the reoccurrence of PTSD in two women who had experienced sexual abuse as adolescents. Both of these examples are consistent with findings in numerous other studies wherein investigators have concluded that a history of childhood trauma and sexual abuse can predispose an

individual to the later reoccurrence of PTSD (Davidson, 2001; Mezey & Robbins, 2001; Zlotnick, Davidson, Shea & Pearlstein, 1996).

Macleod (1994) found that physical illness, retirement, loneliness, and service reunions contributed to reactivation of PTSD symptoms in a group of 45 WWII veterans. Re-experiencing and arousal symptoms were the most likely symptoms to re-occur among veterans who experienced masking of intrusive symptoms. Once an individual has developed PTSD, the symptoms can be triggered or exacerbated at a later date whether or not there is an asymptomatic period and despite prolonged episodes during which symptoms are less pronounced and/or less problematic.

1.6 Quality of Life and PTSD

Individuals who suffer from psychological disorders frequently have a corresponding decrease in the ability to enjoy many aspects of their lives. Although the relationship between quality of life and anxiety disorders, including PTSD, has not been clearly defined there is a body of evidence suggesting a relationship between the two such that as PTSD symptoms increase quality of life decreases (Hansson, 2002). Symptoms of a mental disorder can cause severe disturbances in one's ability to experience satisfaction in many domains. The capacity to take pleasure in life activities is often absent in people who suffer from mental illness and yet it is a crucial element to the well-being of the person. If overall good health is to be realized then it is necessary that there be not only an absence of the wide range of symptoms indicative of illness but a capacity to derive enjoyment from life in general (Endicott, *et al.*, 1993).

Since 1948 the World Health Organization's (WHO) definition of health has included satisfaction with multi-dimensional aspects of living. WHO delineates health as

“A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (Hernandez, Durch, Blazer & Hoverman, 1999, p.39). In other words, a complete definition of health must encompass a good quality of life and include satisfaction in numerous domains to meet WHO standards. It is not good enough, therefore, to simply be free from psychological and physical problems there must be elements of overall wellness in the day to day functioning of an individual.

Several studies have explored the relationship between increased PTSD symptoms and decreased quality of life. Warshaw *et al.* (1993) found, in a study of anxiety disorders, that subjects with PTSD reported lower functioning than subjects with all other anxiety disorders and that their quality of life had been severely affected in almost every area. Similarly, in a study conducted in California a group ($n= 638$) of Latino immigrants who had been victims of political violence showed both elevated prevalence rates of PTSD and impairment in health-related quality of life (Eisenman, Gelberg, Liu & Shapiro, 2003). Amir & Lev-Weisal (2003) concluded that 43 Holocaust survivors had higher PTSD scores and lower physical, social and psychological quality of life scores than did a matched community sample of 44 persons without PTSD.

War veterans are a population much studied with regard to how PTSD may be implicated in various other areas of impairment. Two notable studies have specifically looked at quality of life in populations of symptomatic veterans. Researchers conducted an analysis of archival data from the National Vietnam Veterans Readjustment Survey (NVVRS) and examined the relationship between PTSD and quality of life in male veterans (Kulka, et.al., 1988). They reported that there was a significantly increased risk of a lowered quality of life in soldiers with PTSD and that the decrease was exclusively

related to the disorder (Zatzick, *et al.*, 1997). In a related study Zatzick *et al.* (1997) investigated PTSD and quality of life in female Vietnam veterans. As in the male sample female veterans with increased PTSD symptoms also had a diminished quality of life.

1.7 At Risk Populations

Although much of the available literature on PTSD came out of the experiences of war veterans the disorder appears within the framework of numerous other trauma related events and has begun to gain recognition as a world wide health issue (Brunello *et al.*, 2001). It has been well documented in the literature that war is not the only event capable of causing immense distress and subsequent PTSD. Numerous investigators have suggested that pathological responses to disturbing events are manifest in those who come in contact with traumatic events through varied sources. The three main streams that have formed the crux of research focus are: disaster (Canino, Bravo, Rubio-Stripec & Woodberry, 1990; Green & Lindy, 1994), violent criminal victimization (Breslau, Davis, Andreski & Peterson, 1991; Fitzpatrick & Boldizar, 1993; McFarlane & Potts, 1999) and war (McFarlane & Potts, 1999). This does not, however, represent an all inclusive list; another population in which significantly elevated levels of PTSD have been consistently found is that of victims of traumatic or critical workplace incidents (Murray & Snyder, 1991).

In addition, authors of the DSM-IV-TR (2000) also propose several ways in which an individual may develop PTSD including: personal incidents that involve being robbed, assaulted or being taken hostage, learning about the injury or assault of a close associate or friend, or experiencing, or witnessing such an event (DSM-IV-TR, American Psychiatric Association, 2000). Not only are there many circumstances that put

populations at risk for PTSD but within each of these groups there is a wide range of pervasiveness. The literature contains a plethora of evidence supporting trauma related PTSD and suggests that prevalence rates may vary even when trauma events are similarly categorized (McFarlane & Potts, 1999).

1.7.1 *Disasters*

Disasters are categorized as natural or man-made and can be accidental or deliberately induced. Moreover, the consequences of natural disasters are frequently worsened due to an interaction with human elements (Green & Solomon, 1995). Regardless of the initiating mechanism, victims of disasters present with an increased incidence of PTSD.

There is some difference of opinion, however, as to what degree of psychopathology, particularly PTSD, will occur post-disaster. The results of some enquiries suggest that the vast majority of victims (90%) will not experience a trauma related mental disorder and that for those who do experience a disaster recovery is likely to occur within one to two years (Freedly & Kilpatrick, 1994). In citing McFarlane's paper presented at the 1994 NATO conference, Meichenbaum (1994) postulates that after a disaster the PTSD prevalence rate in most studies is less than 20%. Each year a considerable number of persons survive disasters and do not develop any psychological pathology but rather seem to adjust. When stressors are severe or prolonged the individual is at increased risk to develop PTSD but whether or not someone will develop the disorder is also influenced by other factors.

Vulnerabilities or predispositions will play a role in who would be considered part of a high risk group. Researchers have identified much such vulnerability. Previous

exposure to disasters, combat or other extreme adverse events (Freedy, Saladin, Kilpatrick, Resnick & Saunders, 1994) including being abused as a child (Zaidi & Foy, 1994) and having a history of prior psychiatric disturbances are all considered to be predisposing factors (Lonigan, Shannon, Taylor, Finch & Sallee, 1994). Such variables may be responsible for the variance observed in PTSD rates.

A relatively low rate of PTSD was found in survivors of the Mount St. Helens volcanic eruption. A comparison was made between residents of the area who were exposed to the eruption and those who were not. A lifetime prevalence rate for the former group was 3.6% (Shore, Tatum & Vollmer, 1986) and for the latter 2.6% (Shore Tatum & Vollmer, 1989) both of which are lower than lifetime prevalence cited in the DSM. Similarly low rates (4%) were found in Puerto Rican flood victims (Canino, Bravo, Rubio-Stipek & Woodberry, 1990) and American tornado victims (2%) (North, Smith, McCool & Lightcap, 1989).

Furthermore, many people who exhibit symptoms post-disaster do recover over time. In an example of the decrease of symptoms and the associated prevalence rate over time following a disaster, researchers completed a longitudinal study of a group of children following the Buffalo Creek Dam collapse. At the initial assessment they reported a PTSD rate of 32% while at follow-up 17 years later there was a large decrease bringing the group rate down to 7% (Green et.al., 1991; Green, Grace, Vary, Kramer, Gleser, & Leonard, 1994).

Other researchers contend that the impact that a disaster will have increases in direct proportion to and can be gauged by the degree of exposure an individual personally has to it (Solomon & Green, 1992). Weisaeth (1996, 1989) speaks to how central the

incident itself can be when considering the probability of psychopathology post-disaster. Weisaeth looked at the intensity and duration of PTSD in study participants over a four year period following a factory explosion and then compared groups of individuals based on their proximity to the blast. Those closer to the explosion (high exposure group) suffered more injuries and increased mortality rates. This increase was correlated with greater PTSD prevalence. Not only did those closer to the blast have an increased probability of developing PTSD but over time they did not recover as well as the medium exposure group. Prevalence rates of PTSD were assessed at seven months, and at two, three and four year intervals. The high exposure group reported 36%, 27%, 22% and 19% for these periods respectively while the medium exposure group reported 17% at seven months and only 2% at four years.

Another extreme disaster that killed almost all of the residents of a Columbian city also identified a large number of survivors who developed PTSD (Lima, Pai, Santacruz & Lorenzo, 1991). In November of 1985 the Columbian volcano Nevado del Ruiz erupted, killing approximately 24,000 of the 27,000 residents of Armero. Lima *et al.* (1991) evaluated 102 Armero survivors 8 months later. The majority (92%) met DSM criteria for a psychiatric disorder. PTSD was the most frequently found psychiatric problem with 32% of those living in shelters and 42% attending primary care facilities found to have clinical levels of symptoms (Lima, *et al.*, 1991; Lima, Pai, Santacruz & Lozano, 1991). Even higher rates were discovered following the Armenian earthquake in 1988 that caused over 45,000 deaths. Goenjian *et al.* (1994) found that out of a sample of 202 adult survivors, 67% still met diagnostic criteria for PTSD 18 months after the disaster (Goenjian *et al.*, 1994).

The terrorist attack of September, 2001 in New York has generated a great deal of research interest in the psychological repercussions of man-made disaster. Schlenger *et al.* (2002) conducted a web-based epidemiological survey of 2,273 adults in New York, NY and Washington DC one to two months after the attack and compared PTSD prevalence rates to other major metropolitan areas and the rest of the country overall. They found rates to be elevated in New York (11.2%) compared to all other areas (2.7% Washington, 3.6% other metropolitan areas and 4.0% the rest of the country).

Although there are many studies concerning the effect of various sorts of disasters on PTSD prevalence rates, the need for further investigation exists. Questions must be answered, primarily as they relate to factors such as victim proximity to an event, intensity of the event, and other qualitative and quantitative characteristics of personal exposure, in order to define the importance of such dimensions of trauma in relationship to the manifestation of PTSD in overall populations.

1.7.2 *PTSD and Crime*

Examples of the effect that violent crime has on both increased current and lifetime prevalence rates of PTSD are plentiful in the literature (Breslau, *et al.*, 1991; Frank & Stewart 1984; Green, 1994; Kessler, Sonnega, Bromet, Hughes & Nelson, 1995; Kilpatrick, Saunders, Best & Veronen, 1987; Kilpatrick & Resnick, 1993). With the exception of developing a life threatening illness, other events that are recognized by the authors of the DSM-IV-TR as catalysts for the development of PTSD tend to be those which have an element of violence. Furthermore, when an event is perceived as uncontrollable and dangerous, individuals are more likely to develop PTSD than in a situation where this does not hold true (Foa, *et al.*, 1991). Kushner, Riggs, Foa & Miller,

(1993) interviewed 144 women post-assault and concluded that there was a high level of PTSD symptoms among these individuals and that those who felt that they had no control over the situation experienced significantly higher rates.

Traumata that have been persistently associated with high levels of PTSD are: sexual assault, physical assault (other than sexual) and being threatened with a weapon (Kessler et.al., 1995). Victims of violent crimes have widely diverse lifetime and current rates reporting from 19% to 75% and 5% to 39% respectively (O'Brien, 1998).

