Post Traumatic Stress Disorder

Discussion paper prepared for

The Workplace Safety and Insurance Appeals Tribunal

February 2010
Revised September 2015

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Dr. Whitney enrolled in the Canadian military in 1985 through the Medical Officer Training Program. She was posted to CFB Baden, West Germany, in 1989 where she provided medical care to military personnel and their families. She served as a flight surgeon in the first Persian Gulf War from October 1990 to February 1991. During the war, her clinical work focused on the management of psychological symptoms i.e. anxiety, trauma related to the war and the threat of chemical and biological weapons.

Prior to moving to Thunder Bay, Dr. Whitney was the Clinical Director of the Women’s Program at the Centre for Addiction & Mental Health in Toronto (CAMH). The Program treated women with complex mood & anxiety disorders usually with a history of childhood and/or adulthood interpersonal trauma. She was also the Vice President of Medical Affairs at CAMH for a period of time.

Dr. Whitney is an Assistant Professor with Northern Ontario School of Medicine and the University of Toronto as well an Adjunct Professor with Western Ontario. She is the Site Director of Psychiatry Northern Ontario School of Medicine Residency Program in
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This medical discussion paper will be useful to those seeking general information about the medical issue involved. It is intended to provide a broad and general overview of a medical topic that is frequently considered in Tribunal appeals.

Each medical discussion paper is written by a recognized expert in the field, who has been recommended by the Tribunal’s medical counsellors. Each author is asked to present a balanced view of the current medical knowledge on the topic. Discussion papers are not peer reviewed. They are written to be understood by lay individuals.

Discussion papers do not necessarily represent the views of the Tribunal. A vice-chair or panel may consider and rely on the medical information provided in the discussion paper, but the Tribunal is not bound by an opinion expressed in a discussion paper in any particular case. Every Tribunal decision must be based on the facts of the particular appeal. Tribunal adjudicators recognize that it is always open to the parties to an appeal to rely on or to distinguish a medical discussion paper, and to challenge it with alternative evidence: see Kamara v. Ontario (Workplace Safety and Insurance Appeals Tribunal) [2009] O.J. No. 2080 (Ont Div Court).
POST TRAUMATIC STRESS DISORDER

Background

Trauma has long been associated with psychological symptoms and disability. The diagnosis of Post-Traumatic Stress Disorder has been extended to non-war trauma including work place accidents, natural disasters and motor vehicle accidents. In addition, the sequelae of childhood sexual and physical abuse are understood as a form of PTSD called Complex Post Traumatic Stress Disorder. Complex PTSD relates to repeated childhood trauma that impacts on personality development, interpersonal relationships and affect regulation (disturbed ability to deal with feelings) that persists into adulthood. Childhood abuse is a significant risk factor for the development of PTSD related to adult traumas. Post-Traumatic Stress Disorder is often associated with substance abuse, depression, difficulties in interpersonal relationships and self-destructive behaviour.

Definition of PTSD per The Diagnostic and Statistical Manual 5 th Edition (DSM 5)

With the introduction of DSM 5, there have been significant changes in the diagnosis of Post-Traumatic Stress Disorder. PTSD moved from the class of anxiety disorders into a new class of “trauma and stressor-related disorders”. This class also includes the diagnosis of Acute Stress Disorder. The rationale for the creation of a new class is based on clinical recognition of variable expressions of distress as a result of traumatic experience(s).

The current criteria for DSM 5 are outlined below:

Trauma – Criterion A Stressor:

The person was exposed to death, threatened death, actual or threatened serious injury or actual sexual violence, as follows: (one required)

1. Direct exposure.
2. Witnessing in person.
3. Indirectly, by learning that a close relative or close friend was exposed to trauma. If the event involved actual or threatened death, it must have been violent or accidental.
4. Repeated or extreme indirect exposure to aversive details of the event(s), usually in the course of professional duties (e.g. first responders, collecting body parts, professionals repeatedly exposed to details of child abuse). This does not include
indirect non-professional exposure through electronic media, television, movies, or pictures.

