Mental Disorders, Mental Disability at Work, and Workers’ Compensation

William Gnam

for the Institute for Work and Health to the Royal Commission on Workers’ Compensation in British Columbia

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Introduction

Over the last three decades awareness of the potential mental effects of the work environment has grown among both academic health researchers\(^1\) and the lay public. Workers' compensation claims for mental disabilities have proliferated since 1980\(^2\), compelling most jurisdictions in Canada and the United States to consider broad issues involving the psychological and emotional aspects of work. The results of these deliberations are a patchwork of different compensation policies enacted by boards across North America. These policies pertain to a variety of claims related to mental conditions: "chronic mental stress", "occupational stress", "cumulative psychiatric injury", and various mental disorders which are allegedly work related.

Mental stress claims represented 2.8% of all occupational disease claims in Alberta and British Columbia in 1993\(^3\). At its peak in 1990, mental stress claims comprised 9% of all new claims in California, but by 1994 the figure had fallen to less than 4%.\(^4\) Mental claims have never represented more than a small percentage of the overall workload of North American compensation boards, but they consistently have generated attention and controversy. In the United States the number of mental stress claims more than doubled between 1980 and 1987,\(^5\) and prominent jurisdictions such as California experienced even faster growth rates. Insurers, employers, and policy makers feared that an "epidemic" of mental-health related compensation claims would lead to soaring insurance costs.\(^6\),\(^7\) These fears were never realized, perhaps because many jurisdictions in the early 1990s passed legislative measures to severely restrict compensability.

Several salient facts suggest that compensation policies for mental stress and mental disability deserve closer scrutiny than they have often received. Firstly, mental disability claims in workers' compensation are costly: in British Columbia, the costs associated with mental stress claims in 1992 averaged $12,645 per claim.\(^8\) A recent study performed by the National Council of Compensation Insurance (the NCCI) in the United States reported that charges for compensated "mental injury" claims were 52% higher than those for an average traumatic bodily injury. Mental stress claims also lasted longer — an average of 39 weeks, while the average physical injury claim lasted 24 weeks, and the average occupational illness claim lasted 36 weeks.\(^9\) Second, mental disability claims in workers' compensation are frequently appealed and contested, pitting workers against employers, often in a highly confrontational atmosphere. For example, debate in Ontario over the compensability of chronic mental stress claims led to acrimonious exchanges between workers' advocates and employer groups.\(^10\) In the United States, the counterpart to appeal has been litigation. The NCCI reports that 53% of mental stress claims in the United States involve attorneys, compared to 8% of physical injury claims and 36% of occupational disease claims.\(^11\) Third, the experience of jurisdictions such as California suggests that ill-considered compensation policies for mental conditions may result in a dramatic escalation of insurance costs. Fol-

\(^{3}\) Association of Workers' Compensation Boards of Canada (1996): Occupational Stress: How Canadian Workers' Compensation Boards Handle Stress Claims
\(^{5}\) deCateret (1994): supra
\(^{6}\) deCateret (1994): supra
\(^{7}\) Boustedt A (1990): Job-related stress claims expected to pass all others in the '90s. Psychiatry Times 7:78
\(^{8}\) Association of Workers' Compensation Boards of Canada (1996): supra
\(^{9}\) Elisburg D (1994): supra
lowing several key court rulings, the costs of mental stress claims in California grew by 700 percent from 1979 to 1984, and temporarily became the most pressing concern for employers and insurers regarding workers' compensation. Finally, mental conditions and their relation to the workplace are poignant examples of the difficulties boards face in assigning causation when the illnesses or conditions are believed by nature to have multiple causal factors. In this respect the compensation issues raised by mental conditions are germane to a growing list of occupational diseases.

From a critical perspective, this paper summarizes the scientific and clinical understanding of mental disability and occupational stress, and evaluates the evidence implicating workplace factors in the causation of these conditions. The general analytical approach is to extract from scientific health research the key implications for compensation policy. The paper also surveys and critiques the myriad of policies adopted for mental stress claims across North America. Finally, the paper considers the ongoing policy dilemmas for chronic stress claims.

Frequent reference is made to policy experiences of the United States, largely because the forerunners of Canadian mental claims occurred in several key States. American workers who have access to lawyers and courts traditionally have considered creative legal claims, and the incentives for American workers and lawyers to bring forth such claims have often been compelling. It hardly surprising that many State compensation boards have considerably more policy experience with mental stress claims than their Canadian provincial counterparts.

The paper is organized as follows: Section I has two objectives. It describes the categorization of mental claims commonly used in workers’ compensation systems, and relates these categories to the terminology used by academic health researchers and mental health clinicians. These relationships are important to clarify because most of the relevant scientific evidence on mental disorders, mental stress, and disability does not adopt the categorization of compensation boards. Section I also itemizes the controversies common to most mental disability claims in workers’ compensation systems. Section II identifies the types of mental disorder most plausibly related to the workplace, and summarizes the evidence that relates these mental disorders to adverse labor market outcomes such as work disability. This section concludes that mental disorders and other mental conditions cause significant disability that may result in absenteeism and other adverse labor market outcomes. The pivotal issue for workers’ compensation policy is whether mental conditions can be shown to occur "in the course of and arising out of employment." Section III addresses the complicated issues of work-related causation. Section IV reviews the policies adopted by British Columbia and other Canadian provinces. Finally, Section V considers policy options for British Columbia. Brief comments in Section VI conclude the paper.