In a study published in 2000, Hidalgo & Davidson noted that PTSD rates were highest in persons who were sexually assaulted and that men and women in such cases were affected equally. Survivors of rape have reported rates between 30% and 80% (Saigh & Bremner, 1999) for current prevalence and up to 80% for lifetime prevalence (Kilpatrick & Resnick, 1993). The World Health Organization (WHO) reported that one out of three female rape victims will develop PTSD, compared to one out of 20 women who have not been raped (World Health Organization, 2000). Crime victims in general are at increased risk and those who have been physically assaulted report rates between 17% and 38% (Acierno, Kilpatrick, & Resnick, 1999). Men experience more physical assault than women overall but do not respond with increased symptoms of PTSD as frequently and, in fact, any traumatic experience in general was found to be six times more likely to result in PTSD in females (Kessler et.al., 1995).

Two examples that speak to this discrepancy are found in a cognitive theory called the emotional processing theory and in a biological model that conceptualizes inherent differences in levels of neurosteroids in men and women pre and post-trauma. The cognitive model states that the development of PTSD may depend on both individual

processing and content of cognitions post-trauma. Because men and women have different trauma experiences they also have different unique trauma memory records. Women will more often experience self-blame and feel that the environment around them is dangerous. Men do not respond in the same way ultimately this may be a contributing factor in increased prevalence of PTSD in females (Tolin & Foa, 2002). The biological model suggests that women's bodies respond differently than men's when they are subjected to an event and that the neurosteroids involved in this response contribute to the development of PTSD (Rasmusson, 2002).

Unfortunately, not all crimes involving violence are reported. Many who experience sexual or aggravated assault do not make a formal complaint thereby leading to inaccuracies in crime report statistics (Acierno, *et al.*, 1999). Beyond this, definitions of what constitutes an act of violence or an assault may vary between studies or from person to person or definitions may be misconstrued (Hanson, Kilpatrick, Falsetti & Resnick, 1995; Koss, 1993; Resnick, Falsetti, Kilpatrick & Freedy, 1996). It is therefore likely that many persons who are assaulted do not report the event and subsequently, if they develop PTSD, both the triggering situation and the resulting disorder may not be identified. In spite of this shortcoming in identification research results from various studies have indicated a lifetime PTSD prevalence rate well above the average in victims of physical assault (Christopoulos, 2002). Compared to the 8% (DSM-IV-TR, 2000) lifetime prevalence for the general population, these individuals have reported a 23%-39% lifetime prevalence rate (Acierno *et al.*, 1999).

1.7.3 *PTSD and Accidents*

As previously noted, accident-associated trauma also places victims at an

increased risk for developing PTSD (Asmundson, Norton, Allardings, Norton, Larsen, 1998; Sheeran & Zimmerman, 2002). In the United States motor vehicle accidents (MVAs) are the most common accidents that males experience and the second most common type of accident that women will experience. Every year about 1% of the American population or 3,000,000 people will sustain injuries from an MVA (Buckley, 2003). A significant number of accident victims will develop PTSD, with actual ranges depending on other factors such as the severity of the injury sustained (Frommberger, Steiglitz, Nyberg, Schlickewei, Kuner & Berger, 1998) and the pre-morbid psychological condition of the individual (Mayou, Simkin & Threlfall, 1994).

Although American population studies have concluded that approximately 9% of people will develop PTSD after a car accident (Buckley, 2003) there are many studies that have found substantially higher rates. In an Australian study, 29% of 391 victims of motor vehicle accidents assessed for PTSD were found to meet the criteria for this diagnosis (Chan, Medicine, Air & McFarlane, 2003). Researchers at the Department of Psychiatry at the Ramban Medical Center in Israel conducted a study examining PTSD rates in MVA victims (N=74) and found them to be similarly elevated. The victims were interviewed one, three and six months following their accidents. A structured clinical interview was then conducted at one year post-accident and researchers at that time concluded that 32% of these individuals would qualify for a formal PTSD diagnosis.

Rates that are comparably elevated were reported in studies of burn victims. For example, 43% of a group of burn patients met criteria for lifetime or current PTSD. In addition, twelve months after being discharged from the hospital 38% (N=39) still had PTSD (Powers, Cruse, Daniels & Stevens, 1994). A later study completed at the

University Psychiatric Center in Morocco drew much the same conclusion in regard to PTSD in burn victims. Using DSM-IV standards the researchers found that 23.3% of the 60 participants in a burn unit study met diagnostic criteria for PTSD (El hamaoui, Yaalaoui, Chihabeddine, Boukind & Moussaoui, 2002).

1.7.4 *War Veterans*

War veterans tend to be exposed to high levels of aggression, hostility, atrocities and death. During the course of such battle-related phenomena it would be unusual to have only one such experience and most veterans witness or are involved in repeated events. Recurring exposure to violence as well as increased distress at having been personally involved in violent acts during combat has been identified as a predictor of whether or not individuals develop PTSD (Gallers, Foy, Donahoe & Goldfarb, 1988). Documentation of war-experience illustrates that there is a positive relationship between the number and gravity of war-related situations veterans have and the ensuing incidence of mental disorders that occur (Kulka et.al., 1990; Sutker, Winstead, Galina & Allain, 1991).

The vast amount of literature concerning war veterans speaks to the relationship between traumatic events and PTSD that is also found in other populations. The NVVRS which was conducted between 1986 and 1988 consists of information collected during interviews of 3,016 American veterans who served in the armed forces during the time of the Vietnam War. Researchers in the NVVRS estimated prevalence rates of PTSD in male and female veterans who served in that war. Male prevalence rates were estimated at 31% and females at 27% (Kulka et.al., 1988). This rate was much higher than the estimates for 15 to 54 year old males and females in the civilian population (5% and 10%

respectively.

A multi-method approach was utilized by Kulka *et al.* (1990) in one of the most methodologically thorough studies of psychological problems conducted in the US. By analyzing results from psychological tests and a two-part clinical interview, researchers were able to ascertain that current PTSD among all Vietnam Veterans was 15%. Furthermore, lifetime rates were found to be twice that amount placing the lifetime rate at nearly four times that found in the general population (APA, 2000).

This type of war-related increased prevalence is not unique to Vietnam veterans and has been, in fact, found in veterans of other wars as well. In a forty-year follow-up of 188 WW II American former prisoners of war (POWs), lifetime prevalence was 67% and current prevalence 24%, both significantly higher than what would be anticipated in the overall population (Kluznick, Speed, Van Valkenburg & Magraw, 1986). WW II European (N=343) and Pacific (N=65) theater POWs were found to have a lifetime prevalence of 70% and 79% respectively (Eberly & Engdahl, 1991). Veterans in Operation Desert Shield/Storm, while not reporting such a degree of increase reported a 16%-19% current rate in a 1993 study (Sutker, Uddo, Brailey & Allain, 1993). Regardless of which war veterans participated in elevated psychopathology, particularly PTSD, is significantly higher within this group than among participants in large American epidemiological studies (Schlenger *et al.*, 1999).

1.7.5 High-risk Occupations

The U.S. Department of Justice, Bureau of Justice Statistics completed a National Crime Victimization Survey which reported on violence in various jobs throughout the U.S. (Duhart, 2001). This report concluded that between 1993 and 1999 (within

identified workplaces), college or university teachers reported the lowest violent workplace victimization rate (1.6 incidents per 1,000) and police officers reported the highest incidence (261.8 incidents per 1,000). Other rates per 1,000 were: 21.9 for nurses, 68.2 for mental health professionals, 54.2 for junior high teachers and 53.9 for convenience store workers. Included under the category of violent crimes were: rape, sexual assault, robbery, aggravated assault, and simple assault. Aggravated and simple assaults were the most common forms of violence reported accounting for 94% of all work-related violence with four simple assaults occurring for each aggravated assault reported. Aggravated and simple assaults were defined as follows:

Aggravated assault: A completed or attempted attack with a weapon, regardless of whether or not an injury occurred, and an attack without a weapon in which the victim is seriously injured.

Simple assault: An attack without a weapon resulting in either no injury, minor injury (such as bruises, black eyes, cuts, scratches, or swelling) or an undetermined injury requiring less than 2 days of hospitalization. Simple assaults also include attempted assaults without a weapon (Duhart, 2001 p. 12).

It is apparent that there are high risk occupations wherein employees are more prone to experiencing traumatic events due to the nature of the jobs. Police officers (Robinson, Sigman & Wilson, 1997), fire fighters (Lange, *et al.*, 2000), corrections employees (Corrections Services Canada, 1992), military personnel (Schlenger, *et al.*, 1999) and emergency medical workers (Corrections Services Canada, 1992; Cudmore, 1996; Lange, *et al.*, 2000; Wagner, Heinrich & Ehert, 1998) are all employed in milieus wherein there is an increased probability of work-related exposure to violence.

Those who work in these professions often have an increased likelihood of being personally involved in or observing hazardous events, both of which carry the risk of personal injury (Barram, 1998). When this is the case, employees consistently report significantly increased prevalence rates of PTSD. Once again, as in other high-risk situations, working in these environments increases the chance of trauma-related symptoms which increases proportionately in relation to the severity and number of events encountered (Corrections Canada, 1992; Hidalgo & Davidson, 2000; Miller, 1999).

For example, 144 intensive care employees in 15 different facilities in Germany reported having had a mean of 2.7 traumatic work events per year over the average length of employment of 8 years. In documenting examples of work-related situations they related cases where they were required to care for seriously injured, mutilated and/or dying patients and to see cadavers. Participants in the study had a PTSD rate of 41%.

Still higher rates were found in a high-risk sub-group of fire-fighters 42 months after the Ash Wednesday bush fires in Australia. The PTSD prevalence rate in this group was 48% (Spurrrell & McFarlane, 1993). Although the Australian bush fires represented an unusual situation with extreme circumstances, high rates have also occurred among other fire fighters. A larger study conducted two years later corroborated high levels of PTSD in both Canadian (N=625, PTSD = 17%) and American (N=500, PTSD = 22%) fire fighters in general (Corneil, Beaton, Murphy, Johnson & Pike, (1995).

Scottish ambulance personnel (n=160) who were exposed to critical incidents in the preceding six months of their employment also exhibited increased mental disorders, with approximately one third of participants having some form of psychopathology,

including high levels of PTSD (Alexander & Klein, 2001).

Interest in PTSD prevalence and its relationship to job-type in trauma-related work has been of interest since the disorder was included in the DSM in 1980 and has continued until the present. Investigators working with police officers, fire-fighters, and ambulance service workers have reported that 13%, 18.2%, and 21% (respectively) of these employees reported suffering from PTSD (Clohessey & Ehlers, 1999; Robinson, *et al.*, 1997; Wagner, *et al.*, 1998). Although there is a paucity of scientifically validated empirical evidence with regard to PTSD in corrections workers, there is information available that indicates they work in an environment where they are exposed to traumatic incidents such as assaults, riots, hostage takings, self-harming behaviours, and suicides as part of their job (Correctional Services Canada, 1992).

1.8 Critical Incident Stress Debriefing and PTSD

Soon after the inclusion of PTSD in the DSM, controversy began over whether or not psychological debriefing (PD) acted to ameliorate PTSD symptoms. The debate continues until the present, with the bulk of current evidence appearing to support the general lack of effectiveness of brief post-traumatic event debriefing in the minimization of PTSD symptomatology. Part of the conflict has arisen due to the number of models and variations of PD that exist (Everly & Boyle, 1999). One of the more frequently employed interventions utilized in the treatment of individuals post-event is critical intervention stress debriefing (CISD). CISD is often used in a group setting and conducted by a facilitator or facilitators. The goal is to examine important aspects of the trauma as soon as possible after the threat has passed in order to minimize pathological responses by understanding and resolving emotional reactions (Meichenbaum, 1994). It

is usually recommended that this take place within 1-10 days post-trauma and within four weeks in the case of a mass disaster (Everly & Mitchell, 1999).

