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Conditions Facilitating Managers' Adoption of Organizational Interventions Designed to Prevent Mental Health Problems in the Workplace

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Note: The masculine gender is used generically in this document solely to facilitate reading.

SUMMARY

There is increasing scientific evidence that psychosocial constraints (PCs), such as high psychological demands, low decision latitude, weak social support, and an effort-reward imbalance at work, contribute to the development of mental health problems, musculoskeletal disorders, and cardiovascular disease. These health problems are among the main causes of work absence due to illness. The literature on mental health-related preventive interventions focusses mainly on those aimed at changing certain personal characteristics (such as workers' lifestyles) rather than organizational characteristics (such as working conditions or the organization of work). Organizational interventions are complex and include multiple activities that simultaneously influence many psychosocial constraints. Although a number of studies have shown that such interventions can effectively improve mental health in the workplace, very few have attempted to explore the factors that may facilitate or hinder their implementation. Moreover, managers play a key role in implementing preventive interventions in the workplace.

The general objective of this study was therefore to identify the conditions that facilitate or limit managers' adoption of interventions designed to prevent stress in the workplace. More specifically, the study sought to:

1. document the existing approaches to preventing mental health problems in the workplace;
2. provide managers with psychosocial constraint management tools (e.g., guides, examples of best practices) that will support the current health intervention in their organization; and
3. discover which factors facilitate or hinder (a) organizational interventions designed to prevent mental health problems; (b) the adoption of management practices that foster good mental health.

Four employers engaged in an organizational intervention designed to prevent mental health problems in the workplace participated in this longitudinal study, and 73 managers attended the information session on tools for managing psychosocial constraints. A mixed-methods research design was used. Individual interviews (N = 25) were conducted with managers and key stakeholders to document the factors facilitating or hindering the adoption of organizational interventions designed to prevent mental health problems. Two questionnaire-based measures were administered three months apart (N = 144 at Time 1; N = 166 at Time 2, N = 118 at both times) to assess the factors influencing managers' adoption of management practices that foster good mental health.

In terms of factors facilitating or hindering the organizational interventions designed to prevent mental health problems, the one-on-one interviews highlighted factors related to the intervention context, process, and content. Regarding the organizational **context**, *management commitment* to the intervention was the facilitating factor most often reported by the participants. *The integration of the intervention into strategic planning* and *a good communication strategy for promoting it* were also considered facilitating factors. On the other hand, *geographical distances separating workers, strained relationships among the stakeholders engaged in the intervention* and *the complexity of the intervention* were deemed hindering factors. Regarding the intervention **process**, internal (human resources and an intersite committee) and external (a range of

specialized sources) resources were considered critical to assisting the organization with a preventive intervention. Their expertise was regarded as especially necessary given the complexity of the intervention, and, sometimes, its lack of ownership by stakeholders, which the participants themselves pointed out. The commitment of stakeholders (i.e., managers, employees, and unions) also emerged as an important facilitating factor, as did the need to choose a resource person to be in charge of the intervention. Finally, in terms of the intervention **content**, the relevance and value of the activities implemented were sometimes questioned. The principal obstacle faced in adopting the content involved the lack of tools provided to managers to enable them to act. Those managers who completed one or both of the questionnaire-based measures indicated the elements that could help them adopt management practices to support good mental health. The most frequently cited needs were training and coaching, social support (such as a manager assistance program and co-development groups), and human resources (in particular, access to an external consultant).

The information session on PC management tools offered by the researchers to the 73 managers was designed to highlight opportunities for intervention. After the session, 63% of the managers adopted a new PC management practice generally related to communication, training, and recognition. Of these managers, 85.7% noted positive impacts on their teams, but 34.5% experienced difficulties implementing the new practice. In addition to adopting these new practices, the managers who completed the questionnaires were surveyed about their usual management practices for fostering mental health. Those who adopted more of these practices felt that:

1. their organization made mental health a high priority (high psychosocial safety climate);
2. they had greater job decision latitude;
3. they had better relations with their subordinates;
4. they experienced less psychological distress; and that
5. male managers and older managers were more inclined to adopt management practices that foster their employees' mental health.

On a theoretical level, this study contributes to advancing knowledge about models used to assess organizational interventions designed to prevent mental health problems in the workplace. This recent field of research is growing, and this study provides a better understanding of how managers can implement such interventions. **On a practical level**, in addition to reviewing 25 PC management tools, the study identifies factors that facilitate or hinder managers' implementation of interventions, in some cases allowing them to adjust the intervention process at an earlier stage to avoid pitfalls.

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1. INTRODUCTION

There is increasing scientific evidence that psychosocial constraints, such as high psychological demands, low decision latitude, weak social support, and an effort/reward imbalance at work contribute to the development of mental health problems (Stansfeld & Candy, 2006), musculoskeletal disorders (Leslie, Tae-Youn, Si Anh, & Flaherty Manchester, 2012; Stock, Nicolakakis, Messing, Turcot, & Raiq, 2013; Torp, Riise, & Moen, 2001) and cardiovascular disease (Belkic, Landbergis, Schnall, & Baker, 2004). Not only are these the three most frequent, costly, and incapacitating types of health problems among the working age population (Daveluy, Pica, Audet, Courtemanche, & Lapointe, 2000), but they are also among the main causes of sick leave (Bourbonnais, Brisson, Vézina, Mâsse, & Blanchette, 2005).

While a number of tools exist to support organizations seeking to reduce exposure to PCs, many companies are still hesitant about taking primary prevention action (Semmer, 2009). Primary prevention interventions (i.e., those aimed at reducing PCs) are promising, but also difficult to implement and complex in nature. They are promising because theoretically they help reduce exposure to the causes of stress in the workplace. To improve their chances of success, however, it is crucial to have a better understanding of how these interventions produce their effects and not to look simply at the outcomes (e.g., reduction in absenteeism). In fact, many organizations that adopt preventive interventions experience difficulty designing, implementing, and maintaining them (MacKay, Palferman, Saul, Webster, & Packham, 2012; Nielsen, Fredslund, Christensen, & Albertsen, 2006; Semmer, 2006). For example, Biron, Gatrell, and Cooper (2010) found that difficulties in the intervention design and a changing organizational context meant that line managers did not engage in the preventive intervention. Only one-third of them measured the PCs in their teams, but they did not implement concrete changes to reduce exposure to these constraints. After 12 months, the employees with whom the manager had undertaken an intervention without implementing changes reported decreased commitment to the organization. This study illustrates the importance of managers taking ownership of the implementation of organizational preventive interventions.

Many researchers lament the lack of attention paid to contextual factors and to the processes allowing the approach to be deployed (Biron, Karanika-Murray, & Cooper, 2012; Egan, Bambra, Petticrew, & Whitehead, 2009). This applies to the entire process, but is especially true for the implementation phase, which has been the subject of little research (Nielsen & Abildgaard, 2013). Yet it is often during this phase that organizational interventions designed to prevent stress and mental health problems "derail" (Karanika-Murray & Biron, 2015a). Organizational interventions aim specifically to reduce exposure to PCs. The underlying premise of this project was that managers play a key role during the implementation phase of activities related to PC-interventions. To successfully implement management practices that can impact employees' exposure to PCs, however, managers require a degree of leeway to act. Managers who are overloaded and are themselves experiencing psychological distress or conflicts with their work team may be less likely to take preventive action than managers who are not.

Managers' working conditions are attracting growing attention, due partly to the role these conditions can play in the psychosocial work environment of the workers under their supervision and in their health and safety (Biggs, Brough, & Barbour, 2014; Kelloway & Barling, 2010).

This aim of this study was to document the factors facilitating and hindering managers' adoption of organizational interventions designed to prevent mental health problems, and to identify the factors impacting the adoption of PC management practices.

2. THEORETICAL FRAMEWORK

The two most widely recognized models in the field of occupational mental health were used in this study, namely, the Demand-Control-Support (DCS) model (Karasek & Theorell, 1990) and the Effort-Reward Imbalance (ERI) model (Siegrist, 1996). According to the DCS model, work characterized by high psychological demands (quantity of work, task complexity, time constraints), low decision latitude (possibility of making decisions, developing skills, and being creative) and low social support from coworkers and supervisors leads to mental and physical health problems. According to the ERI model, an imbalance between the efforts put into the work and the reward/recognition obtained can lead to the development of pathologies. A number of prospective studies have shown links between these two models and cardiovascular disease (Belkic et al., 2004; Fasbender, Deller, Wang, & Wiernik; Kivimäki et al., 2002; Marmot, Bosma, Hemingway, Brunner, & Stansfeld, 1997), psychological problems (Janssen, Kant, Swaen, Janssen, & Schroer, 2003; Netterstrom et al., 2008), and work absenteeism (Bourbonnais et al., 2005).

2.1 Important role played by managers in operationalizing psychosocial constraint prevention interventions

Recent scientific breakthroughs have shown that to prevent mental health problems in the workplace, it would be more effective to take actions targeting leadership, the work environment, and working conditions than individuals directly (Bourbonnais, Brisson, & Vézina, 2011; van Wyk & Pillay-Van Wyk, 2014). Leadership appears to play a particularly important role in both promoting employee well-being and preventing psychological stress and strain at work (Kelloway & Barling, 2010). Moreover, managers appear to be cornerstones, acting as intermediaries between the work environment and employee health (Kuoppala, Lamminpaa, Liira, & Vainio, 2008).

Recent studies on leadership leave no doubt about the important role played by managers in preventing PCs and about an array of indicators of mental health and safety in the workplace. Prospective studies show that a better leadership style is associated with a reduction in depressive symptoms (Munir, Nielsen, & Gomes Carneiro, 2010), an improvement in workers' general health (Lohela, Bjorklund, Vingard, Hagberg, & Jensen, 2009), employees' psychological well-being (Borritz et al., 2005), a reduction in cardiovascular diseases (Nyberg et al., 2009), an improvement in the safety climate (Zohar, 2002), and even a reduction in accidents and injuries (Barling, Loughlin, & Kelloway, 2002). Managers have an important effect on employees' mental health. A study by Gilbreath and Benson (2004) found that supervisors' behaviour contributes significantly to the workplace well-being of the employees they supervise. Skagert, Dellve, Eklof, Pousette, and Ahlbord (2008) observed that supervisors serve as "buffers." They use various strategies to deal with the sources of stress faced by their subordinates by, among other things, stabilizing personnel through actions aimed at reducing turnover and ensuring the presence of the competent resources needed to perform the tasks.

