The Monitoring and Surveillance of the Psychosocial Work Environment in Canada

A Forgotten Determinant of Health

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ABSTRACT

The psychosocial working environment is an important determinant of health status and health inequalities in Canada. Particular dimensions of the psychosocial work environment such as low job control, job strain and imbalances between perceived efforts and rewards have been related to cardiovascular disease (the leading cause of mortality in Canada) and poorer mental health status. Despite its importance to the health of Canadians and health inequalities in Canada, the national surveillance of the psychosocial work environment is decreasing. Currently, the surveillance of the psychosocial work environment in Statistic Canada's population health surveys is limited to convenience-based samples within particular health regions. Not including important dimensions of the health, such as the psychosocial work environment, in our population-based surveys limits the ability of these surveys to help us better understand the challenges and opportunities to reducing health inequalities in Canada.

Key words: Psychological factors; surveillance; public health; Canada

RÉSUMÉ

L'environnement psychosocial de travail est un important déterminant de l'état de santé et des inégalités en santé au Canada. Certains aspects, comme le manque de liberté de décision, le stress au travail et les déséquilibres entre les efforts et les récompenses perçus, ont été liés aux maladies cardiovasculaires (lesquelles sont la principale cause de mortalité au Canada) et à la dégradation de l'état de santé mentale. Malgré son importance pour la santé des Canadiens et le redressement des inégalités en santé au Canada, la surveillance nationale de l'environnement psychosocial de travail diminue. Aujourd'hui, ce type de surveillance dans les enquêtes sur la santé de la population de Statistique Canada se limite à des échantillons de commodité prélevés dans certaines régions sanitaires. L'absence d'aspects de la santé aussi importants que l'environnement psychosocial de travail dans les enquêtes représentatives canadiennes réduit l'utilité de ces enquêtes lorsqu'il s'agit de comprendre les difficultés et les possibilités de réduire les inégalités en santé au Canada.

Mots clés : facteurs psychologiques; surveillance; santé publique; Canada

The psychosocial environment is an important determinant of health status. It has been defined as *"the sociostructural range of opportunities given to an individual to meet his or her need of well being, productivity and positive self-experience"*.¹ A large part of an individual's psychosocial experiences occur at work. The most commonly used measures of the psychosocial work environment are job control (a measure that includes an individual's ability to make decisions and use their skills at work), psychological demands, job strain (the combination of low job control and high psychological demands),² and imbalances between perceived efforts and rewards.³ In addition, research has also focused on perceptions of organizational justice,⁴ social support and employment and employability security.⁵ A recent systematic review reported that there is consistent evidence from both longitudinal observational and case-control studies, among primarily male respondents, that job strain is associated with increased risk of cardiovascular mortality.⁶ In addition, among observational studies it is likely this risk is underestimated given that imprecise measurement of exposure to job strain is likely to produce results biased to the null. Others have estimated the population attributable risk (PAR) associated with negative psychosocial work conditions and myocardial infarction to be between 7% and 12%,^{7,8} making them similar to previously reported PARs for fruit and vegetable consumption and exercise and just below those reported for hypertension and obesity.⁹ Additional evidence has also linked job control (one aspect of job strain) independently with cardiovascular mortality.⁶ Other dimensions of the psychosocial work environment have also been associated with greater risk of cardiovascular disease in prospective observational studies. These include perceptions that rewards at work are insufficient given the efforts required,^{10,11} and of being treated unfairly by one's supervisor (organizational justice).¹²

The strong evidence of associations between the psychosocial work environment and cardiovascular disease makes the psychosocial work environment of particular importance to the health of Canadians, and Canadian health inequalities. Diseases of the circulatory system continue to be

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the leading cause of mortality in Canada, accounting for 34% of all deaths across all age groups and both genders.¹³ Further, coronary heart disease contributes the largest proportion of any disease to observed overall differences in potential years of life lost before the age 75, between high and low neighbourhood income quintiles.^{14,15}

Research is also now emerging that changing the psychosocial work environment results in changes in health status. For example, negative changes in the psychosocial work environment resulted in greater levels of medically certified sickness absence (> seven days) over the subsequent two- and five-year periods among British civil servants.¹⁶ And recent longitudinal Canadian data suggest that positive changes in job control are related to higher than expected levels of physical activity and self-rated health (and vice versa for negative changes in job control).¹⁷