Debriefing is usually conducted with a group shortly after the problematic event and involves verbally addressing the event and feelings about it with others who were there at the time. Underlying assumptions in most forms of debriefing centre around examining cognitions, counselling, and peer support as key elements in processing traumata (Shalev, 1996). Specifically trained peers often direct others while they discuss their feelings about the event in a single session meeting (Mitchell, 1986).

Although experts generally concur that early treatment is critical in PTSD there is support for the position that this does not necessarily include the need to implement CISD. Dr. Richard Bryand, a researcher in PTSD treatment, argues that it is not abnormal for people to react in a symptomatic way after being involved in a traumatic situation and that most, after a period of 3 months, will recover without any assistance whatsoever (Meichenbaum, 1994). He further stresses that in debriefing processes there may be a tendency to pathologize ordinary responses which can undermine coping abilities, thereby causing further detrimental effects (Larkin, 1999). Several meta-analyses conducted between 2000 and the present appear to provide support for this assertion (Bledsoe, 2003; van Emmerik, *et al.*, 2002; Watson, Friedman, Ruzek & Norris, 2002). The meta-analyses examined for the purposes of this study based their findings on detailed searches of the contemporary literature. All concluded that single-session post-incident debriefing was either ineffective or was actually a contributing factor in the development of PTSD symptoms van Emmerik et al, (2002) completed a meta-analysis of the efficacy of single session debriefing following critical events, the results of which

corroborated earlier findings concerning the lack of effectiveness of critical incident stress debriefings (CISD). Statistical comparisons were made between situations wherein CISD, non-CISD, and no intervention took place following events. It was concluded that there was no difference and that the two intervention types did not help to improve recovery from psychological trauma. In recent journal articles it has been reported that debriefing can, in fact, be harmful and that following critical incidents participants in debriefing sessions have shown significantly more PTSD symptoms than those who were not debriefed (Carlier, Voerman & Gersons., 2000; Suzanna, Jonathan & Simon, 2002).

In the same vein, Bledsoe's (2003) meta-analysis concluded that critical incident stress management (CISM) did not prevent the post-incident development of psychiatric sequela found in PTSD. Furthermore, they concluded that a number of studies found that individuals who had participated in CISM experienced a paradoxical increase in symptoms. Bledsoe concluded by recommending that CISM should not be mandatory after an event and should only be implemented with caution.

Wessely, Rose & Bisson, (2000) completed an electronic search of randomized studies of single session debriefing of recently traumatized individuals and their subsequent development of PTSD. They established that there were no short-term differences (3-5 month) between those who participated in sessions and those who did not. At a one-year follow-up, individuals who had participated in debriefing sessions showed a significant risk for the development of PTSD.

The literature does, on the other hand, present some support for the effectiveness of debriefing programs. Everly & Boyle (1999), following their meta-analysis of post-incident group crisis intervention presented evidence for the value of CISD. Using an

aggregate participant pool drawn from five previous investigations involving individuals from emergency services and a natural disaster, they found that not only did CISD mitigate psychological symptoms following traumatic events, but it was effective throughout a wide range of incidents and with a diverse group of people. It bears mentioning that these cases did not utilize randomization and sample sizes were small.

A previous study of PTSD levels in Registered Psychiatric Nurses (RPN) in Saskatchewan (including those employed in correctional facilities) concluded that access to debriefing mitigated symptoms of PTSD following a critical incident. Nurses were asked whether or not debriefing was provided in the workplace and whether or not they felt debriefing was adequate. Significantly more participants who were symptomatic for PTSD did not find debriefing to be adequate. Moreover, participants reported fewer symptoms of PTSD when they had access to debriefing than when they did not.

Although the sample of RPNs employed in correctional facilities was small (n=12), the ameliorating effect of CISD was noted throughout the entire RPN participant group, (n=212) including the corrections sub-group and the effect was overall (Stadnyk, 2001).

Other studies have concluded that CISD often does not make a significant difference in the prevalence rate of PTSD symptoms. A European study of traumatized police officers compared those debriefed (over three sessions, at 24 hours, one month and three month) post-trauma to those not debriefed and to a control group. The researchers concluded that there was only one time frame out of four where there was a significant difference in psychological morbidity. Those participating in debriefing reported more PTSD symptoms upon assessment at one week post-trauma.

It is difficult to definitively identify the effectiveness of debriefing due to both

ethical issues and the breadth of types of options offered. Random samples can not be obtained because this would involve withholding treatment from those who wanted it and compelling those who did not want it to accept it thereby creating ethical issues. In addition, there are many variations of what can fall under the rubric of debriefing causing some confusion in comparisons and analyses (Neria, & Solomon, 1999). In spite of this, there are some generalized attributions concerning the ineffectiveness of debriefing. For example, in debriefing sessions symptoms may be discussed raising awareness levels and the probability of increased reporting of such at a future date. Another possibility is that psychological wounds are opened in these short sessions and the time available is insufficient to meaningfully address them leaving the individual in distress. Furthermore, if they are in a situation where there may be numerous incidents (eg. fire-fighters, police officers, corrections workers) then it is possible

A noteworthy finding was that a good outcome in symptom resolution was not related to the level of satisfaction with the debriefing sessions (Carlier, *et al.*, 2000). Participants who were satisfied with the debriefing did not show any significant difference in symptoms. So, although individuals may feel that there were advantages to attending debriefing sessions this does not necessarily translate into a reduction in pathological responses. Clarification of trauma responses may be more accurately outlined through tracking the evolution of symptomatic responses after various types of debriefing rather than exploring satisfaction levels with single session debriefing.

1.9 Corrections Workers

There are various jobs in correctional facilities so that the term corrections staff is not used exclusively to refer to those whose job it is to oversee inmates. Aside from

corrections workers (CWs), other job categories include; clerical staff, kitchen staff, employee supervisors, and nurses also work within this high tension environment. CWs are in constant contact with inmates and they must attempt to maintain security while interacting with the prisoner population as they work, during their recreation, and in their living units 24 hours a day. Nurses distribute medication and provide front-line medical treatment, often witnessing the consequences of violence. Observing assault, self-mutilation, suicide and the associated aftermath of this kind of violence may be part of each of these jobs (Correctional Services Canada, 1992) on any given day.

Prisons are unique communities that are socially much different than the rest of society. Upon entering this environment, employees are frequently leaving behind the capacity to take security for granted. A large majority of the population in prison is confined to the facility and often to a specific area of a building for the greater part of each day. Furthermore, most people within this community have been incarcerated for committing crimes, many of which are violent offences. Over the last 10 years, violence inside many prisons has been increasing. Staff frequently works in an environment where traumatic events have become commonplace and subsequently the safety of both inmates and corrections workers may constantly be in question (Stewart and Brown, 2001).

Stewart & Brown (2001) reported that in the US, according to the Corrections Compendium, assault and casualty statistics continued to increase between 1973 and 1998. The average number of assaults per year during that time was 7,632, with a peak in 1997 of 14,283. According to these authors much of the violence is gang related. There has been a steady increase in gang activity and a correspondingly higher number of gang

members have been sentenced to correctional facilities. Even after incarceration, gang members often maintain their affiliations. This has resulted in targeting of prison staff for harassment and assault (Stewart and Brown, 2001).

A similar rise in violent incidents has been noted in provincial prisons in Canada between 1991 and 1999. During this time, the number of inmates found to have assaulted a fellow inmate increased eight times more than did the number of incarcerated individuals over the same time period. In Ontario alone 4,311 assault charges were laid against inmates between 1998 and 1999. Three hundred and sixty nine of these were laid against prisoners who had attacked prison staff representing an increase of 43% over the 1991-92 statistics (Russell, B., 2000).

Informal statistics provided by Corrections Canada Statistical Services for this study confirm an increase and show that although there has been some fluctuation overall, between 1991/92 and 2001/02 assault-related misconducts, for the most part, have continued to escalate in Ontario's adult correctional facilities. The average daily population over this time period was as follows: 1991/92 – 7,344; 1992/93 – 7,419; 1993/94 – 7,254; 1994/95 – 7,282; 1995/96 – 7,357; 1996/97 – 7,789; 1997/98, 7,778; 1998/99 – 7,689; 1999/00 – 7,360; 2000/01 – 7,623; 2001/02 – 7,849. The count of assault-related misconducts over the same time frame was: 1991/92 – 3,471; 1992/93 – 3,839; 1993/94 – 4,174; 1994/95 – 4,241; 1995/96 – 4,136; 1996/97 – 4,343; 1997/98 – 4,458; 1998/99 – 4,752; 1999/00 – 4,434; 2000/01 – 4,519; 2001/02 – 4,253. In other words, between 1991/92 and 2001/02 there was an almost seven percent increase in the average daily population while at the same time there was an approximate 22.5% increase in yearly assault-related misconducts (Underhill, 2003). Contrarily, although there was

an increase of 2.96% in inmate daily population between 2000-2001 and 2001-2002 there was a decrease of 5.89% in assault-related misconducts over the same period.

Violent crime in the province of Saskatchewan escalated from 13,051 incidents in 1995 to 17,025 incidents in 2000 or an increase of 24.34% (Tomkins, 2002). Informal statistics that were provided for this study, by the Department of Corrections and Public Safety of the Provincial Government, corroborate the same trend in increased violence in correctional centres in Saskatchewan seen in both the Ontario facilities and the Province of Saskatchewan in general. At the Saskatoon Correctional Centre inmate assaults and fights nearly doubled between 2001 and 2002, rising from 63 to 124 during that time (McIlmoyl, 2003). Figures for the average daily inmate population in the Saskatoon centre were 291 in 2000-2001 and 306 for 2001-2002. In other words, at the Saskatoon facility while the daily population increased by 5.2% between the 2000-2001 year and the 2001-2002 year, inmate assaults were found to have increased by 96.83% over the same time. The rise in aggression may partially be accounted for by the increase in violent behaviour within the community (Province of Saskatchewan). Still, the number of incidents within facilities is increasing at a disproportionate rate to that identified both within the Province and within Ontario correctional centres. Inside this increasingly hostile environment prison guards must be unfailingly aware of physical and psychological safety issues more than at any other previous time.

Corrections Services Canada (CSC) has defined a major assault as "...a deliberate attack causing grievous bodily harm (e.g., unconsciousness, broken bones, and knife wounds," (Correctional Services Canada p. 1, 1992). In a CSC publication, *Violence and Suicide in Canadian Institutions: Some Recent Statistics*, the authors provide a statistical

analysis for major assaults in Canadian Federal Prisons between 1987-1991. During this period there were 32.6 major assaults per 10,000 inmates. Murder rates of inmates (during incarceration) ranged from between four and 11 per year from 1984-1992. Contemporary researchers in Canada, however, suggest that estimates of prison violence rates may have been minimized as a result of either a reluctance to recollect or an unwillingness to report the violent experience (Correctional Service Canada, 1992; Reyes, 2001).

Possible implications of exposure to this level of violence in Saskatchewan prisons were considered in Stadnyk's study (2001). As part of an honours thesis on PTSD, data provided by 23 registered psychiatric nurses (RPNs) working in correctional centres in Saskatchewan were analyzed. RPNs responded to a mail-out survey that considered, in part, symptoms of PTSD. Over half of these individuals had been exposed to a traumatic situation in the workplace. In addition, 48% of the sample reported symptoms of PTSD at levels high enough to suggest the possibility that they were experiencing clinical levels of the disorder. This suggests that the environment may be problematic and that there is a need for further investigation into the workplace and its psychological and emotional influence on not just RPNs but other employees as well. The findings of this earlier study provided the impetus for the current enquiry.