Yarker, Donaldson-Feilder, Lewis, and Flaxman (2008) showed that managers also have a major impact on the PCs of the personnel they supervise, specifically, on their employees' workload,

the resources available to them to perform their work and cope with the various demands and constraints, their decision latitude, and their access to various types of social support.
Supervisors' influence on the PCs to which employees are exposed and on mental health and occupational health and safety indicators has therefore been clearly confirmed. However, this influence can be both positive and negative. Managers' behaviours vary widely, depending on their particular work contexts (Bakker, Albrecht, & Leiter, 2011), as has been shown in ergonomic analyses of managers' work activity (Bakker, Albrecht, & Leiter, 2010). It is therefore important to understand what enables organizations to succeed or not in implementing conditions conducive to their workers' health and in operationalizing management principles, in order to introduce concrete changes designed to improve the psychosocial work environment.

2.2 Factors influencing managers' ability to adopt preventive interventions and act upon PCs

A number of personal, psychosocial, and contextual factors are likely to influence managers' ability to successfully manage psychosocial constraints and implement preventive interventions.

2.2.1. Managers' personal characteristics

Managers' personal characteristics may influence their ability to adopt management practices that foster their personnel's mental health. For example, a manager experiencing psychological distress may be more irritable, less able to concentrate, more anxious, and more depressed (Kessler et al., 2002). These symptoms risk affecting the manager's practices and ability to perform different tasks (Hilton, 2008). In addition to mental health, gender may also influence management practices. There are differences between men and women in terms of the prevalence, but also the effects, of psychosocial demands on their mental health. For example, the *Enquête québécoise sur des conditions de travail, d'emploi et de santé et sécurité du travail* (EQCOTESST, or Québec survey on working and employment conditions and occupational health and safety) (Vézina et al., 2011) revealed that approximately 18% of the Québec workers surveyed presented some level of psychological distress, and that a greater proportion of women reported a high level of psychological distress than men (21.7% versus 15.0%).

In addition to their sociodemographic and mental health characteristics, their readiness for the changes brought about by the preventive intervention may influence their willingness to take ownership of it and to adopt management practices that foster health. The implementation of preventive interventions implies changes in the work demands placed on the team, in their tasks, and in the organization of the work in general. These changes are likely to involve managers (Yarker et al., 2008). Readiness for change is a concept that refers to a "comprehensive attitude that is influenced simultaneously by the content (i.e., what is being changed), the process (i.e., how the change is being implemented), the context (i.e., circumstances under which the change is occurring), and the individuals (i.e., characteristics of those being asked to change) involved" (Holt, Armenakis, Feild, & Harris, 2007, p. 235). According to Holt et al. (2007), readiness for change has four components: (1) the degree to which the change is seen as appropriate; (2) the feeling of being capable of implementing the change; (3) the belief that the change will be beneficial; and (4) the perception that senior management is committed to implementing the change. In the context of implementing health interventions in the workplace, managers who are more open to change may be more inclined to adapt management practices that foster employees' mental health.

2.2.2. Managers' psychosocial environment

Managers' psychosocial environment may conceivably influence their ability to adopt management practices that foster their employees' mental health. Simard, Carpentier-Roy, Marchand, and Ouellet (2010), for example, concluded in their study on foremen's adaptation to the participatory approach to prevention that [free translation] "foremen adapt better to the new social context of prevention if their own immediate organizational context is itself adjusted (…) through structured activities, mobilization of higher-level managers and workers, and the consequent reorganization of the foremen's workload" (p. 2). Yet various studies suggest that first-line managers carry a heavy workload and that their real autonomy is limited (Dieumegard, Saury, & Durand, 2004) or "paradoxical" (Cousin, 2004), which may hinder their adoption of practices that foster health. Some studies suggest, for example, that managers are exposed to role conflicts, work overload, a lack of decision-making power, unpredictability, low social support, and a negative team atmosphere (Bech et al., 2005). Moreover, the stress associated with managerial responsibilities appears to be the main reason why employees refuse promotions to managerial positions (Harding & Davenport, 2010).

2.2.3. Context

The organizational context may also have an impact on managers and their ability to adopt preventive interventions. Context is defined as "opportunities and constraints that affect the occurrence and meaning of organizational behaviour…" (Johns, 2006, p. 386). Context has been conceptualized in various ways, ranging from organizational, economic, and political to social, or as the specific context of an intervention in which changes are implemented that conflict with the intervention priorities. All these contextual aspects may have an impact on an intervention's trajectory and on managers' ability to adopt management practices that foster their employees' mental health.

Psychosocial safety climate (PSC) refers to a contextual characteristic likely to influence managers' ability to take action to prevent mental health problems. The PSC (Dollard & Karasek, 2010) reflects "a communicated management position about the value and priority of worker psychological health and safety in the workplace" (Hall, Dollard, & Coward, 2010, p. 356). This type of context is considered a macro resource for workers' mental health. Dollard and Bakker (2010) define PSC as the organizational "policies, practices and procedures for the protection of worker psychological health and safety" (p. 580). The PSC construct is built around four sub-dimensions: (1) management's commitment to mental health; (2) the priority placed on this issue compared to production goals; (3) communications on this topic, including listening to employees' concerns; (4) the participation, consultation and commitment of all stakeholders, such as unions, occupational health and safety professionals, and Human Resources departments. Several studies have shown that the PSC acts as a macro factor in the sense that individuals who perceive a favourable PSC report less exposure to PCs, less psychological distress, greater commitment, and more resources to perform their jobs (Dollard & Bakker, 2010; Dollard, 2012; Dollard & Karasek, 2010; Dollard, Opie, et al., 2012; Dollard, Tuckey, & Dormann, 2012; Hall et al., 2010; Idris & Dollard, 2011; Idris, Dollard, Coward, & Dormann, 2012; Law, Dollard, Tuckey, & Dormann, 2011). The PSC is thus considered a "cause of causes," in other words, a determinant of exposure to PCs.

If managers see senior executives as committed to and supportive of their prevention efforts, they will likely be more inclined to participate in the various activities relating to mental health. A favourable psychosocial safety climate also reflects a participatory culture in which different stakeholders are involved in making decisions regarding mental health. Within the preventive-intervention implementation context of this study, it was expected that a favourable (high level) PSC would be more closely associated with the adoption of PC management practices by managers. In such a context, managers may be more aware of PCs and have access to more tools, such as resources, training sessions, and key resources qualified to support them in their efforts to manage their employees' PCs.

In addition to the PSC literature, the literature in another field is pertinent to the study of contexts conducive to the adoption of preventive interventions and management practices that foster mental health: studies on leadership style and "learning organizations." So-called *learning* organizations encourage curiosity and self-criticism, ensure the sharing of ideas, place greater emphasis on knowledge than on job titles, anticipate future demands, and tolerate errors generated by risk taking (Mikkelsen, Saksvik, & Ursin, 1998). Earlier studies show that employees in learning organizations tend to be less exposed to occupational stress and less likely to develop anxiety disorders or depressive symptoms (Lansisalmi & Kivimaki, 1999). The structural learning opportunities that characterize the various types of learning organizations may help facilitate the ownership of health interventions in the workplace.

Despite these leads, we still know little about how managers actually "handle" the prevention objectives defined by senior management or how they operationalize them. There is in fact a major gap in the scientific literature in terms of documentation on the factors facilitating and hindering implementation of preventive interventions. Several researchers mention the current lack of knowledge of the process and the mechanisms that allow preventive interventions to generate improvements in occupational health and safety (Biron et al., 2012; Cox, Taris, & Nielsen, 2010).

Various authors have suggested that qualitative information should be collected (Robson, Shannon, Goldenhar, & Hale, 2001; Shannon, Robson, & Guastello, 1999) to improve the quality of studies on interventions. Others have pointed to the importance of studying the factors conducive or detrimental to implementation and the effects of OHS management systems (Gorgievski, Bakker, & Schaufeli, 2010). However, information on the implementation process is still rarely integrated into studies on interventions, as underscored in recent systematic reviews (Egan et al., 2009).

Our research therefore sought to fill part of this gap in knowledge about a major question in order to advance prevention efforts. It did so by focusing on the role played by key actors (namely, managers) in the implementation of interventions. More specifically, it sought to shed light on the conditions facilitating or hindering managers' adoption of interventions designed to prevent stress in the workplace, as well as the implementation of PC management practices.

3. CONCEPTUAL FRAMEWORK

3.2. Four mainstays of the intervention

A growing consensus exists in the scientific community that organizational interventions designed to prevent mental health problems in the workplace should not be assessed solely in terms of their outcomes, but also taking into account their implementation process and context (Biron et al., 2012; Bourbonnais, Jauvin, Dussault, & Vézina, 2012; Cox, Karanika-Murray, Griffiths, & Houdmont, 2007; Cox et al., 2010). More and more authors agree that the implementation process and the impacts of the interventions are inextricably linked (Biron & Karanika-Murray, 2014; Nielsen & Abildgaard, 2013; Nielsen & Randall, 2012b). In fact, interventions often fail, not because of their content or poor design, but rather due to contextual factors or problems involving the implementation processes. Yet these factors are very often overlooked in evaluation studies despite the many and frequent implementation problems cited by researchers and practitioners alike (Biron et al., 2010; Nytrø, Saksvik, Mikkelsen, Bohle, & Quinlan, 2000; Saksvik, Nytro, Dahl-Jorgensen, & Mikkelsen, 2002). In other words, there appears to be a crucial need to examine questions such as "*How* do the interventions work?" rather than "*Do* the interventions work?"

3.1.1. Context, content, process, and outcomes (CCPO)

A decision was first made about the structure of this report. Rather than using a conceptual framework related to a single intervention theme (for example, by following a theoretical intervention model like that of Nielsen and Abilgaard [(2013)] during each phase of the preventive intervention) or to a single subject (such as transformational leadership, the chaos theory, or the complex systems theory), the report is organized under four themes found in the literature on organizational change (Armenakis & Bedeian, 1999), on program evaluation (Pettigrew, Woodman, & Cameron, 2001; Stufflebeam, Madaus, & Kellaghan, 2000), and on preventive occupational health interventions (Fasbender et al., 2014). Several theoretical models of preventive interventions and several different subjects are applicable here for the purpose of understanding how an intervention produces certain outcomes. Rather than concentrating on one particular subject, we chose to concentrate on three themes encompassing subjects common to all organizational change projects: the intervention context, content, and process. The fourth theme concerns the outcomes (type of effects that can be observed in such intervention projects). These four dimensions provide an understanding of the changes occurring during any organizational change.