The three clusters of the Diagnostic and Statistical Manual IV (DSM IV) are divided into four clusters in DSM 5 as outlined below. The rationale for the change was based on factor analytic studies and now requires one avoidance symptom for PTSD diagnosis.

**Criterion B: Intrusion Symptoms**

The traumatic event is persistently re-experienced in the following way(s): *(one required)*

1. Recurrent, involuntary, and intrusive memories.
2. Traumatic nightmares.
3. Dissociative reactions (e.g., flashbacks) which may occur on a continuum from brief episodes to complete loss of consciousness.
4. Intense or prolonged distress after exposure to traumatic reminders.
5. Marked physiological reactivity after exposure to trauma-related stimuli.

**Criterion C: Avoidance**

Persistent effortful avoidance of distressing trauma-related stimuli after the event: *(one required)*

1. Trauma-related thoughts or feelings
2. Trauma-related external reminders (e.g., people, places, conversations, activities, objects or situations).

**Criterion D: Negative alterations in cognitions and mood**

Negative alterations in cognitions and mood that began or worsened after the traumatic event: *(two required)*

1. Inability to recall key features of the traumatic event (usually dissociative amnesia; not due to head injury, alcohol or drugs).
2. Persistent (and often distorted) negative beliefs and expectations about oneself or the world (e.g., “I am bad”, “The world is completely dangerous”).
3. Persistent distorted blame of self or others for causing the traumatic event or resulting consequences.

4. Persistent negative trauma-related emotions (e.g., fear, horror, anger, guilt, or shame).

5. Feeling alienated from others (e.g., detachment or estrangement).

6. Constricted affect: persistent inability to experience positive emotions.

**Criterion E: Alterations in arousal and reactivity**

Trauma-related alterations in arousal and reactivity that began or worsened after the traumatic event: *(two required)*

1. Irritable or aggressive behaviour.

2. Self-destructive or reckless behaviour.

3. Hypervigilance.

4. Exaggerated startle response.

5. Problems in concentration.


**Criterion F: Duration**

Persistence of symptoms for more than one month

**Criterion G: Functional Significance**

Significant symptom-related distress or functional impairment (e.g., social, occupational).

**Criterion H: Exclusion**

Disturbance is not due to medication, substance use or other illnesses.

In DSM V there are several specifiers related to dissociative symptoms and time of onset of trauma symptoms. The dissociative subtype is a new classification. An individual experiences high levels of dissociation related to either of the following in reaction to trauma-related stimuli.
1. **Depersonalization**: experience of being an outside observer of or detached from one self (e.g., feeling as if “this is not happening to me” or one were in a dream).

2. **De-realization**: experience of unreality, distance or distortion (e.g., “things are not real”).

**Specify if**: With delayed expression.
Full diagnosis is not met until at least six months after the trauma(s), although onset of symptoms may occur immediately.

**Implications of The Revisions in DSM 5:**

Based on the analysis of DSM 5 criteria, the prevalence of PTSD is expected to be similar to what it was with DSM IV. The one item removed from the stressor category in DSM 5 is death of a relative from natural causes and this may influence the prevalence of PTSD. Similar to DSM IV, prevalence of PTSD for DSM 5 is expected to be higher in women than men and increased prevalence increased with multiple traumatic event exposure. (PTSD: National Center for PTSD 2014)

**Acute Stress Disorder**

Until the DSM IV there had been no diagnostic entity or clinical term for trauma symptoms that occur immediately after the trauma. In military settings the term Combat Stress Reaction has been used for acute trauma related to war activities. With Acute Stress Disorder the symptoms onset and resolve within 4 weeks of the traumatic event. If the symptoms persist beyond 4 weeks then the diagnosis becomes PTSD. At this time, Acute Stress Disorder has not been well studied but further investigations may help understand who goes on to develop PTSD. The appropriate interventions for Acute Stress Disorder to reduce the risk of developing PTSD need to be identified. Usually Critical Incident Stress Debriefing (CISD) is offered after a significant trauma in the workplace but the benefit of this intervention is mixed. Some studies suggest that CISD may be harmful in some circumstances particularly if there is delay in providing it. For an individual, cognitive behavioural therapy with a trauma focus is the appropriate intervention in the immediate period after the trauma.

