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# Healthcare Papers

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#### Mental Health and the Workplace: Towards a Research Agenda in Canada

During the Next Decade, the World Health Organization (WHO 1996) projects that among high-income countries such as Canada, depression will surpass ischemic heart disease to emerge as the leading cause of disability. The nature and magnitude of this problem is introduced well in Dewa, Lesage, Goering and Caveen paper. Annually 12% of Canadians between the ages of 15 and 64 years suffer from a mental disorder or substance dependence (Statistics Canada 2003). Results from Ontario estimate that about 8% of the working population has a diagnosable mental disorder (Dewa and Lin 2000). Preliminary findings also indicate differences in the prevalence of mental disorders among workers with regard to occupation, age, sex, physical condition, work environment and work-related stress.

As a result of these trends, mental and emotional health problems promise to take a heavy toll on the workplace in the form of work absences and decreased productivity (e.g., Perez and Wilkerson 1998; Dewa and Lin 2000). The effect of mental illness on the workplace has been measured as presenteeism (attending work with symptoms, and therefore being less productive at work), absenteeism and disability days. For example, in 2001 mental health problems were identified as one of the principal causes of workplace absenteeism (Watson Wyatt Worldwide 2000). The presence of any of these indicators has been used to indicate decreased productivity, with the largest burden attributed to presenteeism days. It has been estimated that these work-related productivity losses cost Canada \$4.5 billion annually (Stephens and Joubert 2001).

Mental illness is also associated with short-term and long-term disability, which in turn is often related to employer-sponsored insurance coverage. Mental illness accounts for 30% of disability claims, translating into \$15 to \$33 billion annually in Canada (Sroujian 2003). Variations in employer-sponsored insurance coverage for supplemental health benefits and fringe benefits can result in differential access to mental health services that contributes to the disparity between the need for and use of mental health services. Indeed, approximately two-thirds of Canadians with a

mental disorder or substance dependence fail to contact a mental health professional (Statistics Canada 2003).

#### The Need for an Evidence Base

In response to the looming crisis, globally there has been a two- to three-fold increase in research in this area over the past decade with Canada leading the way. While this is encouraging news, it is also important to note that less than 1% of health-related research worldwide is devoted to this area. A bibliometric analysis of research in Canada indicates that researchers were spread across the country, with rarely more than three or four researchers in any one setting; key nodes were identified at McMaster University, Laval University and York University, and significant activities at the universities of Toronto, Montreal, British Columbia and Western Ontario and their affiliated research centres. Research has been particularly concentrated in three of the four dimensions of health research defined by the Canadian Institutes of Health Research (CIHR) – health of populations and determinants, clinical research, health services and policy. Research on the biological front has been limited.

Given the potentially staggering social and economic costs we face, it is imperative that we focus our efforts on decreasing the impact through a multi-pronged, evidence-based approach. This can only be achieved by increasing our knowledge with regard to six research streams:

- the nature and magnitude of the problem
- workplace prevention and promotion strategies
- diagnostic and treatment issues
- disability management and return to work
- stigma and work
- integrating health research and the Canadian workplace

#### A Canadian Response to the Looming Crisis

In answer, the Institute of Population and Public Health (IPPH) and the Institute of Neurosciences, Mental Health and Addiction (INMHA) of the Canadian Institutes of Health Research mandated a working group to develop a research agenda consistent with CIHR's goals of fostering research excellence and undertaking research that addresses major health issues and has a positive impact on Canada's economy and society.

Early on, the working group recognized that to be successful, all stakeholders, including employers, must be involved in the development and implementation of future research initiatives. This early buy-in would be essential to developing "inworkplace" strategies to reduce productivity losses and disability costs related to mental illness. In essence, to have direct application in the workplace, it is crucial that the research agenda be engaging for all stakeholders as well as stimulating and attractive for new researchers.

Inspired by the paradigm shift heralded by the Canadian Health Services Research Foundation that suggests expertise and innovation do not necessarily flow in one direction, i.e., from researchers to stakeholders, but also the other way around (Lomas et al. 2003), the working group convened an invited workshop on April 28 and 29, 2004, in Toronto. The workshop was structured to encourage participants to recommend research priorities in six streams of workplace mental health research. Throughout the priority-setting process, participants were advised that identified priorities should be stimulating to researchers and have a high probability of buy-in from all concerned stakeholders. Emphasis was also placed on identifying research priority areas in which significant progress could be easily achieved.

A broad range of stakeholder interests were represented by the over 100 people in attendance. Each attendee was specifically invited because of his or her demonstrated expertise or direct professional interest in workplace mental health issues. About 40% of the participants were researchers; the remainder were representatives of employers, unions, insurers, health providers' professional organizations, national and provincial grant agencies and planners, community organizations, consumers groups and politicians. All proved to be "good listeners" of one another's perspectives (Lomas et al. 2003) with regard to reviewing the state of knowledge, the gaps in knowledge, the research priorities and how to implement them.

This issue of HealthcarePapers contains six commissioned papers together with the responses written by Canadian researchers and experts that served as the background to the workshop. It also includes a commissioned bibliometric analysis to establish the relative position of Canada in this area of research and to delineate the strongest nodes of research activities in provinces, universities and research centres across Canada. The next part of this editorial describes briefly the background, workshop format, a preliminary statement of research priorities and the course of action envisaged to implement these strategies, taking into account the suggestions provided by researchers and stakeholders at the workshop.

#### **Identifying Research Priorities**

To facilitate a constructive dialogue at the two-day workshop and to guide the participants' deliberations, several of Canada's top researchers in the field of workplace mental health were engaged to prepare six academic papers, all of which were forwarded to the workshop participants in advance. The papers covered the six streams of research that were identified as critical to the advancement of the field. Each paper examined the state of knowledge in a particular stream of research, identified current gaps in ongoing research activities and recommended potential research priorities for the next 10 years. Several presentations by leading stakeholders set the context for a series of break-out sessions that dealt with each individual paper.

In each break-out session, the participants were given the task of debating the papers' identified priorities and determining which of these priorities should be pursued in the short term. The potential for buy-in from multiple stakeholders was a key determinant behind the selection of each priority. Participants were also charged

with articulating barriers and risks to pursuing each identified priority. In each session, the context for debate was set by a brief presentation by authors and an assessment of the authors' work by pre-selected expert "respondents." On day 2 of the workshop, a validation exercise was conducted, during which a professional facilitator reviewed the priorities identified and gave all participants an opportunity to verify that those priorities reflected discussion of day 1.

There was significant overlap in the priorities identified in each session. Therefore, subsequent to the validation exercise, members of the workshop steering committee reviewed all of the identified priorities and condensed them into a smaller set of overarching and specific priorities that covered the priorities identified in all sessions. These priorities are listed below.

#### Preliminary Statement of Research Priorities Over-arching Priorities

There is a need to enable applied research on prevention and promotion, treatment, disability management and strategies to address stigma and discrimination and foster the exchange of relevant knowledge by:

- facilitating coalition building among all stakeholder groups;
- making "the business case" for pursuing specific research initiatives, especially through economic studies;
- developing data sets, based on surveys of both the labour force and employers, that include longitudinal and cross-sectional data;
- facilitating access to, and ethical linkage of, administrative data held by employers, payers and providers;
- developing and evaluating measurement tools for prevention and promotion, treatment, disability management and interventions to address stigma and discrimination that can be used to collect information on workers at the organizational and societal levels;
- fostering the development and evaluation of intervention models for individuals and organizations that address prevention, promotion, treatment, disability management and recovery, and stigma and discrimination initiatives;
- fostering the recognition and evaluation of current Canadian best practices with respect to promotion and prevention, treatment, disability management and recovery, and stigma and discrimination initiatives; and
- ensuring that research takes issues into account that are related to specific segments of the population, e.g., by gender, ethnicity, culture, socio-economic status, employment status and time of arrival in Canada.

#### **Specific Research Priorities**

Workplace Prevention and Promotion

 Acquire a further understanding of, and monitor the effects on mental health of, prominent trends in organizational practices. • Emphasize target populations through studies that measure changes over time in mental health outcomes; these studies should consider broader societal contexts.

#### Diagnostic and Treatment Issues

 Pursue studies to clarify diagnostic entities, sub-diagnostic threshold conditions, stress and burn-out, personality disorders and associated physical and mental comorbidities. Include in these studies an understanding of the bio-psycho-social risk and protective factors.

#### Disability Management and Return to Work

 Study the impact of government and corporate policies on short-term and longterm individual outcomes and workplace outcomes.

#### Stigma and Work

- Develop conceptual models of the causes of or results of stigmatization and discrimination, as well as what creates positive attitudes regarding individuals with mental illness in the workplace.
- Assess and monitor the scope of stigma and discrimination, their determinants and their consequences in the Canadian work setting through combinations of direct work site studies, qualitative studies and population studies.

#### Integrating Health Research and the Canadian Workplace

 Conduct research on how to move knowledge into action, including specific research on the knowledge exchange process with respect to mental health in the workplace.

#### **An Implementation Strategy**

The workshop included a full-plenary exercise on developing a theory of action, during which participants were directed to make recommendations on implementing the priorities identified over the course of the workshop. This exercise took place immediately after the identified priorities were validated by the full plenary.

Reflected in participants' remarks was a consensus that the workshop constituted a good start for implementing a long-term research agenda. The partnerships and dialogue begun during the workshop were considered essential to building momentum for implementation of the identified priorities. Given the broad range of stakeholders present, this consensus bodes well for future implementation.

The following list of five recommendations expresses the participants' consensus with respect to potential momentum building and implementation strategies. A full list of recommendations is available with the full report of the workshop on CIHR websites of the two sponsoring CIHR institutes of Population and Public Health and of Neurosciences, Mental Health and Addiction.

• Establish a coalition of partners to build the case for increased and sustained funding for partnership-based research in workplace mental health.

- Establish a foundation or consortium to fund research that will investigate priority areas.
- Convene a regular national conference to foster partnerships and to ensure that
  the identified priorities are pursued and supported by all stakeholders on an
  ongoing basis.
- Identify and pursue short-term objectives that have a high probability of success. Quick wins are essential. These will build momentum among stakeholders and ensure that priorities remain on the radar screen.
- Establish a permanent steering committee to foster knowledge transfer and to ensure that the identified priorities are translated into action.
- Engage more public champions.

New partnerships call for creativity; CIHR's 10-year research agenda must adopt organizational models to ensure a long-term presence in the field. In a country the size of Canada, with its wealth of research institutions and potential partners, this will require a range of funding sources. At the same time, demonstrated outcomes must be achieved quickly to build momentum and keep partners focused, while supporting early experiments with such models.

A variety of partnership models have been implemented in other research areas. For example, CIHR has demonstrated the effectiveness of supporting national centres and networks. This model could be adopted for research in workplace mental health.

At the provincial level, centres, networks and granting agencies, including Ontario's Institute for Work and Health, Quebec's Health-Research Fund sponsored networks and the independent Research Institute Robert-Sauvé, funded by the compensation board, are already involved in health and the workplace.

Another model is the CIHR's Community Alliances for Health Research. This model, which has been used successfully in suicide research, for example, is based on a partnership with community and non-profit organizations. It has a significant long-term funding commitment of \$300,000 to \$500,000 per year for five years. A similar model could be developed for a "Workplace Alliance for Health Research" around mental health and the workplace. The partners could be business, union, insurers, employees' assistance program firms and workers compensation boards.

Among early partnership models of note is the Business and Economic Roundtable on Addiction and Mental Health, which was founded two years ago by Bill Wilkerson. Its senior chairman is businessman and former federal finance minister Michael Wilson (see his workshop speech in the workshop report). The Roundtable has been active, first, in informing; second, in developing guidelines for businesses; and now in funding some initial research projects. This group experience could serve as a starting point by extending its partnership to include researchers and provincial or federal planning and research funding agencies like CIHR.

In the coming months, thanks to the momentum created by the workshop and to the initiative of the two sponsoring CIHR institutes, there certainly will be activity, involving the following:

- The creation of a new working group to develop new funding opportunities within CIHR but also in collaboration with other funding agencies, thereby ensuring close interactions between CIHR, researchers, workplace stakeholders and other funding organizations.
- The pursuit of the workshop newsletter informing all participants and other interested parties of the momentum building.
- The creation of a steering committee composed of researchers and workplace stakeholders to identify and link researchers and stakeholders in early opportunities and support long-term ones.
- The overseeing of the first national conference on mental health and the workplace.
- Initiatives, sponsored by the Institute of Neuroscience Mental Health and Addiction, on early life events and first episodes of mental illness in December 2004 the calls for proposal can include pilots on prevention, early treatment interventions or positive discrimination in the workplace.
- The exploration of the potential of CIHR's ongoing initiative in commercialization as a source of funding. Here, we are not referring to biotechnologies, but rather to other products of commercial value, including tools or models of prevention, treatment and disability management interventions that are in line with identified research priorities. These can be developed by researchers or partners as employee assistance programs. The demonstration of efficacy, efficiency and feasibility, in partnership with workplace stakeholders and funding, would benefit from CIHR researchers expertise and reputation for excellence.
- Use of the new CIHR initiatives in knowledge transfer to support the current mental health and workplace agenda.

Fortunately, we started yesterday. We started small, but we are thinking big with a view towards the long haul; this colossal public health and societal problem requires no less.

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# HealthcarePapers

**DISCUSSION PAPER** 

# NATURE AND PREVALENCE OF MENTAL ILLNESS IN THE WORKPLACE



#### **DISCUSSION PAPER**

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#### **ABSTRACT**

This discussion paper explores the state of knowledge about the prevalence of mental illness and its effect on the working population. Major trends in the literature are also commented on, and significant gaps in knowledge are identified.

Annually, 12% of Canadians from 15 to 64 years suffer from a mental disorder or substance dependence. Few studies have examined the prevalence of mental disorders among Canadian workers. Results from Ontario estimate that monthly, about 8% of the working population has a diagnosable mental disorder. Preliminary findings also indicate differences in the prevalence of mental disorders among workers with regard to occupation, age, sex, physical disorders, work environment and work-related stress.

Studies indicate that mental and emotional health problems are associated with staggering social and economic costs, which create a heavy burden on the workplace. About one-third of society's depression-related productivity losses can be attributed to work disruptions. The impact of mental illness on the workplace has been examined in terms of its effect on presenteeism, absenteeism and disability days. The presence of any of these has been used to indicate decreased productivity, the largest burden arising from presenteeism. In total, Canada annually loses about \$4.5 billion from this decreased productivity. Mental illness is also associated with short-term and long-term disability, which in turn is often related to insurance coverage. Mental illness related disability claims have doubled and mental illness accounts for 30% of disability claims, at a cost of \$15 to \$33 billion annually.

The needs of the working population and employers must be addressed. We must be aware of patterns of mental disorder among occupational groups and industry sectors. In addition, we must understand how the disability benefit structure impacts the prevalence as well as patterns of disability related to mental illness. Effective policies and programs must be based on solid evidence.

#### Introduction

Mental and behavioural disorders account for approximately 12% of all diseases and injuries worldwide (WHO 2001). For countries such as Canada, the percentage of all diseases and injuries attributable to mental disorders is closer to 25%, with as much as 13% attributable to depression alone (Murray and Lopez 1997). In addition, it is expected that by the year 2020, depression will emerge as one of leading causes of disability globally, second only to ischaemic heart disease (WHO 1996).

Studies are beginning to show that mental and emotional health problems

have staggering social and economic costs that place an especially heavy burden on the workplace (Dewa and Lin 2000; Kessler and Frank 1997; Lim et al. 2000; Perez and Wilkerson 1998). For example, Perez and Wilkerson (1998) found that 7% of all Canadian workers had absentee days that they attributed to mental and emotional problems. Compared to the rest of the working population, those with a psychiatric disorder will have a greater number of days during which they are either unproductive or unable to function at full capacity (Dewa and Lin 2000; Kessler and Frank 1997; Lim et al. 2000).

Moreover, approximately 50% of those who miss work because of mental or emotional problems will take either 13 or more days off or will never return to their jobs (Perez and Wilkerson 1998).

About one-third of society's depression-related productivity losses can be attributed to these work disruptions (Greenberg et al. 1993). In 2001, workplace absenteeism due to mental health problems accounted for about 7.1% of the total payroll and was one of the principle causes of absences (Watson Wyatt Worldwide 2000). A recent estimate attributed \$4.5 billion in work-related productivity losses to depression (Stephens and Joubert 2001). Figures from the United Kingdom estimate that stress-related sickness absences result in an annual \$4 billion in workplace losses (Mental Health Organization 2003).

Although the effects of mental illness on the labour force are of critical concern, little is known about the working population disabled by mental disorders (Archambault et al. 2003). Though there have been population-based studies that characterize the general population suffering from psychiatric disorders, the extent to which the general population is representa-

tive of the working population is still not clear (Berndt et al. 2000). The disorders may serve as a screen, keeping the most severely ill from participating in the workforce. Thus, the labour force population that is affected by mental disorders may have different characteristics than the population as a whole. The lack of this basic type of information makes it virtually impossible to develop policies or to plan workplace programs and interventions either to help prevent disabilities resulting from mental disorders or to promote return to work.

The purpose of this paper is to explore the state of knowledge about the prevalence and impact of mental illness on the working population. We will also comment on major trends in the literature as well as identify the significant gaps in knowledge.

#### **Defining the Working Population**

Statistics Canada (2002) defines the labour force as consisting of people who are 15 years or over and either are employed or are actively seeking work. Approximately 66.9% of Canadians (16 million people) fall under this definition. About 73.3% of men and 60.7% of women 15 years or older are in the labour force (see Table 1).

Table 1. Labour Market Participation by Sex and Age: Canada, 20
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	T	otal		Men	Won	nen
Total	% 66.9%	n (in 1,000s) 16,689.4	% 73.3%	n (in 1,000s) 8,989.8	% 60.7%	n (in 1,000s) 7,699.6
15-19 Years	54.4	1,113.7	54.2	568.5	54.7	545.1
20-24 Years	78.0	1,627.5	81.1	859.7	74.9	767.9
25-34 Years	86.2	3,713.8	92.1	1,994.3	80.3	1,719.4
35-44 Years	87.4	4,543.9	92.8	2,414.4	82.0	2,129.5
45-54 Years	83.8	3,807.6	89.6	2,025.5	78.0	1,782.2
55-64 Years	53.7	1,634.9	64.0	956.7	43.8	678.1
65+ Years	6.7	248.2	10.5	170.8	3.7	77.4

Source: Statistics Canada. 2003. *Labour Force Characteristics by Age and Sex*. Accessed October 23, 2003. <a href="http://www.statcan.ca/English/Pgdb/labor20a.htm">http://www.statcan.ca/English/Pgdb/labor20a.htm</a>.

Table 2. Prevalence of Selected Mental Disorders by Sex: Population 15-64 Years, Canada, Excluding Territories, 2002

	Total Popu	lation, 15-64 yr	s Men,	15-64 yrs	Women	,15-64 yrs
	Number	Proportion	Number	Proportion	Number	Proportion
Affective disorders		-		-		-
Major depressive disorder	1,053,996	5.0%	388,047	3.6%	665,949	6.3%
Mania disorder	192,644	0.9%	—a	_	103,754	1.0%
Anxiety disorders						
Social phobia	714,304	3.4%	300,297	2.8%	414,007	3.9%
Agoraphobia	166,579	0.8%	—a	_	129,045	1.2%
Panic	388,473	1.8%	—а	_	—а	_
Substance dependence						
Alcohol dependence	638,497	3.0%	470,275	4.4%	168,222	1.6%
Illicit drug dependence	170,793	0.8%	122,008	1.1%	—а	_
Any of the above	2,495,108	11.7%	1,147,240	10.8%	1,347,868	12.7%

Source: Statistics Canada. 2003. Canadian Community Health Survey: Mental Health and Well-Being. Accessed September 8, 2003. <a href="http://www.statcan.ca/Daily/English/030903/d030903a.htm">http://www.statcan.ca/Daily/English/030903/d030903a.htm</a>. a Estimates not reported owing to large coefficient of variation.

#### Prevalence of Mental Illness Mental Illness in the General Population

According to the Canadian Community Health Survey (CCHS) 1.2, at least 11.7% of the population between the ages of 15 and 64 years suffer from a mental disorder or substance dependence in any one year (see Table 2). In addition, more women than men have at least one disorder (12.7% compared to 10.8%). Community surveys consistently find that the major categories of disorders from which people suffer are anxiety (i.e., generalized anxiety disorder,

panic disorder), affective disorder (i.e., a major depressive episode) and substance use disorder (Offord et al. 1996).

Most of the work on mental illness in the general population focuses on depression. Between 4% to 6% of Canadians experience a major depressive episode during any one year (Murphy et al. 2000; Newman and Bland 1998; Offord et al. 1996; Statistics Canada 2003). In comparison, in the Canadian population between 15 and 64 years of age, the prevalence of other common chronic disorders are: diabetes at 2.3%, high blood pressure

Table 3. Prevalence of Selected Chronic Disorders, by Age: Canada 2001

	Depressi	on	High Blo Pressur		Diabete	es	Arthrit Rheumat		Asthma	a [	Disabling	Pain
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total	976,015	4.8	1,434,376	7.1	449,303	2.3	2,218,048	10.9	1,663,276	8.2	594,441	2.9
15-19 yrs	90,360	4.2	0		0		0		265,544	12.4	25,522	1.2
20-24 yrs	138,341	7.2	0		0		38,333	2.0	235,057	12.2	0	
25-34 yrs	238,321	5.8	73,558	1.8	40,224	1.0	156,393	3.8	381,942	9.3	91,400	2.2
35-44 yrs	254,464	4.7	267,752	4.9	85,944	1.6	459,390	8.5	343,880	6.3	179,772	3.3
45-54 yrs	166,861	4.2	441,568	11.1	133,925	4.5	686,619	17.2	263,474	6.6	157,893	4.0
55-64 yrs	87,668	3.3	651,498	24.2	189,210	7.0	877,313	32.6	173,379	6.4	594,441	5.2

Source: Statistics Canada. 2001. Health Indicators, April 2001. Catalogue no. 82-221-XIE. Ottawa: Statistics Canada.

at 7.1%, arthritis and rheumatism at 10.9%, asthma at 8.2% and disabling pain at 2.9% (see Table 3) (Statistics Canada 2001). It has also been observed that there is an association between these chronic disorders and depression (Patten 1999; Wells et al. 1989). This offers insight into why depression is associated with disability; in fact, the World Health Organization (2001) has ranked depressive disorders as the leading cause of disability days in high income countries (see Figure 1).

#### Mental Illness in the Labour Force

Unfortunately, the prevalence of mental disorders among the general working population in Canada has received relatively little attention. On the basis of results from Ontario (the country's most populous province, which is home to 37% of the population), during a 30-day period, about 8.4% of the working population experience either an anxiety, affective or substance-related disorder or a combination

of two of the three with or without a physical disorder (Dewa and Lin 2000) (see Table 4). Of the five categories of disorders, anxiety disorder and co-morbid physical and mental disorders have the highest prevalence. But, of the five, affective disorders are associated with the greatest disability (Goering et al. 1996).

In addition, as in the general population, there are differences in the prevalence of mental illness by sex and age (Marcotte et al. 1999; Stewart et al. 2003). It has been observed that among the employed population, major depressive disorders are twice as prevalent among women as among men (10.2% compared to 5.9%) (Marcotte et al. 1999). In addition, these disorders are more prevalent among middle-aged workers (i.e., 40-45 years) than among either younger (20-24 years) or older workers (50+ years) (Marcotte et al. 1999).

Preliminary findings also point to differences in the prevalence of the different types of mental disorders among

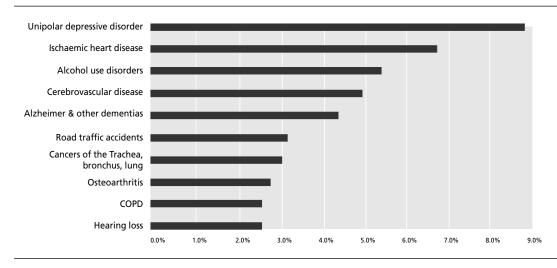


Figure 1. Leading Causes of Disability Adjusted Life Years, High Income Countries, 2000

Source: World Health Organization. 2001. The World Health Report 2001 Mental Health: New Understanding, New Hope. Geneva: World Health Organization.

Note: High income countries, which are defined as in the *World Health Report 1999*, are the following: Andorra, Australia, Austria, Bahamas, Belgium, Brunei Darussalam, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Kuwait, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Portugal, San Marino, Qatar, Republic of Korea, Singapore, Slovenia, Spain, Sweden, Switzerland, United Arab Emirates, United Kingdom and United States of America.

Table 4. 30-Day Prevalence of Selected Mental Disorders and Physical Status by Occupational Groups: Working Population 15-54 years, Ontario 1990

	Anxiety Disorder Only	Affective Disorder Only	Substance Abuse Disorder Only	Co-morbid Mental Disorders Only	Physical Disorder Only	Both Physical and Mental Disorders
Occupational Grouping	%	%	%	%	%	%
TOTAL	2.6	0.7	1.2	0.8	25.5	3.1
Professional	4.3	0.0	0.1	1.0	25.1	1.2
High-level managemen	t 5.7	0.3	0.4	0.5	16.8	1.8
Semi-professional	1.2	2.0	0.2	0.0	22.9	3.5
Technician	0.5	0.0	2.0	0.9	36.0	0.9
Middle management	1.4	1.1	1.5	1.8	24.6	1.2
Supervisors	1.6	0.0	1.7	0.4	18.8	2.7
Foremen	8.0	0.0	2.7	0.0	35.2	4.5
Skilled clerical	2.6	1.5	2.1	1.3	19.8	7.3
Skilled crafts and trade	<b>s</b> 3.6	0.8	1.1	0.5	29.1	2.5
Farmers	1.5	0.0	3.3	0.0	28.0	3.5
Semi-skilled clerical	3.4	0.2	0.5	0.6	28.7	2.6
Semi-skilled manual	1.5	0.2	1.5	0.0	27.0	2.8
Unskilled clerical	3.3	0.0	0.2	2.6	22.9	3.3
Unskilled manual	1.9	1.9	3.4	0.3	27.7	3.9

Source: Dewa, C.S. and E. Lin. 2000. "Chronic Physical Illness, Psychiatric Disorder and Disability in the Workplace." Social Science and Medicine 51: 41-50.

occupational groups (see Table 4). For example, the Ontario Health Survey Mental Health Supplement found higher rates of co-morbid mental disorders among professionals, middle management and unskilled clerical workers (Dewa and Lin 2000). There have also been reports in the literature of a higher prevalence of mental disorders among particular groups, including night security guards and secretaries (Alfredsson et al. 1991; Garrison and Eaton 1992).

#### **Related Factors**

The differences in the prevalence of mental illnesses among the occupational groups raise the issue of the links between the work environment, stress and mental disorders. There is growing awareness of the prevalence of work-related stress. In a population-based sample of Canadians,

30.8% said that most days at work were either quite a bit or extremely stressful. This feeling was reported by a higher proportion of women than men – 36.7% versus 29.0% (see Table 5) (Statistics Canada 2003).

Work-related stress is influenced by the work environment and the nature of the occupation as well as the sex of the worker (Bourbonnais et al. 1998; Bourbonnais et al. 2001; Karasek 1979; Siegrist 1996). It is also related to the presence of mental disorders. For instance, among a cross-sectional survey of 33,689 US women reporting on job strain and health status, those who indicated that they did high-strain work were observed to be at a higher risk of self-reported mental health problems (Amick et al. 1998). Grzywacz and Dooley (2003) found a fourfold increase in risk of depression associated with inadequate

Table 5. Self-Rate Work Stress, by Sex: Population 15-64 years, Canada Excluding Territories, 2002

	Total Popul	ation, 15-64 y	rs Men,	15-64 yrs	Women, 15-64 yrs	
	Number	Proportion	Number	Proportion	Number	Proportion
Most days at work were:		•		•		•
Not at all stressful	1,872,844	10.6%	1,095,258	11.6%	777,586	9.4%
Not very stressful	3,341,620	18.9%	1,788,880	19.0%	1,552,739	18.8%
A bit stressful	6,876,456	38.9%	3,743,251	39.8%	3,133,205	38.0%
Quite a bit stressful	4,462,419	25.3%	2,253,420	23.9%	2,209,001	26.8%
Extremely stressful	967,610	5.5%	482,913	5.1%	484,697	5.9%

Source: Statistics Canada. 2003. Canadian Community Health Survey: Mental Health and Well-Being. Accessed September 8, 2003. <a href="http://www.statcan.ca/Daily/English/030903/d030903a.htm">http://www.statcan.ca/Daily/English/030903/d030903a.htm</a>

employment environments in the California Work and Health Survey and a twofold increased risk in the US National Survey of Midlife Development. In Quebec, Bourbonnais and colleagues (2001) found that individuals who experienced work-related stress were twice as likely to have a psychiatric condition as those who did not (23% compared to 11% for men and 30% compared to 15% for women).