3.1.1.1. Context

Context refers to "situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables" (Johns, 2006, p. 386). According to Johns (2006), different aspects of the context can influence an intervention's success, namely, the general context (which he terms the *omnibus context)* and the specific context (*discrete context)* of the intervention. The general context refers to situations not necessarily related to the intervention, but that nonetheless have an impact on it. Examples are level of organizational maturity

(i.e., an organization where employees feel they have the right to make errors and tolerance is shown (Saksvik et al., 2007)), prevalence of psychological distress problems, ceiling effects possibly preventing further improvements in outcomes, or the fit between the organizational culture and the proposed intervention (Randall & Nielsen, 2012). Contextual issues specific to the intervention refer more to events taking place during implementation of an intervention, such as organizational changes, changes in project managers, conflicting projects and priorities, restructuring, or economic factors affecting how the interventions are carried out.

Increasing numbers of rigorous studies are demonstrating the major impact of context on interventions, specifically on their process, content, and outcomes. One of the most important contextual factors is the visible commitment of senior management. This commitment may take the form, for example, of providing the resources needed to implement interventions. Or it may be evidenced in the priority placed on the health intervention in their organization and in its importance relative to other organizational changes that may conflict with the intervention (Biron et al., 2010). Brun, Biron, and St-Hilaire (2009) recommend looking at commitment as a continuous process throughout all phases of the intervention, rather than simply at start-up. A context characterized by a strong psychosocial safety climate also implies the participation of unions and other stakeholders (managers, Human Resources departments, occupational health and safety managers), not simply senior management. These parties will have to identify the problems, devise solutions, and implement actions in their work units. While intervention models stress the importance of this commitment, few studies have either documented what it entails or evaluated its effects on managers' adoption of the intervention.

It is worth noting that contextual changes occurring outside an organization, such as the health policies of a government or the reduction of financial resources in the organization due to an economic recession, may also have significant impact on the potential success of an intervention. A growing number of countries have in fact adopted legislation regarding workers' psychological well-being (MacKay et al., 2012; MacKay, Cousins, Kelly, Lees, & McCaig, 2004).

At the global level, the World Health Organization developed its *Comprehensive Mental Health Action Plan 2013-2020*, which recommends promoting mental health by providing healthy working conditions, such as improving work organization and stress management. In Canada, the National Standard for Psychological Health and Safety in the Workplace was launched in 2013 at the initiative of the Mental Health Commission of Canada (2013). In Québec, the "Healthy Enterprise" standard provides a context conducive to the implementation of preventive interventions. It offers a certification process that enables interested businesses to structure their intervention in a way that promotes healthy lifestyles, a healthy workplace, work-family balance, and sound management practices (Bureau de normalisation du Québec, 2008). The Healthy Enterprise process leads to certification relating to Standard BNQ 9700-800: *Prevention, Promotion and Organizational Practices Contributing to Health in the Workplace*, and is intended to maintain and sustainably improve the health status of people in the workplace. More specifically, the standard seeks "to provide a well-organized framework for implementing an overall work environment and maintaining management practices that contribute to the health of individuals in the workplace, and to recognize the efforts made by businesses, through a certification process"[1] [free translation].

[1] http://www.groupeentreprisesensante.com/fr/norme/definitions-objectifs

While these contextual elements may be extremely conducive to supporting organizational interventions regarding mental health, the responsibility for implementing concrete changes in workplaces essentially remains in the hands of the stakeholders within the organizations.

In summary, a context characterized by changes or priorities that conflict with a stress-prevention intervention or by changes in the individuals engaged in such a process is highly likely to have a negative impact on the interventions. Conversely, a context characterized by a favourable psychosocial safety climate where high priority is placed on PC prevention, combined with strong commitment from stakeholders and the participation of all levels of the business hierarchy, are factors that contribute to successful interventions.

3.1.1.2 Content

Few studies evaluate the specific content of interventions in relation to their impacts on employees' mental health. Organizational interventions are often complex and incorporate numerous activities, making it difficult to assess the specific contribution of any one component (Biron, 2013; Biron et al., 2012). Recent studies have shown differences between managers' and employees' perceptions of what is implemented in terms of intervention activities (Hasson et al., 2012). Differences have also been noted between the impacts of interventions, depending on the level of exposure to them. For example, the stronger the employees' perception that they have been exposed to changes in their working conditions, the more often they report impacts in terms of job satisfaction, well-being, and stress in the workplace (Nielsen, Randall, & Albertsen, 2007). Nielsen and Randall (2012a) further report that perceptions of changes in work procedures explain a significant portion of the variance in post-intervention working conditions, work satisfaction, and affective well-being. However, the definition of "exposure to interventions" remains problematic because many interventions affecting work organization, working conditions, management practices, and organizational procedures and policies often change simultaneously. This complexity makes it difficult to measure participation in and exposure to each of the intervention components.

An extensive study conducted by Gilbert-Ouimet, Brisson et al. (2011) in a Québec insurance company identified management practices contributing to its employees' mental health. In this seven-year study, three measurements were taken by means of questionnaires administered to 1,659 employees over a period of 30 months. Unit heads had to keep an intervention logbook and to note whether each intervention constituted a major change. Group discussions were also held after 18 months to identify the changes implemented. The results showed that after 30 months, the employees of this large organization reported less psychological distress; fewer lower back, neck, and shoulder problems; and a decrease in psychosocial demands (drop in psychological demands and increase in both social support from coworkers and recognition). This study is important because it identifies the intervention *content*, unlike most studies of the same type, which remain vague in this regard. The content of the interventions were then analyzed, leading to the creation of the *Guide des pratiques organisationnelles favorables à la santé* (Gilbert-Ouimet, Baril-Gingras, Brisson, & Vézina, 2009). It is these management practices conducive to health that we used in our study.

A recent study by Hasson et al. (2014) evaluated employees' perceptions of both their exposure to interventions and the interventions' impact on their work situation. Their measure of

intervention exposure was operationalized using the management practices proposed in the study by Gilbert-Ouimet et al. (2011). It included a scale measuring whether the employees were exposed to changes related to psychosocial constraints, i.e., changes in their decision latitude, psychological demands, social support from coworkers and their supervisor, and recognition. For example, regarding support from their supervisor, the employees had to indicate whether the supervisor met with them individually to discuss their work. Regarding psychological demands, the employees had to indicate whether they were exposed to reviews of their work processes. The results showed that employees who said they had been exposed to changes and who saw the changes as positively impacting their work situation reported improvements in terms of all the psychosocial constraints (psychological demands, decision latitude, social support, and recognition). This study is important for two reasons. First, it suggests that the impacts of PC interventions depend on the exposure to the interventions and on the more or less favourable perception that employees have of these interventions. Second, when many organizational interventions are implemented simultaneously, the rating scale used by Hasson et al. (2014) helps determine which interventions have been implemented. However, the Hasson study evaluated employees' perceptions, not those of managers, who nonetheless have a key role to play in implementing each intervention activity. We used the same scale in our study, but this time, with managers, in order to measure the adoption of management practices that foster mental health.

3.1.1.3. Process

Generally speaking, the term "process" refers to the formative evaluation of interventions, which includes identifying the weaknesses of an intervention program in order to improve it. So-called summative evaluation is used more to evaluate the effects of interventions on the targeted individuals (Rossi, Lipsey, & Freeman, 2000). However, some confusion exists regarding what exactly is covered by "intervention process." For example, Biron and Karanika (2014) present the main definitions used in the literature on preventive interventions. Among the most frequently used definitions is that of Goldenhar, Lamontagne, Heaney, and Landsbergis (2001), for whom the term "process" covers all phases of the intervention, from its development and implementation to evaluation. For Nytrø et al. (2000), the term refers more to the "individual, collective or managerial perceptions and actions in implementation and their influence on the overall result of the intervention" (p. 214). Cox et al. (2007) adopted a definition concerning how the activities are carried out, "essentially who did what, when, why, and to what effect" (p. 353). Steckler and Linnan (2002) refer to the specifics of the intervention implementation phase by proposing a model for evaluating the context, reach (proportion of individuals participating in the intervention), dose delivered (to what degree the intervention supplier delivered what was expected), fidelity (differences between what was planned and what was actually implemented) and dose received (to what extent the individuals perceived they were exposed to the intervention). Using the Steckler and Linnan model (2002), one systematic review on stress management interventions showed that less than 50% of the studies presented results relating to process measures (Murta, Sanderson, & Oldenburgh, 2007). Their review concurred with the conclusion drawn by Egan, Petticrew, Bambra, and Whitehead (2009) regarding organizational interventions to the effect that little attention is paid to process in this type of study, even though we know it has a major impact on intervention outcomes.

The more recent literature suggests that the process should be evaluated throughout the intervention, during each phase, rather than only during implementation. For example, Biron and Karanika-Murray (2014) propose going further than evaluating the process during the implementation phase, since this phase concerns mainly the intervention content and participants' exposure to this content. In actual fact, processes start impacting intervention outcomes much earlier on. For example, senior management's and managers' commitment is a determining factor that warrants consideration right from the outset, not simply during implementation. This recommendation is supported by Nielsen and Abildgaard (2013), who also advocate documenting the processes that come into play, interactions among organizational stakeholders, and their perceptions of the intervention activities, during each phase (preparation, diagnosis, development of action plans, implementation, and evaluation).

In short, despite the many definitions ascribed to the term *process*, based on the recommendations of Karanika-Murray and Biron (2015a), we consider (1) that *process* concerns more the "how" of the intervention than its effects; (2) that it affects all phases of the intervention, from preparation to evaluation; (3) that the process components and their interaction with the intervention content and context allow a progression from one phase to the other; and (4) that it relates to the individuals targeted by the intervention during each phase (their perception of what is happening and how their attitudes, behaviours, and abilities affect the progression from one phase of the intervention to the other).

The interaction between what is implemented (content), how it is implemented (process), and the type of context all have an impact on the achievable results (outcomes).

3.1.1.4. Outcomes

Theoretically, interventions designed to change working conditions should be effective in reducing exposure to sources of stress (i.e., psychosocial demands in the workplace). Organizational-level interventions are designed to improve mental and physical health by changing the way the work is organized, be it task characteristics, working conditions, or interpersonal or social aspects of the work (Semmer, 2011). Several individual and organizational-level interventions are often carried out simultaneously against a backdrop of frequent organizational changes, thus considerably complicating efforts to rigorously evaluate their effects on employees and organizational performance. Semmer (2011) stresses that organizational interventions sometimes have positive effects on health, performance, and other indicators, but sometimes no effect at all. Negative effects (deteriorations) are rarely observed. However, there is still great inconsistency in that an intervention can have positive effects on some indicators but not on others. For both organizations and researchers, difficulties in developing and implementing such interventions are notorious, while outcomes and benefits remain uncertain.