**Epidemiology-How Common is it?**

The lifetime rates for PTSD in the general population in the USA are estimated to be 8% based on several epidemiological studies (Kessler 1995). There is a gender difference with 5% of men and 10% of women experiencing PTSD in their lifetime. There is limited Canadian data with one study showing a 1-month prevalence of 2.7% in women and 1.2% in men (Stein 1997). Approximately 40-60%
of patients with PTSD have symptoms that become chronic i.e. last longer than 6 months. In addition, co-morbidity, i.e. other disorders being present with PTSD, is very common. Up to 80% of patients with PTSD also experience other disorders, such as major depression, anxiety, substance abuse.

**Development of PTSD**

In considering the development of PTSD, features of the trauma as well as the characteristics of the individual need to be carefully considered.

**The Trauma:** The lifetime prevalence of exposure to traumatic events in the general population is high. In Canada it is estimated that 74% of women and 81% of men have been exposed to an event that could cause PTSD. The risk of developing PTSD given exposure to trauma (conditional risk) is estimated to be 10-25%. The types of traumas experienced by each gender have some unique features with women frequently experiencing interpersonal trauma such as rape and childhood sexual assault, while men frequently experience physical violence, accidents and witness violence. Even though men have a higher prevalence of exposure to traumatic events, women are more likely to develop PTSD even when the type of trauma is controlled. PTSD is also more likely to develop with interpersonal violence such as assault or rape than natural disasters.

**The Individual:** The most significant personality trait, which accounts for the majority of the variance in developing PTSD, is Neuroticism or Negative Affectivity. This is a temperamental style where the person tends to respond easily to events with anxiety and depression (Bowman 1999). Another important factor is locus of control i.e. where the person believes the control or responsibility for an event lies. If there is a mismatch between the individual’s belief about where the control should reside and where it actually resides then PTSD is more likely to develop (i.e. if the person believes that they should have control but they didn’t!). A history of previous trauma significantly increases the risk of developing PTSD. Multiple traumas are common and the risk of PTSD increases exponentially with multiple traumas or lifetime adversities (Paris 2000). It is important to acknowledge that there are protective factors for PTSD related to complex beliefs about the self, religious faith, political commitment and self-efficacy.

At the present time, there is no consensus whether personal vulnerability or trauma characteristics are more important in the development of PTSD. It is best to conceptualize the development of PTSD as an interaction between the individual with vulnerabilities and risk factors and the trauma including the type, characteristics, and meaning.
Risk Factors for Development of PTSD

Risk factor must be considered along a continuum including pre-trauma, peri-trauma (around the time of the trauma) and post-trauma.

Pre-Trauma: There have been studies that suggest a genetic contribution to PTSD onset. Using a registry of Vietnam era twins, one study by Xian et al 2000 suggested that 35.5% of the variance in PTSD might be attributed to genetic factors. Some of this variance may be shared with genetic factors common to drug and alcohol dependence but 20% of the variance in PTSD was due to genetic factors unique to PTSD.

The most consistent pre-trauma risk factors include female gender, past psychiatric history, reported childhood abuse and family psychiatric history. It should be noted that these factors are more predictive of PTSD in some populations i.e. combat vs. civilian PTSD populations. Unresolved childhood trauma increases the risk of PTSD more than seven-fold and has been associated with avoidant symptoms of PTSD. There is evidence that firefighters who engage in catastrophic thinking about life events before they engage in fire services are more likely to develop post-traumatic stress after commencing active duty. This may allow employees at risk to be identified and interventions designed to reduce the risk (McFarlane 2007).

