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QUANTITATIVE RESEARCH

Health promotion in the workplaces: fostering resilience in times of organizational change

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Abstract

Objectives In 2015, a healthcare reform was undertaken in the province of Quebec (Canada). This amended system resources and structures, resulting in increased work-related stress, retirements, and sick leaves. In this study, we examined associations between stress, psychological distress, and resilience in this context.

Methods A subsample of healthcare workers ($n = 1008$) from the 2014–2015 Eastern Townships population-based survey was used to examine resilience, its distribution among various occupational categories, and whether it moderated associations between stress and psychological distress. Chi-square analyses were used to look for differences between variables. Logistic regressions served to assess the moderating effect of resilience in the associations between stress and psychological distress.

Results Healthcare workers' resilience was high. Employees with higher resilience are more likely to be older, male, educated, and affluent. One third of workers reported their work as quite or extremely stressful, 56.2% rated it as their main source of stress, and 25.7% reported psychological distress. Despite higher stress, administrators had higher resilience and lower psychological distress. Support staff had higher psychological distress and lower resilience. Occupation involving social staff, technicians, and professionals had higher psychological distress despite lower stress. A positive gradient in the distribution of resilience was observed in the healthcare system hierarchy with higher resilience and lower psychological distress among higher positions (despite equal stress). Higher resilience moderates the negative association between stress and psychological distress.

Conclusion These results support workplace health promotion to foster employee health, particularly in the lower spectrum of the healthcare system hierarchy.

Résumé

Objectifs En 2015, une réforme du réseau de la santé a été entreprise au Québec. Celle-ci a généré une augmentation du stress, des départs à la retraite et des congés maladies. Cette étude examine les associations entre le stress, la détresse psychologique et les capacités d'adaptation.

Méthodes Un échantillon de travailleurs de la santé ($n = 1008$) issu de l'enquête populationnelle sur la santé des estriens (2014–2015) a permis d'examiner la résilience et sa distribution entre diverses catégories professionnelles et de déterminer son rôle modérateur dans l'association entre le stress et la détresse psychologique. Des analyses de chi-carré ont documenté des différences entre les variables. Des régressions logistiques ont évalué le rôle modérateur de la résilience.

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Résultats La résilience des travailleurs est élevée, surtout chez les hommes, âgés, instruits et aisés. Un tiers déclare que son travail est assez ou extrêmement stressant, 56,2 % le désigne comme première source de stress et 25,7 % rapporte une détresse psychologique. Malgré un stress élevé, les administrateurs ont une résilience supérieure et une détresse psychologique moindre. Le personnel de soutien ont une détresse psychologique élevée et une faible résilience. Les employés des secteurs sociaux, les techniciens et professionnels ont une détresse psychologique élevée malgré un stress moindre. Un gradient de santé est observé (i.e., résilience élevée et détresse psychologique moindre parmi les postes plus élevés). La résilience modère l'association entre stress et détresse psychologique.

Conclusion La promotion de la santé au travail est importante pour favoriser le bien-être, surtout dans les corps de métiers plus vulnérables.

Keywords Resilience · Health asset · Workplace stress · Psychological distress

Mots-clés Résilience · Actifs de santé · Stress au travail · Détresse psychologique

Introduction

There is no doubt that healthy employees are more productive and cost less. Each year, around 20% of Canadian workers suffer from a stress-related disease (Leka et al. 2003). Research shows that workplace stress accounts for 20% of absenteeism, 40% of employee turnover, 55% of employee assistance program costs, 50% of workplace accidents, and 10% of prescription drug insurance costs (Statistics Canada 2003). Moreover, this does not take into account presenteeism, which means going to work but not performing one's work tasks. Even though presenteeism is difficult to capture, it has been studied in the literature. According to one study with nurses and pharmacists, presenteeism prevalence was 52.7% in the previous year, with a decrease in the organization's productivity of 3.2% (Warren et al. 2011). Another study estimated the annual burden of presenteeism in the US economy at $150 billion (Hemp 2004), with nurses having the highest presenteeism rate among 41 work sectors (Aronsson et al. 2000). Some studies also found that the cost of presenteeism for organizations is higher than medical or pharmacy expenses (Brady et al. 1997; Loeppke et al. 2009, 2007).