1.10 Hypotheses

The following hypotheses are generated from a review of the literature, which suggests the possibility that a work environment such that found in correctional facilities may contribute to the development of PTSD and that factors such as quality of life and access to debriefing may be associated with PTSD symptoms. This study hypothesizes

that:

1.10.1 *Hypothesis 1*

Corrections employees will report experiencing repeated exposure to traumatic events in the work-place and a large number of participants will have symptoms of PTSD as defined by the DSM-IV-TR and assessed using the PDS.

1.10.2 *Hypothesis 2*

Overall, individuals employed within the correctional facilities in Saskatchewan will report a higher prevalence rate of PTSD than the general population and these symptomatic individuals will report increased rates of absenteeism.

1.10.3 *Hypothesis 3*

Quality of life will be lower for employees who have increased PDS scores.

1.10.4 *Hypothesis 4*

A reported lack of access to critical incident stress debriefing will not be indicative of increased PDS scores.

2. METHOD

2.1 Participants

The participants in this study were 271 individuals employed in correctional facilities who were members of the Saskatchewan Government Employees Union (SGEU). This sample of employees was drawn from a pool of Corrections Workers, supervisors, Probation Officers, Registered Psychiatric Nurses, as well as kitchen, maintenance and clerical staff. They worked in numerous areas including: the four major provincial correctional facilities (employing more than 50 workers) and 16 minor facilities (employing less than 50 persons). Participants were employed in eight probation offices, one correctional centre, four community training residences and two correctional camps. They resided in a range of urban and rural communities throughout the province. Demographic variables for the participants are included in Table 1 and Table 2.

2.2 Procedure

The Research Ethics Board (REB) at the University of Regina evaluated and approved the study (Appendix A Approval Form). Following approval, the questionnaire package was delivered to the Saskatchewan Government Employees Union (SGEU). SGEU had agreed to finance the study and provide support staff time in terms of processing and mailing of the package to the corrections component of the membership. SGEU mail room staff photocopied 1,008 complete packages and mailed them to individuals identified on the union membership list as members of SGEU who were currently employed in correctional facilities in Saskatchewan. Participants mailed their completed packages to the researcher at the Psychology Department at the University of

Regina.

Each package contained: 1) letter to participants (from the experimenter) (Appendix B), 2) letter to participants (from SGEU) (Appendix C), 3) demographic and exploratory questionnaire (Appendix D), 4) Posttraumatic Stress Diagnostic Scale 5) Quality of Life Satisfaction Questionnaire. Self-addressed stamped envelopes were provided for participants to return the completed instruments in.

The cover letter served as an invitation to participate in the study. An explanation was provided indicating that the return of completed package material constituted agreement to participate. Participants were asked not to provide any identifying information. This approach was taken in order to ensure participant confidentiality. Sequential numbers were assigned to each returned package in lieu of names for the purpose of completing statistical analyses. Participants could not be identified by the number. The letter also outlined the intent of the study and identified how the participant was chosen, the potential risks and benefits of participation in the study, and the time the survey would take to complete (approximately 45 minutes). An explanation that the project had been approved by the University of Regina Ethics Board was provided as was contact information for the Chair of the Ethics Board, the researcher, and the thesis supervisors. Information on confidentiality and an explanation of the participant's voluntary participation and right to withdraw at any time and for any reason during the study was provided. In the event that a participant experienced distress during the study, a contact number for the thesis supervisors was provided allowing for consultation.

2.3 Instruments

2.3.1 *Questionnaire*

A demographic/questionnaire sheet, and two psychometric scales were included as part of the research package. The demographic questionnaire was designed to assist participants in outlining non-identifying information related to their age, gender, place and area of employment, wage, marital status, and ethnicity. In order to elucidate the employee's perception of, violence in the workplace, debriefing issues and perceptions of support post-incident participants were asked the following questions: 1) Have you experienced a traumatic event in the workplace? 2) If yes, were you provided with debriefing? 3) Were you satisfied with the debriefing? 4) If debriefed, approximately how long after the event? 5) Following the event, did you feel that any of the following were supportive of you? Co-workers, members of management, family members and others 6) Over the last six months how many traumatic workplace incidents do you feel that you have: personally experienced, witnessed and heard about? 7) Over the length of your career approximately how many traumatic workplace incidents do you feel that you have: experienced, witnessed and heard about? Participants were further asked to report on the number of days they missed over the last six month and one year periods.

2.3.2 Scales

The psychometric properties of all of the scales that were used in this study have been established and published. They have not been included in this thesis due to copyright issues.

2.3.2.1 The Posttraumatic Stress Diagnostic Scale. The Posttraumatic Stress Diagnostic Scale (PDS) (Foa, 1995) was used to measure the presence and severity of PTSD symptoms. The PDS is designed to assist the individual to specifically identify the type of traumatic event experienced and provides a list of traumatic events that they may

choose from. The PDS then asks the individual to identify which event bothers them the most if more than one event was identified.

The PDS is a 49-item self-reporting scale that was developed to assist in the diagnosis of Posttraumatic Stress Disorder using the DSM-IV criteria for PTSD (Foa, 1995). It has proven to be useful in specific populations for estimating PTSD prevalence rates. The PDS can be completed in 10-15 minutes and an eighth grade reading level is considered necessary. Participants rate frequency of symptom experience on a 4-point rating scale in questions 22-38. Symptom severity is then defined in terms of cut-off scores as follows: 10 or less = mild, 11–20 = moderate, 21-35 = moderate to severe and 36 or more = severe. The level of impairment is determined according to responses given in items 41 through 49 which asks individuals to identify areas of their lives in which they have experienced impairment. Calculations are made as follows: zero yes responses = no impairment, 1-2 yes responses = mild, 3-6 yes responses = moderate and 7-8 yes responses = severe. A yes response to question 49 alone would also constitute severe impairment. The PDS has shown good validity and reliability.

The normative sample was recruited from Veterans Administration hospitals, emergency and trauma centres, ambulance corps, residential rehabilitation centres, anxiety disorder and PTSD clinics, Fire halls, and women's shelters located within the USA. Items 22-38 (used to assess symptom severity) had a calculated Chronbach alpha of .92. The symptom severity score was determined to be highly correlated with other measures, including the Beck Depression Inventory (BDI) (.79) and the Impact of Event Scale (IES) Intrusion and Avoidance scales (.80 & .66 respectively) indicating convergent validity. Re-administration of the test was conducted with 110 participants

at an average interval of 16.1 days to determine test-re-test reliability. Good agreement was indicated by a kappa of .74 (Foa, 1995).

2.3.2.2 *The Quality of Life Satisfaction Questionnaire*. Quality of life in seven domains was measured using the Quality of Life Satisfaction Questionnaire (Q-LES-Q) (Endicott, *et al.*, 1993). The Q-LES-Q was “designed to enable investigators to easily obtain sensitive measures of the degree of enjoyment and satisfaction experienced by subjects in various areas of daily functioning” (Endicott, *et al.*, 1993, p. 321). It is a 93 item self-report instrument consisting of eight sub-scales that assist the participant in examining their ratings of quality of life in a variety of areas including: 1) physical health/activities, 2) feelings, 3) work, 4) household duties, 5) school/course work, 6) leisure time activities, 7) social relations, 8) general activities. The sub-scale based on school/course work was not included in the package for this study and so was not used in any evaluations. All other sub-scales were used in analyzing the effect of PTSD symptoms on quality of life.

Ratings in Q-LES-Q are based on a 5-point scale. Seven of the scales use “not at all” = 1 to “frequently or all the time” = 5. Higher scores indicate an increase in enjoyment. The eighth (General Activities) uses “very poor” = 1 to “very good” = 5. Test-retest reliability was established in a sample of inpatients ($n = 54$) with the resulting alpha range of .63 - .89. Convergent validity was assessed through comparisons with the SCL-90-R depression sub-scale. A group of patients seeking help for depressive symptoms ($n = 89$) were administered both scales. Correlations ranged from -.29 (Household Duties) to -.74 (Physical Health), suggesting that while the severity of depression rose enjoyment of life declined (Endicott, Nee, Harrison, Blumenthal, 1993).

Alpha was used to measure internal consistency of the Q-LES-Q in a sample ($n = 83$) of inpatients. Items of sub-scales were found to be highly internally consistent with a range of .90 (General Activities) to .96 (Work).

3. RESULTS

3.1 Data Analysis

Data for hypotheses one through four were analyzed using SPSS version 11.5. Participants who had missing data on the demographic sheet were not included in analyses where these factors were considered. For example, if an individual did not respond to the questions on their frequency of exposure to traumatic events over the last six months their exposure information was not considered during analysis. Deletion of such cases is a standard acceptable method of dealing with missing data where there are not a large number of cases (Tabachnik & Fidell, 1989). Another method frequently employed when data is missing is the insertion of mean values. In cases where there is a large sample and relatively few missing values this provides a satisfactory resolution (Tabachnik & Fidell, 1989). In the current study this was the case and means were inserted for missing values in the Q-LES-Q and PDS. Statistical methods utilized in the data analysis were: frequencies, independent sample t-tests and correlational statistics.

For hypothesis one, descriptive analyses were conducted. The frequency option identified the percentage of employees who have experienced a traumatic incident in the workplace, the mean number of events that participants experienced, witnessed or heard about over both a six month period and over the duration of their career, and the percentage of participants that reported symptoms indicative of a probable clinical diagnosis of PTSD.

In hypothesis two, an independent sample t-test and descriptive analyses were used. Comparisons were made with regard to the frequency of PTSD symptoms in the sample of corrections workers relative to expected norms as defined by the DSM-IV-TR

and epidemiological studies. The independent sample t-test was used to determine whether or not there was a difference in workplace absenteeism in participants who have PTSD and those who do not based on the PDS. The number of days absent was the dependant variable and the PTSD group and Non-PTSD group were independent variables in the analysis.

In hypothesis three, Pearson correlation coefficients were calculated to explore the relationship between PDS scores and Q-LES-Q sub-scale scores. These were used to determine whether elevated PTSD scores as assessed by the PDS were correlated with decreased Q-LES-Q scores.

Finally, independent sample t-tests were conducted for hypothesis 4 to determine whether lack of access to CISD could be used to discriminate between individuals based on mean PDS scores.

3.2 General Demographic Characteristics of the Sample

A summary of the general demographic characteristics of this sample is provided in Table 1 and 2. Of the 1,008 persons included in the SGEU mail out survey, 271 (26.88%) responded and these constituted the sample. In a mail out survey that is only sent once a response rate of approximately 30% is anticipated (Schweigert, 1998). The response rate in the present study was slightly lower. This may have been due to the time required to complete the package. Table 1 includes information on participant age, employment history and wage. In Table 2, worksite locations were collapsed into rural and urban and the range of job descriptions reported were condensed into categories. The final categories consisted of: Probation Officers, Registered Psychiatric Nurses, Corrections Workers (CW1-CW9), kitchen and maintenance staff, supervisors, clerical

Table 1

Demographic Variables: Age, Employment and Wage

	RANGE	MEAN (SD)
AGE	21 - 63 (42)	41.78 (10.19)
EMPLOYMENT (YRS.)	.08 - 28 (27.99)	12.27 (8.39)
WAGE PER YEAR	7,000 - 92,000 (85,000)	46,395.03 (10,848)

Table 2

Demographic Variables: Sex, Ethnicity, Job Type, Work Site and Work Status

	Frequency	Percentage
Sex		
Male	124	45.8
Female	132	48.7
Missing	15	5.5
Ethnicity		
Caucasian	227	83.8
Aboriginal	32	11.8
Asian	4	1.5
Missing	8	3.0
Job Type		
Probation Officer	20	7.4
Nurse	18	6.6
Corrections Worker	197	72.7
Supervisor	12	4.4
Kitchen/Maintenance	12	4.4
Clerical	4	1.5
Instructor	2	.8
Missing	6	2.2
Worksite		
Rural	3	1.1
Urban	240	88.56
Unidentifiable	28	10.7
Work Status		
Full-Time Employees	179	66.1

Part-Time Employees	89	33.2
Non-Responders	3	1.1

staff and instructors. Six of the respondents did not identify their occupation within corrections. There were 179 full-time and 89 part-time employees. Three persons did not identify their status.