Above-average cognitive ability has been identified as a protective factor. Securely attached individuals exhibit fewer symptoms of PTSD where an avoidant style predicts PTSD symptoms.

Trauma severity is a stronger predictor particularly when the trauma involves combat. Traumas due to deliberate human malice (versus natural or accidental traumas) may be a stronger predictor of PTSD and reduce recovery from PTSD (Brewin et al 2000). Peri-trauma dissociation (emotional disconnection or “zoning out”) is predictive of PTSD diagnosis lasting over 6 months in duration, and has been associated with approximately 30% of the variance in PTSD symptom intensity.

Repeated intense exposures over a period of time leads to an accumulated risk requiring that assessment of emergency service personnel should focus on lifetime exposures as well as the immediate antecedent event that prompted the presentation for assessment. The core concept of repeated exposure is sensitization, which refers to a process where there is a progressive increase in the reactivity of the individual to trauma-related cues. There is a critical period in the aftermath of traumatic exposure during which irreversible neuronal changes may occur in those who develop PTSD. (McFarlane 2007)

Post-Trauma: Lack of social support is the primary post-trauma risk factor for developing PTSD. Severity of acute symptoms is predictive of development of PTSD. However, PTSD can develop when no acute symptoms were present (Yehuda 1998). Early research suggests that acute posttraumatic symptoms of increased heart rate and startle response are predictive of developing PTSD.
Resiliency
Resilience has been defined as the ability to maintain a state of normal equilibrium in the face of extremely unfavourable circumstances. Internal characteristics promoting resilience include self-esteem, trust, resourcefulness, self-efficacy, internal locus of control, secure attachments, sense of humour, sense of mastery, optimism and interpersonal abilities such as social skills, problem-solving skills and impulse control. External factors include safety, religious affiliation, strong role models and emotional sustenance—the extent to which others provide the individual with understanding, companionship, sense of belonging and positive regard (Ahmed 2007). The Connor-Davidson Resilience Scale is a self-report scale of 25 items related to resilience with a higher score representing more resiliency (Connor 2006).

Neurobiology & Brain Abnormalities with PTSD
Morphological and functional abnormalities of the brain involve the amygdala, hippocampus and prefrontal cortex. The amygdala plays a role in the processing and storage of memory of emotional events. PTSD is associated with hyper-responsiveness in the amygdala and hypo-responsiveness in the prefrontal cortex. Some studies show smaller hippocampal volume associated with PTSD.

In stressful situations, the sympathetic nervous system becomes activated and adrenaline and noradrenaline are released. Unrestrained activation of the sympathetic nervous system leads to hypervigilance, anxiety and intrusive memories as seen in some people with PTSD. Cortisol and Corticotrophin-releasing hormone (CRH) are mediators of stress. PTSD has been associated with increased CRH levels in the cerebrospinal fluid and low levels of circulating cortisol.

Controversy Surrounding the PTSD Diagnosis
At the present time, the over diagnosis of PTSD is questioned in clinical areas involving military personnel, legal situations and financial compensation for injury in particular. An important feature is the assessment of disability characterized as “clinically significant impairment” associated with PTSD. In one study of US military personnel the rate of PTSD fell from 11% to 5.4 % when significant / severe impairment was considered in the diagnosis (Dobbs 2009). Dobbs (2009) commented that “But as a diagnosis, PTSD has become so flabby and overstretched, so much a part of culture, that we are almost certainly mistaking other problems for PTSD and thus mistreating them”. PTSD is viewed by some public officials as an overly generalized or invalid diagnostic category that is often induced in or falsified by veterans or others seeking compensation. Thus, PTSD is perceived by some stakeholders to be over-diagnosed. On the other hand, many people do not seek treatment when they experience PTSD so the diagnosis can be under-diagnosed in certain populations or situations.

