

Culture Change

# Correlates of Employees' Perceptions of a Healthy Work Environment

Graham S. Lowe, Grant Schellenberg, Harry S. Shannon

## Abstract

**Purpose.** This study analyzed correlates of workers' perceptions of the extent to which their work environment is healthy and how these perceptions influence job satisfaction, employee commitment, workplace morale, absenteeism, and intent to quit.

**Design.** One-time cross-sectional telephone survey.

**Setting.** Canadian employees in 2000.

**Subjects.** A randomly chosen, nationally representative sample of 2500 employed respondents, using a household sampling frame. The response rate was 39.2%. Self-employed individuals were excluded, leaving a subsample of 2112 respondents.

**Measures.** The dependent variable was the response to the item, "The work environment is healthy" (5-point strongly agree–strongly disagree Likert scale). Independent variables used in bivariate and ordinary least-squares regression analyses included sociodemographic characteristics, employment status, organizational characteristics, and scales that measured job demands, intrinsic rewards, extrinsic rewards, communication/social support, employee influence, and job resources. Perceptions of a healthy work environment were related to job satisfaction, commitment, morale (measured on a 5-point scale), number of self-reported absenteeism days in the past 12 months, and whether or not the respondent had looked for a job with another employer in the past 12 months.

**Results.** The strongest correlate of a healthy work environment was a scale of good communication and social support ( $\beta = .27$ ). The next strongest was a job demands scale ( $\beta = -.15$ ). Employees in self-rated healthier work environments had significantly ( $p < 0.01$ ) higher job satisfaction, commitment and morale, and lower absenteeism and intent to quit.

**Conclusions.** The study supports a comprehensive model of workplace health that targets working conditions, work relationships, and workplace organization for health promotion interventions. (*Am J Health Promot* 2003;17[6]:390–399.)

**Key Words:** Workplace Health, Employment Conditions, Work Organization, Survey, Prevention Research

## PURPOSE

Labor market and workplace transformations in the late 20th century prompted occupational health researchers to expand their scope beyond the traditional focus on toxic exposures and the physical environment. At the same time, growing concerns among employers about the recruitment and retention of skilled workers has raised questions for organizational researchers about how work environments affect both employee well being and organizational performance. These two distinct areas of inquiry seem to be converging around one central question: What are the ingredients of a healthy workplace?

There is growing evidence that job design,<sup>1–3</sup> job efforts and rewards,<sup>4</sup> family-friendly management practices,<sup>5</sup> organizational change,<sup>6–8</sup> and job security<sup>9,10</sup> can have major health implications for workers. Work intensification and reorganization, often coupled with technological change, has contributed to an increased incidence of musculoskeletal disorders.<sup>11,12</sup> New health concerns are arising from the psychosocial, ergonomic, and cognitive demands of work.<sup>13,14</sup>

While such research points to key ingredients of a healthy workplace, there has been little effort to combine these empirical insights into a comprehensive definition that could guide health promotion and human resource management practices. Most occupational health studies examine discrete health outcomes, such as stress-related health problems, increased risk of morbidity, health behaviors, and injury—in short, issues

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of exposure and risk. The most fully developed models linking workplace determinants to health outcomes are in the area of psychosocial stress.<sup>1,4</sup>

There is growing recognition among researchers of the need to develop a more comprehensive approach that moves beyond individual workers' health outcomes to examine the underlying workplace determinants. Thus, the U.S. National Institute for Occupational Safety and Health (NIOSH) has identified work organization as a priority research area, including the identification of the characteristics of a healthy organization.<sup>15,16</sup> Recent studies document a wide range of workplace and job characteristics that are related to health outcomes.<sup>17,18</sup> For this thrust in employee health promotion research to become a paradigm shift, as some have called it,<sup>19</sup> it will require interdisciplinary studies that more systematically integrate work environments and health.<sup>20</sup>

Indeed, workplace researchers from a variety of disciplines offer insights about specific workplace factors that could be useful for workplace health promotion researchers and practitioners. A prominent theme in this literature is that workers' perceptions of the quality of their work environment are critical for outcomes ranging from job satisfaction, commitment, and absenteeism to performance.<sup>21,22</sup>