3.3 Trauma Related Variables

3.3.1 *Traumatic Events*

Two-hundred and sixty-nine of 271 employees reported whether or not they had experienced a traumatic event in the workplace (Table 3). These rates fluctuated within groups with a high of 86.3% ($n = 170$) of the CWs reporting an event and a low of 25% ($n = 1$) of the clerical staff. The figures reported for other job classifications were: six (50%) of the 12 kitchen and maintenance staff, nine (75%) of the 12 supervisors, 12 (60%) of the 20 PO's, 13 (72.2%) of the RPNs and one (50%) of the two instructors.

3.3.2 *Debriefing*

Those who reported having experienced a traumatic event in the workplace were asked to answer questions regarding debriefing (Table 4), including their perceptions of support following the event and how soon after the incident they had been debriefed in terms of hours days or weeks. The majority of participants had been debriefed within hours ($n = 73$) or days ($n = 35$). Only four individuals reported receiving debriefing weeks after an event.

3.3.3 *Frequency of Traumatic Event Reporting*

In order to conceptualize the extent of exposure to violence that corrections employees were experiencing, they were asked to identify the number of traumatic events that they personally experienced, witnessed, and heard about both over a six month period and over their entire career within the workplace. Table 5 summarizes this

Table 3

Number of Participants Experiencing a Traumatic Workplace Event

Have You Experienced A Traumatic Workplace Event?		
	Frequency	Percent
Total Sample		
Yes	215	79.3
No	49	18.1
Don't Know	5	1.8
Corrections Workers		
Yes	170	86.3
No	23	11.7
Don't Know	4	2.0

Table 4

Availability of, satisfaction with, and time of debriefing

Post-Incident Debriefing	Frequency	Percent
Yes	88	32.5
No	82	30.3
At Times	43	15.9
More Than One Answer	1	.4
Not Answered	57	21
Satisfied With Debriefing	Frequency	Percent
Yes	84	31
No	64	23.6
Don't Know	33	12.2
Not Answered	89	32.8
When Debriefing	Frequency	Percent
Within Hours	73	26.9
Within Days	35	12.9
Within Weeks	6	2.2
More Than One Answer	10	3.7
Not Answered	147	54.2

Table 5

Reporting of Traumatic Events

	Trauma events experienced 6 months	Trauma events witnessed 6 months	Trauma events heard about 6 months	Trauma events experienced career	Trauma events witnessed career	Trauma events heard about career
Overall Sample-N	185	170	159	200	166	171
Mean (SD)	2.92 (4.17)	4.99 (8.46)	9.77 (14.85)	20.18 (76.37)	30.12 (89.9)	127.31 (769.24)
CW-N	143	136	120	151	130	126
Mean (SD)	3.27 (4.14)	5.42 (9.02)	11.50 (16.51)	24.69 (87.39)	34.58 (100.60)	160.10 (894.27)
RPN-N	14	13	12	13	12	13
Mean (SD)	3.07 (6.44)	5.69 (6.94)	5.75 (4.49)	9.62 (10.82)	19.58 (20.97)	44.54 (56.80)
PO-N	9	6	10	14	8	14
Mean (SD)	.44 (.53)	2.00 (4.90)	1.40 (1.78)	4.64 (5.27)	18.00 (33.73)	22.86 (51.65)
Supervisor-N	8	6	4	9	6	7
Mean (SD)	2.75 (3.12)	3.67 (4.59)	6.00 (3.16)	8.78 (7.21)	15.17 (14.86)	54.57 (60.74)
K & M-N	8	7	7	9	7	7
Mean (SD)	.50 (1.07)	.43 (1.13)	3.57 (3.55)	2.44 (2.55)	2.00 (2.38)	23.43 (35.01)

Note. CW = Corrections Workers, PO = Probation Officers, K & M = Kitchen & Maintenance

information. Many participants provided answers which were not quantifiable, for example, “lots”, “many”, “too many to count”, and “I try not to keep track”. These answers were coded as missing variables. These numeric identifiers were different than those used to identify cases where no answers had been provided (99) and this division between the two groups was completed in order to separate responders from non-responders. If an answer could be quantified the lowest possible amount was entered. For instance, if the entry read “hundreds” then 200 was entered, if “over 50” was reported then 51 was entered.

3.3.4 *Absenteeism*

The issue of workplace absenteeism was considered in terms of time missed over a six month and one year period for those who qualified for PTSD according to the PDS and those who did not (Table 6). Of those who did not have PTSD, 11.11% did not answer the absenteeism question for the six month period and 11.73% did not answer for the one year period. Of those who qualified for a diagnosis of PTSD, 15.71% did not answer the absenteeism question for the six month period while 18.57% did not answer for the one year period. This difference in answering absenteeism questions may be related to PTSD avoidance symptoms. An alternative explanation is that there may be PTSD associated cognitive complications causing disturbances in memory functioning.

Table 6

Respondents Who Reported Workplace Absenteeism

	Work Missed in 6 Months	Work Missed in 1 Year
Overall Sample		
Valid N	238	236
Missing	33	35
Mean	10.77	20.31
S.D.	30.38	55.33
PDS Non-Qualifiers		
Valid N	144	143
Missing	18	19
Mean	7.76	13.01
S.D.	24.15	34.95
PDS Qualifiers		
Valid N	59	57
Missing	11	13
Mean	18.06	37.01
S.D.	40.72	81.60

Note. PDS = Posttraumatic Stress Diagnostic Scale

3.4 Hypotheses

3.4.1 Hypothesis 1

Many corrections employees will report experiencing repeated exposure to traumatic events in the work-place and, a large number of participants will have symptoms of PTSD as defined by the DSM-IV-TR and assessed using the PDS.

Hypothesis one was supported. Results of the frequency analysis indicate that 79.3% of the sample reported experiencing a traumatic event within the work environment. Moreover, those who reported experiencing, witnessing or hearing about a traumatic event tended to have had multiple experiences (Table 5). In addition, a large number of participants reported having symptoms of PTSD at a level suggesting caseness (Table 7).

3.4.2 Hypothesis 2

Individuals employed within the correctional facilities in Saskatchewan will report higher prevalence rate of PTSD than the general population and these symptomatic individuals will report increased rates of absenteeism.

Part one of hypothesis two is supported. An analysis of the frequency of PTSD within the sample was conducted. As identified in hypothesis 1 the current rate of PTSD according to PDS results reported in corrections workers in this study was 25.8%. Of these cases 10.3% were not work related while 15.5% were. This represents a large number of cases of PTSD compared to that which is found in a general population according to National Comorbidity Survey (NCS) (3.6%) and the Epidemiological

Table 7

Prevalence of Posttraumatic Stress Disorder (PTSD) in Sample

	Frequency	Percent
No PTSD	162	59.8
PTSD Work Related	42	15.5
PTSD Non-Work Related	28	10.3
PTSD Overall Rate	70	25.8
PDS Not Completed	39	14.4
Total	271	100.0

Note. PDS = Posttraumatic Stress Diagnostic Scale

Catchment Area Study (ECA) (1.9%). Part two of hypothesis two is partially supported. An independent sample t-test was conducted to establish whether there was a difference between those with PTSD and those without on a mean number of days missed over a six month and one year period. The two groups did not differ significantly with respect to days missed in a six month period. The two groups did, however, differ significantly with regard to the number of days missed over a one year period $t = -2.14$ (64.36), $p = 0.036$. Mean scores for the six month period were 7.76 (SD = 24.15) and 18.06 (SD = 40.72) and for the one year period 13.01 (SD = 34.95) and 37.01 (SD = 81.56) for the non-PTSD group and the PTSD group respectively.

This result could indicate that the longer the individual is symptomatic the more likely they are to miss work thus, raising the possibility of increased symptoms over time. There is a possibility as well that certain employees are becoming more symptomatic with repeated exposure to trauma, and either experiencing more physical symptoms and/or exhibiting PTSD related avoidance symptoms. Even though the difference in workplace absenteeism rates over a six month period did not differ enough to reach statistical significance it should be noted that that during this time those with PTSD missed 132% more work than those without.

Further analyses were completed in order to address the possibility that outliers could be affecting the outcome. The participants were divided into three groups: those without PTSD (group 1), those with PTSD with the traumatic event specifier related to the corrections environment by the PDS (group 2) and those with PTSD with a traumatic event specifier from an event outside of the work environment according to the PDS (group 3). Two stem-leaf analyses were conducted to identify outliers for both the one

year and six month time frames for each of the PTSD groups. Outliers were removed prior to each subsequent analyses according to the PTSD group and time frame that were entered. Independent sample t-tests were then conducted. There was no significant difference in absenteeism rates between group 1 and group 3 for either time frame.

There was, however, a significant difference between group 1 and group 2 for the six month period $t = 3.31(169)$, $p = .001$ and the one year period $t = 2.17(27.91)$, $p = .039$. Means and standard deviations for the six month period were 6.42 (SD = 4.36) for group 2, and 3.90 (SD = 3.71) for group 1 and 19.63 (SD = 26.53) for group 2 and 8.66 (7.41) for group 1 for the one year period. These results suggest that individuals who were traumatized in the correctional facility work environment are missing more work than both those who do not report a pathological level of traumatization and those who were traumatized outside the corrections environment.

3.4.3 Hypothesis 3

Q-LES-Q scores will be lower for employees who have increased PDS scores.

Hypothesis 3 is supported. A correlation matrix was completed to explore whether there was a relationship between PTSD and quality of life and if in fact those with higher PTSD scores reported that they were experiencing less enjoyment and satisfaction in numerous areas of functioning. Correlation coefficients were computed for PDS total scores and the seven Q-LES-Q sub-scale total scores. There was a significant negative correlation between PDS scores and all seven Q-LES-Q sub-scales. This suggests that as individuals become more symptomatic for PTSD their ability to enjoy life in many varied domains decreases (Table 8).

Table 8

Correlations Between PDS Total Score and the Quality of Life Satisfaction Questionnaire sub-scales: Physical Health and Activities, Household Duties, Work, Feelings, Leisure Time Activities, Social Relations and General Activities

	PDS Total	Physical Health and Activities	Household Duties	Work	Feelings	Leisure Time Activities	Social Relations	General Activities
PDS Total		-.568**	-.428**	-.340**	-.599**	-.329**	-.422**	-.594**
Physical Health and Activities			.547**	.499**	.741**	.415**	.543**	.756**
Household Duties				.547**	.672**	.344**	.511**	.667**
Work					.700**	.300**	.543**	.647**
Feelings						.452**	.718**	.882**
Leisure Time Activities							.442**	.455**
Social Relations								.774**
General Activities								

** Correlation is significant at the 0.01 level (2-tailed)

3.4.4 Hypothesis 4

A reported lack of access to CISD will not be indicative of increased PDS scores.