The Terminology of Mental Claims and Mental Disorders

Workers' compensation claims involving mental aspects fall into three categories: “physical-mental”, “mental-physical”, and “mental-mental”. These categories arose from Workmen's Compensation Law, the landmark treatise by Arthur Larson, and have been adopted almost universally by boards across Canada and the United States. The term "mental" is generally understood to include both psychological and emotional aspects. A “physical-mental” claim arises when a work-related physical injury or stimulus gives rise to a mental condition which causes or increases disability. A limb amputation that precipitates a disabling clinical depressive disorder would be an example. “Mental-physical” claims arise when a work-related mental stimulus results in a disabling physical illness or condition. The most commonly cited examples are a myocardial infarction (heart attack) precipitated by a traumatic job event, or specific job characteristics which increase the risk for cardiovascular disease. Other examples are gastrointestinal illnesses or traffic accidents related to job stress. “Mental-mental”

12 Elisburg D (1994): supra
14 Larson A (1992): Workmen's Compensation for Occupational Injuries and Death (desk edition), Section 42.23-42.25
claims arise when a mental stimulus or repeated mental stimuli result in a mental disorder or other mental condition. Examples include witnessing an industrial accident at work that precipitates a post-traumatic stress disorder, or repeatedly stressful work conditions resulting in emotional exhaustion. For each of the three categories, note that the stimulus leading to the disabling condition could be singular, or consist of repeated stimuli over time.

Subject to certain restrictions, physical-mental and mental-physical claims are generally held to be compensable, although for practical reasons workers may find it difficult to convince boards of the merits of these claims.\textsuperscript{16} Mental-mental claims provoke far more controversy than the other two categories, and the subgroup of claims arising from repeated stressful work-related stimuli (the so-called "chronic stress" or "cumulative psychiatric injury" conditions) are the most controversial of all. Chronic stress claims have posed vexing issues for boards, and British Columbia is no exception.\textsuperscript{17}

The controversies surrounding mental-mental claims arise from several factors. Definitions of mental stress lack standardization, which creates confusion for policymakers and variability in the manner by which such claims are evaluated clinically. Causal models of occupational stress and mental disorders typically posit the importance of multiple factors, including factors beyond the work environment. This framework complicates the legal evaluation of work-related causation for any claimant with a mental disability. Compensating work disability arising from mental stress is widely predicted to result in skyrocketing costs.\textsuperscript{18} Moreover, the subjective nature of medical and psychiatric evaluation in mental-mental claims may create incentives for fraudulent claims, or claims for genuine mental disability which are unrelated to work. These controversies have many dimensions, but a clear scientific understanding of mental stress and its relations to disability, mental disorder, and the workplace could assist boards in formulating rational and equitable policy.

Larson’s categorization serves a useful descriptive function for boards and legal analysis, but it only loosely corresponds to the terminology used by most psychologists and psychiatrists. The terms "stress", "occupational stress", and “chronic mental stress” are not recognized by mental health clinicians as distinct clinical conditions. Only a minority of clinicians recognizes proposed industrial mental conditions such as “job burnout”. The term “stress” itself has multiple meanings, and can be used to denote either the nature of the stimulus (“stressors”) or the individual’s response (“stress reaction”). Some authors have recommended discarding the term “stress” because of this ambiguity.\textsuperscript{19} Nonetheless, research psychologists have proposed many models of stress and its relation to health;\textsuperscript{20} relatively few of these models have been validated by extensive empirical studies. Models of occupational stress have also been developed, the most important of which is the \textit{job strain} model of Karasek and Theorell,\textsuperscript{21} which has greatly enhanced our understanding of the health consequences of the work environment. (See Section III.)

When mental claims are clinically evaluated, the most commonly used classification system is the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV), published by the American Psychiatric Association.\textsuperscript{22} Some jurisdictions (such as California since 1994) have made the presence of a DSM-IV mental disorder a necessary condition for compensating mental claims. DSM

\begin{thebibliography}{9}
\item Alfredsson L, Spetz C-L, Theorell T (1985): Type of occupation and near-future hospitalization for myocardial infarction and some other diagnoses. International Journal of Epidemiology 14:378-388
\item Elisburg D (1994): supra
\item Munro C (1993): Psychological Disabilities and Workplace Stress. The Workers’ Compensation Board of British Columbia
\item Elisburg D (1994): supra
\item Karasek R, Theorell T (1990): supra
\end{thebibliography}
mental disorders are also called "psychiatric disorders", and this paper uses these terms synonymously. A "mental condition" for the purposes of this paper refers to psychological or emotional state which a clinician evaluates as "clinically significant", but does not meet the criteria for the diagnosis of a mental disorder. In practice, this group of conditions may be small. This is because the DSM-IV includes a "Not Otherwise Specified" ("NOS") category for most groups of mental disorders, which is intended to capture individuals who have clinically significant distress or impairment, but do not qualify for the other formal definitions of mental disorder. For example, persons experiencing significant distress or impairment with some features of a clinical depression (but failing to meet the threshold for a DSM-IV major depressive disorder) could be classified as having a "Mood Disorder Not Otherwise Specified" under the DSM system.

Two limitations of the DSM-IV classification should be stated at the outset. Most mental disorders in the Manual are not defined by operationalized disability criteria. Consequently, the presence of a DSM-IV diagnosis does not automatically imply disability. This limitation is noted explicitly in the pre-amble to the DSM-IV Manual. The second limitation closely relates to the first; mental conditions failing to meet the diagnostic criteria for a DSM-IV mental disorder may nonetheless be associated with disability. The policy relevance of these limitations is considered in Section V.

Despite these limitations, it is important to understand the types and frequencies of DSM-IV mental disorders suffered by mental-mental claimants in workers' compensation. Surprisingly, only one published study addresses this issue. The California Workers' Compensation Institute reported the frequencies of mental disorders arising from 390 claimants chosen randomly from all claims for "cumulative psychiatric injury" (chronic stress) filed in 1990 in California. Based upon the opinions of the workers' treating psychologists and psychiatrists, in 36% of cases claimants were suffering from a diagnosable mood (i.e. depressive) disorder, in 27% from an anxiety disorder, and in 29% from an adjustment disorder. The remainder (8%) of claimants also had DSM mental disorders, but details are unavailable. The fact that claimants had high rates of mental disorder does not establish work-related causation. Moreover, one study may not generalize to other jurisdictions. The study does suggest, however, that the majority of claimants with a diagnosable mental disorder have either a depressive disorder or an anxiety disorder. Reviewing our knowledge of these mental disorders and their consequences will have some relevance to workers' compensation systems, and it is this review that comprises the next two sections.