The picture of mental illness in the workplace is becoming increasingly complicated. It is clear that there is a link between mental illness among workers and workrelated stress. In turn, both of these are likely to be related to occupation, the work environment and the sex of the worker.

There is also evidence of an association between mental illness and physical disorders. Yet, few studies have considered how all these various factors interact to affect the prevalence of mental disorders among workers. Even fewer have considered their relative contributions to disability in the workplace.

# Impact of Mental Illness on the Labour Force

Mental illness affects the working-aged population in two important ways. First, individuals with a mental illness are less likely to be employed (Ettner 2000;

Marcotte et al. 1999; Marcotte et al. 2000). In addition, there is evidence that the impact of mental illness on labour market participation may be different for men and women (Marcotte et al. 2000). A second consequence of mental illness is that individuals who are employed are less productive.

#### **Defining Disability**

In the literature, productivity is linked to the concept of disability. That is, it is assumed they are inversely related: the less disabled a worker is, the more productive and vice versa. The relationship between productivity and disability has been measured from at least two different perspectives: the worker's and the employer's. This distinction is especially important because there are two different sources of information – one more accessible than the other. Also, the standard used to measure disability and productivity influences the estimates of its impact.

#### **Worker-defined Disability**

Orme and Costa e Silva (1995) define disability as "any restriction or lack of capacity to perform an activity in a manner or within a range considered normal." With this definition, disability is a relative concept; it is judged against what is normal. Thus, the question can be asked of an individual with the answer based on his or her judgment. In the scientific literature, the following three types of questions are typically used to measure disability in population-based surveys (Dewa and Lin 2000; Kessler and Frank 1997; Lim et al. 2000; Stephens and Joubert 2001):

- (1) How many days in the past 30 days have you been able to function only with extreme effort?
- (2) How many days in the past 30 days have you been forced to cut back on activities or did not accomplish as much as usual?
- (3) How many days during the past 30 days have you been completely unable to work or carry out normal activities?

Answers to the first two questions have been used to measure the number of days of reduced or partial productivity. These types of days have been referred to as extreme-effort days, work-cutback days or presenteeism days. All three terms are used to refer to days during which a worker is present at work but functioning at less than full capacity. In contrast, answers to the third question have been used to measure the number of total disability or absentee days – days during which the employee did not report to work; this is a standard less dependent upon individual judgment.

# Impact of Presenteeism and Absenteeism

It has been observed that a significant proportion of the burden of mental disorders arises from presenteeism days (Dewa and Lin 2000; Kessler and Frank 1997; Lim et al. 2000). This disability

pattern distinguishes mental disorders from chronic physical conditions. Chronic physical conditions are associated with total disability days, while the predominant effect of psychiatric disorders is on partial disability; in fact, psychiatric disorders were responsible for 23 times as many partial disability days as total disability days. In addition, disability days are different in the presence of a combination of psychiatric and physical disorders (Dewa and Lin 2000).

It is estimated that in a two-week period, among US workers, average presenteeism productivity loss due to depression is about four hours per week; that translates into \$36 billion (US) (Stewart et al. 2003). In contrast, the average depression-related absenteeism productivity loss is about 1.0 hour per week; that is equivalent to \$8.3 billion (US) (Stewart et al. 2003). Thus, depression-related decreases in workplace productivity result in annual losses of between \$6 and \$60 billion (Cdn) (Stephens and Joubert 2001; Stewart et al. 2003).

#### **Employer-defined Disability**

One of the major limitations of only using the worker's perspective is that it likely underestimates the workplace burden caused by mental illness. For instance, although absenteeism accounts for the days lost when the worker is absent, it does not account for the additional administrative costs the employer incurs as a result of the sick day or the cost of finding a substitute for the absent worker.

The worker's perspective also does not distinguish employee-defined disability days from employer-defined absentee days, short-term disability days and long-term disability days. Unlike total disability or

partial disability, the concepts of short-term and long-term disability are related to insurance coverage. Furthermore, there is no comprehensive governmental body governing these benefits. As a result, many of the disability benefits are employer-sponsored, often in conjunction with an insurance provider. This has two consequences. First, it increases the economic cost of disability. With the introduction of insurance, there are the additional costs of adjudicating and managing the claim. Second, these costs are magnified by the fact that there are multiple insurers.

# Short-Term and Long-Term Disability Benefits

The diversity of insurers also has research implications. To understand the impact of short- and long-term disability related to mental disorders, it is necessary to seek claims data from every insurer. This requires the co-operation of each data holder, thereby adding another impediment to obtaining a comprehensive national picture (Dewa et al. 2000). In addition, the majority of companies track neither the incidence of claims nor the cause of disability (Watson Wyatt 1997); thus, there is no nationwide electronic database from which to gather information.

The disability picture from the employer's perspective becomes further complicated by at least three factors: (1) the philosophical issues surrounding the employer-sponsored benefits, (2) the criteria used to define whether a worker is disabled and (3) the impact of the types and structure of insurance benefits (e.g., premiums, co-payments, deductibles limits on number of visits covered and types of services covered), as well as other fringe benefits.

Philosophical Issues and Disability Some concerns arise with employers and insurers because it is usually more difficult to prove the genesis of a mental disorder than of a physical disorder. As a result, there is some controversy about whether and how they should be covered under a worker's compensation scheme. For instance, under an occupational disease model, compensation for a disability is based on whether the disability arises from continuous exposure to hazardous conditions related to employment (Goldberg and Steury 2001). Yet, the most advanced etiological models of adult depression include factors related to genetic vulnerability, as well as developmental factors, neurobiological factors, childhood experiences, life events, chronic situations (e.g., a stressful work environment) and the presence of other disorders (Kendler et al. 2002). It is not yet understood what the due weight of each of these factors is and how they fit together. As a result, some companies are reluctant to provide psychiatric disability benefits. Because of the current state of the scientific knowledge about mental disorders, companies are left wondering to what extent disability benefits related to mental disorders are a form of worker's compensation rather than health insurance (Goldberg and Steury 2001).

Variation in Disability Criteria
As a result of different philosophical underpinnings, criteria and benefits vary. That is, there are no universal definitions of short- and long-term disability. This creates a major obstacle to comparing business sectors, occupations and nations. For example, a low rate of short- or long-term disability in one business sector compared to another could be a result either of a healthier workforce or of less

generous benefits. That is, because shortand long-term disability is linked to insurance benefits, one quick and easy way for a company to reduce its rate of shortand long-term disability would be to curtail these types of benefits or stop offering them.

# Types and Structure of Employer-sponsored Benefits

Finally, the types of disability benefits and criteria as well as other employeesponsored fringe benefits also influence workers' behaviour. For example, it has been observed that wages are positively related to return to work from long-term disability and negatively related to the length of the disability (Salkever et al. 2000a). The opposite holds for the relationship between the generosity of the benefits, on the one hand, and return to work and length of disability, on the other (Salkever et al. 2000b). That is, the generosity of the benefits is negatively related to return to work and positively related to the length of disability. Furthermore, age and fringe benefits have an effect on the use of disability benefits (Salkever et al. 2000a; Salkever et al. 2000b).

The potential influence of fringe benefits is further underscored by the fact that in many provinces, public health insurance will not reimburse independent non-physician providers for mental health services (Rochefort and Portz 1993). Many workers depend on employer-sponsored private insurance plans to provide mental health coverage that includes these non-physician providers. Still, such plans are generally limited to larger companies, annual dollar caps are low and only psychologists among non-physician providers are eligible for reimbursement (Rochefort 1997).

In addition, substantial segments of the population lack adequate coverage for prescription drugs. It has been estimated that up to about a quarter of Canadians do not have insurance for prescription drugs (Canadian Institute for Health Information 2002). Yet, it has been observed that patterns of drug benefits use have been linked to return to work from short-term disability (Dewa et al. 2003a).

The lack of coverage for these essential outpatient treatments also contributes to the disparity between the need for mental health services and their use. For instance, the Canadian Community Health Survey (CCHS) 1.2 found that approximately two-thirds of Canadians with at least one mental disorder or substance dependence failed to contact a mental health professional (Statistics Canada 2003). This unmet need may have a variety of causes: shortages of appropriate services or trained and experienced service providers in local communities; under-diagnosis of disorders; fear of treatment and real or perceived stigma attached to mental illness or those who seek help; restrictive intake criteria; and barriers to obtaining mental health services that are due to distance or inadequate information (Dewa et al. 2003b). Not the least of these barriers is the outof-pocket cost of treatment (Newhouse et al. 1993). Indeed, these costs are intensified by the lack of insurance coverage.

# Impact of Short-Term and Long-Term Disability

While much more knowledge is needed, a few studies have been conducted that begin to assist us in understanding the effect of short- and long-term disability on the workplace. They have consistently found that about 3% of employees collect short-

Table 6. Lost Workdays by Cause of Short-Term Disability, 1993-1995

Reason for Short-term Disability	Average Duration of Short-Term Disability	Recidivism Rate	Total Lost Workdays
Depression	43 days	22%	10,859 days
Diabetes	33 days	8.3%	795 days
Hypertension	25 days	8.8%	947 days
Ulcer	24 days	0.0%	353 days
Asthma	19 days	32.7%	1,432 days

Source: Conti D.J. and W.N. Burton. 1998. "Use of an Integrated Health Data Warehouse to Measure the Employer Costs of Five Chronic Disease States." Disease Management 1(1): 17-26.

term benefits (Dewa et al. 2002; Nystuen et al. 2001). Between 62% and 76% of short-term disability episodes due to mental disorders are attributed to depression (Conti and Burton 1994; Dewa et al. 2002).

Moreover, the effects of short-term disability related to mental illness are also relatively large. For example, the average short-term disability episode related to depression is longer than one related to chronic physical disorders (Conti and Burton 1998; MetLife 2003) (see Table 6). In North American studies, it has been observed to range from 33 to 95.2 days; by a conservative estimate, that translates into 10 to 140 thousand total lost workdays (Conti and Burton 1994; Conti and Burton 1998; Dewa et al. 2002).

Over the last few years, the number of disability claims for mental disorders has been soaring. Between 1989 and 1994, according to the Health Insurance Association of America (1995), such claims doubled. In Canada, short- and long-term disability related to mental illness accounts for up to a third of claims and about 70% of the total costs – \$15 to \$33 billion annually (Sroujian 2003).

A large proportion of workers who experience a depression-related short-term disability are women (Conti and Burton 1994; Dewa et al. 2002; Nystuen et al. 2001). In addition, the majority of these

workers are between 36 and 55 years of age and have invested a significant number of years in their workplaces (Dewa et al. 2002). Thus, the productivity loss is compounded by the fact that some of the most seasoned employees, who are in their mid-careers, become disabled.

Furthermore, as shown in Table 6, those with a history of depression-related short-term disability have a higher reoccurrence rate – ranging from 12% to 22% (Conti and Burton 1994; Conti and Burton 1998; Dewa et al. 2002). At the same time, about 76% of these workers return to work, whereas 8% go on to long-term disability and 16% terminate their employment (e.g., they quit, retire or are terminated) (Dewa et al. 2002).

#### **Summary**

From the currently existing body of literature, we know that mental health problems present a serious threat to the nation's productivity. At the same time, we are only beginning to comprehend fully the prevalence and magnitude of the impact of mental health problems in the workplace. Much work still remains to be done.

There is a pressing need to devise strategies that meet the needs of the working population. This will be achieved only by understanding the patterns of mental disorder among the different occupational groups and industry sectors. With problems of manpower shortages constantly arising, it is important to know whether some occupations are at a more critical juncture than others, and whether we can solve some of the drain on human resources by targeting particular occupations or sectors.

We must also understand the association of employee-sponsored benefits and the prevalence of mental health problems in the workplace as well as patterns of disability related to mental illness. What are the trends in psychiatric disability? Is there a greater prevalence of one type of disability than another? To what extent do the employee-sponsored benefits – e.g., supplemental insurance, prescription drug benefits and employee assistance programs (EAPs) – facilitate access to mental health services? If the impact of these services is large, should this encourage policy-makers to intervene by ensuring a basic minimum set of benefits for all workers? If there are large societal benefits to these services, should policymakers consider subsidizing them?

If we are to develop effective policies and programs, the answers to these questions must be based on solid evidence. But there is one looming impediment: the data needed for these inquiries have not been accessible. Only recently have we had access to a population-based epidemiological study that will enable us to examine the prevalence of mental disorders among the entire Canadian working population. At the moment, a nationally representative dataset showing disability from the employer's perspective does not exist. Furthermore, there has been little investment in building the links between academic research and business that would facilitate the development of such a dataset. Because of this, it is the area that we know

the least about. Yet, these hurdles must be overcome. Indeed, in our knowledge-based economy, where the heavy lifting is done with our minds and not our backs, it is imperative that we find the solutions.

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# Essential to Understand the Relationship Between Mental Illness and Work



RESEARCHER RESPONSE

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#### ABSTRACT

In their paper "Nature and Prevalence of Mental Illness in the Workplace," Dewa et al. (2004) take on a task of enormous difficulty but of even greater importance. Generally, Dr. Dewa and her colleagues carry out this task extremely well. They define the principal dimensions of the problem clearly and summarize key frontiers of our knowledge. At the same time, as a good discussion paper should, they raise more questions than they answer. I will spend a very brief time commenting on the valuable questions this paper answers – and then devote more time to the questions it raises, questions I believe need to be addressed, and priorities I view as most pressing if we are to advance our understanding of mental illness in the workplace.

In Laying out the relationship between the prevalence of mental illness and labour force and employment status, Dewa et al. provide the necessary context for this meeting. Think of it: on the order of 25% of all diseases in Canada are attributable to mental illness (Murray and Lopez 1997). Even more troubling, unlike debilitating

physical illness mental illness is often at least as common among those in the prime of their working lives as in the elderly.

Dewa et al. then illustrate very nicely an implication we can all well understand—that mental illness imposes costs far beyond medical expenses. It is of utmost value that they point out that those costs

can be seen from many different perspectives – those of the ill, employers and even society. Moreover, they do an excellent job of describing the role of disability leave benefits in shaping return to work for the ill. As they make clear, the structure of such benefits can encourage resumption of working lives, but much remains unknown about the many factors shaping that process.

I agree with the exhortation that we need to think of better ways to get at this problem, both as researchers and policymakers. But this is a focus on the back end - after the period of disability leave. I want to focus here first on key questions that remain about the front end – the onset, or "nature" of mental illness in the workplace. While we have made great advances in understanding the prevalence of mental illness in the workplace during the past two decades, we remain quite limited in our ability to sort out the joint causal relationships between illness and employment. It is clear that one cannot treat mental illness as exogenous in the context of the workplace, and we have made strides in developing better estimates of employment and earnings losses subsequent to episodes of mental illness. But the ability to do this relies on relatively weak information to help us identify causal effects. It is safe to say that our analytical ability to address the complicated causal pathways between mental illness and work substantially exceeds the fertility of current data for yielding new insights into these relationships. This is a view, and a frustration, shared by many researchers in the area (e.g., Wells 2002).

Closing this gap is what I believe should be the first priority of the collective research community. If we hope to understand the complicated relationship between mental illness and work, we simply need more and better observations of people as they live and experience both. Because this relationship is complicated, there really is no substitute for panel data to provide new insight into these relationships. So, I add to the list of priorities, begun by Dewa et al., the collection of a representative panel data set containing both diagnostic information and employment and earnings information. In North America there are very few data sets of this sort. Several longitudinal data sets contain depression scales, but diagnostic information on other psychiatric diseases is rare. The National Comorbidity Survey (NCS) will soon release a follow-up interview of its original cohort. While the NCS contains rich diagnostic information, the "panel" consists of only two interviews, a decade apart. I know of no data set that really is up to the challenge of sorting this out.

Let me turn next to a different issue. As we advance our understanding of the labour market consequences of mental illness, we are implicitly asking the question: What if it were not for mental illness? But it is not obvious exactly what we mean by this question. Should we think about preventing mental illness, so that we might view the productivity and earnings of comparable healthy workers as what we would expect for the mentally ill in the absence of illness? Or should we think about "curing" mental illness, expecting that the mentally ill will regain their pre-morbid levels of productivity and earnings? Alternatively, perhaps we should think about treating the mentally ill - thereby limiting disability and attempting to balance work and illness. In many cases, I think this last question is the most relevant and important to ask. Yet, it is the question we are least equipped to answer. We know

precious little about the employment and productivity benefits of treatment. In community-based surveys, little is known about treatment. What we know comes from a few clinical trials of pharmaceuticals and from some important randomized trials of vocational and therapeutic interventions involving groups of severely mentally ill consumers. Thus, we are limited in the types of treatments we can talk about, as well as the population to which we can generalize.

This leads to the second priority I would suggest for advancing our understanding of mental illness in the workplace. It seems to me that many of the ill are willing to talk about treatment, not just symptoms. Can we then construct and include reliable, valid and rich measures of pharmaco-therapeutic and other treatments into panel surveys? If so, the payoffs would be high. First, we would get a better estimate of average benefits of therapy among the ill. Second, we would develop a better estimate of the social value of therapy. Clinical trials tell us about the efficacy of one treatment. But the mentally ill who receive treatment often try many forms of treatment. Community-based samples with valid measures of treatment could provide us with a better sense of the ability of therapy as patients receive it to restore their productivity and employment. Further, if such measures were included in a community-based panel data set, we could learn more about the ways that work can affect therapeutic outcomes.

Next, let me mention a priority relevant to shaping future efforts to collect data, as well as researchers' efforts to analyze available data. It is important to recognize that people lead dynamic lives and that mental illness itself is dynamic. We know that the symptoms and disabil-

ity associated with various mental illnesses are episodic. Yet, we really know little about the employment and productivity impacts of mental illness over episodes and over time. As the authors describe, we have identified useful relationships between time, disability leave and return to work. But we cannot yet sort out severity versus selection effects.

The dynamism of people's lives creates similar challenges. We know mental illness affects people throughout the life course. Still, we often think of mental illness in the workplace as a static concept – affecting the here and now of workers' lives. But mental illness can affect young people while they prepare for and launch their careers. More needs to be done to identify the effects of mental illness on formal schooling, labour market churning and job search. At the other end of the life course, we do not fully understand the role of mental illness in shaping decisions about withdrawal from the labour market.

Finally, let me turn to Dewa et al.'s very helpful discussion of the burden of mental illness in the workplace. Mental illness can limit the ability to find a job, show up at a job or be productive if present. As the authors make clear, the cost implications of this depend on whether you consider lost earnings or the cost of finding a replacement worker. Though they say little about this, a third perspective of importance is the larger social costs – which raise a host of complicated issues. One of these is that mental illness involves social expenditures in the form of disability and health benefits, in addition to the loss of the productivity of the ill. But this raises a further issue that the authors do not address. One way to assess the burden that mental illness places on the workplace is to assess the

cost of finding a replacement for the ill worker, either temporarily or permanently. This friction-cost approach to assessing costs of illness is common in Europe but is used little in North America. In previous work, I have suggested that this approach is more sensible in European countries with high unemployment rates, where one might think of illness as resulting in a re-distribution of employment among workers (Marcotte and Wilcox-Gök 2001). I remain convinced that a frictioncost approach is less compelling in the relatively tight North American labour markets – and in any case, from the perspective of the ill, the costs of illness are huge. But it is fair to say that it is not as clear as Dewa et al. claim that costs to employers, or society, of mental illness are larger that the sum of losses to the ill themselves. On this note, Dr. Goering has published two of the few papers to apply a friction-cost approach to estimate the costs of mental illness in Canada. She and her colleagues find that friction-cost estimates of the cost of schizophrenia are much smaller than the sum of the losses to the ill themselves (Goeree et al. 1999a; Goeree et al. 1999b).

This last point can be integrated with the priorities suggested earlier to round out an agenda for the community of researchers and policy analysts that is both ambitious and humbling. Our first task must be to work to acquire better information if we hope to understand the nature of mental illness in the workplace as well as the employment, productivity and earnings implications of mitigating mental illness. Even if that can be done, we need to develop further our analytical understanding of the full economic costs of mental illness in the workplace, as well as the distribution of those costs.

Clearly there is a lot on the collective agenda – so much that one could be overwhelmed by how much we do not know, despite decades of good work by smart people. But I take heart in the knowledge that what we do know about mental illness in the workplace today is leaps and bounds beyond what we knew just one or two decades ago. The amount and quality of data available to us now would have seemed like a fantasy even very recently, and our ability to analyze it has progressed rapidly. I am optimistic that in the coming decades we can continue to advance our understanding of the complicated and important relationship between mental illness and employment.

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# HealthcarePapers

**DISCUSSION PAPER** 

# WORKPLACE PREVENTION AND PROMOTION STRATEGIES



**DISCUSSION PAPER** 

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#### **ABSTRACT**

Psychosocial factors refer to all organizational factors and interpersonal relationships in the workplace that may affect the health of the workers. Currently, two psychosocial risk models are universally recognized for producing solid scientific knowledge regarding the vital link between social or psychological phenomena at work and the development of several diseases, such as cardiovascular diseases or depression. The first is the "job demand-control-support" model, which was defined by Karasek and to which the concept of social support has been added; the second is the "effort/reward imbalance" model defined by Siegrist. The public health perspective calls for theoretical models based on certain psychosocial attributes of the work environment for which there is empirical evidence of their pathogenic potential for exposed workers. Not only do these models reduce the complexity of the psychosocial reality of the work to components that are significant in terms of health risks, but they also facilitate the development and implementation of workplace interventions.

Psychosocial risk intervention strategies currently implemented by companies are predominantly individual-oriented and aim chiefly at reducing the effects of stressful work situations by improving individual ability to adapt to the situation and manage stress. Like personal protection equipment for exposure to physical or chemical risks, these secondary prevention measures are commendable but insufficient, because they aim to reduce only the symptoms and not the cause of problems. Any intervention program for these risks should necessarily include a primary prevention component with a view to eliminating, or at least reducing, the psychosocial pathogenic agents in the workplace. Several authors have suggested that well-structured organizational approaches are most effective and should generate more important, longer-lasting effects than individual approaches. However, the evidence should be strengthened by more systematic studies to assess the models, their implementation and the outcomes for employers and employees alike.

# The research agenda on mental health and the workplace should have the following goals:

- to foster the development and evaluation of well-adapted models of interventions designed to reduce adverse psychosocial factors and their mental health effects
- to give a better understanding of the prevalence of work organization risk factors in Canada, how they may be changing and how they affect mental health in the long term
- to acquire an understanding of the effects on mental health of prominent trends in organizational practices, such as restructuring, lean production and flexible staffing (all of which result in precarious employment), that may pose special risks for women, immigrants or aging workers in Canada
- to collect data on the considerable direct and indirect costs to business, workers and society of work-related stress in Canada.

#### State of Knowledge

In the last decades, almost all countries in the western world have passed legislation to give employers the "duty to ensure the safety and health of workers in every aspect related to work" (EU Framework Directive – 89/391/EEC). The principles of prevention include "avoiding risks," "combating

the risks at source" and "adapting the work to the individual" within "a coherent overall prevention policy." To provide a basis for such endeavours in Europe, for example, the European Commission has published a detailed guide to the directive (European Commission 2002).\*

Regarding psychosocial risk factors, employers are facing difficulties in doing primary prevention, usually because they don't know how to define and, therefore, how to measure the risk factors. That is the reason that actual workplace strategies to prevent mental health problems at work are mainly targeting individuals; i.e., they aim at modifying the stress response (secondary prevention) or the stress-related health outcome (tertiary prevention).

#### **Defining Psychosocial Risk Factors**

Psychosocial factors refer to all organizational factors and interpersonal relationships in the workplace that may impact health. There are many classifications of psychosocial risks at work. These classifications identify a considerable number of psychosocial factors and make it possible to document the stressful nature of a work situation, notably control (latitude, participation, use and development of skills), workload (quantity, complexity and time pressures), roles (conflict and ambiguity), interpersonal relationships (social support, harassment and recognition), career prospects (promotion, precariousness and demotion), organizational climate or culture (communication, hierarchical structure and fairness) and the interaction between work and private life. Despite the common denominators that variously link these factors, there is a regrettable absence of scientific consensus on how to define and measure a high-risk psychosocial work environment.

Obviously, a deleterious psychosocial work environment cannot be identified by means of direct physical or chemical measurements. The public health perspective calls instead for theoretical models based on psychosocial attributes of the work environment for which there is empirical evidence of their pathogenic

potential for exposed workers. Not only do these models reduce the complexity of the psychosocial reality of the work by dividing it into components that are significant in terms of health risks, but they also facilitate the development and implementation of workplace interventions. These "toxic" components can be identified through validated questionnaires that are applicable to all professions and work situations.

Currently, two psychosocial risk models, the "job demand-control-support" model defined by Karasek and the "effort/reward imbalance" model defined by Siegrist, are universally recognized for producing solid scientific knowledge regarding the vital link between social or psychological phenomena at work and the development of several diseases.

# The "Job Demand-Control-Support" Model (Karasek)

The "job demand-control-support" model is based on the finding that a work situation characterized by a combination of high *psychological demands* and low *decision latitude* increases the risk of developing physical and mental health conditions (Karasek and Theorell 1990).

Psychological demands refer to the quantity of work to be done, as well as its related mental requirements and time pressures.

These attributes are quantified by means of a questionnaire that assesses whether the worker perceives his work load as excessive, "very hard" or very hectic; whether it requires intense concentration during long periods of time, involves conflicting demands, is often interrupted before it is complete or requires working at a very fast pace; whether the worker has enough time to get the job done; and lastly, whether the worker is often delayed because he or she must wait for co-workers to finish their tasks.

Decision latitude refers to the ability to make decisions about one's work, particularly the possibility of being creative and using and developing skills. Thus, the concept of latitude has two components, namely authority (i.e., latitude to decide or influence how one's work proceeds), and opportunities for achievement at work (such as using one's creativity, having varied work that requires a high qualification level, learning new things and developing individual skills).

In 1998, 25% of women and 21% of men in Quebec were exposed to a combination of low latitude and high demand, known as "job strain" (Bourbonnais et al. 2001). In Europe, this figure rose from nearly 25% to 30% between 1991 and 1996, according to surveys by the European Foundation for the Improvement of Living and Working Conditions. This trend continued into 2000, when 56% of workers reported working at a frantic pace, 60% had to meet very tight deadlines for at least onequarter of the time, 35% reported complete lack of control over their task, and almost one-third said they had no control over work methods or pace (Paoli and Merllié 2001). In the United States, between 1977 and 1997, the percentage of individuals who had to "work very quickly" or who reported "never having enough time to finish their work" rose from 55% to 68% and from 40% to 60%, respectively (those were respective increases of 24% and 50%) (Bond et al. 1998). Those conditions are associated with the major workplace changes of recent years, notably intensification. These transformations have been brought about by work restructuring, which is characterized by erosion of "downtime," heightened productivity demands (both for quality and quantity), flexibility and downsizing, which in turn have resulted in a fiercely competitive

and rapidly evolving technological labour market. In Quebec, a social-health survey conducted in 1992-1993 and 1998, showed that in the intervening period, the percentage of workers with low latitude at work rose from 44% to 56%. This increase was true irrespective of age group or sex, but it was higher for women than for men (62% compared to 51%) (Bourbonnais et al. 2001).

In the late 1980s, the social support concept was added to Karasek's model. Generally speaking, social support comprises all useful social interactions available at work, either with co-workers or supervisors. More specifically, there are two types of social support at work: socioemotional and instrumental. Socioemotional support refers to degree of social and emotional integration and trust among co-workers and supervisors, i.e., the extent of social cohesion of the work group and integration into it. Instrumental support refers to the level of help and assistance provided by others when one is performing tasks (Karasek and Theorell 1990).

The combination of high psychological demands, low control and low social support at work (iso-strain) appeared to be the most pathogenic (Johnson et al. 1989). It was also found that, independently of the two first axes of the model, lack of support at work adversely affected the health of exposed workers. Low support or lack of team spirit at work is also associated with occupational changes of the past decade, notably management downsizing and the pressures and competitiveness associated with new management styles, which often lead to individual withdrawal rather than solidarity, not to mention the additional possibility of psychological or administrative harassment.

# The "Effort/Reward Imbalance" Model (Siegrist)

The "effort/reward imbalance" model proposed by Siegrist in the late 1980s (Siegrist 1996) is based on the finding that a work situation characterized by a combination of high effort and low reward is accompanied by emotional and physiological pathological reactions. High effort may stem from two sources: one extrinsic, the other intrinsic.