Hypothesis six is supported. One hundred and forty-five corrections employees responded to the question on whether or not they had received CISD following a traumatic workplace event. Seventy-four answered that they had been debriefed while 71 said they had not. An independent sample t-test was used in this analysis with an alpha level of .05. No significant difference was found in PDS scores between those who were debriefed and those who were not.

4. DISCUSSION

This study examined the prevalence of PTSD in corrections employees in Saskatchewan and considered to what degree these workers are being exposed to traumatic events in their places of work. Moreover, workplace absenteeism and loss of enjoyment and satisfaction in various areas of life in those who reported PTSD according to the PDS were investigated. Finally, because the corrections environment has been identified as one in which violence is expected, critical incident stress debriefing (CISD) of employees in this environment is commonplace as is the case with employees in other high-risk occupations. Controversy over CISD has, however, centred on the high number of studies that suggest individuals fare no better following these sessions and may in fact do worse with regard to PTSD.

It seems plausible that revisiting the circumstances of the traumatic situation in a brief forum such as debriefing may exacerbate PTSD symptoms without offering a way (such as CBT) of coping with ongoing psychological sequela. This could be compared to reopening a wound without providing further treatment. The relationship between CISD and PTSD in corrections staff in this sample was analysed in order to ascertain the value of having provided debriefing for the purpose of minimizing PTSD.

It was expected that participants would have high rates of PTSD, since individuals who are employed in occupations where trauma exposure is common have previously reported an increased prevalence of the disorder (Corrections Services Canada, 1992; Cudmore, 1996; Robinson *et al.*, 1997; Lange, *et al.*, 2000; Schlenger, *et al.*, 1999). It was further anticipated that participants with PTSD would have difficulties with quality

of life and work absenteeism and that timely CISD would not mitigate PTSD rates. To date, there has not been an investigation into PTSD rates or exposure to work related violence in corrections employees in Saskatchewan and few such investigations in other locations. The current study may increase understanding of the impact of repeated exposure to traumatic incidents in the workplace and how this might affect the employee in a range of ways in terms of mental and physical health, workplace absenteeism, and general functioning.

4.1 Traumatic events in the Workplace

A number of conclusions in this study were in relation to the high degree of traumatic event exposure encountered by corrections employees during the course of their employment. The term traumatic incident was not defined in the demographic questionnaire, leaving a degree of subjective interpretation which required each individual to define the parameters of trauma as they understood them. Many participants (nearly 80%) specifically identified at least one traumatic workplace episode within the PDS. Incidents that were identified included inmate suicide and attempted suicide, death threats, personally experiencing or witnessing workplace assault and hostage takings. Any of these occurrences would constitute a traumatic stressor as recognized in the DSM-IV-TR (2000).

Overall, the lifetime exposure rate to traumatic events has been found to range anywhere from 16% to 57% in Americans (Breslau, et.al., 1991; Holman, Silver & Waitzkin, 2000; Ullman & Seigal, 1996). The rate changes depending on a variety of factors. For example, there can be a fluctuation in reports based on the time frame and the particular situation in question. The terrorist attack of September 11th is an example

of a specific time and location based event that generated an increase in trauma associated responses within a population. As could be anticipated, PTSD prevalence rates increased across the U.S. and in New York specifically within the six months following the attack (Galea, et.al, 2002). Moreover, emergency personnel, because of their job-related exposure, required additional psychological intervention (Levenson, 2002).

Sometimes, as was witnessed in New York, an individual's job places them at increased risk for experiencing violence. According to the U.S. Department of Justice, workplace violence showed a considerable decrease between 1993 and 1999, six occupational fields showed a decline of between 28% (mental health) and 59% (transportation) (Duhart, 2001). Nonetheless, traumatic work-related events continue to occur at alarmingly high rates each year in the U.S. and between 1992 and 1997 there were 1.7 million workplace assaults (Duhart, 2001). In June of 1997 the National Institute for Occupational Safety and Health (NIOSH) reported that there were 18,000 victims of work-related assault and 20 work-related murder victims per week in the U.S. Increased risk of workplace violence is a concern that some employees must deal with much more frequently than others (NIOHS, 1997).

In this study, 79.3 % of individuals employed in correctional facilities reported being exposed to a traumatic event in the workplace. When taking into consideration only those employees who were corrections workers the rate of exposure rose to the highest found among all sub-groups in this sample (86.3%). The exposure to a traumatic event in the other sub-groups was: 50% (n = 12) of the kitchen and maintenance staff (the lowest in the sample); 60% (n = 20) of the probation officers; 72.2% (n = 18) of the

nurses; and 75% (n = 12) of the supervisory staff. Plainly, the corrections workers are being exposed to the majority of violent incidents taking place within the facility. Although there is an increase in the expectation of experiencing, witnessing or hearing about traumatic events within certain employment milieus, the degree of reported exposure found in the current sample is excessive even when compared to other high risk occupations.

Other high-risk groups, such as police officers, fire fighters and military personnel tend not to know those who instigate an event whereas corrections employees are in an environment with these individuals on a daily basis. Perhaps perceptions of the world as a safe place may be more significantly altered in circumstances where there is a relationship between the victims and the perpetrators. For example, some of the highest rates of PTSD among military personnel can be found in POW's. POW's are in a situation where they come to know their captors.

Familiarity with the perpetrator is a factor that is also present in correctional settings. In addition, there is little public recognition for the danger involved in this line of work and for the public service provided by the employees. This is unlike what is found in police work and fire fighting where there is often public respect for the job and frequent recognition of heroic acts. Higher rates of PTSD were found in Vietnam veterans compared to other war veterans and perhaps part of the problem lies in this lack of recognition.

One hundred and twenty-six of the 271 corrections workers in Saskatchewan who responded to this survey reported that they had experienced a traumatic event in the workplace within the last six months. The mean number of incidents was 2.92 per

person in six months or 5.84 per year. Calculated on a per thousand basis this would equal 5,840 incidents per year. A shortcoming of the current survey was the failure to define precisely what would constitute a traumatic event, this may have contributed to over-reporting. On the other hand, not defining the type of event allowed for subjective assessment thereby validating perception of participants. Seventy-nine respondents did not answer the question or did not answer in a manner that was quantifiable. Even so, 46.5% of the participants clearly believed that they had experienced a traumatic event and most of these believed that they were being subjected to traumatic situations repeatedly.

Accessing information on the extent and scope of traumatic events within correctional facilities in Canada, including within Saskatchewan, is both costly and difficult. Cost estimates provided by Correctional Services Canada and the Government of Saskatchewan, Corrections and Public Safety with regard to Access to Information requests through these governmental bodies totalled \$1,275.00 and \$2,775.00 respectively for both the retrieval and provision of this information. In other words, the cost for anyone wanting to access records related to violence within Canadian and Saskatchewan correctional facilities for a ten year period could exceed \$4,000 and is prohibitive. This information is not freely available to the general public or to interested institutions or organizations.

4.2 PTSD Prevalence

The present findings must be situated within the context of previous research. In the general population, at any given time, there will be those who qualify for a diagnosis of PTSD. Lifetime prevalence for PTSD, according to community studies, is 8% (APA, 2000). The 1996 Detroit Area Survey of Trauma (Breslau *et al.*, 1998) examined a

representative sample of 2,181 persons from the Detroit area and found that after trauma exposure there was a 9.2% conditional risk of PTSD and that violence related to assault carried the greatest risk (20.9%).

In the U.S. the Mental Health Report of the Surgeon General (1999) included prevalence statistics for PTSD from two American epidemiological studies: the National Comorbidity Survey and the Epidemiologic Catchment Area Survey. These are two of the largest epidemiological studies completed in the US with a combined participant pool of approximately 28,000 people. The National Comorbidity Survey drew from a nationally representative sample of 8,000 respondents from throughout the U.S. in the early 1990's and examined the prevalence rates of various mental disorders. The Epidemiological Catchment Area Survey examined the same issue and developed their statistics from information provided by 20,000 U.S. citizens from five areas gathered between the late 1970's and mid 1980's. The Epidemiological Catchment Area Survey found the prevalence rate of PTSD to be 1.9% while NCS found it to be 3.6% in the general American population (U.S. Department of Health, 1999). The DSM-4- TR gives a lifetime prevalence rate for PTSD of 8% (APA, 2000). The prevalence rates of PTSD vary within populations based primarily on trauma related factors with an increase in the disorder being reported following traumatic events.

Prevalence rates reported by survivors of various events include several populations of disaster victims that have been found to have low to high prevalence rates for example, 4% of South American flood victims (Canino, *et al.*, 1990), 9% of those affected by an oil spill (Palinkas, Petterson, Russell & Downs, 1993), 59% of American flood victims (Green, Lindy, Grace & Leonard, 1992) and 59% of a group of US tornado

victims (Madakasiza & O'Brien, 1987).

War veterans have also shown diverse prevalence rates. For instance, 1.8% to 15% (depending on exposure to combat experience) of 2,858 American Legion members were diagnosed with PTSD, 16% of 334 Israeli soldiers one year post-war who had not reported a war-related acute stress reaction and 59% of 382 who had reported such a reaction were diagnosed with PTSD. Prisoners of war (POW's) were found to have some of the highest lifetime PTSD prevalence rates of any group of veterans. European, Pacific and Korean War POW's reported 70%, 79% and 53% lifetime prevalence in that order (Schlenger *et al.*, 1999). Schlenger *et al.*, (1999) concluded that, although there may have been predisposing personality characteristics involved in determining who might develop PTSD, stress exposure was a major factor. When comparisons of prevalence rates were made between individuals in a high stress exposure group and those in a low/moderate stress exposure group, those in the latter group reported a 9% PTSD rate while those in the former group reported 36%. Overall averages of PTSD in this population are generally found to be between the 13.0 to 17.4 percent reported by the NVVRS (Kulka, 1988).

When a person becomes the victim of violent crime they are at a much greater risk of developing crime-related PTSD (Breslau, *et al.*, 1991; Kilpatrick & Resnick, 1993, Kilpatrick, Ruggerio, Acierno, Saunders, Resnick & Best, 2003). Individuals who fear that they may die during the crime or that they may suffer severe injuries are over twice as likely to suffer from PTSD after the incident (19% and 45.2%). Furthermore, crime victims in general have an increased lifetime prevalence of PTSD that is significantly greater than that identified in victims of other types of events (Resnick,

et.al., 1996).

In the current study, 25.8% of the respondents according to the PDS would qualify for a diagnosis of PTSD. Sub-groups in the sample varied with 29.1% of correction workers 16.7% of nurses, 8.3% of kitchen and maintenance staff and 25% of supervisors reporting symptoms at a level suggesting caseness. Each sub-group in this population exceeds community prevalence rates for PTSD found in all major epidemiological studies. The overall rate in this group of participants is, in fact, far in excess of what has been found in the general population. Furthermore, PTSD prevalence in corrections employees is high even when compared to populations that have experienced high levels of trauma such as disaster victims, soldiers and victims of violent crimes.

It is clear from the present findings that a problem exists within this environment and that many of these individuals are experiencing a trauma-related reaction. Moreover, these persons are also reporting increased difficulty with functioning in multiple domains of life, which is consistent with what has been observed in other populations with high PTSD prevalence rates.