That said, a growing number of rigorous studies are showing the positive effects of these organizational interventions in improving mental health and reducing work absenteeism and PC exposure (Biron, Ivers, & Brun, in press; Bourbonnais, Brisson, & Vezina, 2011; Bourbonnais et al., 2006; Brun, Biron, & Ivers, 2007; Gilbert-Ouimet et al., 2011; Kobayashi, Kaneyoshi, Yokota, & Kawakami, 2008). There is also a growing consensus that by factoring in the

implementation process and intervention context, intervention outcomes may be more nuanced, more consistent, and better understood (Biron et al., 2012; Cox et al., 2007; Nielsen & Abildgaard, 2013).

3.2. Planned change

A vast amount of scientific literature exists on change and organizational interventions and involves several fields of research. In addition, Gravel, Lortie, Bilodeau, and Dubé (2012) bring to light the interaction between occupational health and safety issues and human resources management. This interactive relationship is all the truer when it comes to mental health issues in the workplace, where a number of psychosocial constraints in the work environment concern work organization, human resources management, and organizational change. However, these areas of research are rarely integrated in either the scientific literature or organizational interventions. Regarding interventions designed to prevent mental health problems in particular, two areas of research are relevant: studies on organizational interventions aimed at stress prevention and mental health, which are essentially being conducted in the occupational health psychology field (Sauter & Hurrell, 1999), and studies on organizational change, conducted mainly in the management sciences field. While the first research area provides better descriptions of the specific factors involved in health interventions, the second offers greater insight into preventive interventions seen as an organizational change. More specifically, the planned change approach has less to do with the content of the change and more to do with the process. The traditional model of planned change includes six phases: identifying the problem; diagnosing the situation; choosing the intervention; planning; implementing; and evaluating and stabilizing. Several models of planned change exist, but they all have similar steps. More recently, Collerette, Lauzier, and Schneider (2013) proposed an intervention that concerns both the organizational content and strategies for implementing the change. These phases and strategies (described in Table 1) will be used to improve understanding of the factors influencing the preventive interventions in the organizations that participated in this project.

Table 1 – Reproduction of main phases in a change process (Collerette et al., 2013)

Analyze	**Phase 1**	Initial groundwork	Prerequisites for a change operation
			Preliminary analysis
	Phase 2	Conducting a strategic analysis of the organization	Analysis of the situation and the organizational profiles
			Strategies associated with the organizational profiles
Prepare	**Phase 3**	Assessing the readiness for change	Challenges that the changes pose to people
			Factors facilitating and hindering change
			Preventing resistance to change
	Phase 4	Preparing for the change	Stakeholders involved
			Choosing a management approach
			Action plan
Manage	**Phase 5**	Managing the change	Managing the transition
			Monitoring the change
			Communicating when a change is made
			Taking action in crisis situations
			Assessing the outcomes

4. METHODOLOGY

4.1. Study objectives and design

This longitudinal study used a mixed-methods research design based on data collection, including two measures via questionnaires administered three months apart and semi-structured one-on-one interviews with managers and key stakeholders. Table 2 shows the methods used for each objective.

This study sought first to document the current health interventions in four organizations and to provide managers with PC management tools (e.g., guides, examples of best practices) in support of these interventions. Second, it identified the conditions facilitating managers' ownership of these organizational interventions and their adoption of management practices that foster mental health. To participate in the study, the participating organizations had to have diagnosed the presence of psychosocial constraints. Following this diagnosis, the organizations had to be engaged in a preventive intervention, regardless of how far along it was.

Objective 1. Document the current intervention designed to prevent stress in the workplace
To document which preventive interventions had been initiated in the participating organizations, we conducted one-on-one interviews with managers and key stakeholders (heads or representatives of well-being and mental health committees, union representatives). The questionnaire respondents were also surveyed about their perceptions of the current intervention.

Objective 2. Present tools on PC management practices to managers
The participants from each organization then participated in a half-day information session. At this session, 25 tools on psychosocial constraint management were presented, as well as the theoretical rationale explaining the links between psychosocial constraints, employees' mental health, and organizational performance. The purpose of this meeting was to highlight possible intervention opportunities. At the end of the meeting, the managers had to identify at least one PC management practice they committed to implementing with their personnel.

Objective 3. Identify factors facilitating or hindering adoption of (a) organizational interventions designed to prevent mental health problems; and (b) management practices that foster mental health.
The study's underlying hypothesis was that the presentation of tools would concretely highlight possibilities/opportunities for applying management practices that had not occurred to the managers in the context of the current preventive interventions in their organizations. A diagnosis of PCs had to have been completed for the organization to participate in the project, but the diagnosis may have been perceived as difficult to translate into a concrete action plan. The implementation of entire action plans usually takes place over a much longer period of time, but this study sought to assess, in the short term, what factors influence managers in their application of management practices that foster health.
In this study, the application of PC management practices was considered to be an indicator of the adoption of interventions designed to prevent mental health problems.

Indeed, the interventions under way in each of the organizations may involve different dimensions, such as lifestyle habits or the physical work environment. However, this study focussed on the factors that influence the preventive intervention on the one hand, and the implementation of PC management practices on the other. We therefore considered that by adopting management practices aimed at reducing exposure to PCs, managers demonstrated their ownership of the organization's preventive intervention.

One-on-one interviews were conducted with managers and key stakeholders to document the factors facilitating and hindering ownership of the organizational health intervention. In addition to interviews with those in charge or representatives of the well-being/mental health committees and union representatives, this objective also involved discussions with advisors from joint sector-based associations. A questionnaire was administered twice over a three-month period to all managers involved in a preventive intervention in order to identify the factors influencing the adoption of PC management practices. On the second occasion, the questionnaire included an additional section specifically on the factors that had facilitated or hindered the adoption of PC management practices, as well as a set of questions on the practice retained by the manager during the group information session (see Objective 2 above).

Table 2 – Specific objectives and methods

Objective 1 – **Document the current health intervention**	One-on-one interviews with managers and key stakeholders	Questionnaire evaluating perceptions of the interventions designed to prevent mental health problems, PC management practices, and the personal and organizational factors influencing their adoption
Objective 2 – **Present tools on PC management practices to managers**	Review, adapt, and prepare 25 tools on psychosocial constraint management, and hold an information meeting	Group meetings with managers and key stakeholders, including the presentation of PC management tools to highlight opportunities for carrying out interventions
Objective 3 – **Identify factors facilitating or hindering the adoption of (a) organizational interventions designed to prevent mental health problems (b) PC management practices**	A) One-on-one interviews with managers and key stakeholders	B) Questionnaire evaluating perceptions of interventions designed to prevent mental health problems, PC management practices, personal and organizational factors influencing their adoption, with specific questions about management practices following the group meeting

4.2. Study hypotheses

The general hypothesis of this study was that, during implementation of a health intervention in their organization, the managers might experience changes in their psychosocial work environment and health. Given that the preventive interventions under way in the four selected organizations covered all aspects impacting management, it was also postulated that the implementation of the interventions might result in changes in their people management practices. Although the information session on PC management tools was not considered an "intervention" per se, it was also hypothesized that it might have an effect on the adoption of management practices. By learning first about the nature of PC factors and, second, about concrete strategies for managing them daily, the managers might conceivably report changes in their adoption of management practices that foster health or in other indicators. That said, the information session was not considered an intervention and it was not anticipated that it would have any effect on the indicators measured in the study.

H1. Following the information session, the managers will try out new PC management practices.

H2. Following the information session on PC management tools, at Time 2 the managers will adopt more practices that foster mental health than non-participants.

H3. The information session on PC management tools is not considered an intervention and will not be associated with changes in management practices or in perceptions of the contextual characteristics, of the psychosocial work environment, or of the managers' personal characteristics.

H4. Managers who perceive their organizational context to be favourable to prevention at T1 will be more inclined to adopt management practices that foster their employees' mental health at T2.

H5. Managers who perceive their psychosocial work environment more positively at T1 will be more inclined to adopt management practices that foster their employees' mental health at Time 2.

H6. Managers who are more open to changes at Time 1 and who are in better mental health (low psychological distress) will be more inclined to adopt management practices that foster their employees' mental health at Time 2.

The respondents' sociodemographic and socioprofessional characteristics might be associated with the adoption of management practices, but no directional hypothesis was proposed as the literature on this subject is not sufficiently specific. A number of sociodemographic variables underwent analyses, but more for control than hypothetico-deductive purposes.

4.3. Procedures

4.3.1 Sampling

Between December 2012 and October 2013, 11 organizations were approached to participate in the study. Members of the follow-up committee provided contacts or did promotion to facilitate recruitment. The members of this committee included representatives of joint sector-based associations for municipal affairs, provincial administration, and social affairs (APSAM, APSSAP and ASSTSAS respectively); representatives of the Institut national de santé publique du Québec (INPSQ); and representatives of the participating organizations and of the Groupe de référence et d'intervention en santé mentale au travail (GRISMT). Explanatory pamphlets on the project were distributed at the information stands of the Chaire en gestion de la santé et de la sécurité du travail (CGSST, or chair in occupational health and safety management) and the Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST) at the Forum SST[2] in April 2013. During the same month, a document explaining the research project and designed to recruit volunteers was sent to the IRSST for publication in its electronic newsletter, which has 16,000 subscribers. Lastly, the project was advertised via the LinkedIn social network in July 2013.

[2] Now called the "Le Grand Rendez-vous santé et sécurité du travail," this [annual] event is dedicated to occupational health and safety. It draws more than 1,500 participants and visitors, who convene to attend specialized lectures on the subject and visit an exhibition of some 100 stands.

The organizations were contacted by telephone or email. To participate, they had to show that an intervention designed to prevent mental health problems in the workplace was under way in their organization and that a diagnosis of psychosocial constraints had been made within the past five years.

A total of 11 organizations were reached and four of these were selected. There were several reasons for excluding the seven other organizations (in various industry sectors) that had been approached: (1) the announcement of organizational changes inconsistent with a health intervention; (2) the absence of a primary prevention process or an intervention designed to prevent psychosocial constraints; (3) the organization desired such an intervention, but no diagnosis had been made and no intervention was under way; (4) various initiatives had already been taken in the organization/in specific sectors, but did not consist of an intervention designed to prevent mental health problems (e.g., managers had access to a personalized coaching service if needed, but it was not a health intervention per se).