There may be cultural differences with relation to the diagnosis of PTSD as identified by the Ochberg Society for Trauma Journalism. Following the Iraq and Afghanistan wars, only four percent of British veterans suffered from PTSD while
American veterans suffered PTSD at a rate of thirty percent (Grinker 2015). Possible explanations include that the British soldier spent 6 months on deployment compared to 12 months for the US soldiers. British soldiers also spent several days in Cyprus at the end of the deployment for decompression on the way home. Culture may play a role with British soldiers expected to “demonstrate a stiff upper lip” and get on with life while American soldiers largely return home to a society that expects them to be psychologically wounded. However, British veterans are more likely to suffer from depression and drink more compared to their American counterparts.

Another relevant area is the issue of financial compensation i.e. disability for the PTSD diagnosis. For veterans as well as most people, disability payments cease if the person returns to functioning i.e. work so there is minimal incentive to become more functional and return to work. Another perspective is a shift from a psychiatric diagnosis for combat veterans and front line responders (i.e. EMS, police) to see post combat or post critical incident distress / symptoms not as a disorder but as part of a normal, if painful, healing process. Rachel Yehuda, trauma psychologist, identifies the importance of “re-contextualization” – the process of integrating trauma as normal life experiences.

**At Risk Work Environments**

Every workplace has the risk of unpredictable disasters and accidents. The emergency services, military, acute medical services, bank officers and train drivers have the most notable attention in the scientific literature (McFarlane 1997). However the most accident-prone industries such as mining, agriculture and fishing should not be neglected as they have a high rate of accidents.

Several employee populations deserve specific attention and focus in the province of Ontario at this time. The EMS / paramedics, police officers (from regional or city services & OPP), fire fighters and health care providers are a high risk population for PTSD as well as suicide. The rate of PTSD for EMS personnel has been found to be 20% which is twice that of the general population. The Ontario Ombudsman identified that 23 OPP officers committed suicide between 1989 and 2012. The Tema Center Memorial Trust (www.tema.ca/about.html) is a Canadian hub of education, research, scholarships and training in the fields of Operational Stress Injury and Post-Traumatic Stress Disorder. This organization has been tracking suicides by first responders and military members. Between April 29 and December 31, 2014, 27 first responders died by suicide. In 2014, 19 military personnel died by suicide.

The Canadian Mental Health Association estimates that in emergency service workers the prevalence of PTSD is twice the national average i.e. approximately 16%. Paramedics were at the highest risk of developing PTSD (Hong 2013). The Tema organization estimates that 16 to 24% of Canadian paramedics will be diagnosed with PTSD at some point in their career.
Psychological treatment services for work-related PTSD rely on the WSIB or OHIP treatment system. EAP services often do not provide trauma related treatment as their expertise is lacking. The single largest challenge is timely access to mental health resources with expertise in assessing, diagnosing and treating work related PTSD. Often there is at least a several month wait for access to appropriate treatment resources. In more remote areas of the province, the delay may be up to a year or the specific trauma resources are not available at all.

Signs of Psychological Dysfunction secondary to Workplace Trauma

Supervisors in occupational settings must be able to detect signs that a worker may be experiencing PTSD symptoms (McFarlane 2007). Manifestations may include:

- Increased alcohol use.
- Interpersonal and/or family conflict.
- Social withdrawal.
- Somatic distress.
- Performance deterioration.

Clinical Assessment Tools

There are a variety of structured interviews and self-report measures available for PTSD. These measures tend to be used by clinical programs and clinicians specialized in providing trauma services. Since work related PTSD usually presents to primary care initially, screening measures in this setting would be beneficial. The Primary Care PTSD Screen (PC-PTSD) is a 4 item scale and 3 positive responses indicate the requirement for a structured clinical interview (Prins 2004). Another primary care screening option is the Short Form of the PTSD Checklist – Civilian Version which consists of 8 items on a 5 point scale. Unfortunately PTSD screening measures are not used in primary care at this time.