Mental Disorders and Adverse Outcomes in the Labor Market

This section reviews the evidence linking mental disorders to adverse labor market outcomes and disability. In the context of workers' compensation this review serves several purposes. It establishes a list of those mental disorders for which work causation has at least prima facie plausibility, and rules out other mental disorders without plausibility. It evaluates the general credibility of the claim that certain mental disorders cause significant impairment and work disability. Finally, the review offers some estimates of the magnitude of these phenomena, from both a societal and workplace perspective, which can be helpful in anticipating the consequences of policy decisions in this area.

The disability and social consequences of some mental disorders have only been rigorously established in the last decade, and until very recently much of this evidence was not available to boards across North America. Large population surveys have become the vital scientific instrument for establishing the general credibility of the association between psychiatric disorders, disability, and other adverse labor market consequences. An important innovation of these surveys has been the development of

23 The American Psychiatric Association (1994): supra
structured diagnostic psychiatric interviews delivered by trained interviewers, which closely reproduce the diagnoses that experienced clinicians would make on the basis of face-to-face interviews. These surveys are highly confidential, implying that respondents have no incentives to misrepresent their mental status or personal circumstances. The confidentiality represents an important advantage over clinical evaluation in the workers' compensation setting, where the self-report of injured workers has potential consequences for compensation judgements. Table 1 provides a list of DSM-IV mental disorders for which work-causation has prima facie validity. The table also includes a list of mental disorders with possible but more speculative work-causation.

**TABLE 1:**

*DSM-IV Mental Disorders which Plausibly or Possibly have Work-Related Causation.*

<table>
<thead>
<tr>
<th>Plausible Work Causation</th>
<th>Tangential or Unknown Work Causation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major Depressive Disorder</td>
<td>Specific Phobias (certain subtypes)</td>
</tr>
<tr>
<td>Mood Disorder NOS (Minor depression)</td>
<td>Panic Disorder with Agoraphobia</td>
</tr>
<tr>
<td>Acute Stress Disorder</td>
<td>Panic Disorder without Agoraphobia</td>
</tr>
<tr>
<td>Post-traumatic Stress Disorder</td>
<td>Social Phobia</td>
</tr>
<tr>
<td>Anxiety Disorder NOS (&quot;partial&quot; PTSD)</td>
<td>Pain Disorder</td>
</tr>
<tr>
<td>Adjustment Disorders</td>
<td></td>
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</tbody>
</table>

* And Relevance to Workers’ Compensation

Several exclusions from the table should be briefly justified. Chronic and debilitating mental disorders such as schizophrenia or severe bipolar disorder (manic-depression) are not listed. Persons with these mental disorders have minimal relevance to workers' compensation because the probability that they would obtain the kind of regular employment covered by workers' compensation is low. Moreover, evidence from genetics and twin studies strongly implicates genetic and biological factors in the causation of these disorders, although certain life events may trigger relapses or specific episodes. DSM-IV eating disorders (such as bulimia nervosa or anorexia nervosa) are also excluded. Certain occupations (such as modeling or ballet dancing) encourage women to adopt extremely slim body shapes, and in some cases this might be viewed clinically as a precipitating or perpetuating causal factor in these disorders. However, these occupations are not frequently covered by workers' compensation insurance. Personality disorders are also excluded. These diagnoses are based upon certain enduring dysfunctional personality characteristics that become manifest by adolescence. They are obviously not work-caused. Note, however, that the presence of a personality disorder may complicate the adjudication of work causation when other mental disorders are simultaneously present, because some evidence suggests that personality disorders may act as "pre-existing" conditions, and independently elevate the risk of developing other mental disorders such as post-traumatic stress disorder.

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The entries in the “tangential or unknown work causation” column of the table deserve brief mention. The first four entries are anxiety disorders that feature episodic symptoms that in some cases will be triggered by ordinary non-traumatic workplace stimuli. While these disorders might satisfy a "but for" legal standard of work-related causation (but for the workplace stimulus, the anxiety episode would not have occurred), they likely would not satisfy more substantial concepts of causation. An example may clarify this point. A specific phobia is a marked and persistent fear of a discernible, circumscribed object or situation, exposure to which almost always provokes immediate severe fear and anxiety. The most illustrative example in a work setting is the blood/injection/injury subtype, where afflicted persons often have severe involuntary anxiety and fainting when confronted by blood or injury. This phobia could cause disability among health workers and certain other occupations, and obviously a work-related stimulus serves as a trigger for a particular episode. From a scientific perspective, however, there is strong evidence that blood/injection/injury follows a clear familial pattern, suggesting that genetic or other biological factors play a pivotal role in causation. Similar considerations pertain to panic disorder with or without agoraphobia, and to social phobia. The frequency with which these disorders result in prolonged work disability is unknown. Pain disorder describes a chronic pain condition initiated by physical factors but perpetuated by mental factors. While this might represent a form of physical-mental injury, almost no evidence to date relates this disorder to the workplace setting.

The bolded entrants in the first column have both the highest plausibility of work-related causation and the greatest relevance to the workers’ compensation setting. The diagnosis of acute stress disorder is made when an individual suffers from the typical symptoms constituting post-traumatic stress disorder (PTSD), but the duration of the disorder does not exceed one month. Acute stress disorder is jointly considered with PTSD for the purposes of this paper. Adjustment disorders are not reviewed here. They represent controversial DSM categories because many experts believe that they do not constitute distinct categories. Moreover, the scientific evidence describing the disability consequences of these disorders is sparse.