At the four organizations selected, the managers and stakeholders approached to participate in the study had to be involved in a preventive intervention. In addition to these individuals, the three representatives of the occupational health and safety joint sector-based associations who sat on the follow-up committee were interviewed, given their expertise in mental health interventions. The project was approved by the Comité d'éthique de la recherche avec des êtres humains (ethics committee on research involving human subjects) of Université Laval, and measures were taken to ensure the anonymity of the organizations and respondents. Specific consent forms were completed before proceeding with the questionnaires, one-on-one interviews, and group discussions.

4.3.2. Questionnaires

For the quantitative component, a questionnaire was administered twice, three months apart, in paper and electronic formats via SurveyMonkey, to managers at the four organizations. The questionnaire was designed to identify factors influencing the implementation of PC management practices that foster health. The members of the research team took rigorous measures to ensure the respondents' anonymity. Each participant was assigned a confidential code found only on his or her questionnaire. Only the researchers had access to the list matching this code with the respondents' identity. The managers were contacted by email. The participants in the information meeting held with the researchers completed the paper version of the questionnaire at the beginning of the meeting. The managers unable to attend the meetings received the electronic version of the questionnaire to complete.

4.3.3. One-on-one interviews

One-on-one interviews were conducted with managers, key stakeholders (e.g., members of the implementation committees), and advisors from the joint sector-based associations (ASPs). The purpose was to document the interventions under way, as well as the factors facilitating and hindering the managers' ownership of health interventions during each of the phases.

Three interviews were therefore conducted with the representatives of the joint sector-based associations (APSSAP, APSAM and ASSTSAS) sitting on the follow-up committee to document their experiences with factors facilitating and hindering managers' actions. These representatives had to recall and refer to two interventions aimed at preventing mental health problems in which they had taken part. One had to illustrate the managers' effective ownership of the health interventions, while the other had to reflect the obstacles encountered. By following the intervention phases proposed in the guide produced by Brun, Biron and St-Hilaire (2009) (i.e., preparing for the intervention, diagnosis, identifying concrete problems, developing the action plan, implementing the actions, and evaluating the impacts). They were therefore asked to identify, for each phase in the two interventions, those factors facilitating or hindering the adoption of the health interventions in their organization.

For the interviews with the key stakeholders and the managers, it is important to note that these participants were selected from lists provided by the organizations, by means of a random number generation Web-based tool. Of the 34 individuals contacted, 25 agreed to participate, while six did not respond. The three other potential candidates refused for the following reasons: lack of time, departure elsewhere, and period of the year with reduced staff. The purpose of the interviews with the stakeholders sitting on a committee related to mental health was to document, during each phase of a preventive intervention, the factors facilitating or hindering the managers' ownership of the health interventions. The interviews with the managers had the same purpose. However, the researchers found after a few pre-test interviews that some managers knew few details about the preventive intervention under way in their organization.

The interviews lasted an average of one hour (minimum of 35 minutes and maximum of 2 hours) and were conducted face-to-face (17) or by telephone (8). They were carried out in the participant's workplace (14) or in rooms at Université Laval (3), according to the participants' preferences. The interviews took place between July 29 and August 28, 2013. They were recorded when the participant agreed (all participants agreed). The recordings and the verbatim transcripts were kept in a computer file protected by a code known only by the research team, and were not disseminated in any way whatsoever or given to anyone outside the research team.

4.3.4. Information session on PC management tools

The purpose of the meetings with groups of managers was, first, to provide them with PC management tools, and, second, to encourage implementation of management practices that foster mental health in the workplace. The meetings were run by the researchers. The participants signed a participation consent form. They then completed the questionnaire after signing a specific consent form. The participants received a binder containing 25 tools for managing psychosocial constraints (Table 6). These tools concerned either a description of the phases in an intervention designed to prevent mental health problems, several psychosocial constraints, or one constraint in particular (decision latitude, psychological demand, social support, and recognition at work). The information session, which lasted three hours, provided an opportunity to present psychosocial constraints and their consequences for health and organizational performance, and to describe the management tools contained in the binder.

At the end of the presentation and following discussions and team exercises, the managers had to identify a practice for managing PCs that they would undertake to implement over the next three

months. Most of the presentations were delivered lecture-style, but the participants were asked to respond to questions throughout the presentation. Four trainers from the research team gave eight information sessions on psychosocial constraints; they were held at the participants' workplaces.

4.4. Description of participating organizations

After a first meeting or a first contact that gave us an idea of the intervention under way, four organizations were selected to participate in the study, including three public organizations (whose activity sector cannot be specified for reasons of confidentiality) and one large non-profit organization operating in the pre-hospital emergency services sector. The nature of each organization's activities concerned technical work, specialized expertise, and services to the public. In all cases, these activities involve various hierarchical levels of management. For purposes of the study, we considered two categories: first-level managers (e.g., foreman, team leader) and mid- or higher-level managers (e.g., department director, unit director, vice-president). An employer representative had to sign a collaboration agreement that specified the objectives of the research, the advantages and risks of participating, the methods used by the researchers to safeguard confidentiality, and the contributions expected of the organization.

In three of the four organizations, interventions aimed at obtaining Healthy Enterprise or Healthy Enterprise – Elite certification were either under way or successfully completed.

Organization 1. Organization 1 is a non-profit organization operating several establishments, three of which are members of a working committee on the prevention of mental health problems. The workforce totals 370 employees (for all three participating establishments), including 27% women and 30 managers. The average age is 37 years and the managers have an average of 19 years of tenure. While the organization itself is not involved in a Healthy Enterprise certification process, one of its three participating member establishments is. Group discussions were held with the managers and worker representatives of the three participating establishments. These discussions were part of the preventive intervention set up within the organization and not as part of this study. They were led by a neutral person, i.e., someone representing neither the employer nor the union. Those who took part in the discussions did so voluntarily. They were asked to discuss problems experienced in the context of their work and that could harm their mental health, that of their coworkers, and in the case of managers, that of their subordinates.

In this organization, the joint working committee on the prevention of mental health problems included both representatives of the establishments participating in the intervention and individuals from the joint sector-based association. The committee members participated in the analysis of the points raised during the group discussions in order to target priority actions. The representatives of the workers, the union, managers, and the employer discussed possible solutions, and together decided on the interventions to be carried out. These group discussions can therefore be described as organizational diagnoses. They made it possible to establish an action plan whose goal was, among other things, to implement actions related to psychosocial constraints as well as secondary and tertiary preventive actions.

Organization 2. This is a large public organization with over 4,000 employees, including 408 managers. The workforce consists of 35% women, 20% of whom hold management positions. The average age is 46 years and the managers have an average of 11 years of tenure. The organization has several sectors that are divided into administrative units. The choice to implement the Healthy Enterprise standard or not is left up to each unit. The administrative units that embark on the certification process create a well-being committee whose members – both workers and managers – are responsible for carrying out the activities outlined in their action plan. Sub-committees are also formed to help the well-being committee carry out specific actions.

The organization supports the implementation by compiling all necessary information and making it accessible to everyone, by organizing meetings between representatives of the well-being committees and the managers of the various units, by organizing activities, and so forth. It also releases one resource person who is responsible for the process internally in order to help the members of the well-being committees carry out the different steps.

In this organization, the diagnoses were made by the INSPQ, by means of questionnaires. The INSPQ analyzed the data, provided documents containing the diagnoses, and presented and explained the results while ensuring the confidentiality of the answers. The action plans of the administrative units were determined on the basis of their respective diagnoses, in turn making it easier to identify the activities to implement and to monitor the progress made.

Given that each division of the organization carries out its own Healthy Enterprise certification process, the level of advancement varies from one division to the other, with some only initiating the process and others having already obtained Healthy Enterprise – Elite certification. Overall, the organization is very active in promoting health.

Organization 3. This is a small public organization with Healthy Enterprise certification. The INSPQ also made the diagnosis in this organization. In the same way as mentioned earlier, the results analysis provided by the INSPQ shed light on the organization's strengths and weaknesses. However, while the INSPQ lent considerable support to the diagnostic process, this organization hired a consultant to obtain additional expertise in order to better understand the results and develop its action plan.

All the activities carried out in this organization in connection with the Healthy Enterprise standard were headed by a project leader. The consultant lent support by devoting time to this person and sharing his knowledge with her. The well-being committee in this organization included workers, as well as managers from all the jobs groups and all levels of the hierarchy. Sub-committees, each with their own sphere of activity, were formed concurrently to help roll out the action plan.

Several activities, such as sports activities (walking, softball, etc.), were introduced in the "lifestyle habits" sphere. Presentations and training sessions were also organized. The lectures focussed on various topics such as stress management or nutrition. Regarding "management practices," several activities were launched, such as co-development meetings for managers and training sessions to raise worker awareness of the various forms of recognition. The organization

also used various means of communication to disseminate information about the standard and the certification process.

Organization 4. This public sector organization has a workforce of 698 employees, including 47 managers. The organization began the Healthy Enterprise certification process in 2011 following the diagnosis made by the INSPQ. The process was headed by a well-being committee that reported to the executive committee. All five sites that make up the organization were participating in the certification process. Activities were carried out in the four areas of activity (employee lifestyle, workplace, work-life balance and management practices) for each of the sites. One committee worked specifically on internal communication. Four committees were responsible for the four areas of activity covered by the standard. In addition to these committees, local committees at each site supported the intervention activities. The organization lent financial support by allocating a budget for implementing activities and an intranet, by raising points of information to the management committee and at staff meetings on a regular basis, and by releasing members of the local committees to allow them to organize interventions. Moreover, a project coordinator was released on a full-time basis to devote energy to the organization's preventive intervention.

Only one of the sites was contacted in this organization. Of the managers at this site, 41 agreed to participate in the survey.

4.5. Participants' characteristics

Data collection took place between July 2013 and February 2014. It took from 4 to 14 months, depending on the organization. Table 3 shows the numbers of participants in the two questionnaire-based measures, in the one-on-one interviews, and in the information sessions. Specific consent forms had to be signed by the participants prior to completing the questionnaires and taking part in the one-on-one interviews.

Variance and chi-square analyses were performed to compare the individuals who completed only the first questionnaire, those who completed only the second questionnaire, and those who completed both. The results showed no differences in the following sociodemographic indicators: age, gender, education, job, number of employees supervised, and tenure. A total of 144 people responded to the first questionnaire and 166 to the second. These numbers represent participation rates (number of individuals completing the questionnaire/number of individuals invited to do so) of 58% and 52% respectively. A total of 118 managers completed both measures (of the 192 who completed at least one of the two questionnaires, giving a rate of 61%). Table 4 summarizes the main sociodemographic and socioprofessional characteristics of the questionnaire respondents. A total of 15 managers and 10 key stakeholders participated in the one-on-one interviews (including three representatives of the joint sector-based associations, the content of whose interviews was used to structure data collection and fuel the reflection process). A total of 73 managers participated in the information session on PC management tools.