For example, studies of high performance and lean production work systems have documented both positive and negative effects on employee health and well being.<sup>23,24</sup> Organizational changes associated with downsizing and restructuring have a range of negative health-related effects on those who remain in the organization.<sup>7,18,25</sup> Assuming that some workers' mental and physical efforts have increased,<sup>26</sup> the detrimental health effects also could undermine the productivity gains expected from new work systems. Job stress and work-family conflict are associated with direct (absenteeism, employer health care costs) and indirect (job dissatisfaction) effects on organizational performance.<sup>1,5,27</sup>

Despite these links between work contexts and health outcomes, from

a health promotion perspective, workplace and organizational studies do not give sufficient attention to workers' physical and mental health. Job satisfaction remains the most widely used indicator by organizational researchers of a person's quality of work life.<sup>23</sup> And while the relationship between new forms of work organization and a firm's performance has received increasing attention from researchers, worker outcomes have received far less attention<sup>28</sup> and so require closer examination.

In this regard, it is important to understand how organizational factors that influence the quality of work life<sup>21</sup> may also be associated with perceptions of a healthy work environment. These factors include firm size (larger firms typically provide better wages and working conditions than smaller firms); unionization (unions on average provide wage and benefit advantages and closer occupational health and safety monitoring and enforcement); industry (business and financial services and the public sector employ high proportions of knowledge workers who receive relatively good salaries and benefits); and prominent organization change strategies such as downsizing, restructuring, team work, and employee involvement.<sup>29,30</sup>

The purpose of this article is to analyze the correlates of healthy workplaces from the perspective of workers. Specifically, the article examines the relationships of demographic, labor market, job, and organizational variables with workers' self-reported perceptions of the health of their workplace. Also explored is how these perceptions are related to measures reflecting organizational performance. Despite a tradition in both epidemiological and workplace research to utilize individual self-reports of a wide range of attitudes and behavior, lacking is a systematic analysis of workers' assessment of whether their work environment is healthy. This knowledge gap is addressed by drawing on job satisfaction research, which incorporates a wide range of factors, including task content, pay, work hours, career prospects, interpersonal relation-

ships, security, and organizational change.<sup>22,31,32</sup> Also useful in this regard is sociological research on work, which suggests that ultimately it is the worker who judges job quality.<sup>33,34</sup>

Using a nationally representative survey of employees in Canada, the article addresses four research questions:

- (1) To what extent do employees perceive their work environment to be healthy and safe and how closely are these perceptions related?
- (2) What are the sociodemographic, labor market status, organizational, and working condition correlates of perceptions of a healthy work environment?
- (3) Which of these factors are the most important correlates of a healthy work environment?
- (4) What are the links between workers' perceptions of a healthy work environment and the following organizational and individual outcomes: job satisfaction, employee commitment, perceived workplace morale, absenteeism, and intent to quit?

Answers to these questions will provide further empirical testing of the emerging models of healthy work organizations, noted above. For health promotion practitioners, this information can be helpful in designing interventions that go beyond employee health behaviors to address the underlying working conditions that may affect both employee health and organizational performance.

## METHODS

### Design

The one-time cross-sectional study design utilizes a nationally representative sample of 2500 employed Canadian residents 18 years of age and older (the CPRN-Ekos Changing Employment Relationships Survey).<sup>22</sup> Quotas were assigned by region (determined by each province's population as a percentage of whole Canadian population) to ensure that the sample would be nationally representative using parameters from Statistics Canada's Labor Force Survey (LFS).

**Table 1**

**Employees' Perceptions That Their Work Environment Is Healthy by Selected Sociodemographic Characteristics\***

	Mean	SD	Sig.	N
Total	3.67	1.04		2112
Male	3.63	1.03	†	1107
Female	3.72	1.04		1005
Age group				
18–24	3.95	0.90	‡	353
25–34	3.62	1.07		475
35–44	3.61	1.04		626
45–54	3.55	1.08		441
55+	3.76	0.98		178
Marital status				
Married/common-law	3.63	1.04	†	1134
Never married	3.75	1.03		728
Separated, divorced, widowed	3.58	1.04		236
Self-reported visible minority				
Visible minority (including Aboriginal)	3.58	1.16		348
Other	3.69	1.01		1755
Education				
Less than high school	3.76	1.03		170
Some postsecondary	3.67	1.04		729
Postsecondary certificate/diploma	3.66	1.08		729
University degree	3.66	0.95		474

\* Table reports mean scores on the question “The work environment is healthy” using a 5-point Likert response scale where 1 = strongly disagree and 5 = strongly agree.

†  $p \leq 0.05$ , two-tailed *t*-test or ANOVA.