Extrinsic effort is associated with time pressures, frequent interruptions, numerous responsibilities, increased workload, mandatory overtime and physical demands. Intrinsic effort, which will be referred to here as overcommitment, measures the attitudes and motivations associated with an innate need to surpass oneself, gain esteem or approval, or simply the satisfaction of tackling challenges or taking control of a threatening situation. This personality profile component is an add-on to the demand concept of Karasek's model. Overcommitment is measured especially by the inability to distance oneself from work obligations or prevent work concerns from intruding on one's private life.

Low reward is primarily observed as one of three forms: unsatisfactory salary, lack of esteem or respect at work (including low support and unfair treatment) and lastly, job insecurity and low career opportunities (including the prospect of demotion and work that does not correspond to one's training).

While "control" is central to the Karasek model, "social reciprocity" (i.e., the possibility of access to legitimate advantages, duly earned according to the effort expended in the work) is the key concept for Siegrist's model. This model is based on sociological theories of "self" and identity that underscore the importance of continu-

ity of fundamental social roles in the construction of self-esteem and individual sense of mastery and effectiveness.

In the populations studied, it has been calculated that 10% to 40% of workers are exposed to some level of "effort/reward imbalance." That occurs chiefly among employees belonging to low socioeconomic groups (Siegrist 2002). In part of a study conducted among 9,000 white-collar workers in the Quebec City region, the percentage of individuals exposed to "effort/reward imbalance" was in the range of 24% for both men and women.

This model is particularly well adapted to measuring the impact on health of another major characteristic of workplace changes in the past decade, namely, precarious employment. These effects are greater when they are prolonged, for instance if the labour market does not offer an alternative or the individual tolerates unfair working conditions in hopes of promotion. The model is applicable to a wide range of work situations, primarily among groups exposed to rapid socio-economic changes or structural unemployment. "Effort/reward imbalance" is frequent in service jobs, particularly those involving interaction with customers (Siegrist 2002). Lastly, this model is very relevant for assessing the impact on health of complexified work, notably as a result of technological advances. When technological changes are combined with increased quality and quantity requirements, they generate new problems for workers. In a context where the idea that familiarity with work is unnecessary for its management is increasingly taking hold, managers tend to rely on a set of so-called objective indicators, such as the number of actions per unit of time or customer satisfaction surveys. These evaluation modes are a far cry from taking

into account actual work problems or complexity, and they do not allow for judging and acknowledging the effort made to attain the results requested by the employer in consideration of trade requirements and professional standards. This lack of recognition weakens self-esteem and opens the door to psychological symptoms, such as anxiety and depression; physiological symptoms, such as increased adrenalin secretion, high blood pressure and disturbed sleep; and such behaviour as drug and alcohol consumption, violence and aggressiveness.

# **Empirical Evidence of the Pathogenic Effect for These Models**

Over the past 20 years, the "job demandcontrol-support" model defined by Karasek and the "effort/reward imbalance" model defined by Siegrist have been the focus of many research projects worldwide, and the results have clearly shown the pathogenic effects of these adverse work situations, primarily on cardiovascular and mental health, two pathologies whose links with each other have been well documented. Indeed, prospective cohort studies provide strong evidence that psychosocial factors, particularly depression and lack of social support, are independent aetiological and prognosis factors for coronary heart disease (Stansfeld et al. 2002).

In regard to cardiovascular disease, the research, with some exceptions that share certain weaknesses (Theorell 2001), overwhelmingly shows a link between job strain resulting from high psychological demands and low control, and cardiovascular disease (Bosma et al. 1997; Karasek et al. 1981; Niedhammer et al. 1998). With a prevalence of 23% (Bourbonnais et al. 2001), job strain in Quebec is a risk factor for cardiovascular disease comparable to sedentary

habits, smoking or high cholesterol.

The findings of cohort studies of workers exposed to job strain makes it possible to assess the relative risk of coronary heart disease as between 1.4 and 2.6 (this means that the probability of having a coronary heart disease is 40% to 2.6 fold higher when workers are exposed to job strain compared to non exposed workers), controlling for the known risks for cardiovascular disease (Siegrist 2002). Similarly, in the industrial sector the risk of mortality from cardiovascular disease associated with long-term exposure to job strain has been evaluated at 2.2, again after adjusting for the known risk factors for cardiovascular mortality (Kivimâki et al. 2002). In other words, exposure to job strain doubles the risk of serious cardiovascular disease, whereas smoking increases this risk by only 70%. The likelihood that work plays an important role in the occurrence of coronary heart disease is reinforced by the fact that known risks, such as those associated with nutrition, a sedentary life and smoking only partially explain new cases of coronary disease.

Of the three dimensions in Karasek's model, low control latitude is the most harmful. Contrary to popular belief, individuals at the bottom of the hierarchy are more at risk. It has further been shown that in men, the incidence gradient of coronary heart disease in favour of higher classes of employment disappeared when low control over work was taken into account (Marmot et al. 1997). These conclusions are in accordance with research conducted on animals. In the 1970s, Jay Weiss demonstrated that animals will protect themselves against the effects of stress when they can exert control over the situation He used the following experiment: two rats in a cage received the same electric shocks, but one

could block off the current by rotating a wheel, thereby protecting the other rat connected to the same electrical circuit. The outcome of the experiment was that the rats in a passive submissive position faced with the situation developed gastric ulcers while those with an active control over the situation were comparable to the control rats that did not receive any electric shocks (Dantzer 1984).

Siegrist's model has been validated by more than 12 subsequent independent studies, including many cohort studies. The relative risk of the incidence of coronary heart disease linked to "effort/reward imbalance" has been assessed at between 2.7 and 6.1, controlling for known risk factors of cardiovascular disease (Siegrist 2002). Similarly, in the industrial sector the risk of mortality due to cardiovascular disease associated with long-term exposure to effort/reward imbalance has been evaluated at 2.4, again after adjusting for known risk factors of cardiovascular mortality (Kivimâki et al. 2002)).

There are two biological mechanisms that could explain this excess of cardiovascular disease risk factors: direct and indirect. The direct action mechanism is manifested by increased neuroendocrine activity of the sympathoadrenal system that triggers shortterm increases of adrenalin and noradrenalin secretions, the effect of which on the cardiovascular system is well-known (increased heart rate, high blood pressure, etc.). In the longer term, this situation is accompanied by an increase in glucocorticoids and cortisol to allow the circulation of glucose and lipids to cope with the increased energy needs caused by the situation. From the results of stress research, we know that a chronic stress situation can be accompanied by adverse health effects due to prolonged secretion of neurotransmitters, which leads to hyperadrenergism or hypercortisolism (McEwen 1998). This endocrine stimulation can be triggered by fear, anger or irritation provoked by these work conditions. According to Siegrist, these adverse feelings are not necessarily conscious, especially when associated with day-to-day, chronic experiences (Siegrist 1996).

The indirect mechanism involves known risk factors, such as high blood pressure, atherogenic lipids, fibrinogen or even risky behaviour such as smoking or sedentary habits (Theorell 2001; Hellerstedt and Jeffery 1997; Schnall et al. 1990).

From this perspective, it can be stated that the previously mentioned relative risk of coronary heart disease and mortality from cardiovascular disease is considerably underestimated, because these risks were calculated in removing the effect of known risk factors of cardiovascular disease, such as arterial hypertension, high cholesterol, obesity, sedentary habits or even smoking.

As regards *mental health* problems, job strain, as defined by the Karasek model, has been linked to depression, psychological distress, professional burnout and increased use of psychotropic drugs (Bourbonnais et al. 1998; Karasek and Theorell 1990; Moisan et al. 1999; Stansfeld et al. 1995). In Québec in 1998, among the population aged 15 years that was employed, those who were exposed to job strain experienced twice as much psychological distress as those who were not. (23% compared to 11% among men, and 30% compared to 15% among women) (Bourbonnais et al. 2001).

The "effort/reward imbalance" has also been associated with an increased risk of functional disability from mental health problems. The increase is from 1.4 to 1.8 in men and from 1.8 to 2.3 in women (Kuper

et al. 2002). The same study showed that Siegrist's model was also associated with an increased risk of new cases of transitory psychiatric disorders; the increased risk was 1.7 in women and 2.6 in men (Stansfeld et al. 1999).

At the biological level, these disorders can also be linked to increased chronic stimulation of glucocorticoids secretion. Thus, when stress is repetitive, unavoidable or chronic, the response to the stress may last longer, thereby producing physiological and mental symptoms that lead to depression.

The impact of factors identified by both models has also been assessed on the general well-being of workers and on increased absenteeism rates. In Quebec in 1998, the percentage of working individuals 15 years of age and over who considered themselves in excellent general health was greater when these individuals, particularly women, enjoyed wide latitude at work (Bourbonnais et al. 2001). Other authors have shown that increased work absenteeism is found where there is a lack of latitude at work (North et al. 1996). Similarly, a six-year follow-up of a cohort of over 13,000 individuals showed that, in both men and women, low decision latitude and low personal social support (both instrumental and emotional) independently of each other predict a 17% to 24% increase in absenteeism (Melchior et al. 2003).

Lastly, several studies have shown that both models identify distinct psychosocial determinants that have independent effects on coronary disease, depression, worker well-being and overall health (Bosma et al. 1997; Tsutsumi et al. 2001). Thus, workers exposed to the constraints of both models have a higher relative risk of developing pathologies. That is especially the case, as discussed previously, of

workers at the bottom of the hierarchy with precarious jobs.

# Major Trends in Intervention Research

Psychosocial risk intervention strategies currently used by employers are predominantly individual-oriented (Kompier and Cooper 1999) and aim chiefly at reducing the effects of stressful work situations by improving individual ability to adapt to the situation and manage stress. These activities are usually part of an employee assistance program (EAP) that involves learning relaxation techniques or reinterpreting stressful situations as less threatening or that improves the perception of personal coping effectiveness. These cognitive-behavioural strategies, which are usually taught by counselling, consist of exercising more, smoking and drinking less, or adopting healthy eating and sleeping habits. Like personal protection equipment for exposure to physical or chemical risks, these secondary prevention measures are commendable but insufficient, because they aim only to reduce the symptoms of the problems, and not the cause.

Since the elimination of the source of problems is crucial to a public health approach, and since so many epidemiological studies underscore the pathogenic dimensions of some specific psychosocial risk factors, any intervention program for these risks must include a primary prevention component with a view to eliminating, or at least reducing, the psychosocial pathogenic agents in the workplace.

Several authors have shown that well-structured organizational approaches are more effective than individual approaches (Kompier and Kristensen 2001) and should generate more important, longer-lasting effects.

The authors who analyzed preventive

interventions that aimed at reducing psychosocial constraints identify five factors that are necessary for a project's success (European Agency for Safety and Health at Work 2002; Goldenhar et al. 2001; Kompier et al. 1998). They are support from senior management and involvement of all of the hierarchy; employee participation in discussions of problems and possible solutions; preliminary identification of worker populations at risk on the basis of validated theoretical models or their associated manifestations; rigorous implementation of necessary changes in targeted worker populations; on-site management of the procedure and changes.

In recent years, several studies have shown that if those factors are present, interventions focused on organization of work could have considerable benefits, notably decreased absenteeism and depressive symptoms or even increased well-being and productivity (Lourijsen et al. 1999; Bond and Bunce 2001; Nielsen 2002; Kawakami et al. 1997).

# **Significant Gaps in Knowledge**

Despite the abundance of empirical evidence for the health impacts of the factors identified in the Karasek and Siegrist models, few intervention studies targeting these factors have been conducted or rigorously evaluated. Therefore, the priority objective of a long-term research agenda on mental health and the workplace should be to produce knowledge that fosters the development of well-adapted interventions designed to reduce adverse psychosocial factors and their mental health effects. According to the National Occupational Research Agenda Intervention Effectiveness Research Team, intervention research has three phases which are: development, implementation

and effectiveness and each is intended to address specific questions (Goldenhar et al. 2001). Evaluating the effectiveness of the intervention first necessitates assessing the development and implementation of the intervention.

With respect to intervention *develop-ment*, research studies should examine the following questions:

- (1) What is the best way to determine what changes are needed?
- (2) What changes are needed to enhance the health of the target population?
- (3) What are the best ways to bring about these changes?
- (4) What principles or theories in occupational health and safety and related fields might apply in a given situation?
- (5) What barriers hinder the desired changes?
- (6) To what extend does the target audience understand and accept the need for changes?

With respect to intervention *implementation*, research studies (also referred to as formative evaluation, process evaluation, program control and implementation assessment) should document how an intervention is carried out, in order to answer questions such as:

- (1) What are the intervention components (e.g., activities, organizational changes, materials and technology) and how were they planned, introduced or provided to the target audience?
- (2) What were the strengths and weaknesses of the intervention? (e.g., were trainers well-qualified? was documentation pertinent? was equipment used properly?)
- (3) How many and which members of

- the target audience experienced the intervention?
- (4) What role did the different parties play in the implementation of the intervention?
- (5) Did some workers reject the intervention?
- (6) How did implementation of the intervention deviate from expectations? Why?

With respect to intervention *effectiveness*, research studies (also referred to as impact, outcome or summative evaluation studies) indicate the degree of effectiveness of an intervention under real-world conditions; they answer such questions as the following:

- (1) To what extent does the intervention reduce worker exposure to psychosocial risk factors?
- (2) To what extent does the intervention reduce psychological distress or work disability for mental health problems?
- (3) What are the social and economic consequences of the intervention on work-related injuries and illness (e.g., workers' compensation, medical and indemnity costs, quality of life)?
- (4) What changes were observed in workers' knowledge, attitudes or behaviour as a result of the intervention?

Given the major changes in the organization of work in Canada during the past decades (see NIOSH 2002), the second-most important objective of a long-term research agenda on mental health and the workplace should involve the collection of data that will provide a better understanding of the prevalence of work organization

risk factors, how they may be changing and how they affect mental health over time (Landsbergis 2003). There is a need for periodic national surveys similar to the National Quality of Employment surveys conducted by the US Department of Labor between 1969 and 1977 or the European Union surveys of working conditions, which have been carried out at five-year intervals since 1990. As suggested in the Tokyo Declaration, these surveys should monitor<sup>2</sup> organization restructuring and downsizing, the frantic pace of work and personal life, the erosion of leisure time and/or the blending of work and home time, new employment practices such as use of contingent workers, new management models with a greater emphasis on teamwork, just-in-time and total quality management, changing workplace, etc. (cited in Landsbergis 2003).

Lastly, the *third objective* of a long-term research agenda on mental health and the workplace should be to understand the effects on mental health of prominent trends in organizational practices, such as restructuring, lean production and flexible staffing, all of which result in precarious employment and all of which may pose special risks for women, immigrants or ageing workers. Special attention should be given to factors, such as trust in management and organizational fairness, that could serve as buffers against psychological distress when sweeping changes are made to the organization of work. Some authors have also argued that new systems of work organization offer increased flexibility, responsibility and learning opportunities (Landsbergis 2003). Regarding the type

<sup>&</sup>lt;sup>1</sup> Prevention of psychosocial risks and stress at work in practice, issue 104, 2002 <a href="http://osha.eu.int/publications/reports/104/en/stress.pdf">http://osha.eu.int/publications/reports/104/en/stress.pdf</a>>

<sup>&</sup>lt;sup>2</sup> A consensus document produced by occupational experts from the European Union, Japan and the United States, cited in Landsbergis, 2003.

of employment and mental health, an analysis of the European Surveys on Work Conditions have shown that non-permanent workers reported higher percentages of dissatisfaction but lower levels of stress and that people working for small employers were more likely to report fatigue and stress but less likely to report dissatisfaction.

On the other hand, research we conducted in order to understand how intermittent work is experienced by people and how it affects life and health have shown that some people perceive their unstable situation as having certain advantages, whereas others experience a deep sense of loss of control over their lives. To understand why some people cope well with temporary or precarious employment while others do not we need to examine how and under what conditions work experiences may be "salutogenic" by acting on the construct of identity and reinforcing self-esteem and confidence in one's abilities. Similarly, we need to gain an understanding of the mechanisms of work that create social isolation, which is a major determinant of mental health problems (Vézina et al. 2004).

# **Concluding Remarks**

Prevention of mental health problems in organizations is a major challenge. Ignoring this issue because it is too complex to tackle would increase the fragility of the workforce, which will soon present important problems of relief or replacement due to the attrition of the ageing population. One final, or *complementary objective*, of a long-term research agenda on mental health and the workplace is further research and accurate data collection on the importance of the considerable direct and indirect costs to business,

workers and society of work-related stress. Such information could prove useful in convincing decision-makers of the necessity of investing in the creation of a healthy workplace. Many experiments have shown that stress prevention enables organizations not only to reduce or contain the costs of poor employee health, but also to maintain and improve organizational health and productivity (Cooper et al. 1996). It is worth mentioning that various studies of practices in successful organizations have identified attributes that benefit both the company and the employees' mental health, namely employment security, self-managed teams and decentralized decision-making, extensive training, reduced status distinctions and barriers (including dress, language, office arrangements and wage differences between levels) and extensive sharing of financial and performance information throughout the organization (Pfeffer 1998). All these psychosocial factors show that work has to remain human and that production ethics must respect the psychological integrity of individuals.

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# Research Must Look at What Interventions Work as Well as When and Why



RESEARCHER RESPONSE

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### ABSTRACT

This discussion paper is well-written and up to date. A strong feature is its attention to the biological and behavioural mechanisms that connect exposure to certain job characteristics with illness. First, some remarks are made with respect to the definition and measurement of psychosocial risk factors. It is concluded that we do know which factors in work are major risk factors for stress and its consequences for ill health, and that in order to prevent or reduce occupational stress we must first make a reliable and valid diagnosis, identifying these risk factors and risk groups. Next, some issues are discussed regarding future priorities (interventions and monitoring). It is argued that in order to develop further a "psychosocial intervention science," we will need to address three types of questions.

Dr. Vézina and his colleagues ought to be commended for their well-written discussion paper. The paper builds a bridge between theory and data from empirical studies, on the one hand, and research

policy with respect to prevention and intervention and actual preventive work-place strategies on the other. A strong feature of their paper is its emphasis on the biological and behavioural links between

exposure to certain job characteristics and illness. Moreover, the paper provides some interesting Canadian figures about stress at work.

In this commentary I will concentrate first on the "state of knowledge" part of their paper; then I will comment on the priorities that are suggested.

# Remarks with Respect to the Definition and Measurement of Psychosocial Risk Factors

Vézina and his co-authors are too pessimistic when they state that there is a "regrettable absence of scientific consensus on how to define and measure a high risk psychosocial work environment." In fact, they present such a classification themselves. Elsewhere (Kompier 2003), we have discussed the seven most prominent theoretical approaches in this field, including the two models that are discussed by the authors (the demandscontrol model and the effort-reward model), in order to identify critical job features: those factors in the psychosocial work environment that may either cause stress or promote motivation or learning. In this respect there is a remarkable overlap between these models. These critical job characteristics are "job demands" (six out of seven models), "autonomy" (six) and "skill variety" (six). Other important psychosocial job characteristics are "social support" (four), "feedback" (three), "task identity" and "job future ambiguity" (each three).

It is only partly true that, as Vézina et al. (2004) state, the DCS and ERI models identify distinct psychosocial determinants. In fact the concept of job demands (DCS model) is comparable to that of extrinsic effort (ERI model) (for a further comparison, see Kompier 2003).

From the above it follows that (1) we do know which factors in work are major risk factors for stress and its consequences for ill health, and (2) in order to prevent or reduce occupational stress, we must first make a reliable and valid diagnosis, identifying these risk factors and risk groups. Such an assessment should thus focus on job demands, autonomy, skill variety, social support, feedback, task identity and job insecurity. As Vézina et al. report, validated questionnaires have been developed to assess these job features.

These job features are not only "toxic components." Numerous studies have taught us that stress and motivation can be regarded as two sides of the same coin. If work provides the right mix of work characteristics – that is, high but not too high demands, enough but not too much control and support, and so forth – work stimulates motivation and mental health, as well as productive performance. When work does not provide a proper configuration of work characteristics, it may provoke stress reactions. Healthy work may well be productive work (Karasek and Theorell 1990).

# Comments on Priorities: Interventions and Monitoring

According to the authors, ignorance of the definition and measurement of psychosocial risk factors is the reason why actual workplace strategies to prevent mental health problems at work are predominantly individual and reactive. We believe that this is but one reason. Other important reasons are the following: (1) senior management has individualistic attitudes and values and tends to point at within-person factors instead of within-work factors in case of stress complaints; (2) because of their training, many professional interventionists (e.g., occupational doctors and psycholo-

gists) are more comfortable with changing individuals than changing organizations (Cooper and Cartwright 1994: 458); (3) stressors may be inherent in the job; (4) the yet limited empirical evidence that interventions in the psychosocial work environment may reduce mental health problems; (5) the study of the costs and benefits of stress prevention has been largely neglected (see also Kompier and Kristensen 2001).

To overcome these hurdles, as Vézina et al. (2004) state, "the priority objective of a long-term research agenda on mental health and the workplace should be to produce knowledge that fosters the development of well-adapted interventions designed to reduce adverse psychosocial factors and their mental health effects." I support that conclusion: there is a strong need for well-designed and wellimplemented prevention and intervention studies. The scientific study of work organization interventions is both difficult and challenging, because such studies do not take place in the laboratory but in the natural context of quickly changing organizations. This organizational context is not under the control of scientists. Moreover, the people whose work is at stake – employees, middle managers and top managers – are not passive study objects. Rather, they are active shapers of their own work situation, and their actions and reactions are based on their interests, attitudes and preferences.

Therefore, if we want to develop such a "psychosocial intervention science," we will have to carefully address three types of questions: (1) questions about the content of the interventions (e.g., is there a problem? is an intervention necessary? does the intervention address the real problem? does it address those who need it?); (2) the context of the study and its interventions

(e.g., is the change process well organized and implemented? is there top management support? is there employee participation? "did the patient take the pill"?); and (3) the design of the study (e.g., is the study design adequate? are the assessment instruments reliable and valid? is the time interval theoretically valid? are subgroup analyses performed, e.g., between those with severe and mild complaints?) (see also Kompier 2003). Those questions resemble the ones about the development, implementation and effectiveness of the intervention (see also Goldenhar et al. 2001).

This all means that in order to change the predominant "bias to the individual" we need to do more than better describe potential psychosocial risk factors and to develop research instruments. Through the study of such "what," "how" and "why" questions, the challenge, both theoretical and practical, is to build up a strong body of evidence that shows which interventions may have which effects, and under what circumstances and by what mechanisms.

Whilst prioritizing research issues, Vézina et al. (2004) follow the research directions that have been pointed out by the USA National Occupational Research Agenda/NIOSH (2002) (see also Landsbergis 2003). Inspired by this NORA report, Vézina and his colleagues, in addition to stating the priority concerning intervention research, formulate two other major objectives: (1) "The collection of data that will provide a better understanding of the prevalence of work organization risk factors, how they may be changing and how they may affect mental health over time"; and (2) "To understand the effects on mental health of prominent trends in organizational practices, such as restructuring, lean production and flexible staffing, all of which result in precarious employment and all of which may pose special risks for women, immigrants or ageing workers."

I believe that this combined emphasis on intervention and surveillance is indeed what is needed to bring advances in this field, not only from a theoretical perspective, but also for practical reasons, that is, in order to reduce stress problems on the national, sectoral and organizational levels. Canadian Institutes of Health Research Invited Workshop on Mental Health and the Workplace. April 28-29, 2004. Toronto.

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# Industry Recognizes the Importance of Taking Action



STAKEHOLDER RESPONSE

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## Abstract

Any gap between the demands of the environment and the individual's expectations and resources places his or her health at risk. The individual's perception and evaluation determine the extent of the risk and the degree of negative or positive impact. Companies now recognize the importance of taking action to deal with workplace organization (i.e., primary prevention), in addition to offering more conventional methods of secondary and tertiary prevention. Variables associated with the intervention context, which were identified in Vézina's text, are conditions for the successful implementation of any occupational health and safety project. As representatives of a joint occupational health and safety association, we feel that we should be focusing mainly on primary prevention in the workplace. Research should be conducted to offer companies the procedures, methods, tools and means they need in order to implement effective and sustainable prevention strategies that will maintain a healthy workplace.

The paper that discussed promotion and prevention strategies in the workplace presents a review of two work analysis models to help define the issue of psychological health on the job.

In light of our experience in the field, Selye's stress model appears to be a good complement to the two other models described in the document. One reason is that this model brings out the subjective and systemic dimensions inherent in the definition of risk factors. In this model, the problem is the interaction between the individual and his or her environment. Any gap between the demands of the environment and the individual's expectations and resources places his or her health at risk. The individual's perception and evaluation determine the extent of the risk and the degree of negative or positive impact. This model recognizes the need to deal with psychosocial risk factors based on multifactorial combinations.

In an ASSTSAS survey of the Quebec health sector, nearly 49% of the respondents who had experienced a major health problem believed the problem to be directly related to their job.

Companies and organizations dealing with prevention are now more interested than ever in identifying potential solutions to this emerging problem. Companies now recognize the importance of taking action to deal with workplace organization (i.e., primary prevention) in addition to offering more conventional methods of secondary and tertiary prevention. In Québec, research conducted by Université Laval's chair of occupational health and safety management in organizations is attempting to put forward primary prevention intervention tools for workplaces. In our view, it is obvious that psychological health concerns must be integrated into the

culture of the organization and reflected in management philosophy.

Our experience confirms that the variables associated with the intervention context, which were identified in Vézina's paper, are conditions for the successful implementation of any occupational health and safety project. The factors that facilitate this intervention include support from senior management, commitment by all leaders of an organization, the type of leadership, worker participation, shared vision (through group projects), communication that encourages participation, and structured and consistent follow-up to increase or simply maintain any improvements.

The research approaches to be developed should make it possible to identify effective primary prevention strategies for companies – in other words, strategies that address work-related causes – in order to eliminate or reduce sources of stress: avoiding work overload, reviewing levels of supervision, improving communication, increasing worker participation in the organization's decision making, holding team meetings, and ensuring the development of skills required by employees – in other words, improving work organization.

Companies traditionally tend to invest in secondary prevention by acting on personal characteristics and individuals' coping mechanisms. These strategies, which are taught through stress management training, aim to reduce the consequences of stress, but they cannot change the working conditions and usually have just a short-term effect. Similarly, tertiary prevention strategies, which come into play when the individual is experiencing problems, aim to reduce suffering and improve well-being. The strategies consist of EAP, treatment, rehabilitation, return to

work and individual follow-up. Like secondary prevention, these strategies are directed at the individual rather than the work situation.

As representatives of an occupational health and safety joint association, we feel that we should be focusing mainly on primary prevention in the workplace. Research should be conducted to offer companies the procedures, methods, tools and means they need to implement effective and sustainable prevention strategies. As a complement to the priorities identified in the Vézina report, we believe that the research agenda should more specifically take the following actions:

- Design tools and procedures for companies and measure their effectiveness.
- Document the characteristics of a work situation that place workers' psychological health at risk, and also document the characteristics of a healthy environment that fosters psychological well-being.
- Specify the links that exist between factors of satisfaction, dissatisfaction and psychological health at work.
- Analyse the relationship between the quality of the organizational environment and psychological well-being, between the quality of the environment and performance, and between performance and psychological well-being at work.
- Identify psychological health indicators in the workplace.
- Create tools to measure the effectiveness of a preventive approach to psychological health in the workplace: impact indicators, measurements of results and follow-up over time.

• Identify the components of an effective program for managing the return to work after psychological problems, and measure the impact of such a program in terms of organizational health indicators (absenteeism, quality of the work environment, etc.).

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# HealthcarePapers

**DISCUSSION PAPER** 

# MENTAL HEALTH AND MENTAL ILLNESS IN THE WORKPLACE: DIAGNOSTIC AND TREATMENT ISSUES



**DISCUSSION PAPER** 

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## **ABSTRACT**

Mental health, mental illness and stress-related disability are especially ill-defined, complex and controversial issues when considered in the context of the workplace. A multi-determined disorder such as major depressive disorder (MDD) does not fit a simple cause and effect model, but is similar to other complex occupational illnesses such as low back pain. Currently, a knowledge gap exists between mental health professionals and employers regarding symptom-based models of illness and function-based models of work performance. As a result, psychiatric disorders affecting workers are under-identified and under-treated and likely result in unmitigated impairment and disability. The authors examine several conceptual models for workplace mental illness across medical and psychological disciplines and propose a unifying construct. The utility of the existing screening methods for common workplace illnesses and their potential application are reviewed. The challenges of diagnosis and effective treatment of workplace mental illness are highlighted within an "occupational mental health system" with suggestions for future research directions.