4.3 PTSD and Workplace Absenteeism

Previous research has shown a strong relationship between mental disorders and workplace absenteeism. One of the most common mental health issues of the last decade is the high prevalence of anxiety disorders. The Canadian Mental Health Association (2003) surveyed 1,500 adult Canadians and found that two-thirds state that they have either personally experienced or have known someone who has experienced either depression or anxiety. Seventy-eight percent of the participants believed that anxiety or

depression strongly affects their ability to function in the work environment. Currently, in the Canadian workplace, the fastest growing category of long-term disability claims are those filed due to psychiatric problems (Canadian Mental Health Association, 2002).

The Mental Health Supplement of the Ontario Health Survey is a report based on findings from an epidemiological survey of psychiatric disorders in 3,258 Ontario adults which was completed between 1990 and 1991. Anxiety disorder prevalence rates in this study show that 9% of men and 16% of women in that province experienced an anxiety disorder in the preceding 12 months (Ontario Ministry of Health, 1994). The Edmonton Survey of Psychiatric Disorders, another large Canadian epidemiological study of adult residents in Alberta (3,258 participants), corroborated a similarly high prevalence of anxiety disorders with an 11.2% prevalence rate (over a one year period) of anxiety/somatoform disorders (Bland, Orn & Newman, 1988). Both studies confirm that in Canadian populations anxiety disorders have a high prevalence rate.

In a discussion paper prepared for Health Canada, Antony & Swinson (1996) examined the financial implication of anxiety disorders and specifically considered the impact these disorders have on health care and economic costs. They stressed that anxiety disorders are the most widespread of all mental disorders, but that the cost (both direct and indirect) had not been investigated in Canadian populations. They found that in American studies individuals with anxiety disorders were more likely to attend primary care facilities for treatment and that over a six month period their care at these facilities cost nearly twice as much as care for those without anxiety disorders over the same time. Their report recognized the high cost associated with the disorders and the importance of early recognition.

Greenberg et.al. (1999) created a human capita model of anxiety disorders to examine their societal cost. Using information from the National Comorbidity Survey as well as from a large managed care organization, they applied statistical analyses and concluded that in 1990 anxiety disorders in the US cost 42.3 billion dollars. Of this, 23 billion was attributed to anxiety related non-psychiatric medical treatment and 4.1 billion to indirect workplace costs (88% of which was lost productivity at work as opposed to absenteeism). The highest rates of services were provided to patients suffering from panic disorder and PTSD, with PTSD costs exceeding that of all other anxiety disorders.

PTSD has been associated with comorbid psychiatric pathology, somatic complaints, and general lowered health status (e.g., Asmundson, Stein, McCreary, 2002; Howard & Hopwood, 2003). Given the probable under-diagnosis of the disorder as well as the subjective perception of physical distress and the reported increase in physical and psychiatric disease in individuals who have PTSD, it should not come as a surprise that those who were found to have PTSD in this study were also more frequently absent from work.

Although there is little available information on the specific impact of PTSD on workplace absenteeism rates researchers have noted that work impairment has been associated with PTSD (Brunello, *et al.*, 2001). Workplace costs, expressly those related to absenteeism and reduced productivity, have been linked to anxiety disorders (Dupont, Rice, Miller, Shiraki, Rowland & Harwood, 1996). Corrections employees in this study who reported PTSD according to the PDS also reported higher work place absenteeism. The number of work days missed over six months and one year was over double for the six month period and nearly triple for the one year period for those in the PTSD group.

The Saskatchewan Labour Force Survey states that in Saskatchewan the average employee (excluding those who are self-employed) loses 7.8 days of work per year as a result of their own illness or disability (Statistics Canada, 2003). In the current study the group without PTSD missed nearly twice as many work days as the Saskatchewan average over a one year period and those with PTSD missed nearly five times more work days per year. Data analysis revealed that the two groups differed significantly in work days missed for both time periods.

Individuals who are injured as a result of crime victimization while at work cost the employer millions of dollars in productivity each year over and above days that are used as sick or annual leave. The average loss of work days per crime, in the U.S. was calculated at 3.5 in 1994 (Bachman, 1994). This amount is calculated based on cases which are reported. Interestingly, over half of violent work incidents were not reported to police in 1994 (Bachman, 1994) and by 1999 only four out of 10 were reported (Duhart, 2001). The number of days attributed as lost due to such incidents may, therefore, be underestimated. In the present study, participants sometimes answered the questions on violence in text as opposed to reporting a numerical value. Some responses were: "I don't talk about it", "I try not to think about what has happened" and "It's better to forget" These responses suggest that avoidance and numbing may play a role in how much these employees are willing or able to recollect or report, and underreporting of violence in the workplace is undoubtedly a possibility.

4.4 Quality of Life and PTSD

Decreased quality of life has been linked to PTSD, a finding that is consistent with results from the present study. Quality of life is often poor in those who are

suffering from a mental disorder (Atkinson & Zibon, 1996; Becker, Diamond & Sainford, 1993; World Health Organization, 2001). When an individual begins to exhibit symptoms of pathology either physically or mentally the consequences can be far reaching and cause difficulty in social, physiological, personal and economic areas of functioning (World Health Organization, 2001).

In order for a person to derive enjoyment from their daily life they must feel satisfaction in critical areas of functioning. The WHO's description of health is one of an optimal quality of life that includes physical, mental, and social components (Hernandez, *et al.*, 1999). This description is a reminder that wellness does not exist within a single dimension, but is multi-faceted, dynamic and holistic. Numerous studies have concluded that individuals who report having PTSD also report lower quality of life scores across many aspects of being (Amir & Lev-Weisal, 2003; Eisman, *et al.*, 2003; Rapaport, *et al.*, 2002; Warshaw *et al.* 1993).

An article in the Iranian Journal of Medical Sciences (2000) examined the relationship between PTSD and quality of life in 236 participants who were randomly selected from 2,500 psychiatric files from the War Victims Foundation. These subjects were interviewed using the Structured Clinical Interview for DSM IV (SCID) and were then divided into three groups. Group one consisted of 65 participants with full PTSD, in group two were 93 persons with partial PTSD and in group 3 were 78 people who did not have PTSD. Data analyses were performed using PTSD scores and scores from eight domains of quality of life. Both PTSD groups reported a decrease in all quality of life scores (Kalafee & Adib, 2000). Rapaport, Endicott & Clary (2002) also established that

there was a relationship between impaired quality of life and PTSD in a group of 359 participants.

In the current study, corrections employees who suffered from an increase in PTSD symptoms reported decreased quality of life scores in all seven Q-LES-Q sub-scales. The sub-scales encompassed Physical Health and Activities, Work, General Activities, Social Relations, Leisure Time Activities, Household Duties and Feelings. These results suggest that employees who are experiencing symptoms suggesting a diagnosis of PTSD will also experience difficulties with optimal functioning in other areas of their lives compared to asymptomatic employees.

4.5 CISD

CISD is meant to minimize the impact of a traumatic event on those experiencing or witnessing it (Meichenbaum, 1994). The question that continues to be asked in the literature is: whether post-incident CISD can help minimize the likelihood of developing PTSD? In spite of the fact that most high-risk jobs include CISD for employees following a traumatic event, there is a great deal of empirical evidence supporting the position that these sessions are not helpful and may even be harmful (Bledsoe, 2003; van Emmerik et.al. 2002; Watson et.al. 2002). Bledsoe's meta-analysis (2003) concluded that although CISD is common practice following traumatic events especially for emergency personnel it has not proven to be effective in minimizing pathological psychological responses. This was particularly noticeable with regard to PTSD. A cautionary recommendation was made suggesting that CISD should not be mandatory following an event and that if it is used it should be implemented only with extreme care.

On the other hand, there have been studies that have concluded that CISD has

mitigated psychological symptoms (Everly & Boyle, 1999; Stadnyk, 2001). Everly & Boyle (1999) found that not only was CISD effective but it succeeded in minimizing symptoms in numerous types of situations and it did so with diverse populations. Notwithstanding the controversy over CISD, employees have reported satisfaction with debriefing sessions even though the sessions were not related to symptom resolution (Carlier et.al, 2000).

When participants in the present study were asked whether or not they had been debriefed, just over half ($n = 74$) of those who answered this question said yes while just under half ($n = 71$) said no. There was no difference in PTSD between the two groups. This finding is consistent with that of the majority of other studies. The relationship between PTSD and CISD in corrections employees has not been extensively studied and further investigations into this relationship may be warranted. However, since it could be anticipated that CISD may not be an effective means of alleviating pathological responses, perhaps other forms of intervention provided by the employer could be examined. CISD is a single-session intervention that the bulk of current literature suggests is not effective in preventing PTSD. It is plausible therefore, that a multifaceted intervention plan that includes employer-sponsored cognitive therapy (that literature indicates is effective in treating PTSD) should be considered. Given that the employees in this investigation have a current prevalence rate of PTSD and associated increased workplace absenteeism, other options for post-incident intervention in this population are worth exploration.

4.6 Limitations of the Study

Inherent in the nature of a mail-out survey design are several limitations. For

example, participants are unable to receive clarification for questions that they might have or difficulties may arise in understanding question wording. A flaw in the study design was the lack of a clear definition of the term “traumatic event”. Parameters of such a definition could have been clearly outlined and placed at the beginning of the package. This omission may have caused confusion for participants and may have had an impact on how they answered the trauma-related questions. Clarification of the term would have eliminated any ambiguity in what was being asked and reduced subjectivity in responses. Nonetheless, conversely perhaps trauma is best defined as “the subjective experience of an individual that they would perceive or identify as being traumatic”.

Similarly, although it is possible to identify whether these employees participated in post-event debriefing, it is difficult to say precisely what this entailed. It can not be determined what sort of post-incident intervention was offered. The questions did not include an explanation of the kinds of debriefing that exist nor did they ask for participants to distinguish between debriefings.

There are also other limitations to the study. Mail-out surveys tend to have low response rates, and compounding this disadvantage is the possibility that those who do respond may represent a particular sub-group of a given population. For example, the sample could consist of an inordinate number of corrections workers who are dissatisfied with their workplace or perhaps an inordinately large number of those with PTSD responded. If this were to happen the sample would not be representative and any inferences made about the overall population would be inaccurate (Schweigert, 1998).

The information that can be gathered through the use of an anonymous mail-out survey is limited because there can be no follow up, since package material is non-

identifying. Furthermore, participants are unable to get clarification and therefore may not be able to provide accurate information or may provide no information at all to certain questions. In addition, the package contained a large amount of material requiring approximately 45 minutes to complete. Participants may have found this excessive and chose not to participate based on time requirements.

Notwithstanding these limitations, personally sensitive information such as was required in the present study is most effectively obtained in a situation where the participant is able to maintain anonymity. Mail surveys allow people to respond anonymously. In addition, interviewer bias is avoided both in the way they might record answers and in the form of unintentional cues that they might communicate to the participant with regard to favoured answers. Furthermore, the package can be completed when convenient for the participant (Schweigert, 1998).

4.7 Significance of the Study

PTSD can develop following the witnessing of, hearing about, or experiencing of a traumatic event. The resulting symptoms can take away an individual's ability to enjoy life and communicate with others in a way they had prior to developing the disorder. There is a need for increased recognition of the symptoms particularly within high risk groups. Corrections workers are employed in an environment where they are frequently exposed to traumatic incidents.