‡  $p \leq 0.01$ , two-tailed *t*-test or ANOVA.

The data were compared against LFS population estimates for province, age, gender, and industry and weighted for gender and age to correct for slight sample variations. The 95% confidence interval on proportions for a sample of this size and design is  $\pm 2\%$ .

**Sample**

The survey used a household-based sample frame by drawing from a database comprised of all telephone directories published in Canada, supplemented with randomly generated telephone numbers to ensure that unlisted telephone numbers also were included. Interviews were conducted by Ekos Research Associates Inc., a leading Canadian polling firm, using a computer-assisted telephone interviewing system. The response rate was 39.2%. This is based on a functional sample of 14,233 residential phone numbers: 5583 cooperative respondents (2500 individuals who completed interviews plus 3083 individuals who would have complet-

ed interviews but were ineligible because they were not in the labor force); 5213 outright refusals; and 3437 numbers that were excluded because there was no answer after 10 callbacks or because potential respondents were unable to participate due to language difficulties, illness, or other personal reasons. This is the standard PMRS method for calculating response rates that is used by commercial survey research organizations. General public surveys of this kind usually yield response rates in the 25–30% range.<sup>35</sup> This article excludes the self-employed, focusing on the 2112 respondents who were employees.

**Measures**

The telephone-administered questionnaire was pretested in early February 2000 and the field work spanned from mid-February to mid-March 2000. The average length of time for respondents to answer the approximately 120 questions was 22 minutes. The questionnaire included

a wide range of job, workplace, and labor market measures, making it ideally suited for analyzing contextual factors associated with employee perceptions of a healthy work environment. The dependent variable is a Likert-type item: *To what extent do you agree or disagree that this describes your job . . .* “The work environment is healthy,” with the response categories of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree (mean = 3.67; SD = 1.04). In addition, respondents were asked a similar “disagree–agree” question: “The work environment is safe.” Both measures are consistent with much sociological and epidemiological research on health status among adults, which uses respondents’ reports of morbidity in social surveys.<sup>36</sup> Independent variables include sociodemographic characteristics (gender, age, marital status, educational attainment, self-identified visible minority status [including Aboriginal]), employment characteristics (temporary vs. permanent job, occupation, work hours, job tenure, weekly earnings, shift work, hours worked at home), organizational characteristics (workplace size, union membership, industry, affected by downsizing or restructuring, involvement in work team or employee participation program), and whether the respondent had any injuries at work during the year prior to the survey (answered “yes” or “no”).

Measures of job conditions, resources, and rewards were used to construct six working-conditions scales based on concepts derived from a range of literature on organizational behavior, job stress, job satisfaction, work design, and human resource management.<sup>22</sup> Scale construction was assisted by factor analysis, with all items having factor loadings greater than .3 and most loading above .5. The scales also have acceptable Cronbach’s alphas for internal consistency. Component items asked respondents to report on their current job and working conditions using 5-point Likert-type “strongly agree–strongly disagree” or frequency (“never–very often”) re-

**Table 2**  
**Employees' Perceptions That Their Work Environment Is Healthy by Labor Market Status\***

	Mean	SD	Sig.	N
Employment security				
Permanent job	3.66	1.04		1879
Temporary job	3.78	1.03		215
Occupation				
Management	3.87	0.87	‡	199
Professionals	3.68	0.98		436
Technical/semiprofessional	3.75	1.05		257
Clerical/sales/service	3.75	0.98		666
Manual	3.35	1.20		383
Other	3.74	0.98		166
Hours (hours/week)				
<15	3.88	1.04	†	64
15–29	3.87	0.95		224
30–44	3.65	1.04		1172
45 or more	3.61	1.05		651
Current job tenure (years)				
≤1	3.82	0.95	‡	526
2	3.86	0.90		211
3–4	3.73	1.03		267
5–7	3.53	1.10		236
8–10	3.52	1.10		185
11–19	3.55	1.11		343
≥20	3.52	1.07		251
Weekly earnings				
<\$300	3.90	0.90	‡	300
\$300–599	3.71	1.04		522
\$600–899	3.50	1.11		448
\$900–1199	3.52	1.05		253
\$1200+	3.61	1.00		201
Shift				
Shift, on-call	3.60	1.06	†	686
Regular day schedule	3.71	1.02		1423
Hours worked at home				
None	3.62	1.06	‡	1526
1–5	3.82	0.92		266
≥6	3.79	0.99		298

\* See footnote \*, Table 1.