## Introduction

In the last decade the economic impact of mental illness in the workplace has been the subject of a growing number of publications in the psychiatric literature (Greenberg et al. 1999; Dewa and Lin 2000; Simon 2003). Mental illness has also captured the attention of employers, insurers and healthcare providers and remains a substantial burden (Dewa et al. 2002). Results from the recently completed Canadian Community Health Survey (Statistics Canada 2003) are expected to provide unique Canadian data in this area. Previously, the Ontario Mental Health Survey provided informative data on both under-detection and under-treatment of major mental illnesses in the community and also highlighted the impact of these disorders in the workplace (Dewa and Lin 2000). With respect to depression, there have been several reports on the importance of treatment until remission of all symptoms is achieved, both in preventing relapses and in increasing the likelihood of successful reintegration into the workplace (Paykel et al. 1995; Druss et al. 2000; Simon et al. 2000).

Differences in professional and theoretical backgrounds have contributed to the gap between traditional mental health workers, who treat individuals with diagnosed mental illness, and those in the employment sector, who have tended to consider occupational health in terms of stress and burnout. It is our contention that there is much greater overlap between stress disorders and psychiatric disorders than is generally recognized and that the first level of intervention would be to confirm this hypothesis.

For the purpose of this paper, we have chosen to focus on entities affecting

employed and employable adults, recognizing that occupational difficulties are also faced by other populations with severe and persistent mental illness. From the occupational perspective, the emphasis has largely been on stress and stress-related syndromes, including burnout, while those allied to mental health and mental illness have focused on mood disorders and anxiety disorders, as well as substance-related and adjustment disorders. The degree of overlap between these two frames of reference remains to be clarified.

These entities have been consistently linked to impaired work capacity in the form of decreased productivity, absenteeism and disability, which may include increased frequency of accidents. Reduced occupational attainment and increased turnover in the workforce are also sequelae. While robust and standardized data are not available across work environments, there is evidence to suggest that mental illness influences the bottom line in at least five distinct ways: (1) performance levels are sub optimal (presenteeism); (2) repeated short-term absences (< five days) that do not trigger disability claims; (3) short-term disability claims based on absence for 5-90 days; (4) long-term disability claims (> 90 days off work) and (5) failure of retention in the workplace.

# Stress-related Syndromes and Burnout

According to Cherniss (1980), psychological stress may be related to individual and organizational factors, and it is best defined as "a state of being, resulting from the tension experienced by the imbalance between what is demanded and what is offered to meet that demand." Work-related stress appears to be unique in that it is not easily modified and requires the

cooperation of several systems, notably management and employers in order to adapt to increased demands.

# **Conceptual Frameworks**

Health psychologists, as well as industrial and organizational psychologists, have studied constructs of stress-related syndromes and burnout for several decades. Stress-related syndromes, such as "sick building syndrome," are generally not well delineated and researched. They are characterized by non-specific respiratory, gastrointestinal, dermatological, musculoskeletal and neurological symptoms associated with changes of mood, memory disturbances and difficulty concentrating (Arnetz and Wiholm 1997). Burnout is a stress-related construct that is conceptualized in the context of specific and persistent workplace stressors. It has been widely recognized and studied, primarily in occupational settings within the human service sectors, and it initially involved mental health professionals (Freudenberger 1974). Over the past three decades, burnout has become an accepted disability from an employee perspective, but it is not accepted as a "medical disability."

Maslach and Jackson (1981) proposed three dimensions of burnout; emotional exhaustion (EE), depersonalization (D) and reduced personal achievements (PA), as measured by the Maslach Burnout Inventory (MBI). Emotional exhaustion, which is generally regarded as the initial and defining feature of burnout, results in attitudinal and behavioural changes that impair work performance.

# Symptom Severity and Functional Impairment

There is robust evidence that burnout, as measured by the MBI, influences work

performance, absenteeism and disability. Situational factors, such as high effort and demand with low job satisfaction, are believed to be more important than personal factors as antecedents of burnout (Iacovides et al. 2003; Karasek and Theorell 1990). In general, the more severe and pervasive the manifestations of burnout become, such as affecting family and social relationships, the more likely it is to overlap with clinical disorders such as MDD and anxiety disorders.

Current understandings of stressrelated syndromes and burnout have shifted away from the typical cause-effect relationship, which was grounded in traditional occupational medicine models. Subsequently, the interpretation has shifted toward the biopsychosocial, recognizing the mediating effect of personality and coping mechanisms in their response to a stressor and the context in which they interact. Within medicine, the biopsychosocial model has been widely utilized to explain disorders such as depression, anxiety and low back pain; this suggests a merging conceptual model for occupational mental illness (Spurgeon 2002).

# Depression, Anxiety and Substance Use

That stress may trigger or exacerbate mental and physical illnesses is well accepted. Biological manifestations of stress result from maladaptive responses by the body's internal regulating systems, including the hypothalamic-pituitary-adrenal axis. Failure to regulate stress-related hormones, including corticotrophin releasing factor and other neurosteroids, may promote a chronic state of stress in the brain, which can result in atrophy or shrinkage of certain brain areas – particularly the hippocampi

- that are associated with memory and mood regulation (McEwen 1999). A similar model of understanding exists in research regarding occupational stress.

# **Diagnostic Frameworks**

Major depressive disorder (MDD), dysthymic disorder and bipolar disorder are among the most prevalent psychiatric disorders in the workplace. Anxiety disorders, including panic disorder, generalized anxiety disorder (GAD), social phobia (social anxiety disorder), post-traumatic stress disorder (PTSD) and obsessive-compulsive disorder (OCD), are also highly prevalent and are frequently comorbid with mood disorders. Over time many individuals who suffer from anxiety disorders are likely to develop co-morbid depression (Angst et al. 1990).

Substance abuse and physical illness are also co-morbid with both anxiety and depressive disorders. In general, comorbidity adversely affects outcome. One-third of mood disorder patients have a lifetime history of substance use, and 20% of individuals with alcohol problems have a lifetime history of a mood disorder (Merikangas et al. 1998). Among the medically ill, risk of death following a heart attack is significantly increased by the presence of co-morbid depression (Frasure-Smith and Lesperance 2003). There are also many examples where co-morbid depression is associated with increased utilization of medical services for non-psychiatric conditions, likely due to worsening substance use, psychiatric illness and physical illness (e.g., pain or cardiac disease) (Osby et al. 2001). All these influence the subjective experience of health or "wellness," but the effect on job satisfaction, organizational commitment and retention rates is less clear.

Increasingly evident is a reduction in performance and productivity, which is likely mediated through cognitive impairment, physical symptoms and interpersonal conflict (Stewart et al. 2003).

A more unifying construct for defining depressive and anxiety spectrum disorders would include etiologic and functional dimensions, such as mood (irritability and emotional exhaustion), cognitive functions (concentration and memory), interpersonal relations (conflict and sociality), behaviour (reduced occupational achievement, absenteeism or reduced performance) and physical symptoms (pain, weakness, fatigue, neurological symptoms, gastrointestinal problems). Physical symptoms are an integral component of both depressive and anxiety disorders and may be especially relevant in justifying the "sick role" in the workplace (Stewart et al. 2003).

# **Symptom Severity and Functional Impairment**

Evaluating response to treatment, whether counselling and psychotherapy or medication and pharmacotherapy, is generally an informal judgment that is reached by the individual and the clinician together. However, both qualitative and quantitative measures of severity are available. The Hamilton Rating Scale for Depression (HRSD) (Hamilton 1960) and the Hospital Anxiety Depression Scale (HAD) (Zigmond and Snaith 1983) are examples of observer-rated and self-report scales. Abbreviated versions of the HRSD, such as the seven-item version (McIntyre et al. 2002) take less time to administer and have been used in family practice and psychiatric clinics to evaluate treatment outcome. Their utility as screening instruments has yet to be established.

Functional outcome is a neglected but equally important measure during treatment of these disorders. Quality-of-life assessments, such as the Medical Outcomes Short Form – 36 item scale (SF-36), have been used to evaluate functional impairment across numerous physical and psychiatric disorders, but they have limited utility in the workplace (McHorney et al. 1992). The Endicott Work Productivity Scale (Endicott and Nee 1997) and the Life Functioning Questionnaire (LFQ) (Altshuler et al. 2002) are relatively brief validated measures of workplace performance.

# **Screening Strategies**

In general, screening is indicated when a condition is highly prevalent, underdetected and undertreated; when available and reliable screening methods are available; and when effective treatments exist (Greenfield et al. 1997). Workplace screening has been recommended for hypertension, diabetes, cancer, TB, musculoskeletal disorders, chemical exposure and countless other ailments, and more recent findings suggest erring the same need for screening for mental illness.

# Screening for Stress-related Syndromes and Burnout

The Job Content Questionnaire (JCQ), based on the Demand-Control Model (see Vézina's paper), has been successfully administered in the Canadian National Population Health Survey (NPHS) and the French GAZEL cohort, which both include large samples of working individuals (Karasek 1985; Ibrahim et al. 2001; Niedhammer and Chea 2003). Burnout has been measured in a large sample of Finnish physicians with the Maslach Burnout Inventory (MBI) (Korkeila

et al. 2003). More longitudinal studies are needed to adequately evaluate these self-report instruments and the health outcomes which they intend to link (e.g., self-reported health). Both may be helpful in identifying those at increased risk for developing sequelae from stress, such as depression and anxiety disorders (Niedhammer and Chea 2003).

# Screening for Depression, Anxiety Disorders and Substance Abuse

General screening instruments evaluated for depression include the Center for Epidemiologic Study Depression (CES-D) scale (Roberts and Vernon 1983) and the General Health Questionnaire (GHQ) (Goldberg 1972). In 2002, the US Preventative Services Task Force found sufficient evidence to recommend routine screening for depression in clinic populations. Overall, routine screening for depression followed by feedback to the provider increased disease recognition by 10% to 47%. It is of note that improvements in treatment rates and outcomes were associated with superior outcomes only when integrated with a depression management program (Pignone et al. 2002).

Anxiety disorders are also highly prevalent and, with the exception of simple phobia, are associated with impairment in workplace performance (Greenberg et al. 1999). To date, there is less research into screening methods for anxiety disorders than for depression. The utility of common anxiety disorder assessment instruments for screening has been evaluated in a German female population with the Symptom Checklist Revised (SCLR-90), the Beck Anxiety Inventory (BAI) and the Anxiety Sensitivity Index (ASI) (Hoyer et al. 2002). More research

and development is needed in global anxiety screening tools that would accurately identify workers in need of clinical attention.

Substance abuse screening in the form of drug testing has been widely adopted, particularly in the United States. The effect of drug testing is substantial as a deterrent, but it is still unclear whether it alone has been responsible for reduced substance use in populations or whether it persuades individuals to seek treatment (Cook and Sclenger 2002). The use of widespread drug testing may not be applicable to Canada, and it can be criticized as being insensitive to on-the-job impairment, adversarial and an overly invasive screening method (Raskin 1993). Non-invasive methods evaluated in a workplace setting include the Brief Michigan Alcoholism Screening Test (BMAST) (Pokorny et al. 1972) and the CAGE (Ewing 1984). These instruments were also limited by their ability to differentiate present from past drinking and lack of agreement about cut-off scores (Watkins et al. 2000).

# Screening for Musculoskeletal Disorders

In 1986, the National Institute for Occupational Safety and Health (NIOSH) in the United States proposed a strategy to decrease cumulative trauma disorders (CTDs), such as carpal tunnel syndrome. This involved a comprehensive questionnaire and physical screening over four weeks. The effectiveness of workplace screening programs is supported by the decrease in incidence rates of CTDs (Melhorn 1999). One concern, however, which has been expressed by employers, is that if an individual is evaluated, educated or informed about CTD musculoskeletal

disorders related to the workplace, the reported rate of occurrence would increase. Prospective studies have shown this did not happen (Melhorn 1999).

Evidence from studies screening for common stress-related entities and psychiatric disorders suggests that several valid instruments are available that can be administered broadly on a self-report basis. The optimal screening instruments and procedures have not been explicitly determined for many mental illnesses and may include novel strategies such as Internet-based methods (Houston et al. 2001). To date, screening strategies have relied primarily on self-identification and self-referral, with findings for depression and CTD's indicating that more structured protocols yield improved outcomes. While indications for workplace mental illness screening, particularly depressive and anxiety disorders, do meet sufficient criteria, there are as yet no protocols for the workplace.

# Treatment Treating Stress-related Syndromes and Burnout

Strategies for limiting stress-related illnesses have been used and evaluated at several levels. The promotion and prevention strategies are reviewed in Michel Vézina's paper. Treatment interventions typically involve workplace counselling through employee assistance programs (EAPs). EAPs are designed to provide counselling, information and/or referrals. These were originally developed in the United States for alcohol-related problems and have been extended to other stress and mental illness problems (Cooper and Cartwright 1997). These confidential services, which employees can obtain voluntarily, typically offer four to eight

sessions per year per employee. Marked benefits can occur in symptom reduction, but it is unclear if these interventions have any impact on work performance. It is of interest that evidence from counselling programs indicates that one-quarter of all presenting problems were related to problems outside of work (Reynolds 1997).

The impact of EAP interventions on employees with depressive or anxiety disorders has not been established. A scientific review of critical incident stress debriefing (CISD) performed by the Cochrane group did not support CISD as an effective intervention to prevent PTSD (Suzanna et al. 2002). This is an example of a widely adopted EAP practice and intervention that appears to have no clinical benefit but is considered of value to employers and management. There is a need to evaluate the effectiveness of existing interventions more stringently and to define treatment plan thresholds for referral to additional psychiatric services (McLeod and Henderson 2003).

# Treating Depression, Anxiety and Substance-related Disorders

The course of mood and anxiety disorders is episodic, the peak ages of onset being in late adolescence and early adulthood for most disorders. Despite the burgeoning mental health and socio-economic impact of depression, two large studies, the Depression Research in European Society (DEPRES) study and the Ontario Health Study (OHS), conclude that only about half the individuals with major depression seek help, and among those who do, only about one-third receive any pharmacotherapy (Lépine et al. 1997; Parikh et al. 1997). In a longitudinal evaluation, patients with depression spent about 20% of their lives depressed and frequently

experienced residual symptoms between episodes. Also in about 20% of patients, depression followed a chronic course with no remission. The recurrence rate for those who recover from the first episode is around 35% within two years and 60% in 12 years, it is also higher in individuals who are 45 years of age or older (Keller and Boland 1998). Given the course of these disorders, it seems imperative to limit their impact on occupational attainment and sustainability with effective treatments.

Despite the availability of numerous guidelines for the treatment of mood and anxiety disorders (Kennedy et al. 2001; Segal et al. 2001a; Segal et al. 2001b; Stein 2003), recent evidence confirms the suspicion that the actual prescription of antidepressant medication for disability claimants does not meet dose and duration recommendations. In a sample of Canadian insurance and financial sector employees, individuals who went on to long-term disability were significantly less likely to have received first-line antidepressants at guideline recommended doses. Conversely, those who were treated in adherence with guidelines were significantly more likely to return to work after a short-term disability claim. More than half of the claimants had received antidepressants (56%), but it was impossible to evaluate the frequency or effectiveness of evidence-based psychotherapy (Dewa et al. 2003).

The decision to recommend psychotherapy or pharmacotherapy depends on several issues, including patient preference, symptom severity, treatment availability and prior treatment experiences. In general, for mild to moderate depression, evidence-based short-term psychotherapies (e.g., cogni-

tive-behaviour therapy and interpersonal psychotherapy) are as effective as medication treatments (Kennedy et al. 2001). There are numerous other pharmacological techniques for promoting remission (e.g., augmentation and combination therapies), and in chronic depression, often lasting several years, combined psychotherapy and medication are superior. The benefits of treating to remission include reduced relapse rates, improved psychosocial function and reduced work-related costs (Simon et al. 2000).

Both psychological and pharmacological treatments have been employed effectively across the spectrum of anxiety disorders. In fact, many of the same medications (e.g., SSRIs) and psychotherapies (e.g., CBT) are used to treat these disorders. The importance of early detection and treatment has been emphasized as a means of preventing future co-morbid anxiety and depression. Typically, treatment for co-morbid mood and anxiety disorders as well as co-morbid substancerelated disorder is more complex, requires more than one intervention and may yield lower rates of response and remission. Motivational interviewing techniques have provided successful outcomes in some substance-abuse populations. Adjustment disorders are at the interface between stress-related disorder and mood and anxiety disorders. They may be well suited to brief focused counselling interventions as offered by EAPs.

In the case of depressive disorders, there is now convincing evidence that treatment is cost-effective, even when the employers bear the full cost of treatment (Druss et al. 2000; Goldberg and Steury 2001). In Canada, employers could further limit organizational costs by effectively utilizing a public health care system and

reducing insurance costs through the prevention of disability. Considering that the great majority of Canadians are employed, society would also benefit from using the workplace as a conduit for treatment. To date, few treatment studies have identified the economic impact of early and sustained evidence-based interventions through improved occupational attainment and function. Currently, identification and treatment delivery strategies appear to be greater barriers than the effectiveness of treatment.

# **Healthcare Delivery**

We understand the system in which employee mental health is addressed as the "occupational mental health system" (see Figure 1). Within this fragmented system, there are several barriers related to timely identification, correct diagnosis, shared treatment strategies, and prevention of relapse and disability (Goldberg and Steury 2001). The occupational mental health system includes representatives from the healthcare providers (physicians, psychologists, EAPs and researchers), the workplace (employers, human resources, managers and co-workers) and insurance providers (public and private), as well as the home and community (family and advocacy groups). In general, this system is poorly integrated and is characterized by barriers caused by lack of education, illdefined roles, inadequate resources, delayed and unsuitable treatment and socio-economic factors, all of which discourage resource utilization and investment. Ideally, interventions should be initiated by gains-driven positive motives rather than problem-driven negative motives such as cost containment (Cooper and Cartwright 1997).

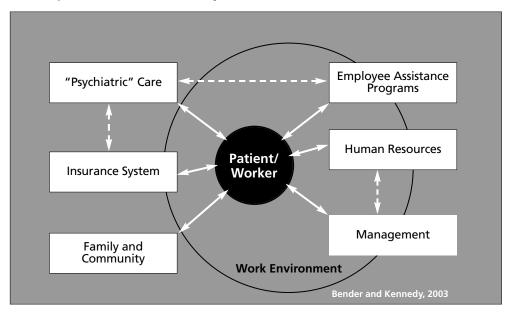


Figure 1. Occupational Mental Health System

### **Healthcare Providers**

Employee Assistance Programs are often the first point of contact for employees with mental health concerns. The rates of EAP coverage appear to be related to the size of the organization and industry group. Smaller organizations (those with fewer than 100 employees) are much less likely to offer EAPs than large organizations (those with over 1,000 employees), particularly those with educated and unionized workforces (Hartwell et al. 1996). Great variability also exists in the coverage and services provided by EAPS in different organizations and in their utilization; and interventions often occur independently of those provided by the primary care physician (Reynolds 1997).

In Canada, public health physicians still remain the primary providers of mental health services to working individuals. There is now evidence that mental disorders, such as depression, are associated with higher utilization of general health resources rather than specific

resources directed towards mental disorders. That is of concern in a constrained public health system (Simon 2003). Interventions within physician health practices have achieved modestly better outcomes in the diagnosis and treatment rates of depression by using organizational and individual strategies. Effective professional interventions include distribution of educational materials, educational meetings, clinical management consensus processes, educational visits and feedback to practitioners, the use of local opinion leaders, patient feedback through selfrated screening, audit and feedback of clinical performance, and reminders and review of treatment barriers. Effective organizational interventions include revision of professional roles, clinical multidisciplinary teams, formal integration of services and continuity of care (Gilbody et al. 2003). It is of interest that those receiving enhanced-practice management of depression had lower rates of unemployment and work conflict at

one year than those who received usual care (Smith et al. 2002). In the primary care setting, novel practice strategies will continue to be a focus of future research with potential application to a workplace setting. These may include shared-care models with primary care physicians, occupational medicine specialists and clinical psychologists in collaboration with psychiatrists.

# The Workplace

Evaluating the utility of individual and organizational strategies for improving treatment outcomes in occupational mental illness will require the collaboration and co-operation of several organizations. Potential interventions, which have not been adequately evaluated include delivering confidential self-rating scales to the work site; promotion of greater awareness by EAPs; recognition training for supervisors; and more education for labour boards and the judicial system (Goldberg and Steury 2001). Because of the stigma of mental illness and fear of discrimination, targeted mental health interventions, such as health counselling for substance abuse, may be more effective if imbedded in socially acceptable programs for smoking or cardiovascular disease (Cook and Sclenger 2002). Since a significant proportion of the Canadian workforce is employed in small and medium-sized organizations, findings in large organizations may not be generalizable and there may therefore be a need for independent study of these variables (Statistics Canada 2003). Despite this, most organizations do have government-mandated occupational health and safety policies and programs that may accommodate and guide potential workplace mental health strategies.

# **Home and Community**

Results from the National Comorbidity Study highlighted the significant relationships between conflicts at home and in the workplace. Those reporting increased workplace conflict due to family stressors were 10 to 30 times more likely to be experiencing psychiatric disorder than those who did not report such conflict. Family and community supports have the potential for reducing work-life imbalances and preserving sustainable employment by reducing caregiver burden, improving identification, and advocating for treatment seeking and better adherence to treatment plans. These findings emphasize the need to examine optimal home interventions, including workplace family-supportive programs (Frone 2000).

### **Insurance Providers**

The insurance industry has worked closely with employers and labour unions, acting in good faith when handling occupational health claims by (1) commissioning specialists to examine the claimant; (2) providing vocational support services; (3) negotiating on behalf of the claimant for modified duties or modified environment; and (4) offering a financial safety net during rehabilitation (Lloyd 1997). Unfortunately, there are frequent delays – in communication, compensation and treatment – which lead to further morbidity related to psychiatric disorders.

# Challenges in disseminating existing knowledge

Despite the availability of evidence-based treatment guidelines, investment in the dissemination of this information has been minimal. There is a gathering momentum in research as it applies to occupational factors and a growing inter-

est of organizations in implementing these findings. To achieve this, Rosenheck (2001) suggested four strategies: (1) leadership coalitions to promote implementation; (2) research initiatives linked to organizational goals and values; (3) continuous monitoring of implementation process and program performance; and (4) development of subcultures that reinforce evaluation and learning.

### **Outcomes**

Identifying outcome measures that are meaningful to researchers, healthcare providers, employers and employees is an important first step. In clinical settings, there is a gradual paradigm shift from symptom reduction to successful functional outcomes. In workplaces, maintaining competitiveness through enhanced productivity and cost-control has been an emerging business driver, although the long-term effects on employee mental health have not been firmly established. Most research has relied on crosssectional design or retrospective analysis, neither of which is able to establish a causal link between mental disorders and work dysfunction (Simon 2003).

We propose that there is a need for longitudinal controlled prospective studies that thoughtfully combine clinical and economic outcomes. These outcome measures have not been uniformly defined, but they are taking shape. In our opinion, the economic consequences of mental illness are related to absenteeism, productivity (presenteeism), disability rates (short- and long-term), retention rates, job satisfaction and insurance costs. The clinical outcome measures most relevant to the workplace are diagnostic and comorbidity rates; referral rates; response, remission and relapse rates;

quality of life and functioning; healthcare services utilization; and program cost-effectiveness.

## **Conclusion**

We are faced with the challenge of greatly improving the detection and treatment of mental illnesses in the workplace. There is a growing determination among various stakeholders to identify occupational factors that contribute to mental health and mental illness and to develop appropriate treatment interventions. The model adopted by several countries, including Canada, for addressing occupational low back pain serves as a useful example. Guidelines contain recommendations for diagnostic triage, screening for specific symptoms, and the identification of workplace barriers and psychosocial issues. All of these guidelines have been criticized for lack of attention to organizational barriers, implementation strategies and costs (Staal et al. 2003). There is a great opportunity in the field of mental health to learn from this and other occupational models.

We propose the following research agenda:

- (1) Clarify diagnostic entities and associated co-morbidities with validated research instruments for occupational mental illnesses.
- (2) Understand the factors that contribute to workplace stress to be risk factors for psychiatric disorders, and for the populations they affect.
- (3) Develop and evaluate screening tools for mental illness and functional impairment in the workplace.
- (4) Evaluate EAP interventions and their impact on stress and burnout and psychiatric disorders.
- (5) Develop and evaluate shared-care

- strategies that can be adapted to different sizes and types of organizations.
- (6) Develop guidelines for the management of mental illness in the context of the "occupational mental health system."

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# Organizational and Environmental Factors Can Influence Effectiveness of New Care Models



RESEARCHER RESPONSE

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### ABSTRACT

This paper puts forward important concepts related to the diagnosis and treatment of individuals with mental illness and the workplace. These include the need to take an integrated bio-psycho-social approach, an emphasis on functional outcomes, the need to improve the current fragmentation of occupational mental health services, the benefits of identifying individuals at risk of developing mental health problems, the difficulties in disseminating educational information, and the impact of the relationship between workplace and family factors.

While the paper focuses on traditional approaches to treatment (prevention is addressed in another paper), there are a number of dimensions that are missing from this analysis and that need to be included in the development and evaluation of effective occupational mental health services. The framework being proposed would be strengthened if it (1) defined target groups at whom workplace mental health services should be aimed, (2) put greater emphasis on the interaction between individual and contextual or workplace factors and (3) looked at factors that can affect the "processes" of care in order to develop effective intervention models. The inclusion of these areas reflects three important principles underlying the delivery of occupational mental health services:

- It needs to be seen as a collaborative venture between management, representatives of the workforce, mental health and occupational health services, and other community resources.
- Occupational mental health services need to take a systems or organizational perspective, addressing factors in the workplace as well as individual factors that can contribute to the development of work-related problems and affect their management.
- Many individuals have difficulty in accessing appropriate psychiatric services for work-related problems. The work-place is in a unique position to identify these problems and facilitate referrals.
- (A) WE NEED TO BE CLEARER about whom workplace mental health services should be directed to, rather than just stating "all individuals with jobs and mental health problems." This will help to define the responsibilities of occupational mental

health services (Kahn 2002). Potential roles can include assisting (1) workers and workplaces in addressing specific sources of stress that contribute to work-related mental health problems (this is discussed in the prevention paper); (2) workers who are coping with mental health problems arising from workplace difficulties, or where rapid access to suitable treatment will increase their return to productive participation in the workplace; (3) workers who require referrals to mental health services outside the workplace; or (4) workers who are returning to the workplace after dealing with a mental health problem. The question of whether these services should just focus on work-related issues that will affect the worker's ability to participate in the workplace or whether they should address general mental health issues needs to be clarified as part of the developing national agenda.

(B) A GREATER EMPHASIS is required on the need to recognize and address contextual factors in the workplace as part of the assessment and treatment of a mental health problem (Maddocks 2000). Factors such as work relationships, lack of control over the work environment, etc., can contribute to the development of mental health problems and their management. Incorporating these factors into a systemic and organizational approach will allow us to take a multi-dimensional view of the origins of a problem and open up broader options for effective management (Fingret 2000).

Most workplaces also have relational and political tensions or undercurrents that can affect the way mental health problems present or can be screened for or treated, or how services are utilized. For example, (1) it may not be clear whether the services are in place to improve the well being of the individual or the productivity of the company; (2) there may be an element of coercion in suggesting that a worker receive mental healthcare in the workplace; (3) it may be stigmatizing for workers to be identified as having a mental health problem, and they may therefore wish to have their problems treated elsewhere; and (4) the workplace may be ambivalent in its acceptance of mental health problems and services.

(C) There needs to be a greater focus on the process of care and the factors that can *influence this.* The paper states that many different services and organizations already provide mental health services to the workplace, often in a fragmented manner with poorly defined responsibilities, although it overlooks the role of the family physician, who will bear primary responsibility for ongoing care for many people seen by occupational mental health services (Kates et al. 1997). We need to identify the optimal roles of the three sectors – occupational health services (including EAPs), mental health services and primary care – and determine how they can work together and complement one another (Goldberg and Steury 2001). The paper touches on the important issue of the need to develop and evaluate innovative models of service delivery. To be effective, these must be relevant to and fit with the demands and expectations of the workplace and key stakeholders; acknowledge and take into account specific contextual factors that can affect the way services are used; and be well linked with primary care and community mental health services (Sederer and Clemens 2002).

We also need to investigate what the optimum models are for ensuring that

workers with mental health problems receive suitable treatment, determining whom they get it from, and identifying the main factors that contribute to their success. Several specific questions need to be answered: What is the optimal role for mental health specialists when working with occupational health services? Should EAP services see anything other than problems that affect an individual's participation in the workplace? How should EAP and occupational health services be linked? How should workplace services be linked with primary care and community mental health services? What services need to be in place for individuals exposed to "critical incidents"?

New models of care need to recognize that organizational and environmental factors can influence their effectiveness (Lubit and Gordon 2002). When we are developing and analyzing these models, the decisions to be made include (1) what role employees should play in the organization of mental health services, (2) what factors in the culture of the organizations can affect the integration or acceptance of models of care in the workplace, (3) who should be paying for these services and the implications of different models of treatment, (4) what staff need to be involved in these services and (5) what the most effective models are for educational and screening programs, who should be involved in their implementation and how they should be prepared and supported.