Many individual clinicians rely on the clinical interview to make the diagnosis of PTSD. The CAPS (Clinician Administered PTSD Scale) is commonly used in speciality trauma clinics and it provides information on diagnosis and symptom level. The Davidson Trauma Scale is a 17 item self-report measure of PTSD, and therefore requires less time to administer. It measures severity & frequency of all 3 DSM IV symptom clusters and tends to be sensitive to treatment response effects. Standardized assessment tools can assist with the diagnosis as well as monitor the effectiveness of treatment over time. The challenge is incorporating such tools into day to day clinical practice.
Natural History of Trauma responses/PTSD

The majority of patients who develop PTSD do recover over time. For example, a longitudinal study by Shalev & Yehuda 1999 showed that 58% of traumatized people recovered by 9 months. However, a significant number of people fail to recover for years, estimated to be 15-25%. On average, the clinical progression of PTSD occurs over a twenty-year span with the patient experiencing an average of 3.3 PTSD episodes, which are each seven years in length (Greenberg 1999).

Diagnosis

The most common diagnostic error associated with PTSD is clinician failure to elicit the information about trauma history (Davidson 1999). Often, distinguishing PTSD from other disorders is difficult, as it shares many symptoms with other psychiatric conditions. The high incidence of co-morbidity (other disorders being present) also complicates diagnosis as the patient may present complaining of depressive or anxiety symptoms.

Workers with a trauma history are more likely to present to their family physician than to mental health services. There is a need to screen for PTSD in patients with: sleep complaints, somatization (multiple physical symptoms), co-morbidity with anxiety or depressive disorders, alcohol or chemical use, suicidal ideation, and high rate of medical service consumption.

There may be a delay in the onset of PTSD symptoms so when trauma symptoms onset 6 months after the trauma, the classification is delayed-onset PTSD. At times PTSD symptoms may develop years later. This often occurs in the context of another trauma or a significant reminder of the original trauma. For example a police officer may witness a very severe accident that reminds him of previous motor vehicle accidents or a woman with childhood abuse may experience trauma symptoms when she encounters the abuser as an adult.

Misdiagnosis may occur with PTSD. Flashbacks may be misinterpreted as hallucinations and the hyper-vigilance may be seen as paranoia. Numbing may be misinterpreted as depression, and hyper-arousal as anxiety or mood disorder. Avoidance behaviour may be attributed to personality.

Differential Diagnosis

The challenge with the diagnosis of PTSD is eliciting the trauma history as well as distinguishing PTSD from the co-morbid conditions. Kessler's co-morbidity study (1995) showed that 79% of women and 88% of men with lifetime diagnosis PTSD met the criteria for at least one other lifetime psychiatric disorder. The most common co-morbid mental health conditions are major depression, other anxiety disorders
and alcohol abuse/dependence while the most common physical health condition is chronic pain. For those who are physically injured, there may be a delay in the recognition and treatment of PTSD. PTSD symptoms may be misinterpreted as physical symptoms. In one study of injured workers with chronic pain on disability, 34% reported symptoms consistent with PTSD while 18% reported symptoms consistent with partial PTSD (Asmundson 1998).

Malingering must be considered in the differential diagnosis particularly with workplace accidents, motor vehicle accidents or military persons if compensation is an issue. Malingering should be considered if a patient is particularly eager to discuss the trauma as most patients with genuine PTSD avoid discussion of such traumatic events.

**Treatment**

Treatment of PTSD involves psychosocial and pharmacological interventions. The current standard of treatment is a sequenced model as proposed by Judith Herman, Christine Courtois, and Frank Chu. These authors emphasize the importance of titration and pacing in therapeutic work, as well as working in stages characterized by early, middle and late. Trauma survivors must develop fundamental skills related to self-care, and symptom control so that trauma symptoms and depression are under control before exploring the trauma extensively (middle stage treatment). The therapeutic relationship must be developed so that the patient can disclose trauma history in a safe manner that is not re-traumatizing or destabilizing for the patient. The co-morbidity and severity of the PTSD illness must be taken into account with treatment planning. Co-morbid conditions such as substance abuse and depression may also require specific treatment. Treatment guidelines for PTSD have been compiled/developed including the Expert Consensus (Journal of Clinical Psychiatry) and the International Society of Traumatic Stress (ISTSS) Guidelines. These guidelines have not been disseminated widely in Canada and thus only those practitioners specializing in trauma would be familiar with them.