Psychiatric disorders in general are associated with high levels of disability and significant adverse labor market outcomes. The most recent large epidemiological survey of psychiatric disorders in the United States found that employed respondents with a psychiatric disorder reported three times as many short-term work-loss days across all occupations, compared to those without a psychiatric disorder. (6 days per hundred workers per month, compared with 2 days per hundred workers per month.) Respondents also reported three times as many work cutback days compared to those without a psychiatric disorder. Respondents diagnosed with more than one psychiatric disorder simultaneously reported twenty-five times the number of work-loss days and work cutback days compared to respondents with no psychiatric disorder. The Medical Outcomes Study found that patients with depressive disorders or prolonged depressive symptoms had impaired physical, social, and role functioning comparable with or worse than the impairment associated with most chronic medical conditions. Analysis from an earlier major survey (the Epidemiological Catchment Area study) indicated that respondents with a depressive disorder experienced almost five times the rate of work-loss days attributable to the depression, compared to respondents without depression. A separate analysis from the same survey found that clini-

33 The American Psychiatric Association (1994): supra
34 The American Psychiatric Association (1994): supra
37 The American Psychiatric Association (1994): supra
38 The American Psychiatric Association (1994): supra
cally depressed respondents were four times as likely to lose a week of work compared to healthy respondents.\textsuperscript{42}

The last three studies confirmed that even those respondents with prolonged depressive symptoms (but not sufficient to qualify for the diagnosis of depressive disorder) reported significantly higher work absence rates. This finding reiterates what was suggested in Section I: relying exclusively on the presence of a DSM diagnosis would fail to identify some persons who experience significant work disability.

There is also some research that examines more carefully the duration of work disability associated with mental disorders. The first study to examine the economic impact of depression in a white-collar workforce found that depressive disorders had the longest average length of disability compared to all other conditions, including low back pain and heart disease.\textsuperscript{43} Depressive disorders were also associated with the highest recurrence of short-term disability within the twelve months of return to work, and were associated with medical costs comparable to those of heart disease. In the longitudinal Whitehall II study of English civil servants, mental disorder was the fifth most common reason for temporary work absence, but as the duration of work absence increased, mental disorders became the most common reason.\textsuperscript{44}

The long-term consequences of mental disorders for workers are not well understood,\textsuperscript{45} but an excellent recent study suggests that the deleterious effects of mental disorders probably persist beyond the time of recovery from symptoms. This study found that any past or current history of a mental disorder resulted in large decreases in permanent income, suggesting that mental disorders may have prolonged adverse effects on productivity and labor market success.\textsuperscript{46} The implications of this finding for workers’ compensation systems are tentative, but potentially huge. If a work-caused mental disorder leads to long-term impairment of productivity and earning capacity, this may have to be factored into the compensation awards in jurisdictions where such reductions in productive capacity are compensable.

Among anxiety disorders, post-traumatic stress disorder (PTSD) has been most studied in relation to the workplace. Some cases of PTSD arising from workplace trauma represent the most unequivocal examples of work-caused mental disability, from both a scientific and legal perspective. PTSD and other post-traumatic mental conditions are important to British Columbia, since almost all of the 261 mental stress claims paid in 1994 by the Board involved post-traumatic stress.\textsuperscript{47}

One criterion for the diagnosis of PTSD stipulates that a person must have experienced a traumatic event that is outside the range of usual human experience, and would be markedly distressing to almost anyone.\textsuperscript{48} This criterion has assisted boards in evaluating these claims, since unusually traumatic workplace stimuli are rare and often objectively verifiable. Some of the disabling symptoms of PTSD include intrusive psychological re-experiencing of the trauma, persistent avoidance of stimuli associated with the trauma, profound emotional detachment, and a prolonged over-aroused mental state which interferes with such functions as sleep and concentration. These symptoms may be experienced short-term (less than one month), but as many as one-third of those with PTSD have chronic symptoms and disability.\textsuperscript{49}

\begin{footnotes}
\item Ettner SL et al (1997): supra
\item Association of Workers' Compensation Boards of Canada (1996): supra
\item The American Psychiatric Association (1994): supra
\item McFarlane A (1988a): The Longitudinal Course of Post-traumatic Morbidity: The Range of Outcomes and Their Predictors. Journal of Nervous and Mental Disease 176:30-39
\end{footnotes}
Convincing survey evidence demonstrates that some traumatized persons not meeting all of the diagnostic criteria for PTSD nonetheless have chronic and disabling post-traumatic symptoms.\textsuperscript{50,51} Thus the diagnosis of PTSD implies a high probability of disability, yet some traumatized individuals with post-traumatic symptoms but no full-blown disorder are also disabled. (This finding has implications for jurisdictions that demand the presence of a diagnosable DSM-IV disorder as a pre-requisite to compensation.\textsuperscript{52})

PTSD has an extremely high prevalence among soldiers and Vietnam veterans, but several meticulous case studies of industrial disasters or high-risk occupations demonstrate that PTSD may be precipitated by workplace trauma. Weisath\textsuperscript{53} studied PTSD in workers exposed to a devastating industrial disaster. Of 34 workers who developed PTSD, only two were symptom-free after 3 years of treatment, and for 10 workers the symptoms and disability remained marked or severe. McFarlane examined the post-traumatic morbidity of a group of 469 firefighters exposed to a brushfire disaster.\textsuperscript{54} PTSD and other post-traumatic stress conditions were common. The design of this study is especially appealing because the firefighters were volunteers and not covered by any form of employment insurance. Thus the self-reports of their symptoms were not prejudiced by the possibility of monetary compensation. Another significant finding of this study was that previous similar traumatic experiences increased the probability of developing PTSD, and worsened the course of the disorder. A study of Canadian firefighters also reported high rates of post-traumatic symptoms,\textsuperscript{55} and a significant adverse cumulative effect of earlier traumas. Similar results were obtained in a study of U.S. firefighters and paramedics.\textsuperscript{56} These results have implications for workers’ compensation systems because they demonstrate, at least in the case of extreme trauma, that repeated stressful stimuli lead to higher levels of worker impairment from a mental disorder, compared to a single traumatic stimulus.