†  $p \leq 0.05$ , two-tailed *t*-test or ANOVA.

‡  $p \leq 0.01$ , two-tailed *t*-test or ANOVA.

sponse format. Actual item wording is as follows:

- Job demands—Your job is very stressful. Your job is hectic. How often have you had difficulty keeping up with the workload? You are free from conflicting demands that other people make (alpha = .667).
- Intrinsic rewards—I feel very committed to the kind of work I do in my job. The work is interesting. On an average day, you look forward to doing your work. Your job gives you a feeling of accomplish-

ment. Your job lets you develop your skills and abilities. Your job requires a high degree of skill (alpha = .825).

- Communication/social support—Communication is good among the people you work with. The people you work with are helpful and friendly. You have a good relationship with your supervisor. You receive recognition for work well done (alpha = .738).
- Influence/control—You can choose your own schedule within

established limits. Your job allows you freedom to decide how to do your work. You can influence decisions that affect your job or work life (alpha = .565).

- Extrinsic rewards—The benefits are good. The pay is good. Your job security is good. Your chances for career advancement are good (alpha = .651).
- Resources—How frequently have you lacked the necessary tools needed to do your job? You get the training needed to do your job effectively. You have access to the information you need to do your job well (alpha = .650).

## RESULTS

### Perceptions of Workplaces Being Both Healthy and Safe

The starting point for the analysis is the relationship between employees' perceptions of their work environment being healthy and safe. A close link is assumed in occupational health and safety research, so to determine empirically if this is borne out in employees' perceptions, responses to the item "the work environment is healthy" were cross-tabulated with a similar measure, "the work environment is safe." Just over two thirds (68%) of employees surveyed reported that their workplace is both healthy and safe, based on the proportions of respondents who "agreed" or "strongly agreed" with each statement. Another 17% reported that their workplace is safe but not healthy, and 4% reported it being healthy but unsafe. This means that only 15% did not perceive their workplace to be safe, while 28% did not perceive it to be healthy.

### Sociodemographic Factors

Based on the bivariate results in Tables 1 through 3, there are weak but statistically significant relationships between a wide range of demographic, work environment, organizational and labor market factors, and perceptions of a work environment being healthy. Table 1 shows that females and workers who are younger (18–24) and older (55 or older) are more likely to perceive their work environment as healthy, compared with

**Table 3**  
**Employees' Perceptions That Their Work Environment Is Healthy by Organizational Characteristics\***

	Mean	SD	Sig.	N
Location size				
<10	3.91	0.98	‡	344
10–24	3.74	1.03		348
25–99	3.70	0.93		538
100–499	3.54	1.08		490
500+	3.48	1.12		287
Union membership				
Nonunion	3.79	0.97	‡	1408
Union	3.43	1.12		675
Industry				
Consumer and retail services	3.84	0.96	‡	480
Business and financial services	3.81	0.94		366
Distributive services (transportation, utilities)	3.68	1.01		156
Nonmarket services (health, education, social services)	3.62	1.05		394
Public administration (core government)	3.46	1.11		196
Goods producing (manufacturing, natural resources)	3.46	1.13		393
Affected by downsizing past 12 months				
No	3.76	0.98	‡	1670
Yes	3.31	1.16		427
Affected by restructuring past 12 months				
No	3.74	1.02	‡	1476
Yes	3.51	1.05		621
Involved in employee participation program past 12 months				
No	3.68	1.03		1712
Yes	3.64	1.04		385
Involved in work team past 12 months				
No	3.67	1.04		1667
Yes	3.66	1.03		430

\* See note \*, Table 1.

‡  $p \leq 0.01$ , two-tailed *t*-test or ANOVA.

males or workers between the ages of 25 and 54. As well, workers who are single tend to report healthier work environments than do other workers, especially those who are separated, divorced, or widowed. Differences by educational category were not significant.

### Labor Market Status

Table 2 examines various employment conditions as correlates of the perceived healthiness of the work environment. Temporary and permanent employees have similar scores on the healthy work environment measure. There are statistically significant lower mean scores on the healthy workplace measure among manual workers (compared with other occupations), full-time employees (compared with those working less than 30 hours weekly), employees

who have the most job seniority (compared with those who have been in their current job less than 5 years), those with weekly earnings over \$600 (compared with lower earnings), employees who work shift or on-call work (compared with regular day schedules), and those who do not work at home (compared with those who do).