Over the past few decades, research has helped to identify the main factors which have an effect on employees' perceived stress. According to theories about resources such as the Hobfoll Conservation of Resources Theory (1990) or the Demerouti Job Demands-Resources model (2011), there are risk and protective factors in every organizational context. Risk factors increase job demands or employees' perceived stress while protective factors help them to mobilize resources (e.g., economic, social, organizational) to cope better with stress or excessive demands. These risk and protective factors are usually grouped according to the employment context (e.g., changes in the organization, job insecurity) and organizational factors (e.g., workload, recognition, social support from co-workers or superior, autonomy). They are associated with the subsequent incidence of occupational diseases (e.g., psychological, musculoskeletal, cardiac, atherosclerotic problems; INSPQ 2017).

In the field of workplace health promotion, there is growing interest in developing interventions targeting employee stress through upstream actions. The key elements of such initiatives are based on theoretical models focusing on primary prevention, participation of managers and employees, and rigorous planning and implementation procedures followed by an evaluation. In the province of Quebec (Canada), a standardized framework for creating environments conducive to better health and good management practices in the workplace has been proposed (GES 2017). The Quebec National Public Health Institute (INSPQ) has also developed and validated a tool for diagnosing organizational risk factors (and a training program on how to use this tool). While these strategies target organizations as a whole, personalized interventions fostering employee resilience are needed too. Rather than being viewed as conflicting strategies, downstream and upstream interventions should be considered as two complementary ways to develop a complete service offering aimed at promoting health in the workplaces. For example, group programs (e.g., medical or dental insurance, employee assistance programs) help employees to take care of their health and alleviate the financial stress that such expenses create. Other strategies to promote health in the workplaces include encouraging physical activity, providing a fitness room, and holding workshops on nutrition, work-life balance, personal finance, stress management, and transition to retirement (all of which are resources that also help employees cope better with stress). Organizations that value health and well-being improve their organizational profile, which in turn increases their growth potential and facilitates recruitment (and retention) of highly skilled workers (Samra 2017). Employees working in organizations that prioritize the health of their human resources report having more energy, better daily stress management, fewer absences, and higher productivity (DHHS and NIOSH 1995).

Strategies to promote health and well-being in the workplace are thus beneficial for both employers and employees. Such strategies are even more important in a context of

organizational change because perceived stress is likely to increase. For example, there was a major healthcare reform in the province of Quebec (Canada) in early 2015. Without going into detail, the healthcare system was reduced from 95 to 18 local health territories. Clinical and administrative structures were completely reorganized, resulting in higher stress for workers and frequent use of sick leave and early retirement. Regardless of whether this reform was a good idea or not, it had real and concrete impacts on healthcare workers.

Promoting health assets to cope better with stress in the workplaces

Unlike traditional preventive measures aimed at identifying risk factors, limitations, or diseases, asset-based approaches are used to identify factors fostering well-being, resources, or abilities. According to the scientific literature, a greater stock of health assets empowers individuals and communities and helps to improve health and well-being. This is true both directly (i.e., health assets are associated with better health outcomes) (Roy and O'Neill 2012) and indirectly (i.e., health assets moderate the relationships between a disadvantaged social position and negative health outcomes; Levasseur et al. 2017; Roy et al. 2018). However, to our knowledge, the indirect and protective role of health assets in the associations between perceived stress and psychological distress has never been examined in the specific context of a healthcare system, such as differences in the distribution of health assets among various groups of workers in such organizations.

Objective of this study

Based on the premise that health assets may increase health and well-being in adverse situations (in this case, the provincial healthcare reform), the objective of this study was to develop a profile of resilience among healthcare workers in the Eastern Townships, Quebec, Canada. More specifically, we examined (1) the resilience of healthcare workers and its distribution according to social position, (2) the associations between perceived daily stress and psychological distress among various healthcare occupational categories and, (3) the moderating role of resilience in these associations.