Workers’ compensation systems are also concerned with physical injuries, industrial diseases, and how these conditions might affect the risk of developing a mental disorder. This has particular relevance to physical-mental claims, but there may also be broader implications for the design of rehabilitation and treatment systems. For example, at least one thoughtful observer of workers’ compensation systems in Canada has complained that psychiatric assessment is often considered too late for workers who have failed rehabilitation, or who have not recovered from a physical injury as rapidly as expected.\textsuperscript{57} The most important research finding here is that the presence of a chronic medical condition (such as chronic pain or physical disability) increases the risk of developing a mental disorder, especially a depressive or anxiety disorder.\textsuperscript{58} The magnitude of increased risk is approximately 50% for major depressive disorder, and 35% for an anxiety disorder. This finding was originally made on a population sample from five cities in the United States, but was recently replicated in a large survey of physical and mental health conducted in Ontario.\textsuperscript{59} The Ontario study also suggested that the risk of developing a mental

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\bibitem{52} Legislature of the State of California (1993): Legislative Counsel’s Digest: Amendments to the Labor Code relating to Workers’ Compensation
\bibitem{53} Weisath L (1986): supra
\bibitem{54} McFarlane A (1988b): The Phenomenology of Post-traumatic Stress Disorders Following a Natural Disaster. Journal of Nervous and Mental Disease 176:22-29
\bibitem{57} Ison TG (1994): Compensation Systems for Injury and Disease: the Policy Choices. Toronto and Vancouver: Butterworths
\end{thebibliography}
disorder increases with the severity of the chronic medical condition. Depressive disorders that co-exist with industrial physical injuries generally exacerbate the disability associated with physical injury, and are associated with longer work absences. Mental disorders have been associated with delayed return to work among workers with various soft-tissue injuries, although these studies are based on small numbers of compensation claimants.

In summary, several robust lines of evidence indicate that psychiatric disorders cause work absenteeism and disability. The evidence implicating depressive disorders and post-traumatic conditions is particularly convincing, and these disorders are precisely the ones most commonly associated with workers' compensation claims. Depressive and anxiety disorders occur more frequently in workers with chronic medical conditions or disabilities, providing general scientific support for the credibility of physical-mental claims. PTSD studies have established that a purely mental work stimulus of sufficient severity may produce chronic disability.

How important are these problems in aggregate, when considered from a broad perspective? To answer this, it is important to consider the prevalence of these mental disorders in the whole population and in the working population. Major depression has a lifetime prevalence in males as high as 12%, and in females a lifetime prevalence of between 20 and 25%. The lifetime prevalence of anxiety disorders in the general population is even higher. Among the working population, the short-term prevalence of a psychiatric disorder (i.e. having a disorder within the 30 days preceding the diagnostic interview survey) has recently been estimated. In a recent large diagnostic survey of Americans, major depression occurred in 4.4%, any anxiety disorder occurred in 11.6%, and PTSD occurred in 2.2% of working respondents. These prevalence figures suggest that mental disorders represent significant public health problems, and have important adverse labor market consequences. Economic estimates of lost work productivity attributable to depressive disorders run into the billions of dollars in the United States and Canada. With this background, it is appropriate to now consider the pivotal issue of work-related causation.

Work-Related Causation

Several quite distinct lines of scientific evidence support the view that certain enduring characteristics of individual jobs are causal factors in mental conditions and physical illness. Substantial but not definitive evidence also suggests that general organizational aspects of work environment are causal factors in mental conditions and physical illness. The most convincing evidence supporting the first contention comes from the job strain model of Karasek and Theorell. According to the model, the most stressful jobs are characterized by the combination of high psychological workload and low decision latitude. A job with high workload is one that requires workers to work fast and hard to accomplish an

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60 Wells KB et al (1989): supra
65 Kessler RC, Frank RG (1997): supra
excessive amount of work in too short a time. A job with low decision latitude is one that does not allow workers to make decisions on their own, does not involve learning new skills or developing special skills, but does involve a lot of repetitive work. A recent comprehensive review of research on job strain and cardiovascular disease noted that almost all of the 37 studies published between 1981 and 1993 found a strong association between high levels of job strain and increased risk of cardiovascular disease, mortality, and important cardiac disease risk factors like hypertension. Estimates of the increased risk fall between 2.0 and 2.5 times the population baseline risk. (Odds ratios between 2.0 - 2.5) This mass of empirical evidence illustrates that workplace factors have important health consequences, presumably through the mechanism of work-related psychological stress. This evidence also provides a credible scientific basis for some mental-physical claims, at least as they relate to cardiac disease. The evidence relating job strain to other medical conditions is less voluminous, but consistent with the cardiac disease findings.

Job strain has also been studied as a risk factor for the development of mental disorders (and the disability induced by mental disorders). Using nationally representative samples of the male work force in Sweden and the United States, and large samples of male and female workers in Germany and Finland, mental disorders such as depression were reported to occur much more frequently in jobs with high strain. Job strain predicted short-term absence due to mental disorder in the Whitehall II study of English civil servants. This study also found that higher decision authority, higher work skill discretion, and higher levels of job social support were all associated with lower levels of mental disorder. Conflicting work demands, and the threats of job loss or position change were associated with higher levels of mental disorder.

While these studies create a certain scientific credibility to mental-mental claims arising from chronic non-traumatic workplace stress, the strength of the evidence is not conclusive. For one thing, only four studies have found these results, and all they share certain methodological limitations.

Subjective experiences of workplace stress have been associated with low work satisfaction and high rates of minor psychological symptoms, but does not establish causation nor demonstrate significant worker disability. A large literature in organizational psychology attempts to associate complex dimensions of workplace organization to individual worker health outcomes. Studies in this area have generally failed to find consistent links between serious mental morbidity and workplace organization, although they have important implications for worker morale and productivity.

Chevalier et al.'s study of employees of the French National Electricity and Gas Company is the only research which explicitly examines mental disorders in relation to work organizational factors. They reported that rates of DSM anxiety disorders and depressive disorders were elevated among those

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70 Karasek R, and Theorell T (1990): supra
76 Fletcher B (1988): The Epidemiology of Occupational Stress, in CL Cooper & R Payne (eds), Causes, Coping and Consequences of Stress at Work. Toronto and New York: John Wiley & Sons
77 Fletcher B (1988): supra
78 Fletcher B (1988): supra
who faced major changes in work content or work organization. While this study did not measure disability, from the evidence presented in Section II it would be reasonable to assume that those employees with anxiety and depressive disorders also had higher rates of work disability. A 6-year follow-up study of 15,348 Finnish employees\textsuperscript{81} found that interpersonal conflict at work predicted disability only among women who simultaneously reported marital conflict. This study suggests that there are subtle interactions between the organizational aspects of the workplace and other risk factors for mental disorder. These interactions would considerably complicate the scientific and legal task of determining causation.