In addition, longitudinal studies are now providing stronger evidence of an association between dimensions of the psychosocial work environment and poorer mental health outcomes. For example, a recent meta-analysis of 11 high-quality longitudinal studies suggested that job strain, low job control, high psychological demands, and imbalances between efforts and rewards were all associated with higher rates of mental health problems (including depression, anxiety and psychological distress).¹⁸ The effects of the psychosocial work environment on mental health is a particularly important area of future research given the relationships between mental health conditions and extended work absences and decreases in “at-work” productivity.¹⁹

In light of these findings, the ongoing monitoring of the psychosocial working conditions to which Canadian workers are exposed should be an integral part of a preventive population health agenda. Although recent self-reported survey research has suggested that, in general, the psychosocial work environment in Canada has been fairly stable over the latter half of the 1990s and early 2000s – and may have actually improved across some dimensions^{20,21} – it is important to remember that these results represent the average self-reported “exposure” levels across the Canadian labour market. Therefore, con-

siderable variation may exist at the individual level across time points, and particular groups of labour market participants may be faring much worse than the average. In addition, the measure used to assess the psychosocial work environment in both these studies was an abbreviated set of items from the widely internationally used job-content questionnaire, which may not capture either the aspects of work that are important to Canadians, or the dimensions of the psychosocial work environment that are changing.

Unfortunately, the ongoing surveillance of psychosocial work stress is decreasing in Canada. The National Population Health Survey (NPHS) and more recently the Canadian Community Health Survey (CCHS) were the only nationally representative surveys that measured labour force status, working conditions such as the psychosocial work stress and working hours, and health outcomes. Since its inception, the CCHS has had predetermined common and optional content.²² Common content refers to those questions that are asked of all respondents. Conversely, optional content comprises those questions that health regions can decide (or not) to ask respondents within their region. Health regions are limited in the number of additional content areas they can include in the CCHS. Each content area has an assigned point value that represents the length of time needed to respond to the module (e.g., the 12-item psychosocial work stress battery has a point value of four; whereas the SF-36 has a point value of 15); each health region is allowed to select optional content up to a value of 32 points.²³ In each major cycle of the CCHS, psychosocial work stress has been listed as optional content.^{22,24,25} In the 2000-01 survey, 97 of 136 Canadian health regions (71%) elected to include this content, resulting in 83% of the eligible CCHS sample being asked psychosocial work stress questions. However, this reduced to only 20 of 126 regions in the 2003 cycle (covering 9% of the survey sample);²⁵ and 27 of 122 regions in the 2005 cycle (covering 28% of the survey sample).²⁴ As a result, the monitoring and surveillance of psychosocial working conditions in Canada has been reduced to convenience samples located within particular health regions.

Further, the 2005 cycle of the CCHS also reduced the common content labour force interview from 27 questions (contained in the 2000-01 and 2003 cycles) to 7 questions. The common labour force module only assesses the labour market participation of each respondent over the previous one and the previous four weeks.²⁴ Thus, linking a variety of working conditions over the previous 12 months to both health behaviours and health outcomes (such as work injury) – one of the advantages of the NPHS and previous cycles of the CCHS – is no longer possible.

One of the goals of the CCHS (and the NPHS before it) was “to provide timely, reliable, cross-sectional estimates of health determinants, health status and health system utilization across Canada”.²⁵ While the CCHS still contains information on certain health determinants such as household income and educational status, the exclusion of other important determinants of health, such as the psychosocial working environment and occupational information, limits the potential of this data source in helping us better understand the challenges and opportunities to reducing health inequalities in Canada through work. The US, the European Union, and many other developed countries have national occupational health surveillance systems to measure both injuries and illnesses attributable to work,^{26,27} and aspects of the psychosocial work environment.²⁸ Canada currently relies on the passive collation of data on accepted workers compensation claims from provincial and territorial insurance plans. It would therefore seem essential to maintain, and in fact improve, the collection of comprehensive national data on working conditions and health, especially in our “flagship” national health surveys. This can easily be done through the rotation of survey content (including those on working conditions) across survey cycles, rather than limiting them as “optional”.

REFERENCES

1. Siegrist J, Marmot M. Health inequalities and the psychosocial environment - two scientific challenges. *Soc Sci Med* 2004;58:1463-73.
2. Karasek R, Theorell T. *Healthy Work: Stress Productivity and the Reconstruction of Working Life*. New York, NY: Basic Books Inc., 1990.
3. Siegrist J. Adverse health effects of high-effort/low-reward conditions. *J Occup Health Psychol* 1996;1(1):27-41.