Material and methods

Eastern Townships Population Health Survey

The 2014–2015 Eastern Townships Population Health Survey (ETPHS) is a regional representative population-based survey. It was conducted in 2014 in seven of nine local health territories (LHT, $n = 8737$) in the Eastern Townships (Quebec, Canada). It was completed in 2015, taking into account the addition of two LHTs ($n = 1950$) as a result of the provincial law modifying the organization and governance of the healthcare system in the province of Quebec (Canada). Of the 10,687 adults included in this survey, 1008 reported working full time or part time in the healthcare system. Both years of the survey (2014 and 2015) were characterized by organizational instability and significant changes due to the implementation of the healthcare reform.

The 2014–2015 ETPHS involved 10,687 adults aged 18 to 106 years (mean = 50.9 years, SD = 17.9). Respondents were randomly selected using a random digit dialling procedure that included cell phones. Respondents were selected in three steps: (1) random selection of households, (2) confirmation of household eligibility (included a member residing in the Eastern Townships aged ≥ 18), and (3) random selection of a household member aged ≥ 18. The randomly selected respondent in the household could not be replaced. If the respondent was not available, reminders were sent to complete the interview at another time. To gather local estimates with a given or pre-determined accuracy, around 800 participants living in residential units or private homes were surveyed in each area of the Townships and each borough in the central city (i.e., Sherbrooke). Businesses, people living in second homes or nursing homes, and people without a private phone line were excluded. Respondents answered a phone or online questionnaire. An independent firm trained to administer questionnaire surveys collected the data. The Ethics Committee of the Eastern Townships Integrated University Health and Social Services Centre approved this study.

Measures

Resilience Resilience is the individual's or community's ability to adapt positively when faced with stressful events (Luthar et al. 2000). To assess this variable, the validated French version of the Connor-Davidson Resilience Scale (CD-RISC) was used. This scale contains 10 questions assessing the extent to which a respondent has felt able to handle various aspects of life during the previous month (Campbell-Sills et al. 2009; Connor and Davidson 2003). Items included being able to adapt to change, dealing with what happens, seeing the humorous side of problems, coping with stress and getting stronger, bouncing back after hardship, achieving goals despite obstacles, staying focused under pressure, not being easily discouraged by failure, thinking of self as a strong person, and being able to handle unpleasant feelings. Every question has five possible answers (i.e., not true at all, rarely true, sometimes true, often true, true nearly all the time), scored from 0 to 4. The scale gives a composite score from 0 to 40 (the sum of the scores on the 10 questions). A higher score indicates higher resilience. This measure has

good construct validity and internal consistency (Cronbach $\alpha = .88$) and has been used in large-scale studies elsewhere (Antunez et al. 2015; Jeste et al. 2013).

Perceived stress Perceived stress was assessed with two questions. The first concerned perceived daily stress level and was as follows: "Thinking about the level of stress in your life, would you say that most of your days are …?" Possible answers were *quite or extremely stressful*, *somewhat stressful*, *slightly stressful*, and *not stressful at all*. Work as the leading source of stress in employees' daily lives was assessed with a question about the main source of stress. *Work*, *financial worries*, *family*, *lack of time*, and *personal problems* were the possible answers (plus an open category defined as *other*). A dichotomous measure was then computed (*work* versus any other source of stress).

Psychological distress Psychological distress was assessed with the six-item Kessler scale and the question: "In the past six months, how often did you feel (nervous, hopeless, restless, so depressed that nothing could cheer you up, that everything was an effort, worthless)?" Answers were *none of the time* (0), *occasionally* (1), *sometimes* (2), *most of the time* (3), and *all the time* (4). A composite score was then created and a score of seven or more was indicative of possible psychological distress (Kessler et al. 2003). This measure has been used in large population-based surveys and presents good content and face validity (Statistics Canada 2013).