In summary, scientific research from several sources strongly supports the view that certain mental aspects of the workplace may lead to medical illness, mental disorders, and other disabling mental conditions. Collectively, the studies cited above provide as strong or stronger evidence of workplace causation than exists for several industrial diseases. However, this evidence is often based on experimental measurement techniques, and does not necessarily assist boards in their evaluation of work-related causation for any individual mental disability claim. Because psychiatric assessment does not use "objective" assessment tools (such as laboratory or radiological examinations), the assessment of work causation must rely on careful assessment of family, psychological, and interpersonal factors which may also contribute to the mental condition.\textsuperscript{82,83} Research to validate these clinical assessment techniques is difficult in the absence of a "gold standard" to which comparisons can be made. Nonetheless, detailed clinical assessment techniques have been published,\textsuperscript{84,85} and consistent standards for clinical assessment of all mental claims have been adopted in many jurisdictions, including British Columbia.\textsuperscript{86}

### Policy Practices

There has been little resistance to authorizing the compensability of mental conditions arising from physical injury.\textsuperscript{87,88} Payment for this kind of injury is well established in case law and compensation statutes.\textsuperscript{89} Physical-mental claims policy thus conforms broadly to the scientific evidence presented earlier, which established that workers with physical injuries or chronic industrial diseases face an elevated risk of developing a mental disorder. Physical-mental claims are often subject to extensive evaluation by a clinical psychologist or psychiatrist. However, once the relationship between the physical injury and the mental condition has been established, these mental conditions are usually compensable.

Subject to restrictions, most boards have also decided that mental-physical claims are compensable, so long as the work-relation test can be satisfied. Across Canada, one major restriction applies: if the physical disability arises from chronic rather than acute workplace stresses, they are not compensable.\textsuperscript{90} The partially subjective nature of clinical assessment means that there are practical difficulties in establishing the authenticity of mental-physical claims. These difficulties are contentious in practice but

\textsuperscript{86} Psychology Department, the Workers' Compensation Board of British Columbia (1996): Guidelines for Medico-Legal Assessment in Psychological Practice in the WCB Setting
\textsuperscript{87} Elisburg D (1994): supra
\textsuperscript{88} Association of Workers' Compensation Boards of Canada (1996): supra
\textsuperscript{89} Elisburg D (1994): supra
\textsuperscript{90} Association of Workers' Compensation Boards of Canada (1996): supra
in principle are not barriers to compensability. These practical difficulties are also shared by several compensable physical conditions such as low-back strain and chronic pain.¹¹

Mental-mental claims (and chronic stress claims in particular) have historically evoked the widest variation in policy response. Jurisdictions have enacted five types of policies, and we will describe each briefly.⁹² The most inclusive jurisdictions have compensated mental injury even if the stimulus is gradual and not unusual compared to ordinary life or workplace employment. No Canadian province has explicitly adopted such a position (or had such policy suggested through tribunal decisions).⁹³ Historically the most important jurisdiction to adopt this policy was California in the 1980s and early 1990s. California’s experience has had widespread influence, and is considered further in Section V.

The second category of jurisdiction finds that mental injury is compensable even if the stimulus is gradual, but only if the work stress is unusual or clearly related to the illness and disability. For instance, Saskatchewan recognizes that certain occupations (such as teaching and air-traffic control) are inherently stressful, but is willing to consider (chronic) work stress claims from any occupation.⁹⁴ The consequences of this policy in terms of claim volume, costs, and board experience are not currently available. The difference between the first and second categories is often subtle, and in the United States judicial or board decisions have blurred the boundaries between the two.

The third category of jurisdiction compensates mental-mental claims, but only if the stimulus was sudden and of a traumatic nature. The policy of British Columbia fits this category, although the Board may provide survivor benefits if the worker commits suicide as a result of cumulative workplace trauma or stress.⁹⁵ In 1992 the Appeal Division of British Columbia overturned earlier Board decisions involving an ambulance driver with post-traumatic stress symptoms. The Appeal Division accepted that repeated cumulative stressful work experiences exacerbated his condition, thereby overtly including the effects of repeated traumatic stimuli in their judgement.⁹⁶ Most Canadian provinces have adopted policy positions similar to British Columbia, although court decisions in Nova Scotia and Prince Edward Island have recently held that board policy may not restrict the definition of "accident" to sudden or traumatic events (and in doing so reject any consideration of claims where the alleged work stresses were chronic) unless the legislation itself imposes the restriction.⁹⁷ A fourth category of jurisdiction has explicitly ruled never to compensate mental-mental claims (the States of Washington and West Virginia are examples), and a fifth category of jurisdiction does not have explicit policies on mental stress claims. (The Yukon Territory falls into this last group.) No Canadian province currently falls into these latter two groups.

**Policy Options**

Mental claims pose difficult policy questions for compensation boards, but they also exemplify a more fundamental challenge to traditional workers’ compensation systems. As evolving scientific evidence causally implicates workplace factors in more and more diseases and mental conditions, boards must grapple with claims for which the straightforward adjudication of work-relation is not possible.⁹⁸ The multicausal models for mental conditions are examples of a general paradigm shift in the way causation is viewed for many medical conditions. Ultimately, workers’ compensation systems cannot

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⁹² Elisburg D (1994): supra

⁹³ Association of Workers’ Compensation Boards of Canada (1996): supra

⁹⁴ Association of Workers’ Compensation Boards of Canada (1996): supra


⁹⁶ Decision No. 92-1516, the Workers’ Compensation Reporter, WCB of British Columbia

⁹⁷ Association of Workers’ Compensation Boards of Canada (1996): supra

ignore this emerging scientific consensus without violating the “historical compromise” which led to the advent of workers’ compensation systems in the first place: the avoidance of destructive and wasteful tort liability by employees against employers, in return for a no-fault insurance system which covers all medical and mental conditions arising out of and in the course of employment. Verifying the authenticity of mental disability claims and their work relation may be difficult, but jurisdictions where all mental-mental claims have been prohibited now face the possibility of tort liability. For cultural and socioeconomic reasons, Canadian workers have infrequently resorted to the courts, especially when compared to U.S. workers. However, as one Canadian legal scholar has argued, no one should assume that this passivity will be maintained. Jurisdictions in the United States refusing all mental-mental claims (by requiring, for instance that some physical injury be present) may be diverging sharply from the implications of an extensive corpus of scientific studies.