The current study was informed by previous findings in the field of PTSD research. These findings, and others served as the impetus for exploration into the environment that Saskatchewan corrections employees work in, the amount of violence that they are being exposed to, the level of psychopathology that they are experiencing

and the effect that these variables have on their quality of life and their ability to attend work. Through this research identification of probable clinical levels of PTSD in corrections workers was identified, and it was determined that there was a relationship between violence in the workplace, increased symptoms of PTSD, workplace absenteeism and decreased quality of life. These results will be provided to participants, the employer (Department of Corrections and Public Safety, Government of Saskatchewan including the Minister of Corrections and Public Safety) and the union (Saskatchewan Government and General Employees Union) to assist in the further exploration of workplace violence and its impact on employees who work in Saskatchewan correctional facilities. The findings could be valuable if used as the basis for discussions related to the recommendation of methods intended to decrease workplace violence. Furthermore, the findings could be used to create educational strategies designed to assist employers and employees in recognizing PTSD symptoms in at risk employees.

Given the propensity for PTSD symptom reactivation to occur and the potential severity and persistence of symptoms following re-occurrence, early recognition and treatment are fundamental considerations. Timely identification of the disorder and treatment of the individual would decrease the probability of the disorder becoming chronic and thereby more difficult to treat (Doyle, Foa, Keane & Marshall, 2001). As a result, the quality of life of corrections workers would be improved and the cost would be minimized both in terms of absenteeism and health care services. Through improved recognition of the workplace problems faced by corrections workers, particularly as they relate to violence, consideration could be given to ongoing work environment

assessment, employee assessment and, where necessary, to re-evaluation of management practices concerning changing environmental factors and employee needs. Policy and procedure modifications or alterations could be utilized to address environmental and employee issues that are identified.

Employers and unions have previously taken the initiative with regard to employee well-being in the areas of human rights, workplace safety, and employee assistance programs. The findings in this study suggest that interest in employee well-being must be extended to mental health issues, including the allocation of funds and resources that would allow for ongoing group or individual psychotherapy for employees who have symptoms of PTSD. Prevention and early treatment of mental health problems lowers societal cost (e.g. financial costs related to lost productivity, absenteeism and health care use) and distress related to personal disability (American Psychological Association, 2003). Information sessions for employers and the union based on the current findings have already begun and will continue. These sessions highlight issues related to the extent of workplace violence, the prevalence of PTSD and its relationship to quality of life and absenteeism in this sample of corrections employees. The advantages of early recognition of PTSD symptoms and effective treatment are also discussed.

Finally, partially in recognition of the difficulties encountered in this study in attempting the recovery of statistical data on violence, the Provincial Government Department of Corrections and Public Safety has initiated a review of methods currently used for the storage and retrieval of statistical information as it relates to violence in Saskatchewan correctional facilities. Recognizing that there are numerous disadvantages

to the existing methods (including the lack of a central registry and a computer data base) strategies are being designed to implement a central registry. This will simplify and expedite the future retrieval of information regarding violence in correctional facilities in Saskatchewan. This is a crucial first step for employers that will facilitate the initiation of important changes with regard to the recognition and understanding of traumatic workplace events. With the development of the registry, employers and employees will be able to easily and quickly review incidents and in so doing define what constitutes the range of violent incidents in their unique milieu. A formal classification of these definitions will make possible the implementation of a standardized method of recording incidents. This will lead to simplification of methods used to access both specific and general information concerning work-related violence. Ultimately, this information could be used in the characterization, classification and mapping of trends related to violence (e.g. specific institutions, individuals or circumstances that are particularly problematic) and the exploration and creation of techniques designed to minimize traumatic events within the environment.

In addition, it is imperative to understand the evolution of the individual trauma history within the context of the cumulative effects of repeated exposure to critical or violent situations. Consideration must be given to the potential that multiple incidents have for psychiatric repercussions either immediately following any one of a series of incidents or considerably later than any one of the events within a succession.

Results from this study could be used by both employers and interest groups to determine whether corrections workers are currently being provided with effective methods of post-trauma intervention or whether they require access to other programs

and/or therapy following traumatic work-related incidents. In cases of trauma-induced psychopathology, timely recognition and therapy could help the employee return to pre-morbid levels of functioning sooner, thereby lowering the cost of absenteeism while at the same time safeguarding the dignity, self-esteem, and work-related objectives of the employee. Furthermore, the implementation of new or amended programs and policies would indicate employer good will and could lead to improved interpersonal relationships in the workplace both at a professional and personal level between co-workers and members of management.

4.8 Future Direction

Although there is some disagreement in the literature with regard to how effective CISD is in assisting in the prevention of PTSD following a traumatic incident at work overall most researchers have concluded that CISD is not helpful (Bledsoe, 2003). What has shown to be effective in minimizing PTSD symptoms following a critical incident is cognitive behavioural therapy (Ehlers & Clark, 2000; Foa & Rothbaum, 1998; Meichenbaum, 1994) and pharmacotherapy (Marmar *et al.*, 1996; Marshall *et al.*, 1998; Stein *et al.*, 2000).

Studies in the future could explore the advantages of utilizing CISD as a first step procedure when used in conjunction with other forms of intervention and treatment. A future possibility might be to redesign the parameters of symptom management modalities so that the duration of each session and actual session numbers might be negotiable or flexible based on individual and group need as well as the profile of the traumatic incident. Periodic assessment of employees could be used to determine whether or not such steps ameliorate trauma-related symptoms.

In the present investigation participants were divided into those who met full PDS criteria for PDS and those who did not. Comparisons were made between these two groups. In the group who did not meet PDS requirements for PTSD there were a large number of individuals who met most of the criteria but were missing one or two items. Many of these individuals display sub-clinical levels of PTSD and may, in fact, be suffering from considerable dysfunction. Dysfunctional behaviour, workplace absenteeism and quality of life are factors that should be studied in those who have sub-clinical levels of the disorder.

Additionally, since corrections employees work in an environment where it is very likely that they will be exposed to further traumatization, periodic trauma symptom assessment should be offered to all employees, particularly those who have sub-clinical symptoms. The symptoms of PTSD should be monitored to ensure that symptomatic employees are identified and are able to obtain the treatment they require before the disorder becomes chronic and before their ability to function has been impaired. If the employer and employees were to participate in this or a similar undertaking then future studies could consider whether or not early recognition of PTSD symptomatology would have an affect on PTSD prevalence rates and workplace absenteeism.

While acting as a moderator for a panel of experts in psychiatry and psychology Dr. Doyle, a Clinical Professor of Psychiatry at Georgetown Medical School, proposed that multiple traumatic events are a key factor in the development of PTSD. In his opinion, it is often not just a single event that leads to psychological crisis but rather more than one event (Doyle, *et al.*, 2002). Participants in the present study reported personally experiencing an average of nearly one traumatic event per person every second month.

They witness and hear about many more such incidents. Future research could be conducted into whether the central registry for violent incidents currently being developed in the province has been successful in facilitating the delineation of corrections work related violence, the identification of trends related to violence, and subsequent mitigation of the numbers of events.

Many of the participants in this study, when asked about the number of traumatic workplace events that they had experienced, did not answer this question with numerical values but instead stated that they chose not to think about them. This suggests certain possibilities: first, that they may not be coping with the events, and second, that they are probably not reporting them in primary care settings. It is rare for an individual to report having been traumatized to their physician. If these individuals are to recover, the therapy that has been deemed to be the most effective in the treatment of PTSD is exposure therapy, which requires that the person (within the context of a safe therapeutic environment) “confront their fear invoking memories” and by doing so “habituate the fear” and “change cognitions that are associated with PTSD” (Foa, 2001, p. 4). Those who are not able to “engage emotionally with the traumatic memory (do not do) as well” (Foa, 2001, p. 4).

Perhaps a future direction could include PTSD education packages and seminars for primary care facilities and for corrections employees. The employee portion could stress the importance of informing the primary care giver of recent traumatic events encountered while the facility portion could stress the importance of screening for exposure to traumatic incidents.

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APPENDIX A
Ethical Clearance

APPENDIX B
Letter of Consent

February 06, 2003

Dear Participant,

As partial fulfilment of a Masters degree in Psychology, at the University of Regina, I am conducting research into Posttraumatic Stress Disorder (PTSD), personal perceptions of the workplace environment and relationships, and associated health issues. Dr. Mary Hampton will oversee the proposed study. Your participation would be very much appreciated and will provide valuable information in this regard. This information could not be gathered in any other way than directly from people who live the lives of professionals in your area of work.

This letter is an invitation to participate in our research by filling out the enclosed forms, which will take approximately 45 minutes. Your name was chosen from the membership of Saskatchewan Government Employees Union (SGEU) register. **The purpose of the study is to determine whether or not there are high rates of violence in the corrections environment and if so what physical and psychological implications this might have.** Furthermore, we are interested in understanding the job, and what it means to work within this environment from your perspective. Finally, we would like to determine the availability and effectiveness of employee programs related to emotional or psychological needs that corrections workers might have.

There are no direct benefits for participants in this study other than the knowledge that may be gained. There are no potential risks or discomfort that should be experienced by participants in association with the study. If, however, you should experience any emotional discomfort while completing the forms please stop immediately and contact the thesis supervisor at the telephone number or e-mail address provided below.

In order to assure complete anonymity participants are asked not to sign any of the enclosed forms (please be assured that you will not be identifiable to any party including the researcher and supervisors). Completion and return of the enclosed documents will imply your consent to participate in this study. A summary of the completed study will be provided to any participant at their request. Participation in this study is voluntary and you may withdraw at any time and for any reason during the study. Should you have any questions concerning the study you may contact the researcher or thesis supervisor.

This project was approved by the Research Ethics Board, University of Regina. If participants' have any

questions or concerns about their rights as participants, they may contact the Chair of the Research Ethics Board at 585-4475 or by e-mail at: researchethics@uregina.ca

THESIS SUPERVISORS SIGNATURE: _____ DATE _____

THESIS SUPERVISORS SIGNATURE _____ DATE _____

RESEARCHER'S SIGNATURE: _____ DATE: _____

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APPENDIX C

Letter to Participants (SGEU)

APPENDIX D

Demographic Information Sheet

DEMOGRAPHIC INFORMATION SHEET

Please do not provide your name in order to assure anonymity. This information will be used to assist in understanding the psychological, physical, emotional, and social experiences of corrections workers.

Age: _____ Gender: Male____ Female____

Ethnicity: Caucasian____ First Nations/Metis____ Asian____ Hispanic____ East Indian____ African-American____ Other ____ If other please specify: _____

Marital Status: Single____ Married____ Widowed____ Divorced____ Common-law____

Do you have children: YES____ NO____ Ages: _____

Approximate personal income per year: _____

Corrections Work History: Amount of time employed in corrections: Number of months____ Years____

Job classification: _____

Where in your facility do you work? _____

Are you employed: full time____ Part time____ Average number of hours worked per week: _____

Approximate number of work days you have missed due to illness over the last four months: _____

Approximate number of physician visits you have had over the last six months: _____

Have you experienced a traumatic event in the workplace? Yes____ No____

If yes to above were you provided with debriefing? Yes____ No____

Were you satisfied with the debriefing? Yes____ No____

If debriefed approximately how long after the event? Number of: Hours____ Days____ Weeks____

Over the last six months how many violent workplace incidents (related to your work environment): Have you personally experienced ____ Witnessed____ Heard about____

Do you have access to an employee assistance program? Yes____ No____

Have you used your workplace employee assistance program? Yes____ No____

If yes to above were you satisfied with this program? Yes____ No____

Do you smoke? Yes____ No____ If yes number of cigarettes per day____

Do you drink alcoholic beverages? Yes____ No____ Number per day____ week____ month____

Do you use recreational drugs? Yes____ No____ How often? _____

Please use back of this sheet for any comments that you might have. Your opinions are valuable to this study.