Indicators of social position Social position was measured with nine different indicators: gender (men, women), age (18–29, 30–49, 50–64 years old), highest completed education level (high school or less, college, university), annual household income (< $30,000; $30,000 to $79,999; ≥ $80,000), living alone (yes, no), housing status (owner, tenant), geographic location (new LHT, Sherbrooke LHT, other LHTs), household composition (living alone, single mother, couple with children < 18 years old, couple without children < 18 years old), and perceived self-rated health (excellent, very good, good, fair, poor).

Statistical analysis

The distribution of resilience according to each indicator of social position was examined. Chi-square analyses were used to look for differences in resilience as a function of social position. Daily stress, work as the main source of stress, psychological distress, and resilience scores among healthcare workers were compared according to occupational categories. Chi-square analyses were again used to look for differences. To assess the moderating role of resilience in the associations between stress and psychological distress, logistic regressions were used. The main effect of perceived stress (quite or extremely stressful vs. somewhat, slightly, or not stressful at all) on psychological distress was tested. Then, interaction models using healthcare workers' mean resilience score were tested to examine the moderating effect of resilience in the association between perceived daily stress and psychological distress. Significance level (alpha) was set at .05. Analyses were conducted using SPSS Statistics V24.

Results

Mean resilience score and distribution according to social position

Table 1 details the resilience profile of healthcare workers according to various indicators of social position. Being a man, older, more educated, and more affluent were all associated with higher resilience scores. Healthcare employees' mean resilience score was 31.6 (out of 40).

Associations between perceived stress and psychological distress among employees from various occupational categories

Among healthcare workers, 33.3% reported that their daily work was quite or extremely stressful, 56.2% indicated that their work was their main source of stress, and 25.7% had a score indicative of psychological distress. To examine these proportions according to occupational categories, various professions were grouped into eight of the most broadly represented job types in the healthcare system (Table 2).

Despite a higher level of perceived stress among senior management (or specialized middle management) employees, this occupational category displays higher resilience and lower psychological distress compared with other categories (Table 2). The same observation applies to the professional occupations. Workers from the nursing occupations show psychological distress and resilience around the mean. Those in the administrative support occupations stood out with higher psychological distress and lower resilience. Among workers in the technical support occupations, social services or community services occupations, technical healthcare professions, and natural or applied sciences categories, despite lower perceived stress compared with others, psychological distress was higher. Although the lower resilience score might explain psychological distress for technical support staff, that was not the case for the other occupational categories where resilience scores were around the mean.

Table 1 Distribution of resilience according to indicators of social position in the Eastern Townships Population Health Survey (2014–2015)

Indicator of social position	*n*	Mean resilience score (/40) (*n* = 1008)
Gender		
Men	252	32.5*
Women	756	31.4
Age (years)		
18 to 29	210	31.0
30 to 49	476	31.7
50 to 64	322	32.0*
Local health territory (LHT)		
New LHTs (Pommeraie and Haute-Yamaska)	260	31.3
Sherbrooke LHT	434	31.7
Other 6 LHTs	315	31.8
Education		
High school or less	132	30.5
College	422	31.6
University	454	32.0*
Annual household income		
< $30,000	85	30.0
$30,000 to $79,999	494	31.5
≥ $80,000	390	32.2*
Housing status		
Owner	812	31.6
Tenant	197	31.8
Living alone		
Yes	176	31.1
No	831	31.8
Household composition		
Living alone	176	31.1
Single mother	58	32.4
Couple with children < 18 years old	389	32.0
Couple without children < 18 years old	299	31.4
Self-rated health		
Excellent/very good/good	956	31.7
Fair/poor	53	30.4

*Statistically different proportions ($p \leq 0.05$) using a chi-square test

Moderating role of resilience in the association between stress and psychological distress

The main effect of daily stress on psychological distress was tested among healthcare workers. The odds ratio (OR) was 1.63 (95% CI, 1.23–2.18). When the same association was examined among healthcare workers whose resilience score was below the mean (i.e., < 31.6), the OR was 2.81 (95% CI, 1.91–4.14). Finally, among healthcare workers with resilience above the mean (i.e., ≥ 31.6), the association was reduced to non-significance (OR = 0.84; 95% CI, 0.50–1.51).