Table 3 – Number of respondents (and response rate), by measurement time in each organization

ORGANIZATION	Total	Organization 1	Organization 2	Organization 3	Organization 4
Questionnaire					
Participant at T1 (participation rate)	144 (58%)	33 (80%)	83 (76%)	12 (48%)	16 (35%)
Participant at T2	166 (52%)	27 (66%)	106 (56%)	13 (52%)	20 (49%)
Participant at T1+T2	118	27	69	11	11
One-on-one interview	25**				
Manager	15	6	5	4	0*
Key stakeholder	10	3	3	1	0*
Information session with presentation of PC management tools	73	29	28	11	5

Notes: *Organization recruited late in the project. No interviews were conducted in this organization due to schedule conflicts. **Including three preparatory interviews with representatives of the joint sector-based associations.

4.5.1. Questionnaire

Table 4 – Respondents' sociodemographic and socioprofessional characteristics at two measurement times, by organization

ORGANIZATION	Total %	Organization 1	Organization 2	Organization 3	Organization 4
Job (% first-level managers)	51.3	74.1	47.8	30.0	36.4
Age group (%)					
18-24	0	0	0	0	0
25-44	38.5	66.7	26.5	45.5	36.4
45-54	38.5	25.9	44.1	45.5	27.3
55 et +	23.1	7.4	29.4	9.1	36.4
Average number of employees supervised by manager	19.7	40	14.2	11.2	20
Tenure in the organization	15.2	16.2	16.5	10.8	8.7
Gender (% of women)	23.1	7.4	25	27.3	45.5
Education (%)					
Secondary V or less	9.6	14.8	10.5	0	0
College/Certificate	34.8	77.8	23.9	20.0	9.1
Bachelor's degree	29.6	7.4	37.3	50.0	18.2
Master's degree/PhD	26.1	0	28.4	30.0	72.7

4.5.2. One-on-one interviews with managers and key stakeholders

A total of 25 one-on-one interviews were conducted with key stakeholders (members of the implementation committees) and managers. Of the individuals interviewed, 15 were managers (including seven middle or higher-level managers and eight first-level managers) and seven were key stakeholders (representatives of the implementation committees and of Human Resources departments). It should be noted that Table 5 does not include the three preparatory interviews conducted with representatives of the joint sector-based associations.

Table 5 – Characteristics of persons interviewed, by organization

ORGANIZATION	Total	Organization 1	Organization 2	Organization 3	Organization 4
Number of interviews	25**	9	8	5	0*
TYPE OF JOB HELD BY THE PARTICIPANTS					
Manager	15				
Middle manager or higher	7	5	0	1	0
First-level manager	8	1	5	3	0
Key person	10**				
Clerical staff	6	3	2	1	0
Technician	1	0	1	0	0
Number of women	11				
Manager	3	0	1	2	0
Key stakeholder	5	2	2	1	0

*Organization recruited late in the project. No interviews were conducted in this organization due to schedule conflicts. **Includes three interviews with representatives of the joint sector-based associations.

4.5.3. Information session on PC management tools

A total of eight group meetings were held, with 73 managers participating. The researchers held three-hour information sessions on PC management tools in each of the organizations (from one to three meetings, depending on the organization). Discussions took place with the participating managers, but this information served primarily to fuel the reflection process and was not coded, as the methodology was designed more to meet the objectives by means of longitudinal questionnaires and one-on-one interviews.

4.6. Instruments

4.6.1. Development of a compendium of PC management practices

To highlight intervention opportunities for managers and encourage implementation of management practices that foster mental health, the research team analyzed, translated, and

created tools on health interventions and management practices that foster mental health. A total of 48 tools were analyzed and 25 were retained (Table 6). These tools were selected because they met the following criteria:

- they concern psychosocial constraints that research has compellingly shown to have an effect on mental health, specifically: rewards, workload, social support, autonomy, or organizational interventions in general;
- their content is related to the main theoretical models and state-of-the-art knowledge in the field;
- the content can be applied in the Québec context.

These tools were then compiled in a binder, and page-layout and design tasks were performed. A binder was given to each participant during the half-day information session. It should be noted that:

- a tool was developed by the research team during the project (Tool 15);
- some tools were translated and adapted by the research team during the project (tools 13, 14, 18, and 25);
- existing tools not available to the general public were included in the binder (tools 2, 8, and 20).

Table 6 – Psychosocial constraint management tools presented to managers during the information session

Tools on the intervention	1. *Guide pour une démarche stratégique des problèmes de santé psychologique au travail* (Brun et al., 2009) 2. *Les 7 pièces manquantes du management : Fiches-action* 3. *Sélection des actions efficaces: application d'un cadre de qualité* (Samra, Gilbert, Shain, & Bilsker, 2012) 4. *Stress au travail: Les étapes d'une démarche de prévention* (Chouanière, Langevin, Guibert, & Montagnez, 2011) 5. *Santé psychologique au travail: Une démarche structurée pour mieux gérer l'action* (Lamarche, 2007) 6. *Grille d'identification des risques psychosociaux au travail* (Institut national de santé publique du Québec, 2011) 7. Website of interest (chair in occupational health and safety management: www.cgsst.com)
Tools on several PCs	8. *Guide de pratiques organisationnelles favorables à la santé au travail* (Gilbert-Ouimet et al., 2009) 9. *Programme de gestion intégrée de la présence au travail* (Association paritaire pour la santé et la sécurité du travail du secteur des affaires sociales, 2003) 10. *Plan d'action contre l'épuisement professionnel* (Association paritaire pour la santé et la sécurité du travail du secteur des affaires sociales, 2001b) 11. Forum sur l'amélioration des conditions d'exercice du travail (Association paritaire pour la santé et la sécurité du travail du secteur des affaires sociales, 2002a)
Tools by constraint (presentation of Karasek's Demand-Control-Support models and of Siegrist's Effort-Reward Imbalance model (Siegrist, 1996) and their consequences for health)	
Low autonomy	12. Summary (in French) of a video on decision-making (available on the chair in occupational health and safety management website at www.cgsst.com) 13. *Stress Management Competencies − Autonomy* (Health & Safety Executive & Chartered Institute of Personnel and Development, 2007). Document adapted from the Yarker et al. study (2008)
Heavy workload	14. Examples of actions to address workload, document adapted from the Health & Safety Executive website: http://www.hse.gov.uk/stress/standards/pdfs/actionplan.pdf 15. *Plan d'action en santé psychologique inspiré d'un cas réel dans le domaine de l'enseignement* (taken

	from a real case) (Brun et al., 2007) 16. Summary (in French) of the video on change, available on the www.cgsst.com website 17. *Démarche participative sur l'organisation du travail* (Association paritaire pour la santé et la sécurité du travail du secteur des affaires sociales, 2001a) 18. *Compétences de gestion en lien avec la charge de travail.* (Document adapted from Health & Safety Executive & Chartered Institute of Personnel and Development, 2007). https://www.cipd.co.uk/Images/line-management-behaviour-and-stress-at-work_2009-line-managers-guidance_tcm18-10444.pdf
Effort-Reward Imbalance	19. Presentation of Siegrist's model (1996) and consequences for health and organizational performance, and summary (in French) of the video on recognition available on the www.cgsst.com website 20. Summary table on recognition (Brun & Dugas, 2002)
Support	14. Summary (in French) of the video on support available on the www.cgsst.com website 15. *Le soutien social: pour améliorer la qualité de vie au travail* (Association paritaire pour la santé et la sécurité du travail du secteur "administration provinciale," 2008) 16. *Une valeur sûre: le soutien social* (Legault, 2012) 17. Groupe d'entraide (Association paritaire pour la santé et la sécurité du travail du secteur des affaires sociales, 2002b) 18. *Stress Management Competencies – Support* (Health & Safety Executive & Chartered Institute of Personnel and Development, 2007). Document adapted from the Yarker et al. study (2008)

4.6.2. Questionnaires

Appendix A provides details on the items comprising each of the scales, the distribution of these items by the factors constructed on the basis of the factorial analyses, as well as the response scales, internal consistency coefficients, and references for these instruments.

4.6.2.1. Measures of sociodemographic and socioprofessional characteristics

Gender, age group, number of employees supervised by the manager, number of years of tenure, level of education, and type of job held (first-line manager versus middle-/higher-level manager) were taken into account.

4.6.2.2. Measures of personal characteristics and health indicators

Readiness for change. This scale measures the degree of readiness for the health intervention in the organization (Randall, Nielsen, & Tvedt, 2009). It assesses how confident the respondent is that the intervention will bring about positive changes in working conditions and how ready he or she is to accept these changes ("readiness for change"). The response scale ranges from 1 (totally disagree) to 4 (totally agree). The scale was back-translated into French and had adequate internal consistency ($\alpha = 0.74$).

Psychological distress. Psychological distress, which was measured using the K6 (Kessler et al., 2002), is an early indicator of mental health impairment that assesses two of the most frequently observed syndromes in mental health, namely, depression and anxiety. The K6 is not a tool for diagnosing these pathologies, but rather an instrument for identifying individuals at the highest risk of developing these types of pathologies. It includes six questions evaluating the presence of symptoms during the previous month. The response scale ranges from 1 (never) to 5 (all the time) ($\alpha = 0.80$).

4.6.2.3. Measures of psychosocial environment characteristics

The scales used to measure the psychosocial characteristics were the same as those used in the *Enquête québécoise sur des conditions de travail, d'emploi et de santé et sécurité du travail* [Québec survey on working and employment conditions and occupational health and safety] (EQCOTESST) (Vézina et al., 2011). The response scale ranges from 1 (strongly disagree) to 4 (strongly agree).

Decision latitude. This scale measures the respondents' ability to use their skills and develop new ones, and the possibility they have of choosing how to perform their work and of participating in related decisions. The five questions asked come from an adaptation of the *Job Content Questionnaire* (JCQ) (Karasek, 1985, in Vézina et al. 2011). The psychometric quality of the French translation of this indicator (a nine-question item) has been demonstrated (Brisson & Larocque, 2001). A Cronbach's alpha of 0.57 represents an internal consistency similar to that obtained for the Québec population (EQCOTESST $\alpha = 0.61$).

Psychological demands. This construct refers to the quantity of work (workload), mental requirements, and time constraints the worker has to cope with. The six questions used to measure this indicator come from the short six-question version of the JCQ (Karasek, 1985). One question taken from the nine-question version was added to measure the interruptions and disruptions experienced during job performance. The French version of this scale has been validated (Brisson & Larocque, 2001; Larocque, Brisson, & Blanchette, 1998) and demonstrates satisfactory internal consistency ($\alpha = 0.77$).