### Organizational Factors

Table 3 examines organizational correlates of perceptions of a healthy work environment, focusing on characteristics linked in the research with variations in the quality of work life. Respondents in smaller workplaces (less than 10 workers) see these sites as significantly more healthy than do respondents in larger workplaces (100 or more workers). Union members in the sample are less likely to

report that their work environments are healthy. In terms of industry differences, one contrasting pair—retail and consumer vs. business and financial services—shared top rank, while another—public administration vs. goods production—shared bottom rank. The fact that government employees (the majority of whom are unionized in Canada) rated the health of their work environments well below average is consistent with the budget cuts, restructuring, layoffs, increased workloads, and salary freezes in this sector through much of the 1990s.<sup>37</sup> Workers who were affected in the 12 months prior to the survey by downsizing or restructuring were significantly less likely to report having a healthy workplace, which corroborates previous studies. Finally, two organizational changes thought to have positive impacts on workers—participation programs and teams—were not associated with healthy work environment perceptions.

### Working Conditions

Table 4 presents the relationship between six work environment factors and perceptions of a healthy workplace. All six scales have strong positive relationships with the perceptions of a healthy work environment. In other words, workers in jobs with reasonable demands, who obtain high intrinsic and extrinsic rewards from their job, have good social supports available, can exert a high level of influence in workplace decisions, and have good resources available are significantly more likely than workers who lack these conditions to perceive their work environment to be healthy.

### Multivariate Analysis of the Correlates of a Respondent-reported Healthy Workplace

While these bivariate results tell an interesting story, albeit unsurprising, it is important to identify which of these many factors have the greatest influence on the extent to which employees perceive their workplace to be healthy. To assess the “net” effect of each factor considered in the bivariate analysis above, an ordinary least-squares regression equation was

**Table 4**  
**Employees' Perceptions That Their Work Environment Is Healthy\* by Working Conditions Scales†**

	Mean	SD	Sig.	N
Job demands				
Two to four	3.97	0.88	‡	406
Five	3.86	0.91		398
Six	3.78	0.95		492
Seven	3.60	1.03		391
Eight	3.28	1.16		269
Nine or ten	2.90	1.20		154
Intrinsic rewards				
Two to four	2.92	1.29	‡	106
Five	3.38	1.09		97
Six	3.28	1.13		207
Seven	3.56	0.98		344
Eight	3.70	0.90		729
Nine or ten	3.99	1.00		627
Extrinsic rewards				
Two to four	3.11	1.26	‡	198
Five	3.14	1.11		232
Six	3.47	1.02		366
Seven	3.68	0.95		535
Eight	3.95	0.77		514
Nine or ten	4.31	0.89		254
Social support				
Two to four	2.10	1.15	‡	50
Five	2.86	1.13		101
Six	2.89	1.12		179
Seven	3.31	1.02		356
Eight	3.77	0.77		829
Nine or ten	4.25	0.86		597
Autonomy and influence				
Two to four	3.16	1.26	‡	407
Five	3.52	1.03		242
Six	3.65	0.93		581
Seven	3.82	0.92		221
Eight	3.94	0.86		502
Nine or ten	4.26	0.82		157
Resources				
Two to four	2.59	1.17	‡	147
Five	2.96	1.14		66
Six	3.39	1.00		350
Seven	3.55	1.00		297
Eight	3.81	0.84		831
Nine or ten	4.20	0.94		420

\* See note \*, Table 1.

† All scales have ranges of 2 to 10.

‡  $p \leq 0.01$ , ANOVA.

constructed, with “the work environment is healthy” measure described above as the dependent variable.

Based on the bivariate results in Tables 1–4 and further correlational analysis, some minor modifications were made to the independent variables. Specifically, education and hours worked at home were dropped

because each of these is highly correlated with occupation. Hours of work were entered into the equation as two dummy variables (less than 30 hours week; 45 or more hours weekly). Because not all work environments perceived to be healthy are necessarily considered to be safe, it was important to include as an inde-

pendent variable a binary measure of self-reported work injury in the year prior to the survey. This measure was strongly related to perceived workplace safety, reported earlier ( $p \leq .01$ ). All independent variables and their coding are listed below Table 5.