There are three other key issues not raised in the paper that need to be addressed as part of a national agenda: (1) What are the most effective ways of reducing the psychological impact of job loss (Kates et al. 2002)? (2) Can we develop a broader understanding of the relationship between the workplace and

family activities (Morrison and Deacon 2002)? (3) How do we train psychiatrists and mental health workers to appreciate the role work plays in people's lives and the impact of work-related factors on their mental health.

## Additional Priorities for the National Agenda

- Who should the target populations be for occupational mental health services?
- What are the optimal models for delivering services to these populations and what factors promote or retard their successful implementation?
- How should workplace-based services be linked with community mental health services and primary care?
- What are the most effective models for educating and screening workers with potential or emerging mental health problems?
- How can we best assist workers in smaller workplaces (those with fewer than 100 workers) that don't have EAPs and that have limited on-site health resources?

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## Workplace Culture and Mental Health Are Interwoven



STAKEHOLDER RESPONSE

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#### ABSTRACT

Workplace health is a serious issue. Illness and injury take a significant toll on employers, employees and the bottom line. Research has focused primarily on the physical health and injury side of the workplace health equation, with much less attention being paid to the mental health factors that affect employers, employees, families, productivity, efficiency, quality, creativity and innovation.

Workplace Mental Health (behavioural health, mental illness and addictions) is directly related to the workplace environment, home and work balance, employee assistance programs, and the broader public and private healthcare system. We will profit from a greater

understanding of the impact of these factors and their interactions with and effects on mental health and resilience.

Many Canadians do not receive any services for their mental health problems. The workplace mental health research agenda can explore the contribution of the

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workplace to improving mental health and resilience for clinical and subclinical populations.

It is important for the CIHR to expand its research activities to include more psychological and social research in order to meet its legislative mandate. This research agenda will help accomplish this important goal, and the results will be generalizable across the work of the institutes.

Kennedy and Bender review important issues relevant to mental health in the workplace. They point out that mental health, mental illness and addictions have a significant impact on the workplace, and they argue correctly that workplace mental health involves a complex interaction of biological, psychological and social factors. This interaction and the relevant drivers within each should be of primary interest in this research initiative. For the purposes of this discussion, mental health includes behavioural health, mental illness and addictions.

The term psychosocial often describes an undifferentiated mass of all things that are not biological or medical. Commonly agreed upon definitions are essential. The biological domain is concerned with, for example, genetics, physiology and pharmacology. The psychological domain focuses on the biological, cognitive, affective, social, cultural and environmental determinants of behaviour (Canadian Psychological Association 1999) and on the behavioural factors affecting health and disease (Dobmeyer et al. 2003). The social domain includes social policy, legislation, regulation, workplace culture, the work-community interface, employee benefits and return-to-work systems.

Kennedy and Bender mention the important contribution of workplace culture to mental health, an issue dealt with in the Vézina paper. These two areas are inextricably interwoven, and the research agenda needs to recognize that fact. The authors also refer to addictions (e.g., to substances or gambling), a serious factor in the workplace that must not become the poor cousin of this research initiative.

Between 30% to 60% of primary healthcare visits to family physicians are because of a psychiatric or psychological problem or said problem is a significant contributing factor to the diagnosis (Cummings et al. 1997). Estimates suggest 20% of the Canadian population will experience a significant mental health problem in their lifetime but fewer than 50% report receiving treatment (Statistics Canada 2003). It is important to understand the impact of these treated and untreated conditions on workers and the workplace and how the workplace can help to improve employee functioning.

While it is true that the majority of mental health services in Canada are delivered by physicians, this is to some extent an artifact of funding mechanisms and of supply and demand. New interdisciplinary models for primary healthcare and mental healthcare delivery are being developed. These models must take the workers and the workplace into account, and the workplace research agenda must contribute to the development of models that effectively support and interact with the workplace (e.g., examine the interface between primary healthcare and the workplace; study the impact of the increase in the privatization of mental health services; evaluate the role and efficacy of Employee Assistance Programs (EAP) and their interface with work and primary healthcare; and examine back-towork and maintenance programs).

As Kennedy and Bender state, mental health screening, recognition and treatment in the workplace need to be better understood. This discussion could expand to include conflict resolution, harassment and bullying and their relationship to mental health (LeBlanc and Kelloway 2002). It is also as important to examine the prevalence, course and impact of subclinical conditions, which are widespread and have a considerable effect on the workplace.

Most Canadians work for small and medium-sized organizations that do not have the same work environment, infrastructures, unionization or benefits as large corporations. This sector needs to be included in the research.

Workers bring their external environment to work and vice versa. It is crucial to understand better the impact of non-work variables on workplace mental health and the interaction between the work and non-work factors that support psychological resilience in workers.

There are structural problems in the collection and sharing of mental health data on epidemiology l, utilization and outcomes in Canada (Statistics Canada 2003; Health Canada 2002). These problems are evident in both the public sector (e.g., hospitals, regional health authorities and provincial and territorial governments) and the private sector (e.g., insurers, private providers and EAPs). A study of the currently available data systems in order to make improvements has the potential to significantly strengthen research in this area.

There is excellent research already occurring in the biomedical and pharmaceutical areas within the CIHR. The workplace mental health agenda will profit from this science. The results generalize

well. The psychological and social aspects of health, mental health and addictions are less well funded in the 13 CIHR institutes. They are central to the workplace research agenda and provide an important and exciting opportunity. The focus of this research agenda needs to remain on the psychological and social factors.

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## HealthcarePapers

**DISCUSSION PAPER** 

# DISABILITY MANAGEMENT, RETURN TO WORK AND TREATMENT



**DISCUSSION PAPER** 

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#### Abstract

Individuals with severely disabling mental illness receive more benefit from supported employment initiatives than from other vocational services, but these initiatives show variable job tenure and low implementation by governments. For those with less severely disabling mental illnesses, such as depression, evidence-based treatment results in substantial restoration of job function, and restored work function occurs in synchrony with reduced symptomatology. However, there is a substantial degree of residual impairment despite receiving standard treatment. Major research trends include an increasing focus on occupational recovery in less severe forms of mental illness and potential application of integrated disability management models to occupational recovery from disabling mental disorders. Promising research directions include effectiveness of standard mental healthcare in restoring work function; effectiveness of actively managing co-morbid mental health problems for disabling physical disorders; population factors affecting return to work in those with disabling mental disorders; identification of policies fostering occupational recovery for disabling mental disorders; effectiveness of innovative mental healthcare focused on occupational recovery; and organizational interventions to foster occupational recovery in employees with disabling mental disorders.

#### Introduction

The purpose of this paper is to discuss research issues related to disability management, return to work and treatment as they relate to people with mental health problems and mental illness in the workplace. The current report is one of a series of discussion papers being developed by a Working Group mandated by the Institute of Population and Public Health (IPPH) and the Institute of Neurosciences, Mental Health and Addiction (INHMA) of the Canadian Institutes of Health Research (CIHR) for the purpose of advancing research and increasing available evidence in the area of workplace mental health.

The paper has three main objectives:

- (1) to report on the state of knowledge in the area
- (2) to identify major trends in research
- (3) to identify significant gaps in knowledge with suggestions for promising research directions

In order to achieve these objectives, a review of the scientific and "grey" literature was undertaken and a small group of researchers who have studied occupational disability in people with mental illness were interviewed.

#### Current State of Knowledge Knowledge Related to Physical Health Problems

There has been significant research activity on workplace health that has considered disability management, return to work and treatment. For the most part, however, such research has not directly addressed mental health problems or mental illness but have been focused upon various physical health problems encountered in the workplace (e.g., back injury and other musculoskeletal problems, brain injury, cardiac illness and chronic rheumatic diseases). Although the findings do not tend to address mental health problems

directly, they may provide valuable information about mental health and may be useful for future research concerned directly with mental health and mental illness. Some of the relevant research findings are highlighted in this section.

Consistent across a number of health problems in the workplace has been the finding that the likelihood of an individual returning to former employment after an absence from work is determined by a number of factors other than the nature and severity of the health problem (Brewin et al. 1983; Kenny 1994; Shaw et al. 2001).

Predictors of a more rapid recovery and return to work include socio-demographic characteristics, job satisfaction and referral to appropriate rehabilitation services (Brewin et al. 1983; Kenny 1994). In a study of disability and return to work following occupational low back pain, a systematic review examined 361 studies and selected 22 that met specific inclusion criteria (Shaw et al. 2001). The factors associated with protracted disability included low workplace support, personal stress, shorter job tenure, prior episodes, heavier occupations with no modified duty, delayed reporting, greater severity of pain, more significant functional impact and extreme symptom reports. On the basis of the evidence gathered in the study, the following measures were recommended to help physicians improve disability management: the use of standardized questionnaires, improved communication with patients and employers, provision of recommendations for specific return to work accommodations, early intervention and use of behavioural approaches to pain and disability.

A review of scientific literature related to workplace disability management for musculoskeletal disorders (Williams and Westmorland 2002) found employer participation, a supportive work climate and cooperation between labour and management to be crucial factors facilitating return to work.

A systematic review undertaken to determine the effect on time lost from work of physical conditioning programs for workers with back and neck pain (Schonstein et al. 2003) found that physical conditioning programs that included a cognitive-behavioural component could produce a clinically worthwhile reduction in the number of sick days taken at 12 months (average of 45 days; 95% confidence interval [3, 88]), compared to general practitioner care or advice for workers with chronic back pain. There was little evidence of an effect on time lost from work of specific exercise programs that did not include a cognitive-behavioural component.

A three-year follow up study evaluated a randomized intervention for low back pain in which the intervention group received early intervention through a clinic, which provided information, reassurance and encouragement to engage in physical activity (Molde Hagen et al. 2003). The intervention group had significantly fewer days of sickness compensation (average 125.7 days per person) than the control group (169.6 days per person), whose members received usual care through their own physicians. This difference was primarily due to more rapid return to work during the first year. Economic returns of the intervention were calculated in terms of increases in the net present value of production for the society because of the reduction in number of days on sick leave. Net benefits accumulated over three years of treating the 237 patients in the intervention group amounted to approximately \$2,822 per person.

A number of studies have investigated potential difficulties in physician approaches to disability management and have report mixed results (Anema et al. 2002; Dasinger et al. 2001; Guzman et al. 2002; Mahmud et al. 2000). Most have found that physicians' actions related to disability management are inconsistent with recommended clinical practice guidelines and policies, such as those set out by the Canadian Medical Association (Kazimirski 1997). Mahmud and colleagues (2000) found disability to be significantly associated with increased utilization of specialty referrals, use of specialized diagnostic tests and prescription of opioids. They found that patients with low back pain whose treatment course did not involve extended opioid use and early diagnostic testing were 3.78 times more likely (95% confidence interval [1.6, 8.9]) to have gone off disability status by the end of their study. Dasinger and co-investigators (2001) found positive recommendations by physicians to be associated with a 60% greater rate of return to work in "sub acute and chronic disability" (i.e. >30 days of disability) following back injury. However the association between positive recommendations by physicians and return to work for patients "acutely disabled" (i.e. <30 days) was found to disappear when injury and workload characteristics were taken into account.

### **Knowledge Related to Mental Health** and Mental Illness

Research on vocational rehabilitation related to mental health has primarily involved people with severely disabling mental illness. In trying to understand better the work integration processes of people with severe mental problems,

detailed descriptions of the different vocational services/programs have been undertaken (Cochrane et al. 1991). Trochim et al. (1994) tried to describe them along a continuum of services, with sheltered work as a first step, transitional work as a second step and supported employment as a subsequent step. Of all these vocational services, supported employment, which appears to have been studied the most, has yielded significantly higher work integration results than other vocational services (Crowther et al. 2001).

Although supported employment has been found to be more successful than other programs directed toward people with severe mental illness, it still encounters difficulties, such as variability in achieving successful job tenure. It has also seen relatively minimal adoption by governments and administrations (Bond et al. 2001). In recent years, many studies of the work integration of people with severe mental disorders have been published; they have investigated vocational outcomes in relation to clinical and economic correlates (McGurk and Meltzer 2000; Latimer 2001; Rogers et al. 1997), to psychosocial individual variables (Midgley 1990) or to specific work-related variables (Macias et al. 2001; Mueser et al. 2001). There have also been promising interventions using psychosocial approaches to improve occupational function in people experiencing severe mental illness as a result of schizophrenia (Liberman et al. 1998; Reker and Eikelmann 1997) and bipolar affective disorder (Craighead and Miklowitz 2000).

Fewer research studies have examined disability management or return to work in relation to people with less severe mental health problems or disorders. Those that have done so, however, have

found that, despite policies to the contrary in the United States, few accommodations are made by employers for mental health disability (MacDonald-Wilson et al. 2002; Zwerling et al. 2003). A retrospective cohort study of the quality of rehabilitation provided to workers with adjustment disorders in the Netherlands found that four of the ten performance indicators measured were adequate in less than 50% of the time, when measured against clinical guidelines (Nieuwenhuijsen et al. 2003). Overall, optimal care was found to have been received by only 10% of the cohort.

Evidence-based treatments for major depression have been shown to yield corresponding improvement in occupational function, and employees with substantial improvement in depressive symptoms after receiving appropriate treatment rate themselves as much more able to function effectively in the work environment (Berndt et al. 1998; Coulehan et al. 1997; Ormel et al. 1993). Furthermore, improvement in major depression appears to be associated with greater likelihood of remaining employed and less work absence due to depressive symptoms (Claxton et al. 1999; Mintz et al. 1992; Simon et al. 2000; Wells et al. 2000). However, two studies did not find a relationship between improvement in depression and in selfreported work function (Simon et al. 2002; Simon et al. 1998).

A study of short-term disability based on a nationwide Canadian sample of employees of three large financial and insurance companies (representing 12% of their sector) found that most employees absent on depression-related disability were in fact receiving appropriate pharmacological treatment and that prompt

initiation of pharmacological treatment shortened disability absence (Dewa et al. 2003b). They also found the receipt of pharmacological treatment did not predict earlier work return when compared to those depressed employees who did not receive such treatment. However, those employees on depression-related disability who were not receiving antidepressants also reported relatively fewer symptoms related to depression as compared to those who were receiving antidepressants (Dewa et al. 2003a), a finding that suggests that the severity of depression may have differed across the two groups. It is also interesting to note that the researchers observed an association between complexity, or resistance to antidepressant treatment, and return to work. That is, employees with complex patterns of use (i.e., those who switched antidepressants or augmented their antidepressant use) had relatively longer episodes of disability (Dewa et al. 2003b). Several studies produced data suggesting that cognitive behavioural therapy (CBT) has a beneficial effect on work function above and beyond the impact of antidepressant medication (Hirschfeld et al. 2002; Mynors-Wallis et al. 1997; Sherbourne et al. 2001). Hirschfeld and colleagues (2002) suggested that "[CBT] psychotherapy has a direct effect on psychosocial functioning through therapeutic work on issues that have relevance to psychosocial functioning, such as the building of social skills."

One important question is that of "synchrony": does change in work ability occur in tandem with change in depression symptomatology? An early review paper suggested that improvement of work ability might occur well after resolution of depressive symptomatology, i.e., that there might

be a delay in the impact of antidepressant treatment on work function (Mintz et al. 1992). However, subsequent research has not supported this idea. It has been determined that change in work ability is, for the most part, simultaneous with change in depressive symptomatology – as depression resolves, work function is restored. (Berndt et al. 1998; Judd et al. 2000; Kocsis et al. 2002; Miller et al. 1998; Sherbourne et al. 2001). Most of the improvement in depression symptoms or work function is evident in a few months following initiation of treatment. There is some indication that adverse effects of antidepressants may be of concern for recovery of work function: a recent study found that some employees experienced antidepressant side effects that interfered with work performance, including sleep disturbance, poor concentration, lack of motivation and a "numbing down of feelings and responses" (Haslam et al. 2003).

Despite substantial effectiveness of standard treatments for depression with regard to recovery of work function, it has also been demonstrated that there is a significant degree of residual impairment in function after treatment. A study of depression treatment in primary care provides detailed information concerning the relationship between depression treatment and recovery of work function (Simon et al. 2000). After 12 months of appropriate treatment with antidepressant medication, 41% of patients with major depression were no longer depressed (i.e., they were in full remission) and had six days of depression-related job absence in the year; 47% were improved but still had significant depressive symptoms (i.e., were in partial remission), with 11 days of depression-related job absence; 12% remained persistently depressed (had no remission) and had 17 days of depressionrelated job absence. Furthermore, one study found that even in those who have fully recovered from major depression according to clinical criteria, some degree of reduced work capacity is evident, and it concluded that this subset of patients might benefit from specific psychosocial interventions designed to foster more complete rehabilitation (Kocsis et al. 2002).

There is some emerging evidence that a disability management approach, similar to that applied to recovery from musculoskeletal injury, may yield significantly improved work recovery for depression-related work impairment (Burton and Conti 2000; McCulloch et al. 2001).

Several studies have examined the impact of depression on work disability associated with other health problems. In a sample of 114 physically injured persons who were receiving workers' compensation benefits and vocational rehabilitation, Ash and Goldstein (1995) found that subjects with moderate or severe depression were significantly less likely to return to work than patients with less severe depression. Similarly, a Swedish study (Soderman et al. 2003) of 198 employed patients who had recently experienced an acute myocardial infarction or had been treated with coronary by-pass surgery or coronary angioplasty found that clinical depression before intervention exerted a great influence on work resumption. Chronic pain conditions constitute a substantial proportion of long-term disability cases in many workplaces (Faucett and McCarthy 2003), and there is evidence that depression is a substantial predictor of long-term disability in employees with chronic pain (Ericsson et al. 2002). Similarly, fibromyalgia is a frequent cause of disability that has been found to have a significant relationship to mental health (Wolfe et al. 1995).

#### **Major Trends in Research**

With an increasing realization of the importance of disability management and the need for successful approaches to assist people in their return to work, there has been intensified interest and activity in these areas of research. New models and methods have been developed and recommended recently, and, although these may not have been designed specifically to address mental health problems, they may be applicable in future studies of this population.

Franche and Krause (2002) at the University of Toronto's Institute of Work and Health have proposed a new "Readiness for Return-to-Work Model" that focuses upon the interpersonal context of the work-disabled employee. In this model, employee interactions with the workplace, the healthcare system and the insurance system are considered as they affect the three defining dimensions of change – decisional balance, self-efficacy and change processes. The model was designed to account for individual variation in optimal stage-specific timing of interventions based on an individual's readiness to return to work. Thus, interventions to assist return to work may be applied at the time most appropriate for the individual, thereby faciliting improved outcomes.

Following a review of the literature on the design, conduct and evaluation of occupational injury interventions, one group of investigators found randomized controlled trials to be rare and noted that quasi-experimental studies had often used the weakest designs (Zwerling et al. 1997). They recommended a hierarchical approach to evaluating occupational injury interventions, beginning with qualitative studies, following up with simple quasi-experimental designs using historical

controls, continuing with more elaborate quasi-experimental designs comparing different firms' experience, and, when necessary, conducting randomized controlled trials.

Fisher (2003) utilized a survey tool, the "Return to Work Perception Survey," to examine the perception of various supervisors and front-line workers of factors related to return to work, including company policies and procedures, job satisfaction, worker relationships and work environment. Significant differences were found in the responses of supervisors and front-line workers.

Researchers in the Department of Community Health Sciences at the Université de Sherbrooke have developed the Work Disability Diagnosis Interview (WDDI) to assist in the detection of prognostic factors for disability in patients with sub-acute or chronic musculoskeletal pain (Durand et al. 2002). The WDDI, which was developed through systematic methodology, is composed of open-ended questions about physical, psychosocial, occupational and administrative factors that have been collated into an interview form used at the first encounter with a disabled worker. Initial applications have demonstrated a high prevalence of sociodemographic, work-related, and psychosocial factors that may contribute to prolonged work absence and have enabled clinicians to develop appropriate rehabilitation plans.

Mustard and colleagues (2003) at the University of Toronto's Institute of Work and Health utilized surveillance data to investigate trends in the incidence of work-related morbidity and disability in Ontario. Time series estimates of work-place injuries and work-related disability based on two panel surveys for the period

1993-1998 were compared with rates of work-related injury and illness compensation claims during the same period. The investigators found that, over the six-year period, lost-time compensation claims declined by 28.8%, self-reported workrelated injury declined by 28.2% and the self-reported incidence of work absence for work-related causes declined by 32.2%. Thus, three independent data sources indicated reductions in workrelated morbidity during the period of observation. The researchers interpreted these findings to mean that there has been an important reduction in injury risk in Ontario workplaces over the past decade.

Some recent studies have applied qualitative methods to study disability management and return to work. In a study undertaken at the University of Toronto's Joint Centre for Bioethics, the authors examined how people living with HIV/AIDS perceive, attach meaning to and approach the experience of returning to work (Nixon and Renwick 2003). They found that participants were influenced by, and wrestled with, both the dominant societal perspective that "people should return to work," and the opposite perspective that people with HIV/AIDS "should not return to work." A theoretical understanding of the results was developed through the use of the concepts of the "sick role" and the "hierarchy of identities."

In another qualitative study, researchers in three Canadian provinces explored the perceptions of many different actors involved in return-to-work programs for injured workers, studying their views on successful strategies, barriers and facilitators of the return to work process (Baril et al. 2003). The investigators, who analyzed the underlying dynamics of their different experiences, found

that roles and mandates of the different groups of actors (injured workers, other workplace actors and actors outside the workplace), while sometimes complementary, could also differ, leading to tension and conflict. Human resources managers and healthcare professionals tended to attribute workers' motivation to their individual characteristics, whereas injured workers, worker representatives and health and safety managers described workplace culture and the degree to which workers' well-being was considered as having a strong influence on workers' motivation. Non-workplace issues included confusion stemming from the compensation system itself, communication difficulties with some treating physicians and role conflict on the part of physicians wishing to advocate for patients whose problems were non-compensable. Several common themes emerged from the experiences related by the wide range of actors, including the importance of trust, respect, communication and labour relations in the failure or success of return-to-work programs for injured workers.

A number of studies have used mixed methods in studies of disability management and return to work. A Finnish study evaluated outcomes of the "Pathway-to-Work Project," which aimed at tailoring return-to-work plans for 140 middle-aged, long-term unemployed participants with various disabilities and getting half of them into work or training (Juvonen-Posti et al. 2002). The research design comprised three parts: a quantitative quasi-experimental component with a matched control group, a register followup and the collection of qualitative data. The main variables used to evaluate the outcomes were (1) changes in the labour market situation during the two-year

register follow-up, (2) changes in distress, perceived competence and sense of coherence during the intervention and (3) description of the process in the project. After two-year follow-up, 14% of the participants were at work and 59% unemployed, whereas 9% of the control group were at work and 86% unemployed. The participants' distress level decreased remarkably, and their perceived competence increased, but their sense of coherence did not change. The investigators concluded that even carefully tailored client work enables only some of the longterm unemployed people with disabilities to cross the job threshold and that other kinds of policy, strategy and intervention are needed to link the return-to-work interventions more closely with work, work places and enterprises.

Becker and colleagues (2000) have described methods for their work in progress, which will evaluate four workplace prevention and/or early intervention programs designed to change occupational norms and reduce substance abuse at a major US transportation company. The four programs are an employee assistance program, random drug testing, managed behavioural healthcare and a peer-led intervention program. An elaborate mixed-methods evaluation is planned, combining data collection and analysis techniques from several traditions. A process improvement evaluation focuses on the peer-led component to describe its evolution, document the implementation process for those interested in replicating it and provide information for program improvement. An outcome assessment evaluation examines the impacts of the four programs on job performance measures (e.g., absenteeism, turnover, injury and disability rates) and includes

a cost-offset and employer cost-savings analysis. Issues related to using archival data, combining qualitative and quantitative designs, and working in a corporate environment are discussed.

In a study of 108 supervisors who were provided with a 1.5-hour training session to reinforce a proactive and supportive response to work-related musculoskeletal symptoms and injuries, results showed improvements in supervisor confidence to investigate and modify job factors contributing to injury, to get medical advice and to answer employees' questions related to injury and treatment (McLellan et al. 2001). More supervisors reported decreases (38.5%) than increases (9.6%) in lost work time in their departments.

#### Significant Gaps in Knowledge

Canadian representation and sponsorship were included in an international research project on job retention and return-to-work strategies for disabled workers undertaken by the International Labour Office and GLADNET (the Global Applied Disability Research and Information Network on Employment and Training). A code of practice for managing disability in the workplace has been published by the International Labour Office (ILO 2002). However, research into the utility and uptake of the code has not yet been developed.

Researchers have begun to study questions that can improve disability policies and practices, but such research has not yet been developed significantly in Canada. In the United States, Sim (1999), using research by experts on return-to-work practices in Germany and Sweden, examined the following three approaches that have been suggested for improving the rate of rehabilitation of disabled

workers: (1) intervening as soon as possible after a disabling event to promote and facilitate return to work, (2) identifying and providing necessary return-to-work assistance and managing cases to achieve return-to-work goals and (3) structuring cash and health benefits to encourage people with disabilities to return to work. Potential benefits and limitations were discussed in the application of these approaches in the US environment. Another study assessed the impact of US federal programs, such as Social Security Disability Insurance, vocational rehabilitation, medical insurance and psychiatric services, upon employment, by conducting a qualitative study of 16 employed and 16 unemployed individuals with psychiatric disabilities (O'Day and Killeen 2002). All participants had disabilities severe enough to qualify them for Social Security Disability benefits. However, they reported that the federal policies and practices encouraged employment and integration of only a few participants in a particular stage of their recovery and placed significant barriers in the employment path of others. Studies of policies and their influence on disability management and return to work are needed in Canada.

There is a need to study disability management and return-to-work factors related to anxiety disorders, such as social phobia and panic disorder, given their prevalence and the low availability of appropriate treatment resources (Lepine 2002; Wittchen and Fehm 2001). In workplaces where there is a high risk of traumatic events, evidence-based approaches to disability management and return to work are needed in order to support individuals with post-traumatic stress disorder and work-related injuries (Asmundson et al. 1998).

Similarly, disability management and return-to-work factors related to problem substance use requires study (Becker et al. 2000). The high prevalence of substance use disorders and their co-existence with other mental health problems are important reasons to address this significant gap in the research literature.

Although some important research studies of disability management for depression have been done, there has been only limited study of the impact of depression on work disability associated with other health problems. In a sample of 114 physically injured persons who were receiving workers' compensation benefits and vocational rehabilitation, Ash and Goldstein (1995) found that subjects with moderate or severe depression, defined as having a score greater than 16 on the Beck Depression Inventory (BDI), were significantly less likely to return to work than patients with less severe depression (for back-injured patients, odds ratio (OR = 31, 95% CI [8.8, 108]). BDI scores correctly classified 84% of the back-injury and 86% of the other-injury groups with respect to their return to work. The level of workers' compensation benefit was the only variable that added (marginally) to the predictive power of the BDI.

Similarly, a Swedish study (Soderman et al. 2003) of 198 employed patients who had recently experienced an acute myocardial infarction (AMI, n = 85) or had been treated with coronary by-pass surgery (CABG, n = 73) or coronary angioplasty (PTCA, n = 40) found that clinical depression before intervention (≥16 as measured by the Beck Depression Inventory) exerted a great influence on work resumption both at full time (OR = 9.43, 95% CI [3.15, 28.21]) and at reduced workinghours (OR = 5.44, 95% CI [1.60,18.53]).

Mild depression (BDI 10-15) influenced only work resumption at full time (J88 = 2.89, 95% CI [1.08,7.70]). More research is needed in order to elaborate the degree to which treatment of depression enhances work resumption rates for a variety of health problems.

Chronic pain conditions constitute a substantial proportion of long-term disability cases in many workplaces (Faucett and McCarthy 2003), and there is evidence that depression is a substantial predictor of long-term disability in employees with chronic pain (Ericsson et al. 2002). Similarly, fibromyalgia is a frequent cause of disability that has been found to have a significant relationship to mental health (Wolfe et al. 1995). Research in disability management and return-to-work factors related to these conditions is needed.

In the multicultural environment of Canada, cultural factors related to disability management require research study. Yip and Ng (2002) have described Chinese cultural dynamics of unemployability of male adults with psychiatric disabilities. Further research on issues that affect various populations is needed.

### **Summary and Promising Research Directions**

In an article in 1993, Rachel Jenkins asked why mental health at work was so underresearched (1993). More than a decade later, the same question remains relevant. There are many gaps in knowledge to be filled. Little is known regarding best practices in managing the disability associated with the most prevalent mental disorders (i.e., depression, anxiety disorders and substance use disorders). Although some information is available to assist people with severe mental disorders

in obtaining employment, knowledge to help people maintain employment is lacking. Additionally, knowledge regarding systemic factors that influence disability management and return to work (e.g., employee assistance programs and disability insurance regulations) relevant to people with mental disorders is yet unavailable.