Social support. The seven questions used to measure social support in the workplace also come from the JCQ, apart from one question that was taken from the *Copenhagen Psychosocial Questionnaire* (COPSOQ) (Pejtersen, Kristensen, Borg, & Bjorner, 2010) ("Are you part of a group in your work?]. Internal consistency is satisfactory ($\alpha = 0.78$).

Recognition. This refers to rewards at work, whether monetary (a satisfactory salary), social (esteem and respect from both colleagues and supervisors), or organizational (job security and good prospects of promotion). Recognition was measured by means of six questions taken from Siegrist's instrument, with two other questions added from the COPSOQ (Pejtersen et al., 2010). Cronbach's alpha shows good internal consistency ($\alpha = 0.74$).

Relationships with subordinates. Two items were created for the purposes of our study to measure the quality of relations with employees: [free translation: "My subordinates are open-minded" and "I have good relations with my subordinates"]. The two items are correlated at 0.52 and the response scale ranges from 1 (totally disagree) to 4 (totally agree).

4.6.2.4. Measures of organizational context

Psychosocial safety climate. The psychosocial safety climate (PSC) was measured using the PSC-12 (Hall et al., 2010). This tool includes 12 items covering four dimensions: (1) management commitment; (2) the establishment of a healthy psychosocial climate as a priority in the organization; (3) communication about mental health issues (4) the participation of all hierarchical levels in interventions designed to prevent mental health problems. The items are measured on a five-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree); $\alpha = 0.89$. Here is a sample item: "Senior management clearly considers the psychological health of employees to be of great importance." Like other studies, our study used only the general dimension of the PSC and not its four sub-factors (Dollard & Bakker, 2010; Dollard & Karasek, 2010; Law et al., 2011).

Learning organization. The learning organization scale was back-translated from the D-LOQ (Marsick & Watkins, 2003). This scale includes seven items, each covering one of the seven following dimensions: (1) continuous learning; (2) inquiry and dialogue; (3) collaboration and team learning; (4) systems to capture learning; (5) empowering people; (6) connecting the organization; and (7) providing strategic leadership for learning. The response scale ranges from 1 (almost never) to 6 (almost always). Here is a sample item: "My organization recognizes people for taking initiatives." Internal consistency is satisfactory ($\alpha = 0.86$).

Access to training/information on people management. Two items were created for our study to assess whether the managers had access to information and training on people management: *"Je reçois régulièrement de l'information pour m'aider à mieux gérer les personnes dans mon équipe"* and *"Dans mon organization, il y a régulièrement des formations sur la gestion des personnes"* [free translation: "I receive information on a regular basis to help me better manage the people on my team" and "In my organization, there are regular training sessions on people management"]. The correlation between the two items is 0.51, and the response scale ranges from 1 (strongly disagree) to 4 (strongly agree).

4.6.2.5. Dependent variables: adoption of management practices that foster health

Adoption of a practice following an information session on PC management tools. During the second questionnaire-based measurement session, the managers were asked if they had participated in the information session on PC management tools offered by the researchers. They also had to indicate whether they had attempted to implement a PC management practice during the previous three months, and then to describe it and indicate whether it was inspired by the results of an organizational diagnosis within the company. They also had to specify whether at least one of the management practices retained constituted a major change in the team.

Managers' needs. The managers indicated whether they had run into difficulties implementing this management practice, as well as its effects on employees. They also noted whether they had read the contents of the binder of PC management tools. They then had to answer the question: "*Qu'est-ce qui pourrait vous aider à adopter des pratiques de gestion qui favorisent la santé des personnes*?" [free translation: "What might help you to adopt management practices that foster people's health?"].

Management practices that foster health. This scale includes 18 items (see Appendix A) initially designed in the context of a broad longitudinal intervention project carried out by the Groupe interdisciplinaire de recherche sur the organization et la santé au travail (GIROST) in a large Québec company (Gilbert-Ouimet et al., 2009). The managers involved in this project were required to keep a record of interventions in which they noted the changes implemented in their unit. The 18 categories of change were designed to reduce psychosocial constraints (high psychological demand, low decision latitude, low social support, low recognition) (Appendix A). Studies have shown that employees who perceive interventions as having positive impacts on them report decreased exposure to psychosocial constraints (Hasson et al., 2014). The items were pre-tested by the authors on 10 respondents to identify any comprehension problems, and then after fine-tuning, were tested again on 20 respondents. The procedure used for keeping records of the interventions and the consistency between the planned changes and those implemented is described elsewhere (Gilbert-Ouimet et al., 2011). In the present study, the managers were questioned to find out to what degree these practices corresponded to their own ways of acting toward the staff under their supervisions during the previous 12 months. The response scale ranged from 1 ("*ne correspond jamais à mes pratiques*") to 4 ("*correspond très souvent à mes pratiques*" [free translations: "never corresponds to my practices" and "very often corresponds to my practices"]). Factor analysis with orthogonal rotation (Varimax) was performed to identify any sub-categories of management practices. Three factors were retained, with eigenvalues

greater than 1.00. The items all show good quality representation ("final communality estimates") (>0.25). One item ("*Remplacer les employés lors des absences*" [free translation: Replace employees during absences"]) was eliminated because it belonged to three factors. The factor structure is commendable (Kaiser's MSA = 0.83).

4.6.3. Guides for one-on-one interviews

As mentioned earlier, 22 semi-structured interviews were conducted with managers and key informants at three of the four organizations participating in the project. The interviews with the three representatives of the joint sector-based associations were constructed differently and were not coded because the information collected was used instead (1) to stimulate the researchers' reflection process and (2) to construct data collection tools, including the one-on-one interview guide. The interview guide included **three** sets of questions. The initial set of questions (general) served both to create an atmosphere conducive to the expression of opinions by the participants and to collect information about the general context.

The second set of questions concerned the steps in an intervention designed to prevent mental health problems: planning the intervention, making a diagnosis, identifying concrete problems, developing solutions, and implementing actions. The interviewer inquired about the actions taken for each phase, and particularly about the facilitating or hindering factors. Thus, for each of the main questions, investigation questions (intended to complement or clarify an incomplete or vague answer) and commitment questions (aimed at developing an idea in detail) were formulated based on the participants' discourse. The third and final set of questions included only a few questions designed to wind up the interview and ensure that there were no other aspects or topics that the participant wished to broach. Table 7 shows examples of the main questions for each set.

Table 7 – Sample questions from the one-on-one interview guide

SET	THEME	SAMPLE QUESTIONS [free translations]
1	Opening question	What do you know about the Healthy Enterprise process?
2	Planning the intervention	What might have influenced the adoption of the intervention?
	Making a diagnosis	How did the presentation of the results of the diagnosis go?
	Identifying concrete problems	How did the identification of concrete problems go?
	Developing solutions	How did the development of solutions go?
	Implementing actions and following up	How did the implementation of actions go?
3	Closing question	Generally speaking, in your opinion, what are the factors that facilitated or hindered adoption of the intervention? Is there anything you'd like to add?

4.7. Analyses

4.7.1. Statistical analyses

Data entry. For both measurement times, the data from the hard copy of the questionnaire were entered twice (dual data entry method) by the research team to maximize their integrity. The Web version of the questionnaire automated this step. Both sources of data were then examined using standardized procedures (Tabachnick & Fidell, 2012) to detect any incorrect data and verify the normality of the distributions. The data were manipulated and statistical analyses performed using the SAS version 9.1.3 software package (SAS Institute, 2004). The alpha threshold was set at 5% and all the tests were bilateral.

Representativeness of the participants at the two measurement times. Some participants left the study before completing the second measure, while others joined the study (not having participated in the first measure). In order to maximize the statistical power of the inferential tests while respecting the representativeness of the samples, the participants who had completed *at least one* of the two measures were included in the analyses (apart from the longitudinal analyses, which included only those who participated at both measurement times).

However, to ensure that there was no sampling bias, the participants who joined the study and those who completed only the first questionnaire were compared to their coworkers who had completed both measures with respect to a series of sociodemographic indicators (i.e., age, gender, education, job, number of employees supervised and tenure, psychological distress and emotional burnout) using chi-square and variance analysis tests.

Longitudinal changes. A series of linear mixed ANOVAs was performed for each variable to study the longitudinal changes in participants, The temporal change in each group was estimated by means of simple effects tests (Kirk, 1995). Mixed model analysis was chosen over traditional, repeated measures ANOVAs due to its ability to retain incomplete longitudinal observations (increasing the statistical power of the tests while promoting better representativeness of the conclusions) and its greater robustness to non-normal data and unequal group size (Keselman, Algina, & Kowalchuk, 2001). These mixed model analyses were also used to assess whether the information session on PC management tools offered by the researchers was associated with longitudinal changes in the respondents.

Multiple linear regressions were performed using a simultaneous model to identify the initial conditions (at Time 1) that influenced the adoption of management practices (at Time 2). The purpose of this analysis was to estimate the contribution of personal characteristics, the psychosocial work environment, and perceptions of the organizational context at Time 1 to the adoption, at Time 2, of management practices that foster health.

4.7.2. Qualitative analyses

All the interviews were transcribed and analyzed using QDA Miner 4.1. mixed-data analysis software (Provalis Research, 2013). First, the interview corpus was segmented into units of meaning, and a label (code) was assigned to each unit. An inductive method, which allows themes with no *a priori* categories to emerge from the literature, was used. Two coders, who were trained in qualitative analysis and specialized in occupational mental health, studied six interviews selected on a simultaneous, independent, and random basis to draw up a first list of facilitating and hindering factors. The 16 other interviews were coded by a single coder. This step made it possible to, among other things, enrich the list of facilitating and hindering factors and clarify certain codes (factors). Second, the list of codes was validated by a third coder, also an expert in qualitative analysis and occupational mental health. This step increased the objectivity and accuracy of the coding process (Hannah & Lautsch, 2010). Next, thematization was performed (i.e., the facilitating and hindering factors were divided into categories) on the basis of two conceptual frameworks, namely, the model for categorizing information according to whether it concerns the Context, Content, Process or Outcomes of the intervention (CCPR) and the planned change model (Collerette et al., 2013).