Backward stepwise elimination was used to remove nonsignificant variables, resulting in the final reduced-form equation in Table 5. Furthermore, given the number of independent variables, multicollinearity was tested using a variance inflation factor (VIF) in the final model. For all coefficients reported in Table 5, the VIF was less than 1.7, confirming their independence (complete independence would be 1.0 and multicollinearity would be present with a VIF of 7.0 or higher).

The 11 independent variables in Table 5 account for 38% of the variation in perceptions of having a healthy work environment. None of the other independent variables had statistically significant effects ( $p \leq .05$ ). Most striking is the impact of communication and social support, which accounts for 27% of the variation in respondents' perceptions of their work environment being healthy. Based on the scale items, it appears that good communication, friendly and helpful coworkers, a positive relationship with one's supervisor, and receiving recognition enable and support a healthy work environment. In other words, perceptions of healthy workplaces reflect the social relations in which workers are embedded and that facilitate their job effectiveness.

Four of the other working conditions scales, while not as influential as communication and social support, also have significant independent relationships with employees' perceptions of the extent to which their workplace is healthy. Job demands have a negative influence, with a beta of  $-.15$  (having a job that is very stressful, hectic, with a heavy workload, and with conflicting demands) while having adequate resources has a positive influence, with a beta of  $.13$  (having the tools, equipment, information, training, feedback, and guidelines needed to do one's job). Extrinsic rewards are

**Table 5**

**Multivariate Analysis: OLS Regression Results on “the Work Environment Is Healthy,” Reduced-form Equation\***

	Unstandardized Coefficient	SE	Standardized Coefficient	t	Sig.
Communication/support scale	0.207	0.021	0.272	9.99	0.000
Job demands scale	-0.096	0.015	-0.150	-6.34	0.000
Resources scale	0.086	0.017	0.132	5.23	0.000
Extrinsic rewards scale	0.075	0.016	0.116	4.58	0.000
Autonomy scale	0.066	0.014	0.114	4.77	0.000
Manual occupation	-0.262	0.061	-0.098	-4.28	0.000
Public administration	-0.258	0.076	-0.073	-3.38	0.001
Injured in current job	-0.241	0.074	-0.069	-3.24	0.001
Goods-producing industry	-0.173	0.059	-0.067	-2.90	0.004
Intrinsic rewards scale	0.041	0.017	0.064	2.45	0.014
Job tenure	-0.009	0.003	-0.059	-2.70	0.007
(Constant)	0.859	0.196		4.38	0.000
Adjusted R <sup>2</sup> = 0.38 (n = 2112)					

\* Independent variables in full equation:

1. Sex (males = 0)
2. Age (years)
3. Visible minority or Aboriginal (no = 0)
4. Occupation (clerical, sales, and service = 0; managerial; professional, technical, and semi-professional; manual; other = 1)
5. Full-time student status (not enrolled = 0)
6. Temporary/permanent job (permanent = 0)
7. Weekly hours worked (measured by two dummy variables for short and long hours: 30–44 hours = 0, less than 30 = 1, 30–44 = 0, 45 or more = 1)
8. Self-reported work injury in year prior to survey (yes = 1)
9. Regular day shift vs. other shifts (regular day shift = 0)
10. Job tenure (years)
11. Union status (nonunion = 0)
12. Size of workplace (<10, 10–24, 25–99, 100–499, 500+)
13. Weekly earnings (<\$300, 300–599, 600–899, 900–1199, 1200+)
14. Industry (traditional services = 0; dynamic services, distributive services, nonmarket services, public administration, goods producing industries = 1)
15. Number of organizational changes experienced in 12 months prior to the survey (additive scale, 0–4: none, downsized, restructuring, use of temporary workers, changed duties)
16. Number of innovative workplace practices experienced in 12 months prior to the survey (additive scale, 0–2: none, teamwork, participative programs)
17. Job demands scale (range of 2–10)
18. Intrinsic reward scale (range of 2–10)
19. Extrinsic reward scale (range of 2–10)
20. Social support scale (range of 2–10)
21. Autonomy and influence scale (range of 2–10)
22. Resources scale (range of 2–10)

somewhat more important in the assessment of a healthy workplace than are intrinsic rewards (e.g., interesting work).