Current policies for mental-physical claims and post-traumatic stress claims are considered first, before moving on to more general issues and the dilemmas posed by chronic mental-mental (“chronic stress”) claims. The current practice of restricting mental-physical claims to medical conditions that arise from a single traumatic event may ultimately not be sustainable. Section III indicated that robust scientific evidence causally implicates long-term workplace factors (job strain) to medical disease and poor health outcomes. Although all Canadian jurisdictions (including British Columbia) restrict these claims to acute traumatic events, the weight of scientific evidence may eventually influence court decisions, which in turn will force boards to revise this policy. Relaxing these restrictions would certainly increase the volume of mental-physical claims, but beyond this the impact is difficult to predict. Boards in the United States accepting mental-physical claims on the basis of chronic workplace stresses have typically demanded evidence that the workplace was unusually stressful, or that the workplace factors are responsible for a minimum percentage threshold of causation, before granting compensation. In practice these standards substantially restrict the numbers of compensated claims.

A second specific policy implication follows from the PTSD studies. The cumulative effects of trauma are causally significant in PTSD and post-traumatic stress conditions, particularly in occupations (such as policing, firefighters, and ambulance workers) where the probability of repeated exposure to traumatic stimuli is high. The lifetime risk of PTSD has been estimated at 2.7% for women and 1.2% for men, and the lifetime risk of less severe post-traumatic stress conditions is higher. Only a small minority of these conditions are precipitated by traumatic work experiences, and an even smaller percentage of these traumatic work experiences involve repeated trauma. Post-traumatic conditions already comprise the bulk of accepted mental-mental claims in British Columbia, and there is no reason to expect a substantial increase in claim volume by allowing for repeated trauma so long as the policy states that the traumatic events must be unusual.

The most difficult policy choices fall under the subgroup of mental-mental disorders known as chronic stress claims. Most Canadian boards have ruled that chronic stress claims are not compensable. These restrictions demonstrate how legal standards for proof of causation may diverge from scientific standards. Current policy restrictions cannot be justified by the scientific evidence reviewed earlier, but may be justifiable when considering the absence of valid and reliable clinical standards by which to adjudicate individual claims. This issue is considered further below.

101 Association of Workers' Compensation Boards of Canada (1996): supra
102 Elisburg D (1994): supra
104 Association of Workers' Compensation Boards of Canada (1996): supra
Another frequently cited justification for restricting chronic stress claims is that the clinical adjudication of chronic stress will inevitably leave uncertainty, which creates incentives for fraudulent claims.\(^{106}\) While this concern is almost universal, no statistical evidence has been published indicating the frequency of such claims.

A related concern states that dramatic cost escalation will occur if chronic stress claims are found compensable.\(^{107}\) There are compelling historical precedents to suggest that cost escalation could occur. Six States in the mid-1980s experienced a dramatic rise in chronic stress claims, after court decisions created liberal definitions of what could be considered compensable stress. In California, psychiatric disability was recognized in case law dating back to the first few years following the enactment of the State’s workers’ compensation statute. The California State Supreme Court ruled in 1986 that workplace causation need be only “more than infinitesimal or inconsequential” for an mental injury to be entirely the employer’s responsibility. This judgment fuelled an extraordinary growth in mental disability claims – particularly in the “mental-mental” category.\(^{108,109}\) By 1990 mental stress became the most common cumulative injury claim in California. These claims were more expensive than other claims, and 98% of them were litigated, adding significantly to the costs for employers and workers.\(^{110}\) Before successive legislative restrictions were invoked in the 1990s, California boards compensated claims that in retrospect appear extreme. As examples, numerous claims were paid where the stressful stimuli included dismissal or lay-off, or even being criticized by bosses at work.\(^{111}\) The volume of chronic stress claims grew by 700% between the years 1985 and 1989.

The experience of California in the late 1980s strongly fortified the perception that mental stress claims were expanding “out of control” in all jurisdictions, and it has influenced subsequent policy deliberations in Canadian provinces. Care should be exercised in extrapolating California's experience to other places, however. California workers faced compelling incentives to bring forward mental stress claims; winning compensation was often the only method to retain access to medical services. The excessively high rates of litigation also furnished strong financial incentives for lawyers and mental health providers to encourage such claims. The incentives for workers, lawyers, and mental health providers in British Columbia are clearly quite different.

None of the evidence presented earlier suggests that something inherent in the nature of mental conditions favors treating them differently than physical conditions. Most jurisdictions in Canada (with Saskatchewan and in special circumstances Quebec excepted) have deemed that the mental stimulus causing the mental disability be singular and acute rather than repeated over time, and yet we have not restricted physical injuries such as back pain to only those injuries which occurred from a single physical stimulus.\(^{112}\)

Why then treat mental conditions differently? One policy option would process mental-mental claims no differently than physical injury claims. For physical impairment scenarios, the claimant must show that the employment caused the impairment in a “but for” sense; that is, but for the employment, the impairment would not have occurred. In the case where the claimant has a pre-existing or pre-disposing condition, the general rule is that the employer “takes the employee as she find her”, and the worker still receives compensation. To apply the same principles to mental conditions might well result in blanket coverage of all mental conditions, work-related or not.\(^{113}\) The evidence suggests that

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\(^{106}\) Pryor ES (1997): supra

\(^{107}\) Elisburg D (1994): supra


\(^{110}\) California Workers' Compensation Institute (1995): supra


\(^{112}\) Pryor ES (1997): supra
employment to some degree probably does aggravate many mental impairments in ways the employer cannot prevent, or cannot be expected to prevent given the current limitations in knowledge. When employment has not contributed to mental impairment, policymakers have legitimate concerns that the uncertainties regarding cause and the degree of impairments could lead to many false positives if a trivial causal threshold was established.