**Psychological Treatments**

Psychoeducation about PTSD is an early intervention that must be provided to trauma victims and their families. Trauma survivors need to be educated about common symptoms of PTSD including cognitive, behavioural, affective symptoms as well as any changes in their core beliefs i.e. the world is not a safe place. Cognitive Behavioural Therapy (CBT) has been found to be the most effective treatment for PTSD. Irrational beliefs about guilt and safety can be confronted and modified. Exposure therapy has been found to be particularly effective with improvement seen in 60-70% of patients (Foa 2000). The victim constructs a hierarchy of feared situations. The person is gradually exposed to their feared situation while using the relaxation techniques
to control anxiety. EMDR (Eye Movement Desensitization Reprocessing) is a controversial treatment developed by Dr. Francine Shapiro for PTSD treatment. It promises relatively rapid improvement in symptoms. The technique involves bilateral stimulation of the brain through eye movements or sounds to reprocess memories. There are associated imagery and cognitive components as well. Further research should clarify the role and effectiveness of EMDR.

Psychological debriefing, which is a psycho-educational and supportive session provided within 24-48 hours of the trauma, had been widely adopted. The purpose was to normalize the reaction to the trauma and encourage use of appropriate coping skills. However, recent literature is questioning the effectiveness of this intervention and some studies suggest that it may actually be harmful for some people, i.e. make people more likely to develop PTSD. Studies are underway trying to clarify the issue of whether debriefing is helpful or harmful, and when appropriate, who should receive the debriefing.

Pharmacological Treatment

The specific serotonin reuptake inhibitors (SSRIs) fluoxetine (Prozac), paroxetine (Paxil), and sertraline (Zoloft) have been most extensively investigated, and found to result in a reduction of symptoms in all 3 clusters in 40-85% of subjects. These agents have the least impact on the avoidance symptom cluster. Paroxetine (Paxil) is the only SSRI medication in Canada to have the formal indication for treating PTSD. Studies have shown improvement in symptoms in 5-6 weeks with either 20 or 40 mg/day of Paroxetine. In the USA, Sertraline (Zoloft) is the only SSRI that has received FDA approval for treating PTSD. Other SSRIs, including fluoxetine, fluvoxamine, citalopram and esc-citalopram, have open studies demonstrating effectiveness in various trauma populations. It is important to note the population used in the study, i.e. combat, civilian interpersonal trauma vs. natural disaster. There is evidence of effectiveness with dual acting agents (noradrenaline and serotonin) such as venlafaxine and mirtazapine.

Other classes of medication have also been used to treat PTSD. Mood stabilizers including carbamazepine and valproate have been used with some reduction in re-experiencing and arousal symptoms. The traditional mood stabilizers have been used when someone is labile, impulsive or aggressive. The atypical antipsychotics have demonstrated some benefit for sleep and hyper-vigilance to the point of being paranoid. The US military studied prazosin (alpha 1 adrenergic blocker) for disturbed sleep with nightmares, hyper-arousal and irritability in the Afghanistan war (Kung 2012). Prazosin use has been extended to the civilian population as well in the last few years with some success. This medication avoids the risk of dependence which is present with traditional sleeping medication such as benzodiazepines.
PTSD in the Workplace: Return to Work Factors & Accommodations

PTSD symptoms at work may emerge in the following ways:

• Memory problems & difficulty retaining information.
• Lack of concentration.
• Feelings of fear or anxiety & panic attacks.
• Poor interactions with coworkers.
• Extreme reactions to situations that trigger memories.
• Absenteeism.
• Interruptions if employee is still in an abusive relationship i.e. harassing phone calls at work.
• Trouble staying awake at work.