As well, there are several industry and occupation effects, but these are very weak. Workers in manual occupations and those employed in public administration and goods-producing industries are slightly less likely than employees in other occupations or industries to agree that their workplace is healthy. Not surprisingly, those who have been injured on the job are somewhat less likely to agree

with this statement. Finally, job tenure decreases by a small amount the likelihood of agreeing that their work environment is healthy, which seems to run counter to the general increase in job satisfaction found with tenure and age.<sup>38</sup>

**Selected Outcomes Associated With Workers’ Perceptions of a Healthy Work Environment**

Table 6 reports the relationships between perceptions that the work environment is healthy and five measures that reflect organizational per-

formance. With the caveat that these correlations are not necessarily causal, there is a strong and monotonic relationship for all five outcomes. Respondents who “strongly agree” or “agree” with the statement “the work environment is healthy” are significantly more likely than respondents who disagreed or strongly disagreed with that statement to feel satisfied and committed to their job. They also report better morale in their workplace, have lower rates of absenteeism, and are less likely to quit.

**DISCUSSION**

To summarize the key findings, respondents generally believed their workplaces were safe and healthy, although more reported a safe work environment than a healthy one. A multiple regression showed several scales, notably communications/support, job demands, resources, extrinsic rewards, and autonomy, were significantly related to the reported healthiness of the workplace. So too were several measures related to organizational performance.

That more respondents reported their workplace to be safe than stated it was healthy perhaps reflects the greater attention among employers to safety and injury prevention, with lower priority being given to overall employee health and well being. These findings suggest that more attention needs to be paid by practitioners to creating the conditions that support a “healthy” workplace.

This study has four limitations. First, the low response rate requires caution when generalizing the findings. Future studies could obtain higher response rates by using employee samples from specific organizations. This research design also would enable more in-depth analysis of the role of specific working conditions. Second, all data are derived from self-reports, which some health researchers may consider a limitation. Self-reports are standard in most population-based sample surveys of health status and working conditions<sup>39,40</sup> and often are superior to clinical data.<sup>36</sup> However, this study intentionally measured perceptions

**Table 6**

**Employees' Perceptions of a Healthy Work Environment by Selected Outcomes**

<b>"The Work Environment Is Healthy"</b>	<b>Mean</b>	<b>SD</b>	<b>Sig</b>	<b>N</b>
<b>Job Satisfaction Scale*</b>				
Strongly disagree	2.74	1.15	‡	92
Disagree	3.29	0.90		268
Neither	3.48	0.85		229
Agree	3.86	0.71		1167
Strongly agree	4.39	0.70		351
<b>Employee Commitment Scale†</b>				
Strongly disagree	2.77	0.97	‡	93
Disagree	3.25	0.75		267
Neither	3.53	0.64		229
Agree	3.83	0.58		1168
Strongly agree	4.21	0.64		351
<b>Workplace Morale§</b>				
Strongly disagree	4.21	1.99	‡	92
Disagree	3.40	1.32		267
Neither	2.95	1.17		229
Agree	2.54	1.15		1160
Strongly agree	2.06	1.28		351
<b>Absenteeism  </b>				
Strongly disagree	8.14	13.55	‡	91
Disagree	5.59	10.21		268
Neither	4.23	8.79		227
Agree	4.11	8.96		1162
Strongly agree	3.21	7.18		348
<b>Look for a Job With Another Employer in Past 12 Months</b>				
	<b>% No</b>	<b>% Yes</b>		<b>N</b>
Strongly disagree	50.0	50.0	‡	92
Disagree	63.8	36.2		268
Neither	65.9	34.1		229
Agree	74.9	25.1		1168
Strongly agree	74.6	25.4		351

\* Two questions were combined into a scale with a range of 1 to 5 (Pearson  $r = 0.56$ ); "On a scale of 1 to 5 where 1 means very dissatisfied and 5 means very satisfied, how satisfied are you with your job?" and "On an average day, you look forward to doing your work," measured on a 5-point Likert scale where 1 = strongly disagree and 5 = strongly agree.

† Four questions, all measured on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree), were combined into a scale with a range of 1 to 5 (Cronbach's alpha = 0.719): "I find that my values and this organization's values are similar"; "I am proud to be working for this organization"; "I am willing to work harder than I have to in order to help this organization succeed"; and "I feel very little loyalty to this organization" (coding reversed).

‡  $p \leq 0.01$ , ANOVA, chi-square, Kruskal-Wallis as appropriate.

§ A single question, "The morale in your workplace is low" measured on a 5-point Likert scale where 1 = strongly disagree and 5 = strongly agree.

|| Mean days absent in last 12 months due to own illness or injury. A maximum value of 50 was used, with values over this limit recorded as 50.

of the work environment being healthy or safe, which is different than self-reports of morbidity.