Discussion

The objectives of this study were to examine the (1) resilience of healthcare employees and its distribution according to social position, (2) associations between perceived daily stress and psychological distress among employees from various occupational categories, and (3) moderating role of resilience in these associations. First, our findings suggest that Eastern Townships healthcare employees showed a high level of resilience. These results are consistent with those of studies using the same measure in other countries (Lopes and Martins 2011; Li and Sung 1999; Goins et al. 2012). Second, healthcare

Table 2 Proportion of perceived daily stress, work as the main source of stress, psychological distress, and mean resilience score among employees from various occupational categories in the healthcare system (Eastern Townships, Quebec, Canada)

Occupational category according to the National Occupational Classification	n	Daily stress (quite or extremely stressful vs. somewhat, slightly, or not stressful at all)	Work as the main source of stress (yes vs. no)	Psychological distress (score ≥ 7 vs. score < 7)	Mean resilience score (/40)
Senior management, specialized middle management in healthcare (Executives, directors, assistant directors, departments heads, mid-level coordinators)	60	55.0 (+)	74.6 (+)	16.7 (−)	34.2 (+)
Administrative and office support occupations (Administrative assistants, administrative and financial supervisors, office support staff, auditors, accountants, human resources professionals, procurement clerks, storekeepers)	99	33.3	59.6	29.3 (+)	30.9 (−)
Technical support occupations (Food service staff, laundry staff, housekeeping staff, building maintenance and repair staff)	52	25.0 (−)	53.8	42.3 (+)	29.2 (−)
Professional occupations in nursing and assisting occupations in support of healthcare	235	28.5 (−)	50.6	23.4	31.6
-Nurses	130	33.1	60.5 (+)>	23.8	31.3
-Nursing assistants, patient attendants, nurse aides, and orderlies	83	22.0 (−)	32.5 (−)	25.3	31.8
Professional occupations in healthcare (Physicians, dentists, optometrists, midwives, medical assistants, pharmacists, dietitians and nutritionists, audiologists and speech therapists, physiotherapists, occupational therapists, other professionals in therapy or diagnostics)	109	47.7 (+)	64.5 (+)	16.5 (−)	31.2
Professional occupations in education services (University teachers, post-secondary teachers, college teachers, other vocational instructors, school information counsellors)	33	33.3	57.6	27.3	32.3 (+)
Social services and community services personnel (Psychologists, social workers, social and community services workers, educators, family helpers, other therapists, counsellors, planning officers, researchers, consultants)	113	27.4 (−)	48.2 (−)	29.2 (+)	31.5
Technical healthcare professions and professional occupations in natural and applied sciences (Bacteriology and microbiology technologists, medical laboratory technologists and pathologists, respiratory therapists, clinical perfusionists and cardiopulmonary technologists, radiology and radiotherapy technologists, ultrasound technologists, cardiology technologists and electrophysiology technologists, other technologists, biochemists and chemists, bacteriologists, pharmacologists, microbiologists, immunologists, geneticists, toxicologists)	144	27.8 (−)	60.8 (+)	27.4	31.8
Missing data, do not know, no answer, non-codable response	164	34.1	56.3	25.7	31.6
Total sample	1008	33.3	56.2	25.7	31.6

(+) Proportion is statistically higher ($p \leq 0.05$) than the mean among Eastern Townships healthcare employees

(−) Proportion is statistically lower ($p \leq 0.05$) than the mean among Eastern Townships healthcare employees

workers with higher resilience scores were those with a more favourable social position. These results are also consistent with the literature suggesting social inequalities in the distribution of health assets (Levasseur et al. 2017; Roy et al. 2018). Third, one third of healthcare workers reported their life as being quite or extremely stressful, more than half said that their work was their main source of stress, and a quarter showed psychological distress. Fourth, when these proportions were examined according to occupational categories, a positive gradient emerged across the healthcare system hierarchy with higher resilience and lower psychological distress observed among higher positions (despite equal or higher stress). Finally, a greater stock of resilience moderated the negative association between stress and psychological distress (i.e., the adverse impact of daily stress on psychological distress was observed only among healthcare workers with lower resilience).