Several barriers related to the worker have been identified related to return to work including: ongoing anxiety symptoms, comorbid depression, pain or anger and threat appraisals i.e. negative beliefs about the meaning of PTSD symptoms and over-estimates of the likelihood that workplace traumatic events will re-occur. Another dimension related to the workplace is the unique work demands of emergency response workers, police officers etc. which require routine exposure to emotionally distressing events and make gradual return to work difficult to implement. Another relevant workplace dimension relates to the interpersonal conflict in the workplace and the tendency to blame the employer (Alden 2012). A negative and/or high conflict environment in the workplace interferes with return to work.

When a traumatized worker returns to work, there must be a receptive and understanding workplace. Administration, supervisors and co-workers need to understand PTSD symptoms and assist in the worker’s return to work. Return to work meetings involving the worker, union representative, supervisor(s), occupational health and medical personnel are usually held prior to return. It is essential to identify the employee’s limitations related to job performance & specific tasks that may be challenging for them. The employer can identify specific ways to assist the employee in the workplace and documents are available to outline possible accommodation. Finally employers should provide training for supervisors & coworkers particularly in workplaces where PTSD is frequent. Finally, there is the issue of risk management related to return to work for workers who carry firearms and provide life-saving treatment to the public. The worker must be able to return to the high risk work environment and perform their duties at full capacity. The website www.giftfromwithin.org identifies background information regarding return to work.
and recommendations for accommodations related to PTSD in military and civilian environments.

**Bullying in the Workplace & PTSD**

Bullying has been established as a prevalent traumatic stressor both in school and workplaces. Bullying most often involves repeated exposure to aggression in the form of verbal hostility, teasing, badgering, being made the laughing stock and social exclusion. A meta-analysis of bullying (Nielsen 2015) revealed that 57% of the victims of bullying report symptoms of PTSD that exceed the threshold for caseness. Research has also shown that victimization from bullying in school increases the risk of being bullied in adult life. Bullying can be seen as a traumatic event with prolonged exposure that shatters the target’s cognitive schemas about the world, other people and themselves.

**Long Term Outcomes & Economic Costs**

The most adverse outcomes are associated with traumas that occurred in childhood, particularly when it is repetitive. In the National Co-morbidity Survey, PTSD was associated with 40% elevated odds of high school & college failure, 150% elevated odds of unemployment during an episode and 60% elevated odds of marital instability. PTSD results in an average work loss of 3.6 days/month with an annual productivity loss of $3 billion in the USA. The level of productivity loss per case is similar to levels found with depression. There is also an associated mortality with PTSD patients being six times more likely to attempt suicide compared to controls.

**Conclusion & Final Comment**

Post traumatic stress disorder is a chronic mental illness that develops after exposure to a life event or multiple life events that threaten death or serious injury. Initially, the focus for the development of PTSD was on the trauma attempting to characterise the severity and nature of the trauma leading to PTSD. However, large studies have shown the relative risk of developing PTSD is only 10-25% after being exposed to a traumatic event. This has lead researchers to focus on vulnerabilities and risk factors in those being exposed, i.e. the victim. The most consistent pre-trauma risk factors have been shown to be female gender, reported childhood abuse and family psychiatric history. Other relevant factors related to the development of PTSD include dissociation at the time of the trauma, severity of the trauma (in combat, repeated trauma in the workplace) and perceived support after the event.

Trauma treatment has become sophisticated with a staged, sequenced and titrated treatment approach. In Canada there are very few specialized trauma treatment
centres and these are located in large urban centres usually associated with academic health science centres. This makes access to specialized trauma care for those located in smaller communities or remote locations difficult. Several serotonin reuptake inhibitor antidepressants have been shown to reduce some PTSD symptoms and a variety of other medications including mood stabilisers and atypical antipsychotics have also been used. More recently Prazosin has been used for trauma disturbed sleep as well as hyper-arousal and irritability. Cognitive Behavioural Therapy and, in particular, exposure therapy has been shown to be effective treatment for PTSD. Unique treatments such as EMDR and other pharmacological agents are being studied.

Select PTSD References