There are several promising directions for research:

- (1) Application of disability management principles to a variety of psychiatric disorders. Until recently, the focus of disability management has been on physical disabilities, particularly musculoskeletal injuries. Disability management models have not been applied systematically to a variety of psychiatric disorders: research is needed in this area.
- (2) Understanding the impact of disability management for mental health problems in relation to various physical health problems. Disability management and return to work following physical conditions such as musculoskeletal injury, coronary heart disease, chronic pain syndromes and fibromyalgia require study in relationship to mental health and mental illness.
- (3) The relationship of population factors in disability management and return to work. It is likely that a variety of approaches to disability management and return to work may be applicable to specific populations. Issues related to culture, gender, age and environment should be accounted for in future research.
- (4) Policies and guidelines relevant to occupational disability. Existing guidelines for the assessment and treatment of mental illness

have neglected workplace functioning. There is a need for the development and evaluation of protocols to guide practitioners in interventions to enhance or restore work function. Furthermore, there are important questions regarding the optimal role of different health practitioners in working collaboratively to foster work return of psychiatrically-disordered individuals: e.g., which health provider should act as the main referral agent for work entry programs, what skills should family physicians have in order to evaluate depression-related work disability, etc.

- (5) Effectiveness of standard mental healthcare in restoring work function. The outcomes of standard healthcare for psychiatric disorders vis à vis recovery of work function have not been well established. How effective is the existing Canadian mental health system at fostering employability and employment of individuals with severe psychiatric disorders? How effective is this system at fostering work return in depression and anxiety disorders?
- (6) Innovative approaches to mental healthcare. Controlled outcome research is needed on innovative approaches to the delivery of mental healthcare that could lead to improved outcomes for recovery of previously adequate work function; shortening of disability absence related to psychiatric disorder; and enhancement of functional level for those who have not been successfully employed.
- (7) Organizational interventions to foster recovery of work function in individuals with disability related to mental health problems. Examples of organizational interventions might include changes in employee

assistance programs or in the structure of health benefits to increase access to evidence-based health services.

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## Research Priorities Are Critical



RESEARCHER RESPONSE

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#### ABSTRACT

Building on the review by Goldner et al., I argue that the first research tasks for disability management in Canada should be to articulate conceptual models; define promising disability management interventions and characterize the current longitudinal health and labour market trajectories of Canadians disabled by mental conditions. Research should next emphasize pilot studies of novel interventions and observational studies that examine the relationship between treatment, workplace interventions, work environments and disability outcomes. Selective randomized trials of disability management interventions should be considered downstream. Mental health treatment optimization should be assigned a lower funding priority than research on workplace interventions.

At the outset, allow me to congratulate the authors of this review paper for their admirable work in pulling together and organizing a very sparse and scattered literature on disability management and return to work for mental health problems, substance abuse and mental illness (here-

after referred to collectively as mental conditions). Without doubt the research directions identified by the authors are appropriate and cover much of the important terrain. The review did not assign priorities or suggest a logical sequence for the evolution of future research. The

primary objective of this discussion is to suggest priorities and sequences within the multiple directions identified. I also argue on behalf of additional research programs, and I identify the broad implications of the research agenda for methodology and data development. The discussion is selective, but it assumes that there is no minimally adequate and coherent foundation of research pertaining to disability management and return to work for mental conditions in Canada. I believe that the synthesis by Goldner et al. supports this view. I focus primarily upon the disability management of moderately severe mental conditions the types of conditions experienced by those who have had or would have meaningful labour force participation. This approach does not discount the importance of disability management research for the severe mental conditions, but it acknowledges that research on disability management strategies (such as supported employment) for persons with severe mental conditions is considerably further advanced (Latimer 2001) than the research on moderately severe conditions.

The first tasks of disability management research in Canada should be threefold: (1) articulating conceptual frameworks and models for the disability management of mental conditions; (2) defining promising disability management interventions, possibly adapted from approaches used for physical disabilities; and (3) characterizing the current longitudinal health and labour market trajectories of Canadians who become disabled by mental health problems. The first two tasks address the need to identify what may be unique to the disability management of mental conditions, without necessarily discarding the extant approaches developed to manage physical disabilities.

The last task requires more elaboration. The agenda here includes describing the incidence and patterns of short-term disability durations and outcomes, and transitions to long-term disability, in relation to sex, age, occupation, economic sector and geographical region. The results of this research would enhance subsequent research on disability management by establishing baseline performance, defining high-risk working populations and characterizing the longitudinal aspect. The longitudinal trajectory may be particularly important in moderately severe mental conditions, which by nature are chronic but episodic; if researchers do not understand the risk of repeated disability episodes over time, disability management interventions may become too focused on short-term objectives and outcomes. Describing the trajectories of mental disability may also create the opportunity to *stage* mental conditions - that is, empirically define critical intervals in the elapsed time from onset that can guide the nature of disability management interventions. Staging has significantly enhanced the disability management of low back injury by defining the intervals during which interventions have the greatest impact (Hogg-Johnson et al. 2000). Staging is also consistent with the evolution in mental condition treatment research, which increasingly emphasizes early intervention at the time of first episode. One implication of this task is that innovative partnerships will be required, since most of the relevant data on disability that is related primarily to mental conditions resides with private insurers.

Upon completion of the initial tasks, disability management research in Canada should next emphasize pilot and feasibility studies of novel interventions, as well as cross-sectional and prospective studies that examine more systematically the relationship between treatment, workplace interventions, work environments and disability outcomes, including return-to-work and downstream labour market outcomes. The emphasis at this stage should not be on experimental (i.e., randomized) designs, given their enormous incremental costs, but on the spectrum of longitudinal and quasi-experimental methods.

The above agendas establish the foundations for selective randomized trials of disability management interventions, which in my opinion should comprise an important but downstream component of intervention research in disability management. Even now, however, it may be worthwhile to assign a higher research funding priority to certain kinds of intervention research. Goldner et al. note that established disability management principles have never been systematically applied to disabling mental conditions. The term "disability management" encompasses a wide range of interventions, including attempts to optimize clinical treatment. On the basis of direct and indirect evidence, I believe that the optimization of mental health treatment (Goldner et al.'s sixth research direction) should be assigned a lower funding priority than research to develop and validate workplace interventions. The review paper concludes that organizational interventions to improve the clinical treatment of depression have had a minimal or negligible impact upon return to work. The studies demonstrating this were all conducted in the United States, but I believe that the implications are equally compelling for Canada. Further (indirect) support for assigning priority to

workplace interventions comes from back injury research. The most rigorous disability management research on back injury conducted in Canada (Loisel et al. 1997; Yassi et al. 1995) demonstrates that workplace interventions are far more effective than clinical interventions in facilitating return to work. The active elements in workplace interventions include work modification and accommodation, enhanced communication between healthcare providers and workplace participants, and a supportive and helpful environment for injured workers when they return to work (Brooker et al. 2000). For soft tissue injuries these elements are well defined, but for mental conditions they remain completely undefined. Developing innovative workplace interventions related to mental conditions will likely result in far greater advances in disability reduction than attempts to improve clinical treatment.

Finally, I would argue that almost all disability management research for mental conditions in Canada should be informed by careful consideration of certain organizational structures of work. For many Canadian workers with disabilities arising primarily from mental conditions, disability management consists of a highly fragmented insurance and service system. In large companies, the responsibility for disability management services may be shared by the worker, employee assistance programs, human resource departments and the public healthcare system. There are virtually no incentives or traditions that encourage coordination of services between these entities. Insurance benefits may be provided by companies, several private insurers, workers compensation boards or other public disability insurance programs. In large companies, pharmaceutical benefits and disability payments are frequently provided by separate insurers. This fragmentation likely results in poor coordination of benefits and services, as well as differential incentives that may not optimally support a timely return to work. Understanding these organizational structures is imperative as researchers appraise the feasibility and dissemination potential of interventions they wish to study. Of course, this analysis also suggests that policy research on innovative organization structures should also be added to the somewhat daunting list of research priorities.

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## For the Employer Productivity Is Critical



STAKEHOLDER RESPONSE

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#### ABSTRACT

The Stakeholder's Response to Disability Management, Return to Work and Treatment highlights the key challenges for researchers from a business perspective:

- 1. The importance of mental health and disability as business issues. Given this, the research needs to consider the employee population, their challenges and needs.
- 2. Mental health disability is a multi-faceted concern that requires a research agenda that recognizes interconnections between symptom management, coping skills, individual decision making and opportunity.
- 3. The goal of disability management is to support ability and provide workers with the opportunity to function productively at work. A "real-world" focus is essential for research and the resolution of systemic barriers. The challenge is to ensure that knowledge is applicable and considers the sources of motivation and "de-motivation" for both the employees and employers.

The Research Presented in "Research Addressing Mental Health and Mental Illness: Disability Management, Return to Work and Treatment" offers a clear

impetus for the improvement of current practices and for further research.

The section entitled "Knowledge Related to Physical Health" illuminates

the unquestionable role of occupational factors in return to work, and even recovery. In addition, the influence of psychological interventions in physical rehabilitation illustrates the connection between medical, psychological and occupational factors in disability management. With work, health and psychological well-being influencing each other, concerns in one area, such as demandcontrol and effort-reward factors at work, influence others, such as physical and psychological health. Thus, the finding that when it comes to disability management, the actions of most physicians are not consistent with clinical practice guidelines and policies is a troubling example of risk with many possible levels of impact.

Under the heading "Knowledge Related to Mental Health," the discussion paper highlights the need for specific attention to the rehabilitative needs of persons with stable work histories. The restoration of function is crucial. Here again, there is a strong indication that a one-dimensional approach is insufficient. While appropriate pharmacological treatment has a significant impact on disability duration, psychological intervention – in particular, cognitive behavioural therapy (CBT) – adds significantly to improvement in work function. CBT supports development of the skills and coping strategies that are necessary to bridge the state of being disabled and the state where one has recovered to the point where the individual is able to work as fully as they will likely be able to at work. The research also highlights the need to be attuned to mental illnesses as common co-morbid conditions, and mental health issues as predictive of outcome when there is a physical health problem.

The "Summary of Major Trends" describes a promising multi-faceted direction that considers individual perceptions and decision-making factors, job and workplace factors, supervisor training, employer-sponsored programs and the disability claims process.

From the perspective of an employer, the critical issue relating to health is productivity. Protecting productivity, managing risks to productivity, restoring lost productivity and maximizing productivity are all key business challenges.

Disability management is a critical part of productivity management. The purpose of disability management is (1) to minimize the impact and cost of disability to the employer and the employee and (2) to encourage the return to work of an employee with disabilities.

Disability management is supported by:

- treatment (to relieve symptoms or correct impairment);
- rehabilitation (to promote function or compensate for the loss of function);
- policies (that promote work re-entry);
- practices (to ensure a goal-focused coordination of interventions); and
- communication (to ensure clarity for sound decision making and alignment).

The key in this is the employment relationship and the roles of both employer and employee.

The "Gaps and Recommendations" sections of the discussion paper speak, in varying extents, to all of these factors. Three of the recommendations relate to treatment and care specifically for mental health issues. The recommendations express clearly the need for protocols and guidelines for the management of occupational disability related to mental health,

for a focus on restoration of function and for a delivery mechanism that will improve outcomes. From a disability management perspective, the two specific areas of concern need to be addressed:

- earlier detection, early intervention and suitable care; and
- useful and appropriate standards of information exchange between the healthcare community and the workplace.

The remaining recommendations pertain to disability management practice. They recognize the importance of individual variables and the connection between physical and mental health. They also recognize both the risks and opportunities in applying to mental and nervous disability the best practices used for physical disability.

- In addressing these issues, the impact of the workplace and the insurance claims process require as much attention as the role of the individual and the disability management professional.
- We also require a clearer understanding of the psychological and social impact on mental health disability of shorterterm absences (i.e., of less than six months) and return to work.

With all of this said, the goal of research should be to answer questions in a precise enough manner to guide step-by-step improvement, yet to be broad enough in scope that the outcome is sustainable productivity – not just earlier return to work.

A final recommendation pertains to the coordination of government policies, employer practices and the health system. The economic model to be researched recognizes that "prevention" removes some of the burden on the healthcare system and that restoration of lost productivity benefits the economy. Employers have a role in lobbying for responsive healthcare. Governments can also be more active in providing incentives to employers – even temporarily or during a limited period – to pioneer leading edge practices. Such policies need to encourage improvements in the approach business takes to employee health. The results achieved will ultimately make the business case for continued investment.

## HealthcarePapers

**DISCUSSION PAPER** 

### STIGMA AND WORK



**DISCUSSION PAPER** 

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#### **ABSTRACT**

This paper addresses what is known about workplace stigma and employment inequity for people with mental and emotional problems. For people with serious mental disorders, studies show profound consequences of stigma, including diminished employability, lack of career advancement and poor quality of working life. People with serious mental illnesses are more likely to be unemployed or to be underemployed in inferior positions that are incommensurate with their skills or training. If they return to work following an illness, they often face hostility and reduced responsibilities. The result may be self-stigma and increased disability. Little is yet known about how workplace stigma affects those with less disabling psychological or emotional problems, even though these are likely to be more prevalent in workplace settings. Despite the heavy burden posed by poor mental health in the workplace, there is no regular source of population data relating to workplace stigma, and no evidence base to support the development of best-practice solutions for workplace anti-stigma programs. Suggestions for research are made in light of these gaps.

#### **Purpose**

This paper was commissioned by the Working Group mandated by the Canadian Institute of Population and Public Health and the Institute of Neurosciences, Mental Health and Addictions of the Canadian Institutes of Health Research to suggest

priority areas for stigma research as part of a national research agenda on mental health and the workplace.

#### **Stigma Defined**

In ancient Greece, citizens pricked marks on their slaves using a pointed instrument,

The author would like to acknowledge the assistance of Michelle Koller, Research Associate, Stigma Research Program, Queen's University in collecting the literature used in this manuscript.

both to demonstrate ownership and to signify that such individuals were unfit for citizenship. The ancient Greek word for prick is stig, and the resulting mark, a stigma. In modern times, stigma is understood as an invisible mark that signifies social disapproval and rejection (Goffman 1963; Dovidio et al. 2000; Falk 2001). Stigma is deeply discrediting and isolating, and it causes feelings of guilt, shame, inferiority and a wish for concealment (Goffman 1963).

#### **Caveat**

Stigma literature relating to mental health focuses almost exclusively on mental disorders - illnesses that meet certain clinical thresholds for severity and duration, or mental health conditions that have been of sufficient severity to require psychiatric treatment. In this context, stigma has been variously understood as a consequence of the visible signs or symptoms of a disorder; a result of having received a psychiatric label, regardless of whether visible signs or symptoms are present; or as a consequence of having received psychiatric treatment, particularly if the locus of care was a psychiatric hospital or if treatment was legally mandated. While Canadians express stigmatized views of people with serious mental illnesses such as schizophrenia (Stip et al. 2001; Stuart and Arboleda-Flórez 2001; Thompson et al. 2002; Stuart 2003a; Stuart 2003b), the literature does little to examine the extent to which stigma is a consequence of other dimensions of mental health, such as less serious psychological or emotional problems like substance misuse or depression. Consequently, the remaining discussion concentrates on the stigma of severe mental illness and refers to information on other mental disorders when it is available.

#### **General Consequences of Stigma**

"Stigma is an ugly word, with ugly consequences" (Leete 1992: 19), and mental illnesses confer the "ultimate stigma" (Falk 2001; Smith 2002). Goffman (1963) once said that people with mental disorders start out with rights and relationships, but end up with little of either. Stigma adds a dimension of suffering to the primary illness – a second condition that may be more devastating, life-limiting and long-lasting than the first (Schulze and Angermeyer 2003).

Most people with a mental illness are treated in the community, where stigmatizing attitudes can impede recovery and promote disability. Stigma hinders social integration, the performance of social roles, timely access to treatment and quality of life. Other consequences are unemployment, lack of housing, diminished selfesteem and weak social support (Link et al. 1991; Wolff 1997; Markowitz 1998; Wahl 1999a; Stip et al. 2001; Prince and Prince 2002). A key consequence of stigma is that we harbour lower expectations for people with a mental illness and easily accept a quality of life for them that we would not accept for ourselves (Jones 2001).

Stigma, and the expectation of stigma, can also produce serious disruptions in family relationships and reduce normal interactions (Wahl and Harman 1989). For families, stigma means fear, loss, lowered family esteem, shame, secrecy, distrust, anger, inability to cope, hopelessness and helplessness (Gullekson 1992). Families are often directly blamed for causing the illness or criticized for harbouring persons who are potentially harmful or offensive (Lefley 1992).

Stigma also surrounds mental health professionals and services. Sartorius (2004) notes that mental health professionals are

Psychiatric Disability

Self-stigma

Social Stigma

Under Employment

Unemployment

Figure 1. Stigma and Employment Inequity

themselves frequently portrayed as mentally abnormal, corrupt or evil. Psychiatric treatments, which are generally thought to be ineffective or iatrogenic, are approached with profound suspicion and often monitored with much more than the usual zeal. Mental hospitals disgust and horrify, and citizens actively fight to exclude treatment and residential facilities from their neighbourhoods. Stigma also contributes to the persistent under-funding of services and research. In times of economic restraint, the easiest budget to cut is the mental health budget because it rarely results in a public outcry. When there is new money, it goes to groups that are more publicly appealing: children with life-threatening diseases, cancer patients or those with heart disease. Consequently, disciplines related to mental health are less attractive as career options (Sartorius 2004; Kendell 2004).

The consequences of stigma are so pervasive and profound, the World Health Organization and the World Psychiatric Association have identified stigma related to mental illness as the most important challenge facing the mental health field

today (WHO 2001; Sartorius 2004).

#### **Stigma and Work**

No single activity conveys a sense of self more so than work. Work influences how and where one lives, it promotes social contact and social support, and it confers title and social identity. "What do you do?" is one of the first questions asked in any new social relationship. Mental health problems predict unemployment and reduced career goals, and the resulting economic hardship can disadvantage physical and emotional health, quality of life, community participation and recovery (Wahl 1999b). To be excluded from meaningful work not only creates material deprivation; it also erodes self-confidence and results in isolation, alienation and despair. Lack of adequate employment is a key risk factor for mental health problems ranging from mild psychosocial stress to serious depression and suicide (Kates et al. 1990). Figure 1 depicts this as a cycle of unfair and prejudicial attitudes leading to discriminatory employment practices, selfstigma and increased psychiatric disability.

#### Stigma and Unemployment

Employment discrimination occurs when someone is denied a job because of their psychiatric status without regard to their qualifications or capabilities; and it is illegal (Wahl 1999b). The Canadian Human Rights Act stipulates that employers must take appropriate steps to eliminate discrimination against employees and prospective employees. Short of undue hardship, employers must accommodate disabled people. In addition, Canada's Employment Equity Act is aimed at improving the representation of people with disabilities in the workforce (Canadian Human Rights Commission 2003).

Most people with a mental illness are both willing and able to work (Macias et al. 2001). Yet their unemployment rates remain scandalously high. Most studies report unemployment rates between 80% and 90% among severely mentally ill patients (Crowther et al. 2001; Dalgin and Gilbride 2003; Drake et al. 1998; Krupa et al. 2003; McQuilken et al. 2003). Those with an affective disorder have better employment rates than those with alcoholism or schizophrenia (Manning and White 1995).

Table 1: Association Between Unemployment and Psychiatric Disorder\*

Disorder	Odds Ratios for Unemployment
Schizophrenia	4.98
Mania	4.98
Major depression	2.10
Dysthymia	1.69
Phobia	1.54
Panic disorder	2.35
Obsessive compulsive disorder	1.86
Antisocial personality disorder	5.89

<sup>\*</sup> Adapted from Thompson and Bland (1995).

Data from Edmonton (Tables 1 and 2) show how employment rates vary by diagnostic group in a Canadian sample (Bland et al. 1988). This study also showed that those who were unemployed were twice as likely to report sub-clinical psychological symptoms in the two weeks before the interview, and four times more likely to have previously attempted suicide. This confirms that employment barriers exist across a wide range of mental health and emotional problems.

With figures such as these, it is not surprising that people with mental illnesses

Table 2: Lifetime Prevalence of Psychiatric Disorders in the Employed and Unemployed in Edmonton, Canada<sup>\*</sup>

Prevalence			Odds Ratio
	Employed	Unemployed	
Substance use disorder	22.1%	45.9%	3.0
Schizophrenia	0.5	1.5	3.0
Affective disorders	8.8	15.5	1.9
Anxiety/somatoform disorders	12.1	14.3	1.2
Anorexia		0.7	15.6*
Antisocial personality disorder	2.8	15.1	6.2
Cognitive impairment	0.3	0.9	2.7
Any disorder	34.8	59.5	2.8

<sup>&</sup>lt;sup>¥</sup> Adapted from Bland et al. (1988).

<sup>\*</sup> Unstable due to small numbers in sample. Results are weighted.

identify employment discrimination among their most frequent stigma experiences. For example, respondents to a consumer survey conducted by the Canadian Mental Health Association found that social and family life (84%), employment (78%) and housing (48%) were the three areas most affected by stigma (Canadian Mental Health Association, Ontario Division 1994).

In a survey of 74 people with schizophrenia receiving outpatient care in Maryland, all but one reported a recent stigma experience. The most commonly identified source of stigma were people in the community (61%), followed by employers and supervisors (36%) and then mental health caregivers (20%) (Dickerson et al. 2002). In a survey of 1,150 primary care patients in Minnesota, 67% of those with a history of depression and 58% of those with a prior psychiatric visit expected to experience employment-related stigma that would make it more difficult for them to find a job – twice the proportion of those with medical disabilities such as diabetes or hypertension. In addition, women were four times more likely to express employment concerns (Roeloffs et al. 2003). These findings suggest that women who are mentally ill may be doubly disadvantaged in the workplace and that other socio-demographic factors (such as age or ethnicity) may interact with the stigma of mental illness to cause a double disadvantage.

US studies show that employers are reluctant to hire someone with a psychiatric history. In a random sample of businesses, approximately half of the employers surveyed expressed discomfort at hiring someone with a previous mental hospitalization and 70% expressed discomfort at hiring someone who was on anti-psychotic medication. Forty-four percent would be

uncomfortable hiring someone who was in treatment for depression, and 69% would be uncomfortable hiring someone with a history of substance abuse (Scheid 1999). Similarly, a survey of 1,426 restaurant owners showed that while almost half had hired a physically handicapped person, only 29% had hired a mentally disabled person (Long and Runch 1983). Almost a quarter of US employers surveyed would dismiss someone for a previously undeclared mental illness, and half would rarely employ someone with a mental illness (Manning and White 1995). Approximately one in three mental health consumers in the United States has been turned down for a job for which they were qualified once their mental health problems were disclosed. For one in five, even attempts to contribute to volunteer jobs were thwarted. This was true for volunteering both inside the mental health system (20%) and outside it (26%). In some cases, job offers were withdrawn once a psychiatric history was revealed. Even when successful in obtaining a job, a quarter noted that co-workers and supervisors were unsupportive once their psychiatric status was known (Wahl 1999a; Wahl 1999b).

A psychiatric diagnosis can also undermine career advancement. In the United Kingdom, for example, 58% of employers would never hire someone with a diagnosis of depression for an executive position, compared to only 5% for a clerical position. Employers associated depression with impaired performance and sick time, more so than chronic physical conditions, suggesting that psychological causes for sick time are less credible than physical ones (Nicholas 1998).

A major dilemma for jobseekers then, is whether to divulge a mental illness to prospective employers. Honest information may undermine employability, but failure to disclose may result in dismissal or other consequence (such as loss of benefits) when the truth finally comes to light. Mental health consumers often recommend keeping psychiatric treatment a secret, preferring to explain long absences from work with fictional or fake diagnoses, such as "exhaustion" (Schulze and Angermeyer 2003). In a study comparing patients who were hospitalized for medical and psychiatric reasons, over half with a past psychiatric hospitalization would hide this from their workmates, whereas none of those with a medical hospitalization would. The majority of workmates of psychiatric patients (64%) did not know the nature of their colleague's hospitalization, whereas all of the workmates of medical patients did (McCarthy et al. 1995). Although the literature on disclosure is generally sparse, and there are no Canadian studies, there is some evidence from the United States that appropriate job matching may eliminate the need to disclose a psychiatric diagnosis to an employer (Dalgin and Gilbride 2003).

#### Stigma and Underemployment

Workers are underemployed when their jobs are inferior to their normal occupations or are economically inadequate. Underemployment may also include a psychological dimension if it entails lower job satisfaction with the non-economic aspects of the work, such as poor or disrupted relationships with co-workers or low decision latitude. Although thought to be pervasive among the mentally ill and other disadvantaged groups, underemployment has no official definition or statistics that are routinely collected or reported (Dooley 2003). Thus, the

epidemiology of under-employment among disabled groups is unknown. However, like unemployment, underemployment is thought to result in health and mental health effects (Dooley 2003; Grzywacz and Dooley 2003).

The jobs considered most suitable for people with a mental illness often involve menial labour, do not provide opportunities for skill development, do not promote a sense of mastery, negatively impact selfesteem and are a tangible source of psychological stress (Scheid 1999). In a survey of mental health consumers in the United States, one in three reported being counselled to take jobs below their educational level, intellect or training (Wahl 1999a). Most of those who will work in such jobs will last an average of only six months (Henry and Lucca 2002). Twenty-five percent of those with a psychiatric disability will have a job within 18 months, compared to half of those with a physical disability, but fewer than 15% of those with a previous psychiatric hospitalization will keep a job for five years (Botterbusch and Osgood 1997).

Mental health consumers who return to work often return to positions of reduced responsibility with little or no psychosocial support from former colleagues and workmates (Simmie and Nunes 2001; Nunes and Simmie 2002). As well, they may be the brunt of critical comments, such as "without you things were running more smoothly" (Schulze and Angermeyer 2003: 307). Using anecdotal experiences reported by Canadian mental health consumers, Figure 2 illustrates that it can be as difficult to keep a job as it is to get one once one's mental illness is known. Indeed, as many as half of the competitive jobs acquired by people with a serious mental

illness end unsatisfactorily because of problems that occur once the job is in progress (Becker et al. 1998).

People with mental illnesses may face the highest degree of workplace discrimination of any disabled group. In the United States, mental disorders are the second-most common basis for charges of discrimination and workplace harassment (under the Americans with Disabilities Act), constituting 10% of all discrimination cases and 13% of all cases of workplace harassment (Scheid 1999).

Knowledge about how to make workplace accommodations for people with mental health problems is scant; however, there is growing agreement that organizational cultures must be modified to be more receptive to and tolerant of people with psychiatric disabilities (Scheid 1999). Workplace rehabilitation policies of the 1970s and 1980s inadvertently perpetuated underemployment by segregating those with serious mental illnesses in sheltered or transitional workplaces where wages were substandard and job mobility into the competitive labour market was rare (Drake et al. 1998). Since then, supported employment programs, although not widespread, provide competitive employment opportunities for people with psychiatric disabilities. Evaluations of supported employment and consumer-run businesses demonstrate that people with mental illnesses, even severe and persistent illnesses, can successfully obtain and maintain competitive employment (Latimer 2001; Krupa et al. 2003). At least one study has shown that regional variation in unemployment rates among those with a serious mental disorder can be linked to the availability (or unavailability) of supported employment programs (Drake et al. 1998). Virtually nothing is known about the effectiveness of other

workplace intervention strategies, such as educational programs or employee assistance programs, in diminishing employment inequity.

#### **Self-stigma**

Self-stigma occurs when negative social stereotypes are internalized and a mental illness comes to be viewed as a personal failure. Self-stigma results in a loss of selfesteem and self-efficacy and a reluctance to participate in social interactions (Holmes and River 1998). With respect to work, fear of stigma and rejection can undermine confidence with the result that people with a mental illness may make a poorer showing in job interviews. Over time, they will view themselves as ineffective and unemployable and will avoid job interviews altogether (Link 1982; Wahl 1999a). Indeed, 69% of mental health consumers responding to a recent US survey indicated they had not applied for jobs for fear of unfair treatment (Wilson 2004). However, research done in the UK civil service has shown that job performance reviews of people with psychiatric morbidity (presumably morbidity that was unknown to co-workers) were no worse than those of their symptom-free counterparts. Job performance was uncorrelated with symptom level (Nicholas 1998).