Third, the dependent variable is a single questionnaire item that provided respondents no anchor or operational definition of "healthy." Future

research should use multi-item scales and attempt to validate these measures. The logic on which the study is based assumes that employees' perceptions of a healthy work environment are shaped by actual working conditions and in turn influence oth-

er work attitudes and behavior such as job satisfaction and absenteeism. Improved measures of how workers assess healthy work environments would also contribute to developing this conceptual model. Such measures could be validated by future studies that examine the relationship between these perceptual measures and employees' health behavior and status.

Fourth, the exclusion of self-employed individuals from the analysis restricts the analysis of how perceptions of healthy work environments may vary by different forms of "non-standard" work, in particular own-account self-employment. The finding on temporary workers seems inconsistent with research suggesting that nonstandard employment status could be linked to health and safety problems as well as lower overall job quality.<sup>9,34</sup> While it may be that, for most temporary workers surveyed, their employment status is irrelevant to the healthiness of the workplace, it also could be sampling error, reflecting nonresponse bias.

While the cross-sectional design limits conclusions about causality, the underlying model proposes that the independent variables in the regression predict workers' perceptions of the healthiness of their workplaces, which in turn influences measures related to organizational performance. Under this model, the analysis suggests that, from the perspective of workers, psychosocial factors are key ingredients in a healthy work environment. This was especially true for interpersonal relationships that reflect good communication and social support. The relative importance of these social dimensions of workplaces reflects the inherently collective nature of work activity. This finding also underscores the need to expand models of healthy organizations to incorporate coworker and employee-supervisor relationships. Job demands and autonomy were somewhat important, as the job strain model would predict,<sup>1</sup> as were resources needed to do the job. There was a weak relationship for intrinsic rewards, although this still supports the effort-reward imbalance model.<sup>4</sup>

Perceptions of a healthy work en-

environment were strongly related to a number of prominent concerns among employers. While clearly more research is required to understand if causal mechanisms underlie these relationships, perceptions of a healthy work environment could have implications for employee commitment and morale—issues that are tied to the human resource management goals of recruitment, retention, and employee performance. This corroborates studies of specific occupations, such as health professionals,<sup>41,42</sup> which emphasize the importance of creating “healthier” work environments to achieve both worker well being and organizational performance. For health promotion practitioners, how employees perceive their immediate work environment could be a moderating influence on desired wellness outcomes, such as absenteeism, job satisfaction, and turnover. This finding contributes to the “business case” for employer investments to create healthier workplaces.

The multivariate findings regarding communication, social support, job demands, and job resources identify working conditions that usually lie outside the scope of health promotion interventions. This suggests that other organizational stakeholders, from human resource and organizational development professionals to unions, must become active partners in creating healthy organizations. Furthermore, leadership from senior management is crucial for action—but this seems to depend on the recognition that healthy work environments contribute to productivity and competitiveness.<sup>43</sup>

In public policy terms, the findings lend some support to a more comprehensive model that targets both working conditions and workplace organization as part of health promotion interventions. This view is more fully developed in Europe than in North America. The Luxembourg Declaration on Workplace Health Promotion in the European Union aims to improve health and well being of individuals at work by “improving the work organization and the working environment; promoting active participation; [and] encouraging personal development.”<sup>44</sup> The

European Union’s 2002 strategy on workplace health and safety aims to achieve continuous improvement in well being at work.<sup>45</sup> North American workplace health promotion focuses less on organizational contexts and working conditions, although the recent NIOSH emphasis on healthy work organizations is consistent with this perspective.<sup>16,46</sup>

The findings also highlight the convergence across a number of disciplines that examine psychosocial aspects of work. A review of the research on workplace stressors and cardiovascular disease risk has called for a social epidemiology of the workplace.<sup>17</sup> But this can only go so far, given that the unit of analysis in stress research is the individual, not the organization or worksite.<sup>47</sup> Future studies must integrate both levels of analysis to better understand the dynamics of a healthy workplace.

#### SO WHAT?

This study suggests that health promotion practitioners should not only pay attention to helping workers with lifestyle choices. They also should focus on employment conditions and the way work is organized, as both sets of factors are key correlates of the extent to which workers perceive their work environment to be healthy. Management can be told that perceptions of the healthiness of the workplace are strongly related to measures reflecting organizational performance.

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