Why would the high positive rate under the minimal causation rule be undesirable? This approach would place upon employers the costs of some impairments that they could not act in good faith to prevent. This would contradict a compelling economic rationale for workers’ compensation, which states that optimal incentives for employers to create a healthy work environment occur when employers bear the costs of preventable work-related injury. If, as seems likely, some mental impairments are not preventable by anyone, then the minimal work causation rule would in effect become an employer mandate to provide disability insurance to all mental impairments suffered by workers. Such a mandate runs contrary to the historical aim of workers’ compensation. Workers’ compensation systems were never intended to insure losses that were not primarily attributable to the workplace. Creating such a mandate would also immediately raise equity issues with other classes of disability: why fund a mandatory disability system for mental disabilities, and not for other types?

Another policy option for chronic stress claims is to fortify the minimum causal test by requiring that employment cause some specified degree of the resulting impairment, such as a “substantial” degree. (Recently amended California legislation now requires that the workplace be responsible for at least 51% of the impairment.) California has added further restrictions, by eliminating mental claims based solely on lay-offs or work dismissal. Due to limitations in measurement, asking clinicians to specify a percentage of causation would not produce valid and reliable numerical estimates. However, it is far more reasonable to expect that clinicians can offer reasoned opinions about whether the workplace made a “substantial” contribution to the mental condition. Lamentably, there are no studies that validate the clinical assessment methods currently used to evaluate claims. In spite of this, the new standards in California have been accepted widely by employers, and psychiatric disabilities no longer ranks as one of their most pressing concerns. Whether the California policy captures most chronic stress claimants with legitimate claims is a different, and as yet unanswered, question.

Several other practical policy issues should be mentioned in passing. California’s most recent chronic stress legislation now requires that claimants have a mental disorder defined by the DSM system as a prerequisite to compensability. Sections II and III suggest that this approach may be too restrictive. Having a DSM-IV diagnosis does not necessarily imply disability. More significantly, some workers have disabling mental conditions arising from work which do not fit the DSM diagnoses. The DSM system should not be discarded entirely for workers’ compensation purposes -- DSM-IV diagnoses often assist treatment decisions, and the presence of certain diagnoses (such as depressive disorders or PTSD) increases the expectation that the worker is truly disabled.

Another practical issue involves the need for extensive psychological or psychiatric evaluation. Meeting the standards established by the British Columbia clinical guidelines for psychological assessment in the WCB setting necessarily involves an extensive inquiry into the claimant’s personal background. Without such inquiries mental health clinicians cannot generally achieve a reasoned opinion regarding work-related causation, because they are unable to rule out personal, familial, or other factors which may have contributed to the mental condition. The personal and intrusive nature of psychological assessment may be resisted by workers, and may become part of the antagonism between workers’

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113 Pryor ES (1997): supra
114 Pryor ES (1997): supra
117 Pryor ES (1997): supra
118 Psychology Department, the Workers’ Compensation Board of British Columbia (1996): supra
groups and employers. In Ontario unions have opposed such assessments in chronic stress claims.\footnote{Stritch, A (1995): supra} The argument for retaining these assessments, however, is strong. If workers making compensated mental claims could refuse such assessments, the ability of clinicians to achieve reasoned opinions on work causation would be severely curtailed.

Finally, the role of prevention should be briefly mentioned. It is beyond the scope of this paper to review the program evaluations of interventions to reduce workplace stress,\footnote{Elkin AJ, Rosch PJ (1990). Promoting Mental Health at the Workplace: the Prevention Side of Stress Management. Occupational Medicine State of the Art Review 5:739-754} although both Kerr et al and Wells et al (this volume) touch upon this issue. However, in the context of workers' compensation one observation is particularly relevant: no studies have convincingly demonstrated that workplace interventions significantly reduce the kind of mental disability which would likely be claimed under workers' compensation.\footnote{Briner RB (1997): Improving Stress Assessment: Toward an Evidence-Based Approach to Organizational Stress Interventions. Journal of Psychosomatic Research 43: 61-71} This research deficit has been noted,\footnote{Hotopf M, Wessely S (1997): Stress in the Workplace: Unfinished Business (editorial). Journal of Psychosomatic Research 43:1-6} and intervention trials in this area have started.

**Conclusion**

This paper illustrates both the promise and limitations of current scientific research in the context of workers' compensation. Scientific evidence provides a rational basis for asserting that physical-mental and mental-physical conditions are associated with significant impairment, and that (in some instances) they can legitimately be considered as caused by work-related factors. The evidence provides similar support for mental-mental claims involving PTSD. Unfortunately, scientific research has not validated clinical assessment techniques to the point where they provide a sound basis for establishing legal standards of proof. This clinical deficit is most apparent in evaluation of chronic mental stress claims, particularly where the mental stress is non-traumatic. Even with these deficits, boards across North America would benefit from better evaluation of the outcomes of various mental claims policies. Unfortunately, with the possible exception of California, few jurisdictions are pursuing such evaluations.

The difficulties posed by mental conditions and mental-mental claims will prompt boards across North America to periodically revisit the issues raised by this paper. Compared to twenty years ago, our comprehension of mental disorders and the adverse labor market consequences of mental disorders has advanced considerably. In the areas of physical-mental and mental-physical claims, this understanding yields useful policy implications for British Columbia. Unfortunately, state-of-the-art knowledge regarding chronic stress claims offers no convenient policy prescription. Credible scientific evidence suggests that disabling mental conditions may arise from workplace factors, but the practical uncertainties of clinical adjudication for individual claims imply that restrictions on compensability of chronic stress claims may well persist. These policies will require periodic scrutiny so long as our knowledge continues to evolve, which should be for a very long time.

\footnote{Stritch, A (1995): supra}