The anxiety and fear that workmates will find out may exact a significant psychological toll as well as increase workplace disability and cost. People with mental illnesses will go to great lengths to ensure that others do not find out, including staying in unsatisfactory situations for fear that moving will result in disclosure, avoiding friendships and avoiding treatment. In Ontario, for example, workers with mental health problems are less likely to take time off than are those with

#### Figure 2: Real People, Real Stories....

Work places can be like an army that shoots its wounded.

I have known people to "pretend" they have a physical problem and that's why they're away from work.

I have had to lie to get a job rather than admit to having a mental health problem.

They encourage you to use the Employee Assistant Program, but god help you if you actually use it...then you become 'labeled', and they use it against you.

I didn't know what my rights were as an employee, and I didn't have the strength to deal with them. I wanted to believe them when they said they cared.... I was vulnerable.... I was bullied.

I need a job that can help me build up my self-esteem and give me a feeling of being self-sufficient.

When I wasn't well, I didn't have the strength to stand up for myself.

They made it so hard for me at work; I think they were trying to force me to guit.

Mental health issues happen to anyone. It is beneath me to beg for a chance to work.

I was told not to talk to anyone at work about what I was going through.....

When I don't feel well, I need to feel secure that I can take the time I need, and not loose my job.

They treated me like a 'broken product' that you just discard if some small part isn't working the same as before.

Excerpts from Real People, Real Stories.... (Mental Health Matters 2001)

physical conditions and are more likely to struggle through at sub-optimal work levels (Dewa and Lin 2000). In the United States, psychiatric disability has been associated with both work loss and work cutback days. The association of psychiatric disorder with work cutback days was greater for professional workers than for those in other occupations (Kessler and Frank 1997).

Lack of knowledge on the part of managers and supervisors hampers early recognition and speedy resolution of mental health problems in the workplace. "Managers can go a long way in lifting the veil of secrecy and ambivalence, which often surrounds mental health, by creating a climate in which open discussion of such concerns is not only tolerated but encouraged" (Schott 1999: 173). However, even when employee assistance programs are available, they may create and reinforce stigma and discrimination by calling into question the very competence and employment suitability of the individuals receiving services. Among military

personnel returning from Bosnia, for example, 61% agreed that admitting to a psychological problem would harm their careers. By comparison only 43% thought that admitting to a medical problem would be harmful (Britt 2000).

## **Strategic Directions for Future Research**

The twentieth century stands out as a period of great awakening, not only with respect to the recognition of the frequency of mental disorders in populations, but their associated human, social and economic costs. It is now recognized that good mental health is an essential component of both social and economic capital. The influence of work on mental health has been of interest to Canadian researchers for over a decade (Baba et al. 1998) but not yet from the perspective of stigma. In light of the gaps outlined in the previous discussion, three priorities for stigma research are suggested for inclusion in a national research agenda on mental health and work.

#### First Priority: Increase Targeted Research to Focus on Mental Health Stigma and Work

There are many gaps in our current knowledge of stigma and work. Although generally scant, the bulk of existing research comes from the United States or United Kingdom and focuses on stigma as a consequence of serious mental disorders. Virtually nothing is known about the extent and nature of workplace stigma in Canada, particularly as it applies to the full range of mental health problems likely to be found in workplaces. Attempting to understand the attitudes, behaviour and motivations of Canadian employers from data collected in social and economic systems with fundamentally different philosophical positions on work, economics, healthcare, social welfare, workplace disability, mental healthcare and a range of other socio-cultural and economic issues is fraught with difficulty, since all of these things can impact workplace environments. Only through a clear understanding of the nature and extent of workplace stigma in Canada can interventions be designed and appropriately targeted.

Therefore, a first priority for a Canadian research agenda must be to gain a better understanding of the extent and nature of mental health related stigma in Canadian workplaces, its determinants and its socio-economic consequences. Studies that should receive highest priority include research on the following:

- Knowledge, attitudes and practices of Canadian employers with respect to the range of mental health problems found in Canadian workplaces
- Employment and workplace experiences of people with mental health problems in order to depict the extent and nature of

- stigma and its consequences, including the factors leading to job instability, underemployment and employment
- Social and organizational characteristics (such as policies, procedures, management structures or programs) that promote or impede stigma in the workplace
- How socio-demographic factors such as age, gender, ethnicity or socio-economic status may interact with mental health stigma to compound workplace disadvantage
- Analyses of legal and policy frameworks that reduce workplace stigma

#### Second Priority: Population Data on Stigma and Work

Despite the heavy burden of mental disorders, Canada does not have a mental health surveillance plan, although one has been under discussion for some time (Beauséjour 2001). Statistics Canada does collect selected mental health information through the Community Health Survey, but the schedule for future collection of mental health data have not yet been defined, and there is no current plan to include items that would broaden our understanding of stigma and work. For example, only two items on the current release of the Community Health Survey address stigma and neither bears any relevance to stigma experienced in the workplace. The creation of population-based data that can be used by researchers to better understand workplace stigma is, therefore, a second priority for a national research agenda. To this end, consideration should be given to including a workplace mental health module in an upcoming cycle of the Community Health Survey. Strategic funding initiatives developed through theme-based institutes could then be used to support secondary analyses of these data.

#### Third Priority: Creating Business-Research Alliances

In recognition of the economic implications of workplace mental health, the business community has now come together in several Canadian cities to examine ways of addressing this problem (Beauséjour 2001). The first Canadian business roundtable on mental health was held in 1998 in Ontario. The group recognized that Canadians have entered an economy of "mental performance" where the mental health of working populations and their families will be increasingly central to the successful workings of the twenty-first century economy. In recognition of the role played by stigma in relation to work, one of the goals identified in their Charter is to "defeat" the stigma attached to mental illness through workplace education (Global Business and Economic Roundtable of Addiction and Mental Health 2003).

Workplace anti-stigma programs and other such interventions require rigorous evaluation. Although increasing numbers of researchers are comfortable in conducting program evaluations, and Canada's capacity for conducting mental health services research is growing, formal alliances between researchers and the business community in this area are noticeably absent. The Canadian Institutes of Health Research, through partnerships between theme-based Institutes, has an opportunity to take a more active role in creating the business-research alliances necessary to foster applied research and evaluation in workplace mental health. Not only would such collaborations give researchers opportunities to strengthen their knowledge of the mechanisms underlying workplace stigma, but they would also assist business leaders in their

pursuit of cost-effective best practices in stigma reduction. Therefore, creating research opportunities that partner applied researchers with business leaders, particularly employers who wish to undertake and evaluate workplace anti-stigma programs, is the **third priority** in support of a comprehensive national research agenda on mental health and work.

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# Important to Investigate the Dynamics of the Stigma Process



RESEARCHER RESPONSE

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#### ABSTRACT

Studies have shown that the stigma of the most common mental disorder, namely depression, expose people with these disorders to a substantial amount of stigmatization in the workplace. Apart from the descriptive assessment of the magnitude of stigma, it is also important to investigate the dynamics of the stigma process. Agreeing with Dr. Stuart, three approaches to research on stigma and the workplace are proposed. The first is the dimension of social stigma, i.e., knowledge, attitudes and practices of employers. The second is the perspectives of the patients, i.e., self-stigmatization. The third is legal and policy frameworks, i.e., structural discrimination.

It is certainly true that research on stigma has focused mainly on serious mental illnesses such as schizophrenia. However, there are a few studies from our department on the stigma of depression or obsessive-compulsive disorder, which provide evidence that people with these disorders are also exposed to a substantial amount of stigmatization at the work place. For example, 81.5% of patients with a depressive episode and 82.0% of patients with OCD expected to be discriminated against because of their mental illness when applying for a job. Furthermore,

67.3% of patients with a depressive episode and 80.0% of those with OCD were advised to keep the mental illness a secret when applying for a job (Angermeyer et al. 2004; Stengler-Wenzke et al. 2004).

Two important findings regarding stigma have crystallised from the many surveys we have conducted: First, stigma appears to be persistent over time. A representative survey among the general population in West Germany revealed that 62% of the respondents participating in the 1990 survey agreed with the statement that most employers will pass over the application of a former mental patient in favour of another applicant. The proportion of those who shared this view remained virtually unchanged in 2001 (63.3%) (Angermeyer and Matschinger in press).

Second, an international comparison of data from surveys conducted in Germany, Slovakia and Russia suggests that former mental patients are perceived as being discriminated against in the world of work. In all three countries, a similarly high percentage of respondents agreed with the statement that most employers will pass over an application from a former mental patient in favour of another applicant (Germany 64.2%, Slovakia 65.5% and Russia 70.4%) (Angermeyer et al. unpublished results). It is very likely that research would find similar results in Canada. However, since results cannot be generalized because of different laws, unemployment rates, etc., the situation needs to be assessed in Canada.

Apart from the descriptive assessment of the amount of stigma, it is important to investigate the dynamics of the stigma process, and more importantly, to learn more about the stigma processes operating for mental disorders other than schizophrenia. Many questions need to be answered: Why are employers unwilling to hire people with mental illness? Which stereotypes are responsible? What reactions are elicited?, etc. Only if we shed light on these processes will we be able to design interventions to reduce stigma at the workplace.

As has been suggested by Dr. Stuart, research on stigma and the workplace should focus on three particular topics: first, the dimensions of social stigma, i.e., knowledge, attitudes and practices of employers; second, the perspectives of the patients, i.e., self-stigmatization and third, legal and policy frameworks, i.e., structural discrimination.

Many anti-stigma programs have been established around the globe, but only a few of them target stigmatization in the workplace. These programs are necessary, but they cannot be designed without a solid theoretical foundation and empirical evaluation. Therefore, I greatly appreciate and support Dr. Stuart's initiative, for I am sure that not only patients in Canada but also those in the rest of the world would benefit from this kind of research.

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# Best Practices in Workplace Mental Health: An Area for Expanded Research



STAKEHOLDER RESPONSE

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#### ABSTRACT

Mental health, mental illness and the workplace is a timely topic. Many Canadian employers are recognizing the consequences for their bottom line of not addressing the issue. Dr. Stuart's paper was a thorough discussion of the topic of stigma. I suggested four points for consideration. First, the time may have come to substitute the word discrimination for stigma. It opens a rights and responsibilities dialogue that would be valuable. Also, employers and employees understand the term. Second, there are two populations to consider; those who want to enter the workforce, possibly for the first time, and those who want to stay in the workforce. Studying both populations' needs and experiences would yield new knowledge. Third, consider broadening the investigation scope to include instances where things are working (best practices). And finally, concentration only on anti-stigma programs would exclude other innovations.

I AM ALWAYS INTERESTED IN THE question "Why now?" Why now is there a growing interest in mental illness in the workplace

when this issue has been with us for many, many decades? One speculative answer to this complex question is the lingering aftermath of September 11. At CMHA, Ontario, we have noted an exponential increase in calls from journalists and business people regarding mental illness since the tragedy. It seems that these two powerful groups have developed a sense of personal vulnerability that they hadn't had before – a vulnerability that relates to the fragility of their own mental health. Mental illness has moved from being viewed as an affliction suffered by unfortunate others to something that could affect anyone.

Dr. Stuart's paper is a timely discussion of the issue of mental illness in the workplace. A close reading of her work raises the following questions and comments – which I hope will add to Dr. Stuart's well-crafted discussion:

(1) Perhaps the time has come to substitute the word discrimination for stigma. Stigma inadvertently bolsters the view of mental illness as occurring to afflicted others rather than something that can happen to me or my loved ones. Antistigma campaigns often rely on messages that entreat so-called "normal" people to be nice to those who are less fortunate than they are. Discrimination, on the other hand, opens up a different dialogue, one based on rights and responsibilities. If Dr. Stuart's research priorities were re-written substituting the word discrimination for stigma, the questions, to my mind, would be substantively changed. Priority 1: To gain a better understanding of mentalhealth-related *discrimination* in Canadian work settings. Priority 2: To develop a body of Canadian evidence based on secondary analyses of workplace discrimination to support best-practice solutions for antidiscrimination programs in the workplace/ Priority 3: To develop business-research

alliances to support intervention studies of anti-discrimination programs. How research questions are asked profoundly affects the answers produced.

(2) Dr. Stuart offers the caveat that her discussion is focused on the seriously mentally ill. Of necessity (a necessity I would support), she goes on to offer many comments and research findings related to the experiences of people who would be considered mildly mentally ill. In the case of this discussion paper, there are legitimate reasons to define and consider two groups of people and two sets of experiences when discussing mental illness in the workplace. While there is inevitably some overlap between these two groups, there are distinct employment issues. People who have been seriously mentally ill since their late teens have typically had their developmental goals and schooling interrupted and may have never worked in their lives. Their desire to work is nonetheless well proven through research. They have particular needs that relate to the unfair uphill battle they must wage just to enter the workplace in the first place. Then there is a second set of people who have worked and who continue to work, but who struggle with a mental illness that their employer may or may not be aware of. This group wants to keep their employment and climb the career ladder without fear of discriminatory treatment. Put simply, one group wants in, and the other wants to stay in. This distinction would focus the research priorities in ways that could produce relevant and, hopefully, practical findings regarding employment strategies for both groups and their current and potential employers.

(3) Dr. Stuart presents ample evidence from other jurisdictions that discrimina-

tion in the workplace exists for people with mental illness. However, a somewhat different reading of the statistics raises a different question: What are employers and employees doing when things work out? For example, half of employers surveyed expressed discomfort in hiring someone with a previous hospitalization but half did not. One in three employees reported being counselled to take jobs below their education level, but two out of three did not. I recognize that it is speculative to interpret these statistics as exactly oppositional to one another but, nonetheless, identifying pockets of activity among employers and employees where there may be something positive going on is worthwhile. Therefore, I would add a nuance to all three research priorities suggested by Dr. Stuart, and that is to uncover instances and best practices where people with mental illness are getting and keeping jobs through positive non-discriminatory interactions with employers.

(4) I wonder if expanding all three research priorities beyond investigating anti-discrimination (anti-stigma) programs in the workplace might net broader findings. Anti-anything campaigns are notoriously ineffective, and there could be a variety of innovative practices to be found in Canadian workplaces that could prove valuable and replicable.

# HealthcarePapers

**DISCUSSION PAPER** 

# What Does It Take TO Transform Mental Health Knowledge Into Workplace Practice? Towards a Theory of Action



**DISCUSSION PAPER** 

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#### ABSTRACT

The purpose of this discussion paper is to consider the question of a knowledge base that might undergird a systematic approach to transforming mental health knowledge into workplace practice. Drawing on a range of systems-change and related research, the paper begins by contrasting the nature of "workplace" as opposed to "mental health knowledge" systems. On the basis of the Luhmann's concepts, these systems are cast as fundamentally being determined by the types of communication in which they are engaged (business about business matters, and mental health about mental health matters). For information from one to be adopted by the other requires the translation of mental health concepts into language understood by the workplace, by people capable of understanding both.

The paper then examines the importance of determining a vision of desired outcome from such knowledge transfer. What is the desired outcome? A workplace free of mental health problems? The role of both values and existing knowledge in determining these is outlined, along with the importance of engaging the most immediately involved actors in developing the vision.

Because valid and reliable knowledge is central to the task, a framework is set out in which the most immediately relevant research findings might be considered in relation to each other. Three categories of knowledge are proposed: employer-led preventive measures, employee-focused workplace interventions and community-based resources supportive of workplaces. Knowledge drawn from summative analyses of existing research is matched against these three categories to illustrate the potential for guiding both implementation and research decision making.

The final section draws together the key elements of an active approach to promoting and supporting knowledge transformation from mental health research to workplaces.

#### Introduction

Whereas other discussion papers in this series focus primarily on knowledge (and gaps in it) related to various workplace mental health issues, this paper is primarily about "action knowledge"; that is, what do we know about how to apply what we know in such a way as to reduce the extent of workplace and mental health problems? It is reasonable to argue that if this "what it takes" question were well understood, then there should be a reduction in both the high prevalence and cost of mental health problems in the workplace. The fact it hasn't suggests a need for a theory of action. It also suggests a need for research on transforming knowledge into practice, since knowledge by itself too often does not lead to implementation, despite assumptions to the contrary.

The literature relevant to such a challenge is more extensive than can be reviewed here. It includes research on organizations as learning systems (Argyris and Schon 1978; Senge 1990), intercultural relationships (Dion 1996; De Witte and van Muijen 1998; Harris and Ogbonna 2002), general and social systems theory, conflict resolution and other areas. Also available is documentation of experience in fostering large-scale transformation of human services, including

in the mental health and other related disability fields (National Institute on Mental Retardation 1982; Neufeldt 2003b). In short, what both prior research and experience suggest is that if we are to make a dent in workplace mental health problems, several things are needed: a vision of what is to be accomplished, congruence of values between the various stakeholders, a sound plan of action and adequate resources over a considerable period of time. Other elements might be added to the framework, but these are most basic.

One might stop the paper at this point, except that these apparently simple four requirements are much more complex than they at first appear. To say "the devil is in the detail" would be apt here. The purpose of this paper, then, is to discuss the following questions: What do we know about the context of "mental health" and that of the "workplace" as it relates to the topic at hand? What does it take to shape a sound vision of the desired state? Of the various possibilities, which kind of knowledge is most important to actions that would lead to their adoption in the workplace, and how might such knowledge be organized? And what are the main considerations in developing an action plan?

#### The Question of Contexts

A useful way to begin is to examine the quite different contexts of two systems. One is that out of which mental health knowledge arises (i.e., by definition, the mental health knowledge system); the other is that to which such knowledge presumably has relevance and should be applied (i.e., the workplace system). We know there are bound to be effects of context both in how knowledge is portrayed and how it is applied (Jacobson et al. 2003; Lavis et al. 2002).

That there are differences in language, culture and practice between these is reasonably well established (Dewa et al. 2000; Peck and Kirbride 2001). The goals of one have been shaped by values of human service, largely conducted within frameworks defined by the state; the other has been shaped by the goods or services market in a context largely defined by the values of the marketplace. Mental health professionals typically are funded for services through public or insurance sources, with reasonable assurance of ongoing funding. Marketplace employers depend on revenues from the sale of products or services, which are vulnerable to competition. The one deals with clients (patients) who may have long-standing and continuing difficulties and a scarcity of other service providers to relieve them should that be desired. The other deals with clients (customers) who purchase one's products and could as easily turn to a competitor if such is available. In other

words, the cultural contexts within which each operates are quite different. It is not surprising, then, that a gulf of knowledge and understanding should exist between them.

That said, it would be wrong to conclude that public and private sector organizations are totally different. Most organization theories, for example, seem remarkably applicable to both. And, while pursuing profitability may be a fundamental motive of all private sector firms, other motives conducive to addressing mental health issues also are evident in many (Argyris 1973; Peters and Austin 1985). These include promoting employee wellbeing,<sup>2</sup> pursuing "good corporate citizenship" and so on, motives that are normally thought of as characteristics of non-profit, professional and public sector groups. Finally, despite the reputation of being hard-nosed, the private sector is remarkably vulnerable to claims put forward by "management gurus" and academics that innovations in corporate management they propose are valid, despite little more than case study evidence (Carson et al. 2000).

The challenge of transforming knowledge about mental health and work into practice might be characterized, then, as less about differences in the nature of organization and motives, and more about figuring out how people using different languages can convey knowledge between two quite different cultures.

It is here that recent advances in systems theory are helpful. While general systems theory tends to consider "mental

<sup>&#</sup>x27;The writings of arguably Canada's foremost management and organizational theorist, Henry Mintzberg, provide a case in point. His book, The *Structuring of Organizations* (1979; Englewood-Cliffs NJ: Prentice Hall), draws on research from both public and private sector organizations, with common concepts derived from and applied to both. The same has been true of other notable theorists such as Argyris, Galbraith, McGregor, Simon and others.

<sup>&</sup>lt;sup>2</sup>Dupont, for example, has a justifiable reputation for concern over the welfare of its employees, one which began long before current organization theories argued the merits of doing so. Its origins as a producer of gun powder contributed to a corporate emphasis on safety, and a culture recognizing that safe workplaces require a satisfied and healthy workforce.

health" or "business" systems in structural or organizational terms, such conceptualization doesn't really help one think about how to get information from one system to another. More helpful is the way in which the German theorist Niklas Luhmann thought about systems (Andersen 2000; Clam 2000; Hagen 2000a; Hagen 2000b; Osterberg 2000; Stichweh 2000). He defined social systems, not in structural terms, but as fundamentally about communication, with the boundaries of systems determined by the language used and the communication that is engaged in. Business systems are defined by their business communication, mental health systems by mental health knowledge and discourse. Such a definition gets one out of the awkwardness of general systems theory, where it often is difficult to decide whether or not certain groups or practices are part of the system (e.g., is the work of general practitioners part of mental health?). In Luhmann's approach, the nature of the language specifies the boundaries between what can and cannot be expected. This same language also constrains the system's search for new connections. So, business systems are constrained by their function as communicators of business matters; mental health systems are constrained by their communication over mental health matters, and so on. Each system maintains itself, and one can't be another.

This way of thinking about systems frames the challenge in a way one can act on it, with language the key. The language of one system needs to be conveyed to the other in a way that is understood. In this case the language is about the mental health knowledge that has potential relevance to workplace settings. In other words, one needs the message translated

from one language to another. This implies the need for interpreters. In systems terms, these would be "transducers." More colloquially, people capable of doing this might be thought of as "boundary walkers" — those who cross the boundaries of systems and are understood in both.

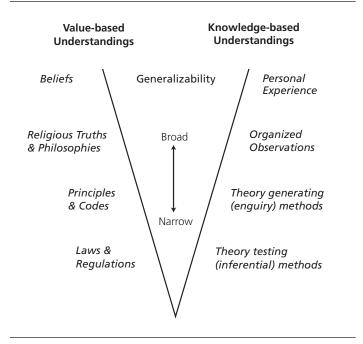
These constructs have relevance for the task at hand and are picked up in a later section on elements of an action plan. They also require much further research since little has been done on this transducing or interpreting role.

#### **Shaping a Sound Vision**

A question deserving of an answer is "what vision might one have of the state of mental health in workplaces if available knowledge were applied effectively?" That workplaces should be free of mental health problems? Something else? No one seems to have made a serious attempt at setting out such a vision. Yet, it is in need of doing if evidence on the importance of visions driving change is given any credence.

Visions of desirable futures are drawn from two main sources of evidence: knowledge-based and, perhaps more important, those that are value-based. It is useful to remind oneself that governments and public sector or private sector organizations rarely make decisions based on research-based evidence alone. Constructs such as "employment equity," "nondiscrimination" and "good corporate citizenship," all of which are widely embraced if not legislated, have a profound effect on how decision makers think about workplace mental health issues. These are not, fundamentally, knowledge-based constructs; rather, they rise out of "values-based" understandings of the world as do notions of cost effectiveness, profit and professional ethics.

Figure 1. Sources of Evidence in Shaping our Futures – The "V" Heuristic



Knowledge and values are intertwined in that values-based constructs shape our understanding of the worth of knowledgebased evidence and our decision whether or not to make use of it. A heuristic to help think about this relationship is provided in Figure 1 (adapted from Novak and Gowin 1984). At their broadest, value-based understandings of worth are drawn from the major religions and philosophies (including philosophies of science). These become more narrowly defined as specific laws and regulations. In the same way, knowledge-based understandings range from broad, loosely organized and defined experiences to narrowly defined, organized observation, such as is undertaken in theory-testing research methodologies. In between there are many degrees of specificity. This Vee heuristic (Figure 1) lends itself to understanding that both knowledge claims and values claims vary in their specificity and

generalizability. The more specific, the more certain one's conclusion about a given phenomenon, but also the less generalizable to other phenomena; and vice versa.

For example, the argument for "evidence-based decision making" articulated in recent years, at its core, is a values-claim. The claim is that evidence from meta-analyses of randomized control-trial experimental studies will lead to better and more cost-effective health, education or social service interventions than alternative sources of knowledge (Cochrane 1972; Cochrane 1979; Mulrow 1987). While most of us probably agree with the intent, it is

useful to note that this is but one of a number of relevant and potentially competing values to consider (Dineen 1996). In the drive for specificity and certainty, one can't help but wonder what less specifiable but broadly important issues may be overlooked.

A theory of action designed to transform mental health knowledge to workplace practice must inevitably consider both dimensions – values and knowledge. The fact that mental health issues are seriously thought about today by both employers and professionals, as contrasted with the situation several decades ago, of itself says something about change in social values. More important, both values-claims and knowledge-claims shape the vision of future possibilities of action to be taken, along with desired end goals and means of achieving them, whether articulated by researchers, professionals, employers or governments.

# Framing Existing and New Knowledge

Since knowledge is central to this task, the gathering of the most relevant, valid knowledge into an easily understood framework is essential. Examination of the literature reveals little that could be called an over-arching conceptual framework or theory that might help either to explain how research in the various areas discussed in this conference is relevant to each other or to guide the use of knowledge in practice. There are a variety of micro-theories on specific topics, but a broader theoretical framework seems not to have been developed. In the absence of a good theory, it would at least be helpful to have a conceptual framework. Here, too, we are disappointed. Overview documents such as that by the World Health Organization (WHO) and International Labour Organization (ILO) (Harnois and Gabriel 2000) provide a glimpse of the range, but they aren't meant to give more than that. Perhaps the closest is provided in an overview of some related literature by Glozier (2002). While helpful, it is eclectic rather than systematic in the material covered.

One task is the broad range of research that might be considered — biological and psychological bases of thought and behaviour, treatment issues (biological, psychological, spiritual and other), environmental factors, workplace health issues, public policy issues and many others. A conceptual framework would help determine which of these areas are more central than others to developing a systematic approach to transforming knowledge to practice. It would also provide a sense of how research on these diverse topics relates to each other.

A major challenge is that much exist-

ing knowledge is subject to what might be called an "isolated pockets syndrome." The different kinds of research described above are published in different types of journal, with cross-referencing infrequent. Epidemiological journals examine the relationship between functioning and psychiatric impairment. Occupational psychology and health literature examines topics such as workplace stressors, health, performance and absenteeism. Literature on rehabilitation and psychiatric fields examines specific treatments for psychiatric conditions, along with the effectiveness of interventions such as short-versus longer-hospital stays, supported employment, case management and others. Of what is published in any one area, only some examines the mediating effects of programs and policies.

In like manner a variety of structural and human factors contribute to difficulties in knowledge transfer, as do differences in culture, history and geography, the effects of which are rarely considered and require more attention (Neufeldt 2003a). It is not uncommon, for example, to observe difficulties in transferring knowledge gained from human service innovations in one province to another, even in a country such as Canada with its highly developed communication infrastructure. One need only examine differences in policy and ways of organizing mental health services across Canada to appreciate the truth of this. In analogous fashion there are gulfs to be bridged in sharing knowledge between the business sector and public sector health, education and social service sectors, each of which has its own culture, norms, assumptions and practices (Dewa et al. 2000).

All of this points to several needs. One is for higher-level analyses of potential

relationships of knowledge gained in one domain with that in another. A second is for a mechanism to convey systematically the essence of extant knowledge to the different audiences that are in a position to build on it, including workplace leaders (employers and unions), leaders of disability advocacy organizations, service providers, policy makers and researchers. A third is for a strategic approach to transforming knowledge into practice. Fourth, perhaps above all, there is a need to develop a sound theory of action. Such a theory would serve as a guide for all when they are pursuing common workplace mental health goals.

A start towards a conceptual framework within which one might organize existing knowledge relevant to this task is to begin with an assumption such as: "the most useful research for transforming mental health knowledge into workplace practice will be that which is most immediately relevant to intervention." This kind of approach serves the purpose of limiting the amount of knowledge one needs to attend to.

On that basis one can identify three clusters of research that have immediate relevance:

- (1) Employer-led initiatives seeking to prevent mental health problems in the workplace
- (2) Employee-focused workplace interventions, initiated or supported by the employer
- (3) Community-based resources supportive of enabling workers with mental disorders remain in or return to the workplace.

Not included is fundamental research on the biochemical or psychological bases of behaviour, research on public policy issues, or epidemiological research documenting the prevalence of various kinds of conditions in the workplace. While these all are valuable sources of knowledge of the kinds inferred above, the argument for their exclusion is that they represent domains of enquiry that are not immediately involved with workplace and mental health issues.

As a test of the utility of the proposed framework, one might take a critical look at knowledge claims in these three areas. The purpose is to determine whether the framework is helpful in clustering previously unrelated research in a way that helps one see new possibilities for research, implementation, and so on; and whether it can contribute to the development of a coordinated intervention strategy. Two questions are important: First, is the state of knowledge such that it might be part of a strategy of action? Second, are there apparent links that can be made between the various areas of research in a given category? To test these questions, data gathered for another purpose is set out below (Neufeldt 2003c). These were drawn from a broad range of literature through the main electronic abstracting services, the Campbell and Cochrane libraries as well as other sources, with a variety of search terms, and with particular emphasis on finding summative reviews and critical analyses of prior research. Given that the framework is meant to help us think about research, it should not be surprising that the data overlaps with those presented in other discussion papers.