4. Kivimaki M, Elovainio M, Vahtera J, Ferrie J. Organisational justice and health of employees: Prospective cohort study. *Occup Environ Med* 2003;60:27-34.
5. Sverke M, Hellgren J, Naswall K. No security: A meta-analysis and review of job insecurity and its consequences. *J Occup Health Psychol* 2002;7(3):242-64.
6. Belkic K, Landsbergis PA, Schnall PL, Baker D. Is job strain a major source of cardiovascular disease risk? *Scand J Work Environ Health* 2004;30(2):85-128.
7. Theorell T. How to deal with stress in organizations? A health perspective on theory and practice. *Scand J Work Environ Health* 1999;25(6):616-24.
8. Rosengren A, Hawken S, Ounpuu S, Sliwa K, Zubaid M, Almahmeed WA, et al. Association of psychosocial risk factors with risk of acute myocardial infarction in 11 119 cases and 13 648 controls from 52 countries (the INTERHEART study): Case control study. *Lancet* 2004;364:953-62.
9. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F, et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): Case-control study. *Lancet* 2004;364:937-52.
10. van Vegchel N, de Jonge J, Bosma H, Schaufeli W. Reviewing the effort-reward imbalance model: Drawing up the balance of 45 empirical studies. *Soc Sci Med* 2005;60:1117-31.
11. Chandola T, Siegrist J, Marmot MG. Do changes in effort-reward imbalance at work contribute to an explanation of the social gradient in angina? *Occup Environ Med* 2005;62:223-30.
12. De Vogli R, Ferrie JE, Chandola T, Kivimaki M, Marmot MG. Unfairness and health: Evidence from the Whitehall II study. *J Epidemiol Community Health* 2007;61:513-18.
13. Public Health Agency of Canada. Major chronic disease surveillance on-line. 2007.
14. Wilkins R, Berthelot J-M, Ng E. Trends in mortality by neighbourhood income in urban Canada from 1971 to 1996. *Health Reports* 2002;Supp(13):1-27.
15. James PD, Wilkins R, Detsky AS, Tugwell P, Manuel DG. Avoidable mortality by neighbourhood income in Canada: 25 years after the establishment of universal health insurance. *J Epidemiol Community Health* 2007;61:287-96.
16. Head J, Kivimaki M, Martikainen P, Vahtera J, Ferrie JE, Marmot MG. Influence of change in psychosocial work characteristics on sickness absence: The Whitehall II study. *J Epidemiol Community Health* 2006;60(1):55-61.
17. Smith PM, Frank JW, Bondy S, Mustard CA. Do changes in job control predict differences in health status? Results from a longitudinal national survey of Canadians. *Psychosom Med* 2008;70(1):85-91.
18. Stansfeld S, Candy B. Psychosocial work environment and mental health - A meta-analytic review. *Scand J Work Environ Health* 2006;32(6):443-62.
19. Bourbonnais R, Brisson C, Vinet A, Vezina M, Lower A. Development and implementation of a participative intervention to improve the psychosocial work environment and mental health in an acute care hospital. *Occup Environ Med* 2006;63(5):326-34.
20. Shannon HS, Ibrahim SA, Robson LS, Zarinpoush F. Changes in job stressors in the Canadian working population. *Can J Public Health* 2006;97(3):225-29.
21. Shields M. Stress and depression in the employed population. *Health Reports* 2006;17(4):11-29.
22. Beland Y. Canadian Community Health Survey - Methodological overview. *Health Reports* 2002;13(3):9-14.
23. Statistics Canada. Optional Content Modules. 2007, Accessed December 11, 2007.
24. Statistics Canada. User Guide to the 2005 Canadian Community Health Survey. Ottawa, ON: Statistics Canada, 2006.
25. Statistics Canada. User Guide to the 2003 Canadian Community Health Survey. Ottawa, ON: Statistics Canada, 2005.
26. Bureau of Labour Statistics. Injuries, Illnesses and Fatalities. 2007.
27. National Institute for Occupational Safety and Health. Traumatic Occupational Injuries, 2007.
28. European Foundation for the Improvement of Living and Working Conditions. Fifteen years of working conditions in the EU: Charting trends. Dublin: European Foundation for the Improvement of Living and Working Conditions, 2006;1-8.

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