Recommendations for actions

Based on these findings, what could be done to increase resilience and promote health among healthcare workers in times of organizational change? In this study, three main strategies are proposed: (1) document the magnitude of the problem among specific groups, (2) develop an organizational strategy to foster resilience, and (3) develop individual abilities to manage stress better.

Document the magnitude of the problem among specific groups

To get a more comprehensive profile of specific groups of workers (or occupational categories), other data sources must be considered (e.g., frequency and nature of work-related absences, sick leaves, and other work-related psychological problems). Such data are readily available and routinely compiled by human resources departments. Given the context of the organizational reform, it would be useful to ensure these indicators are monitored periodically, and by specific groups of concerns. Occupational categories with high levels of psychological distress (i.e., administrative support staff, technical support staff, and social services and community services staff) should be given high priority (Vézina 2014).

Develop an organizational strategy to foster resilience

An organizational strategy co-developed by the regional public health authority, healthcare senior executives and stakeholders, and healthcare workers should be implemented. Stressors and resources are present at various levels (i.e., work organization, management practices, employment conditions, social relations). Validated tools have been developed and must be used to identify such risk and protective factors (INSPQ 2017). Factors aimed at fostering adaptation to change should be encouraged (Rondeau et al. 2008). As conceptualized by the Hobfoll Conservation of Resources Theory (1990) and the Demerouti Job Demands-Resources model (2011), resilience is a resource which must be promoted within organizations. Protective factors which increase individual and organizational resilience should be mobilized, particularly for the most vulnerable groups. Qualitative data gathered in interviews or focus groups could help to identify such stressors and assets.

Develop individual abilities to manage stress better

Efforts to increase employees' ability to cope better with stress and develop resilience are important. This study strongly suggests a protective effect of resilience on the association between stress and psychological distress. Activities fostering this asset and encouraging participation should, therefore, be prioritized. Healthcare workers are expected to demonstrate a high level of empathy towards the patients' personal situations. These expectations can create an emotional burden that is difficult for some employees to manage. In this study, social services and community services workers showed higher levels of psychological distress, which has been observed in other studies (Kinman and Grant 2011). Empathy management strategies are promising, according to recent studies in caregiving contexts. A strategy based on a better balance between empathy and quality of life among healthcare staff could be an interesting approach to develop personal skills (Gouveia 2017; Gouveia et al. 2017).

Strengths and limitations

Given the large sample size and the representativeness of the survey used in this study, the results have increased validity. The variation coefficients also indicate reliable estimates. This study has some limitations. First, data collection started in 2014 and was extended to 2015. This means that some people may have been surveyed before the launch of the large-scale reform that occurred in April 2015 while others may have been surveyed after this date. This could be a source of bias. Second, because the Connor and Davidson (2003) measurement tool is not specific to organizational or team-level resilience, the results observed may have been due to individual rather than organizational reasons. Third, another element that may have impacted the results was the work setting (e.g., hospital or community, critical, general, acute or long-term care), but this information was not available in the survey used. Finally, given the cross-sectional nature of the survey, the findings must be interpreted with caution, as causal inferences cannot be made.

Conclusion

The results of this study suggest that Eastern Townships healthcare employees have a high level of resilience. Workers with higher resilience were generally those with a more favourable social position. Despite a high level of resilience, healthcare workers reported stress and psychological distress. A positive gradient emerged across the healthcare system hierarchy with higher resilience and lower psychological distress among higher positions (despite equal or higher stress). Finally, a greater stock of resilience moderates the negative association between stress and psychological distress. These findings support workplace health promotion initiatives, particularly those targeting the lower spectrum of the hierarchy to reduce health inequalities.

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Compliance with ethical standards

The Ethics Committee of the Eastern Townships Integrated University Health and Social Services Centre approved this study.

Conflict of interest The authors declare that they have no conflicts of interest.

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