#### **Employer-Led Prevention Measures**

The general starting point for most research of this kind is the question

whether workplace stressors and other factors contribute to mental health problems among employees. This initial questioning has been followed by the introduction of workplace policies and practices that seek to reduce the impact of stressors such as job insecurity, long work hours or weeks, control of work issues and the effect of managerial style. The evidence on five largely unrelated areas of research seems to be as follows:

Reducing job insecurity. Job insecurity has been posited as a precipitating factor in workplace mental health problems, particularly in environments where downsizing or change in employment patterns is a high probability (Sparks et al. 2001). Two types of preventive measures are often advocated: maintaining open communication between higher management and employees, and offering employees the opportunity to learn transferable job skills (Vahtera et al. 1997). While both seem to have some validity, the evidence for these knowledge claims seems to be based primarily on "best practice." No metaanalyses of RCT studies were found.

Effects of long work days or weeks. Another hypothesis is that stresses from long work days or weeks in certain kinds of job and from family members (often women) holding two or more jobs contribute to increased mental health problems one common preventive measure is the use of flexible work schedules. This area has generated a reasonable amount of research. A summative review of research on the general hypothesis suggests that the relationship between accumulated stressors and indicators of distress are not well understood and that it requires more work (Sparks et al. 1977). As to flexible work

schedules, a review of a number of studies indicates there are some short-term positive effects of flex schedules, but that these wane with time and the effects of particular stressors are likely to reappear (Baltes et al. 1999). Even so, this may still be an approach of choice for families seeking to balance family and income needs.

Enhancing employee control over work. Research on another common hypothesis, that giving employees control of decisions related to their work should reduce distress and other mental health problems, has also had mixed results (Evans and Carrére 1991; Ganster and Fusilier 1989). There appears to be considerable variability from one person to another in the impact of such a strategy (Ganster 1988), and also variability in the effect of different types of control given to employees (de Rijk et al. 1998). Again, there is a need for more research and for a metanalysis of existing studies.

Managerial style has been thought to have an impact on how employees deal with work stressors. No RCT studies nor meta-analyses of other studies were found. However, a number of studies dating back several decades provide reasonable evidence that leadership styles, such as those that are either "transformational" or "transactional," are the more effective than others in maintaining a satisfied workforce (Bass 1985; Burns 1978). The need for more research and critical analysis of such findings is again evident.

One exception to the above kinds of research has been to question whether it might be possible to prevent mental health problems by screening out vulnerable job applicants (Poole 1999). While seductive, the idea is faulty on at least two counts. First, hiring criteria of this nature

would clearly constitute a discriminatory practice within the provisions of the Charter of Rights and Freedoms and related employment equity legislation and hence would be illegal (this is a "values" matter). Second, it is doubtful the approach would have any utility in that symptoms of illness having little bearing on work success, and that a substantial portion respond well to treatment and recover their occupational functioning (Strakowski et al. 2000). In addition, the variability of symptom presence as noted earlier, particularly among people with the more common mental disorders, would make prediction difficult. Seductive as it may be, the idea should be dismissed.

# **Employee-Focused Workplace Programs**

An alternative to management-led prevention initiatives has been to develop employee-focused workplace programs. In general, these are meant to provide early intervention support or shore up the preventive capacities of groups of employees. The most common and longest-standing have been employee assistance programs (EAPs) and stress management interventions (SMIs). Observations on research related to these are as follows:

Employee Assistance Programs. EAPs have been widely adopted by large employers in Canada and the United States (less so elsewhere) (Teich and Buck 2003). While one would think there would be a substantial body of research supporting EAP use, as some suggest (O'Hara 1995), sadly that seems not the case (Masi and Jacobson 2003; Cohen and Schwartz 2002). Best-practice studies predominate, with very little data of a longitudinal or comparative nature. Despite the absence of strong evidence,

EAPs tend to be regarded favourably by employers and employees alike (they have good "face validity") (Roman 1999). While EAPs may have merit, their credibility and long-term continuation would benefit from sound empirical work.

Stress Management Interventions. In contrast to EAPs, a considerable amount of research has been done on SMIs, though very little of an RCT variety. One meta-analysis of studies comparing different SMI approaches found no differences in effectiveness between any of them (Bunce 1997). It seems that all led to small positive effects. The conclusion of a follow-up study was that SMIs had only limited value in preventing mental health problems hand that the effects were quite temporary and faded with time (Bunce 2000). Again, more systematic study of such approaches by means of RTC or quasi-experimental designs is needed.

Disability management programs are relatively new to the mental health field, and have been studied to little to determine effectiveness with any degree of confidence. Outside the mental health field such programs have become quite prevalent for issues of employee absence and disability leave due to other common types of impairment such as lower back pain, repetitive stress syndrome and injury from workplace accidents. Considerably research has been undertaken related to these issues both in North America and Europe, with generally favourable results (Sim 1999). However, it is also clear that effectiveness varies considerably, depending on the kinds of policies in place, the nature of early intervention programs and a variety of other factors (International Social Security Administration 2002; Bloch and Prins 2001).

Finally, managers are in a position (indeed, have a duty under human rights legislation) to develop ways of accommodating people with mental health problems in the workplace when such issues occur. Two types of accommodation that have been tested are (1) assist the employee with the mental health problem by modifying job tasks, work schedules and performance expectations, and (2) create a more supportive work environment by training co-workers and increasing the amount of supervision available (Schott 1999; MacDonald-Wilson et al. 2003). As in previous types of intervention, there have again been relatively few studies. Of these, modifying job tasks provided positive results, but more empirical research is needed, supplemented by qualitative studies of employers' and employees' experiences.

#### Workplace Support by Community Mental Health Services

For employees with more serious mental disorders, employers depend on the availability of resources from the regular mental health service sector. Research on four kinds of publicly mandated programs was examined – the effect of short-term versus long-term hospitalization policies, the effectiveness of case management (CM) and assertive community treatment programs (ACT), and the supported employment (SE) model.

Length of hospitalization. There has been considerable controversy for many years as to whether intentional short-stay hospitalization is as effective in addressing patient needs as a more open-ended policy. One systematic analysis was found that reviewed five studies (all in the United States) comparing hospital

programs that had short-term stay policies with hospitals, roughly equivalent in terms of patients received and other factors, that had no specific stay policy (Johnstone and Zolese 2003). The intentional short-stay policy was found to be superior, in that it contributed to less readmission (the reverse of what often is argued) and better maintained patients in employment. With only five studies and one systematic review, there is need for additional research; but early evidence suggests that, when hospital admission is required, short-term stay is the best policy.

Case management. CM has become a cornerstone of community mental health services in many jurisdictions. One systematic review of RCT studies was found. It compared CM with standard mental health services (all in the United States) and found that CM contributes to increased hospitalization, rather than decreased as is often argued. There were no differences in other psychiatric or social variables (Marshall et al. 2003). Given its widespread use, the value of CM as a stand-alone service is questionable, though it would be important to undertake additional research.

Assertive community treatment. Again, there was only one systematic review of prior research comparing the effectiveness of ACT with standard mental health services (all US-based) (Marshall and Lockwood 2003). On all dimensions, ACT was found to be superior to standard services. ACT contributes to reduced use of MH services, less time in hospital and greater stay of patients in work.

Supported employment (SE) model. Two systematic reviews were found, each exam-

ining substantially the same data set of US studies (Bond et al. 2003; Latimer 2001). Compared to other employment programs for people with severe mental disorders, both found the SE model a superior strategy for job finding, placement and maintenance. Nevertheless, it was evident that most SE employees worked only part-time.

Conclusions on Relevance of Framework. On the basis of the foregoing summaries, one can draw several conclusions. First, the proposed framework provides a means of organizing information on related but different types of intervention and support that makes some sense for the different actors involved. For example, mental health professionals are most likely to be conversant with the third, whereas employers most conversant with the first and, perhaps, second. Second, information organized in this way should lend itself to revealing potential relationships between the different types of knowledge both within groups and between the three groups. Third, with respect to a substantial number of issues, there exist reasonable hypotheses about strategies that may be appropriate, and a growing amount of evidence even though some of it is "soft." Fourth, in almost all the areas reviewed there is a need for substantially more research and meta-analysis of previous work to ascertain more clearly what courses of action would be desirable. For those reasons, the framework provides a guide to further research.

# Transforming Knowledge into Practice

The foregoing sets the stage for a systematic approach to pursuing the transformation of knowledge into practice. Both prior experience and research-based knowledge have something to contribute.

One summary of major steps involved, based on several systems change experiences, is as follows: (1) frame the issue, (2) clarify values involving all key parties, (3) imagine the future (i.e., create the vision), (4) clarify interests, (5) maximize legitimacy, (6) invent options, (7) build relationships, (8) seek to empower relevant sectors, (9) communicate and listen, and (10) commit carefully (Neufeldt 1986). Even though that list is supported by sound evidence, the problem is that it suggests the process to be linear and relatively easy to implement. The reality of a change process is much more complicated and full of surprises.

In part, complications arise from the fact that a number of different "actors" are involved, each with its own assumptions, culture, language and so on (Lavis et al. 2003; Lomas. 2000). Already identified are the two systems - mental health and workplace – and issues of language and culture. Both can be subdivided. In mental health, for instance, service providers aren't necessarily the same as "knowledge brokers." At a minimum, one also needs to include representation from the people who have had personal experience with mental health and work problems, and the state (i.e., government). Each of these social institutions contributes to the total well-being of society, and all are central to the question of employment of people with mental health problems. The state is the initiator of policies that both create an economic framework and safety nets of various kinds (economic, health, social). Households participate in the market, and they are significant sources of social support, motivation and other factors. The market provides opportunities for work and creates its own policies and programs directed towards its employees and the

well-being of the public. The sources of action and intervention by the various public and private service providers – EAPs, community mental health, non-governmental organizations and so on – cross into all of these in various ways.

A second challenge is to decide where to focus one's energies and resources. While from a mental health perspective the question tends to be one of how to put the available knowledge into practice, even employers interested in being involved are bound to view this as a process that necessitates some changes to their operating systems; from the mental health perspective the question in turn, will be cause for caution. Research on information diffusion and adoption of innovations helps one think about this challenge. Rogers, for example, demonstrated some time ago that adoption of new ideas seems to proceed in stages (Rogers 1962). At the beginning, only small numbers are likely to be interested in an innovation, which is what a systematic approach to adopting mental health knowledge would be. With the success of the innovation by these "early adopters" and persistent effort in promoting and supporting the innovation, others gradually become involved. If the process continues to have some reasonable success, it is likely there will come a time that a "tipping point" will be reached where a large portion of employers are likely to adopt the innovation (though some will continue to resist) (Kuhn 1970). These and other concepts have been elaborated upon by later theorists (Mintzberg 1983; Pettigrew et al. 1992; Tushman and O'Reilly 1997).

A third challenge is that of time. The time involved can be considerable. Human service innovations that the

author has been involved with have typically taken a generation, though the "tipping point" where the ideas started to be self-sustaining averaged about 10 years. The amount of time depends to a large extent on the persistence in promoting the change, the complexity of organizations involved and their readiness for change (Schon 1971; Emery and Trist 1965; Howard-Dixon 2001).

There are several features of successful social change initiatives that seem to contribute to overcoming the practical implementation barriers. One has been that the vision was clearly articulated and was supported by an organized approach both to ensuring shared values and clarity of understanding of relevant knowledge. Second, use typically has been made of a "experimental and demonstration" or "pilot project," where various incentives are used and visibility is given to successful outcomes. Third, there is usually a support mechanism comprising personnel fully conversant with the innovation, and with the "boundary walking" capacity referred to earlier. The support measures include training, providing resource materials, organizing publicity and so on. Fourth, a systematic plan typically is developed for promoting the innovation and its merits to the various "actors" involved. Fifth, these activities are maintained until after the tipping point is reached. That, in turn, requires continuous financing.

#### Conclusion

Given the challenges to knowledge transfer that have been described, it should not be of particular surprise that the available knowledge has not been put into widespread use in private sector workplaces. First, little work has been done so far to bring together the disparate areas of

knowledge that are relevant to the task within a framework that is easily understood by all parties. Second, inadequate attention has been given to determining with any assurance which of the many knowledge claims we can have confidence in. It has been suggested that both require some homework before we proceed further. Third, research on innovation transfer and systems change suggests that the knowledge base exists on which a more systematic approach could be used to transfer existing knowledge on addressing mental health issues into the workplace. Pursuing such a goal requires the concerted and coordinated effort of major stakeholders.

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# Bibliometric Analysis of Research on Mental Health in the Workplace in Canada, 1991-2002



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#### Abstract

This paper uses the Medline biomedical papers database to measure scientific production on mental health in the workplace (MHWP) during the 1991-2002 period at the world, Canadian, provincial, urban, institutional and researcher levels. The level of scientific output has doubled at the world level and tripled at the Canadian level during the last 12 years. At the provincial level, Ontario, Quebec, British Columbia and Alberta are leading in absolute number of papers. Ontario largely dominates both in terms of output and on a per capita basis. At the level of cities, Toronto and Montreal are the largest producers of papers on MHWP. The most important institutions in terms of papers on MHWP are McMaster University, Université de Montréal, the University of Toronto, the University of British Columbia and the University of Western Ontario. The universities with the largest number of active researchers in MHWP are McMaster University, Université Laval and York University.

#### Introduction

This paper uses scientometric methods and the Medline database to examine the scientific production of Canadian researchers in the field of mental health in the workplace (MHWP). After a description of the method, we present the results at various levels of aggregation: in section, Canada's output is compared to that of the world. This shows that Canada has a slightly greater percentage of its papers in the area of mental health in the workplace than the world average. The second section examines the scientific output of the Canadian provinces. Not surprisingly, Ontario is a clear leader and Quebec is second, followed by British Columbia and Alberta. Although those provinces lead in absolute terms, Nova Scotia and Manitoba are important in relative terms (papers per capita and specialization index). The third section looks at mental health in the workplace research at the urban and institutional levels, and the last section examines who the most active researchers are in the field.

#### **Methods**

Working in collaboration with experts appointed by the Institute of Neurosciences, Mental Health and Addiction (INMHA) and the Institute of Population and Public Health (IPPH) of the Canadian Institutes for Health Research (CIHR), we constructed a controlled vocabulary that precisely defined the field of research on mental health in the workplace. This was validated by looking at the percentage of papers from specialist journals that were selected with these keywords. With these keywords, we computed statistics from the Medline database, which is produced by the US National Library of Medicine.

This database has been conditioned with a view to producing statistics on scientific publications in the biomedical and clinical medicine sector. The construction of the dataset for the scientometric analysis is essentially based on the use of Medical Subject Headings (MeSH) terms. These constitute a controlled vocabulary used for indexing papers in Medline. This paper uses the intersection of MeSH terms that represent the field of mental health (e.g., "stress, psychological") and of MeSH terms associated with the workplace (e.g., "occupational diseases") to identify the papers that have a Canadian as first author.

One caveat associated with the use of this database is that only the first author's address is compiled for each paper. This means that the number of Canadian papers obtained here are minimum figures since they do not consider the effect of coauthorship. In addition, because Medline concentrates on biomedical research and clinical medicine, it is possible that some papers from the social sciences and the humanities are missing. However, the overall comparative and relative statistics should not be affected. Furthermore, the purpose of this study being the mapping of the distribution of Canadian expertise rather than the identification of every researcher, this limitation is not a serious handicap, though one should not use the absolute numbers without this limitation in mind.

The data collected were used to produce detailed statistics on the basis of the following indicators:

Number of papers – Number of scientific papers written by authors located in a given geographical, geopolitical or organizational entity (e.g., country, city or institution).

<sup>&</sup>lt;sup>1</sup>We would like to thank Alain Lesage, Jean-Yves Savoie, Renée Bourbonnais, Carolyn Dewa, Gaston Harnois, Marina Morrow, Michèle Parent and Phil Upshall for their comments and suggestions; and Heather Stuart and Aldred Neufeldt for their continued input during this project.

Number of papers per capita – This is a relative measure that accounts for the size of the geographic entities being considered.

**Index of specialization** – This is an indicator of the intensity of research in a given geographic or organizational entity relative to the overall output for a given reference. For example, if the percentage of Ontario's papers (the geographic entity) in the field of mental health and workplace is greater than the percentage of papers in this field at the Canadian level (the reference), then Ontario is said to be specializing in this field, since its index of specialization is greater than one.

For the purpose of the paper, relevant indicators have been calculated for data aggregated by province, by city, by most active institution and by leading researcher.

#### Results

#### 1. Canadian Output at the World Level

Figure 1 reveals that the percentage of papers on MHWP grows faster in Canada than at the world level. In fact, the proportion of papers on MHWP is nearly 50% greater in Canada than at the world level - more than 0.3% in Canada and above 0.2% at the world level. Although the proportion of Canadian papers on MHWP dropped markedly in 1995 and 1996, there is a clear tendency for more Canadian papers in the biomedical sector to be written in MHWP. In fact, the proportion of papers written in this field grew in eight of the twelve years studied. One must note that the yearly variations observed here are not exceptional for a small scientific field, and the field will no doubt show more stability if growth continues.

Figure 2 shows that between 1991 and 2002, papers in MHWP increased by 75% in absolute terms at the world level, that is, from 535 papers in 1990 to 940 papers in 2002. In Canada, growth was even greater, with production more than trebling from 14 papers in 1991 to 52 in 2002. The share of the total MHWP papers written by Canada more than doubled, from 2.6% in 1991 to 5.5% in 2002. On average, Canada was responsible for 4.4% of papers on MHWP, and it wrote 3.7% of papers in the biomedical field indexed in Medline. This means that Canada specializes in MHWP (specialization index of 1.2). By comparison, Canada produces about 4% of the world scientific literature in natural and engineering sciences. Although total output is small in absolute terms, the

0.40% 0.35% Share of MHWP Papers in Canada 0.30% 0.25% Share of MHWP Papers in the world 0.20% 0.15%

Figure 1. Share of Papers on MHWP in Canada and In the World Per Year, 1991-2002

Source: Compiled by Science-Metrix from the Medline database.

0.10%

1991 1992 1993 1994 1995 1996 1997

1999 2000 2001

1200
1000
800
400
200
200
100
200
100
3%
Canadian papers
4%
3%
World papers
4%
1%
0%

1999 2000 2001 2002

Figure 2. Papers on MHWP in Canada and in the World per Year, 1991-2002

1994 1995 1996

1997 1998

Source: Compiled by Science-Metrix from the Medline database.

1992 1993

Canadian contribution to MHWP reflects the general scientific contribution of Canada at the world level. Considered in relation to the economic costs of mental illness in the workplace, the field is clearly rising rapidly at the international level and is growing faster still in Canada, which was catching up from this low 2.6% in 1991.

# 2. Scientific Output at the Provincial Level

In Canada, Ontario has a clear lead over the other provinces in the field of MHWP. The proportion of Ontario's output is more than double that of its closest competitor, Quebec (46% of Canadian papers are written in Ontario, compared to 21% in Quebec). British Columbia and Alberta are on a par at 9% of the Canadian output. Manitoba and Saskatchewan together account for 8% of the papers, whereas the Atlantic provinces account for 7%. This distribution is similar to that in all scientific disciplines. For instance, Ontario published 45% of the papers covered in Thomson ISI's *Science Citation Index* (SCI) in 2000, Quebec 24% and British Columbia 14%.

Figure 3. Canadian Provinces' Share of Scientific Production in MHWP, 1991-2002

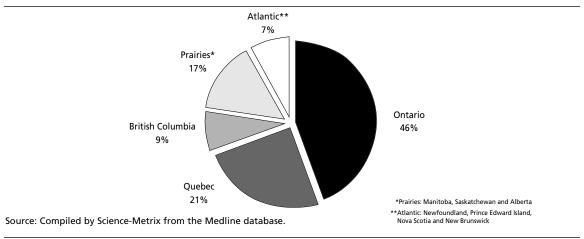


Table 1: Number of Papers in MHWP Research by Canadian Province, 1991-2002

Province	1991-1993	1994-1996	1997-1999	2000-2002	TOTAL
Ontario	25	31	55	65	177
Quebec	14	13	27	25	80
<b>British Columbia</b>	4	6	11	15	36
Alberta	9	4	6	15	34
Nova Scotia	3	3	7	7	20
Manitoba	4	8	8	3	19
Saskatchewan	1	3	2	4	10
New Brunswick		1		1	2
Newfoundland	1			1	2
Prince Edward Islan	d		1		1
Canada TOTAL	62	69	113	137	381

Source: Compiled by Science-Metrix from the Medline database.

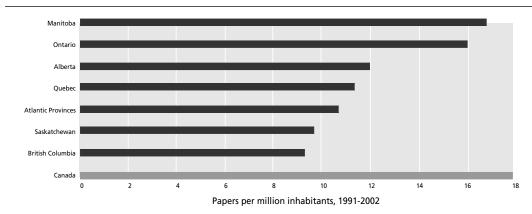
Table 1 reveals that output in MHWP is rising steadily in Ontario and British Columbia. Quebec, Alberta and the smaller provinces are experiencing more erratic patterns. However, the number of papers is quite small at the provincial level, and one should be careful in the interpretation of these statistics.

Figure 4 shows that Manitoba, although not a large producer overall, is the leader in number of papers per capita. It also confirms the leadership position of Ontario and shows that Alberta is also an important producer of scientific output in

MHWP research, considering its size. On the other hand, British Columbia is below the Canadian average output per capita. Nova Scotia, which appears as part of the Atlantic Provinces, also scores highly in number of papers per capita.

Figure 5 shows that, although the Atlantic provinces' overall output is low, it is nonetheless more important than that observed generally in biomedical science – in other words, this region seems to specialize in MHWP. However, it is clear from Table 1 that Nova Scotia is essentially responsible for this interest in MHWP.

Figure 4. Papers per Million Inhabitants per Province, 1991-2002



Source: Compiled by Science-Metrix from the Medline database.

Atlantic Provinces

Manitoba
Ontario
Saskatchewan
Quebec
British Columbia

Alberta

0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6

Specialization Index (1=Neutral)

Figure 5. Specialization Index of Canadian Provinces, 1991-2002

Source: Compiled by Science-Metrix from the Medline database.

Manitoba comes second, thus confirming that in relative terms it is one of the leaders in Canada in MHWP. Ontario also specializes in this field but to a lesser extent, thus adding to the fact that Ontario is the clear leader in MHWP in Canada in both absolute terms and and relative terms (i.e., papers per capita and index of specialization). Whereas Saskatchewan nearly follows the Canadian average, Quebec, British Columbia and Alberta tend to produce fewer papers in MHWP than one could expect.

It is important to note that since research on MHWP appears to be nascent in Canada, these readings might be subject to change in the near future, not only in terms of papers per capita but also in terms of specialization index.

# 3. Scientific Output at the Urban and Institutional Levels

Table 2 shows that, at the urban level, Toronto is the clear leader overall in the field of MHWP. One can also see here that its output is rising steadily. Montreal occupies the second rank, while Vancouver comes third. London and Hamilton complete this ranking of Canadian cities, with at least two papers per year on average. Winnipeg, Edmonton, Quebec City,

Ottawa and Halifax all have at least one paper on MHWP per year on average. Halifax is the only city from the Atlantic region that is in the ranks of Canadian cities, having published at least six papers during the 1991-2002 period. This shows that Halifax is the only MHWP research hub in the Atlantic region.

There is no institution in Canada that really stands out as a very large producer of papers on MHWP (see Table 3). In fact, the leader, McMaster University, has only two papers per year on average in the field. Other leaders include the Université de Montréal, the University of Toronto, the University of British Columbia and the University of Western Ontario – all with at least 1.5 papers per year on average. The University of Manitoba, which dominates the field in that province, managed to publish an average of only one paper a year on MHWP.

### 4. Scientific Output at the Researcher Level

Not surprisingly, McMaster University is confirmed as the leading centre on MHWP research in Canada, for in addition to having the greatest number of papers per institution, it has the largest number of

Table 2: Most Productive Canadian Cities in MHWP Research, 1991-2002\*

City	1991-1993	1994-1996	1997-1999	2000-2002	TOTAL
Toronto	11	16	19	33	 79
Montreal	11	8	18	18	55
Vancouver	4	4	10	12	30
London	4	3	11	10	28
Hamilton	3	5	9	9	26
Winnipeg	4	8	4	3	19
Edmonton	7	2	3	7	19
Quebec	1	5	7	6	19
Ottawa	3	1	5	7	16
Halifax	3	2	2	6	13
Calgary	1	1	1	7	10
Kingston	2	1	3	3	9
Saskatoon	1	1	2	2	6
Wolfville		1	4	1	6

<sup>\*</sup> Cities that produced a minimum of six papers over the period (1991-2002) Source: Compiled by Science-Metrix from the Medline database.

authors on the list of most active researchers in the field (seven authors). The Centre for Addiction and Mental Health (CAMH) and Université Laval, which ranked sixth and seventh among the most active institutions in MHWP, both rank second in number of most active researchers (with

four researchers each). The Institute for Work and Health and Université du Québec à Montréal have three top-ranking researchers each, while Acadia University, Université de Montréal, the University of Toronto and York University have two researchers each.

Table 3: Most Productive Canadian Institutions in MHWP Research, 1991-2002\*

Institution	1991-1993	1994-1996	1997-1999	2000-2002	TOTAL
McMaster University	2	4	9	9	24
Université de Montréal	2	6	3	10	21
University of British Columbia	3	6	2	10	21
University of Western Ontario	2	3	7	7	19
Centre for Addiction and Mental Health	6	2	5	4	17
Université Laval		5	7	4	16
University of Alberta	6	1	3	5	15
York University	2	3	2	7	14
University of Manitoba	2	6	1	3	12
UQAM	3	1	6	2	12
McGill University	5		2	2	9
Dalhousie University	3	1	1	3	8
Queen's University	1	1	3	3	8
University of Calgary	1	1	1	5	8
Acadia University		1	4	1	6
Institute for Work & Health			1	5	6
University Health Network			3	3	6

<sup>\*</sup> Institutions that produced a minimum of six papers over the period (1991-2002) Source: Compiled by Science-Metrix from the Medline database.

<sup>&</sup>lt;sup>2</sup> We defined the most productive researchers as those with at least three papers in the field of MHWP in our database, that is, among papers for which the first author is a Canadian. These data were validated manually to detect erroneous homonymic counts and to determine the authors affiliations. For example, Smith, J. could actually be two authors – Jennifer Smith or John Smith. Of course, it would be an error to impute 10 papers to a J. Smith if Jennifer had written six papers and John, four. The validation involves checking papers one by one to ascertain that counts by author are due to a single researcher rather than names with the same initial.

Although the majority of the most active researchers are located in universities, there are also researchers from the CAMH (as seen above), from the Centre hospitalier affilié universitaire de Québec (CHA Québec), from the Douglas Hospital in Montreal, from Health Canada and from the Institute for Work and Health – thus, about a quarter of leading researchers are located outside a university (though these centres may of course be affiliated to a university).

#### Conclusion

The study of mental health in the work-place (MHWP) is a relatively new scientific field. Although the economic importance of MHWP is well established, only about one-fifth of a percent of biomedical papers address this issue in the world literature. Despite this, the field is growing in absolute terms at the world level, that is, from 535 papers indexed in Medline in 1991 to 940 in 2002 – a growth of 75% in 12 years.

Although the overall output is still low, research on MHWP is growing faster in Canada than at the world level – Canadian institutions are playing catch-up. During the last three years, the number of papers by Canada has tripled, and they now account for 5.5% of the world output in the field; this is 57% more than its overall share in biomedical sciences (3.5%) as measured in Medline in 2002. Similarly, Canada produced about 4.4% of the scientific literature in 2000 as measured with the Thomson ISI's SCI database. Canada thus specializes in this field, having a proportion of papers on MHWP that is higher than its share of papers in biomedical science as well as in science generally.

In Canada, Ontario is, overall, the clear leader. It produces 46% of Canadian

output and ranks second in papers per capita and third in terms of the index of specialization in the field.

The cities that are most active in the field are Toronto and Montreal, while Vancouver, London and Hamilton have at least two papers on MHWP per year on average. Not surprisingly, leading institutions in the field – McMaster University, Université de Montréal, the University of Toronto, the University of British Columbia and the University of Western Ontario – are located in these cities.

Three-quarters of the top 20 researchers in the field are from universities. McMaster and Laval provide the largest number of leaders (four researchers each), while York hosts two of the leading researchers in the field.

The statistics presented in this paper show that scientific activity in the field is still low. As such, the law of large numbers may not yet apply, and one should expect to see some volatility in the ranking of the leading bodies – be they provinces, cities, institutions or researchers – in the coming years. Nevertheless, this paper gives an indication of research at an early stage in the development of the field, and one can expect changes in the geographical distribution of activities.

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