5. RESULTS

5.1. Description of current organizational interventions designed to prevent mental health problems in the workplace

Table 8 summarizes the organizational interventions designed to prevent mental health problems in the workplace that were identified by the respondents to the two questionnaires and the interviewees. Activities related to implementation of the Healthy Enterprise standard were the most frequently cited, followed by those related to the Employee Assistance Program. Several activities were under way in each organization, as indicated in the one-on-one interviews. However, not all the managers were well-informed of the full range of activities. Moreover, some of those who answered the questionnaire and took part in the one-on-one interviews indicated that they were unaware of any intervention. Several activities were in progress, but were not yet visible or not retained by the managers as being actions specifically intended to prevent mental health problems. For example, in the case of organizations involved in the Healthy Enterprise certification process, the "management practices" area of activity of the standard appeared to be a vague area in their minds. The managers use a variety of tools, behaviours, and attitudes in their daily practices without necessarily recognizing these practices as being preventive actions. Consultation and participation mechanisms such as committees, team meetings, or reviewing roles and workloads can sometimes be used without the managers being aware of their effects on employees' mental health. Yet many studies clearly show the impact of management practices on employees' mental health and well-being. However, these practices are less visible as they are not labelled as being part of any specific intervention. Formal interventions and infrastructures were therefore cited more frequently by the managers. In Table 8, the managers who answered the questionnaires and participated in the interviews cited mostly structured and formal activities, and only rarely mentioned management practices that had been modified or enhanced in the context of the preventive intervention.

Table 8 – Description of current interventions according to managers' and key stakeholders' responses to the two questionnaires and in the one-on-one interviews

QUESTIONNAIRES – Name the health interventions currently under way in your organization (number of questionnaire respondents out of a total of 192 who identified this activity)	**ONE-ON-ONE INTERVIEWS (22)**
Activities related to implementation of the Healthy Enterprise standard (58)	
Employee Assistance Program (EAP) (48)	
Well-being Committee/Joint Committee on the Prevention of Psychological Distress/on Recognition/ (15)	
Activities on recognition (15)	Training of managers on recognition (6) Activities on recognition (7)
None (13)	

Intervention (training, committee, policy) on harassment (11) Intervention (training, committee, policy) on courtesy in the workplace (9) Training for managers on mobilizing leadership (7) Supervisor interventions during crisis situations involving employees/Debriefing (6) Employee mobilization plan (6) Research project with Université Laval (this project) (5) Restructuring (2) Focus group on psychological distress (2) Observation of signs of distress in coworkers and employees (2)	
Physical Activity Reimbursement Program (2)	Sports activities (7) + reimbursement of costs of sports and cultural activities (4) + training room (1)
Standardization of procedures, clarification of roles, and distribution of tasks (2) Flexible work arrangements (1)	
Lectures (3)	Seminar (1) + lunch-lectures (6) + training sessions on lifestyle habits + lectures on various topics (7)
Handshake from the president (1) Guide on recognition (1) ½ day with no meetings (1) Occupational health and safety committee (1)	
Mentoring (1) Creation of a manager position to enhance employee support (1)	Co-development between managers (1)
	Means of communication (in-house newsletter, bulletin board) (6) Distribution of healthy food (5) Highlighting special occasions (4) Highlighting employees' contribution (4) Holding team meetings (3) Training managers about the EAP (2) Cooking workshops (2) and recipe sharing (2) Activity on stress management (2) Suggestion box (2) Addition of a library on the work premises (2) Activity on health (1) Distribution of pedometers (1) Individual health coaching (1) Raising awareness about reasonable alcohol

	consumption (1) Employee participation in decision making (1) Chair massage (1) Verification of air quality (1) + verification of the workplace (1) Purchase of defibrillators (1) Alternative working arrangements (1)

Note: This table only indicates how frequently respondents mentioned being aware of a given activity. It does not describe the interventions under way in the organizations as there is some redundancy in the activities (e.g., a health/well-being committee may be part of the action taken in relation to the Healthy Enterprise standard).

Finding 1: All the organizational interventions designed to prevent mental health problems in the workplace were aimed at modifying management practices, but the adoption of management practices that foster health was not always part of a structured organizational intervention.

5.2. Results of the one-on-one interviews – Factors facilitating and hindering the organizational interventions designed to prevent mental health problems

The qualitative analysis of the 22 interviews of the managers and key stakeholders identified 55 specific factors that facilitate or hinder the overall preventive intervention (Table 9). As mentioned earlier, the classification of these factors (creation of categories) was based on two theoretical models: the Context – Content – Process – Outcomes evaluation model (Armenakis & Bedeian, 1999; Karanika-Murray & Biron, 2015b) and the planned change model (Collerette et al., 2013). With regard to the qualitative results, the fourth dimension (*Outcomes)* of the evaluation model was not investigated because the goal here was not to determine whether the interventions brought about the anticipated changes (e.g., improved health or reduced absenteeism). The specific factors facilitating or hindering the intervention process were grouped into categories of factors that fit in with a planned change intervention, and lastly, according to the dimensions of the evaluation model.

Table 9 – Factors facilitating and hindering the interventions designed to prevent mental health problems

Integrated model			Specific factors	Facilitating		Hindering		TOTAL
Evaluation model	Planned change mechanism			N	%	%	N	N
Context	Organizational climate	Organizational characteristics	Geographical proximity between workers	1	5	---	---	1
			Geographical distance between workers	---	---	32	7	7
		Human resources' expertise	Membership in a prevention mutual	1	5	---	---	1
			Opportunity to participate in a pilot project	2	9	---	---	2
		Internal culture and dynamics	*Strained work relations between parties involved in the intervention*	---	---	18	4	4
	Change operation issues	Management approach	Integration of the intervention into strategic planning	5	23	---	---	5
			Union initiative	2	9	---	---	2
		Communication about phases in the intervention	Promotion of the intervention	8	36	9	2	10
		Overall vision of anticipated outcomes	Common objectives of the various parties	1	5	---	---	1
			Commitment of management	13	59	9	2	15
		Structure of the intervention	Brand image of certification	3	14	---	---	3
			Complexity of the intervention	---	---	23	5	5
			Adoption of the intervention (or not)	---	---	13	3	3
Process	Stakeholders present	Opinion leader	Commitment of managers	5	23	18	4	9
			Commitment of employees	6	27	18	4	10
			Commitment of the union	3	14	---	---	3
		Intervention champion	Person in charge of the intervention	6	27	---	---	6

	Description of the current situation	Method	*Apprehensiveness about the method used to identify concrete problems*	---	---	9	2	2
			Worker participation during working hours	5	23	---	---	5
			Ownership of the results by the managers	4	18	5	1	5
			Accuracy of the results (or lack of)	---	---	18	4	4
	Change agents	Internal expertise	Human resources	6	27	---	---	6
			Health specialist in the HWBC[1]	1	5	---	---	1
			Intersite committee	5	24	---	---	5
		External expertise	INSPQ[3] (for the diagnosis)	6	27	---	---	6
			Public health resource	4	18	---	---	4
			Joint sector-based association	4	18	---	---	4
			Consultant	3	13	---	---	3
			Training on the Healthy Enterprise process	2	9	---	---	2
			Web-based tools	2	9	---	---	2
			Commission des normes, de l'équité, et de la santé et de la sécurité du travail	1	5	---	---	1
			Prevention mutual	1	5	---	---	1
			RIPOST[4]	1	5	---	---	1
			Tools developed by the CGSST[5]	1	5	---	---	1
			Benchmarking against other organizations that are certified as Healthy Enterprises	3	14	---	---	3
	Coordination mechanism	Follow-up and steering committee	Formation of the Health & Well-Being Committee (HWBC)	8	36	---	---	8
			Adaptation of schedules of HWBC	3	14	---	---	3

[1] Health & Well-Being Committee, HWBC (or other committee with similar objectives)

[3] Institut national de santé publique du Québec

[4] *Recherches sur les interrelations personnelles, organisationnelles et sociales du travail*

[5] Chaire en gestion de la santé organisationnelle et de la sécurité du travail at Université Laval [cgsst.com]

			meetings to members' realities					
			Diversity of the parties and job groups represented on the HWBC	6	27	---	---	6
			Formation of sub-committees	4	18	---	---	4
			Turnover in members of the HWBC	---	---	5	1	1
			Geographical distance between members of the HWBC	---	---	5	1	1
			Diverging viewpoints among members of the HWBC	---	---	18	4	4
			Human and financial resources available	**8**	36	---	---	8
	Financial impacts	Overall intervention	*High costs generated by the intervention*	---	---	9	2	2
		Work environment	*High costs of the installations*	---	---	5	1	1
Content	Actions to be carried out	Nature	Pertinence and value of the activities	2	9	14	3	5
			Activities carried out outside the workplace	---	---	5	1	1
			Limited space at the workplace	---	---	5	1	1
		Sequence	Holding activities during working hours	4	18	5	1	5
			Large number of company activities	---	---	9	2	2
		Assistance with implementation	Training of managers in management practices	2	9	---	---	2
			Support from supervisors	1	5	---	---	1
			Proximity of the person in charge of the intervention to managers	1	5	---	---	1
			Intervention tools (or lack of)	---	---	32	7	7
			Heavy workload	---	---	9	2	2

Legend: The factors in italics are hindering factors only, while the other factors may be both facilitating and hindering.

5.2.1. Contextual factors

Contextual factors concern more specifically the organizational climate, which corresponds to the current context and environment in the organization.

5.2.1.1. Organizational climate

First, several organizational climate characteristics either facilitated or hindered the intervention. *Proximity between workers* (n = 1) on the same work site was regarded as facilitating the organization of and access to the activities involved in the intervention. Conversely, *geographic distance between workers* (n = 7), i.e., their dispersion over several work sites, was seen as hindering the organization of activities, as illustrated in the following excerpt:

> *We know our coworkers, but I don't see them all. What happens in our case […] is that we have employees at 10 locations. That creates another problem of trying to reach everybody.* [B1KIF][6]

Another factor concerns human resources' expertise, i.e., the organization's expertise, and more specifically, *membership in a prevention mutual* (n = 1), which implies having expertise and tools. Another factor – *having had the opportunity to participate in a pilot project* (n = 2) – allows knowledge to be acquired specifically about the Healthy Enterprise process. Only one specific factor – *strained work relations between the parties involved in the intervention* (n = 4) – was seen as a hindering factor in terms of internal culture and dynamics.

> *At the beginning, we were also involved in collective agreement negotiations, so we all arrived with some reservations: "and what do these people want?"* [A5MNG]

5.2.1.2. Change operation issues

The management approach was regarded as one of the facilitating factors, more specifically, the fact that the intervention was the result of a *union initiative*[7] (n = 2), or that it was *integrated into the organization's strategic planning* (n = 5), as illustrated in the following excerpt:

> *This would definitely last beyond the Healthy Enterprise certification project. A while ago I was talking about the philosophy; that's something that's well integrated [with the business strategy], all the projects associated with strategic planning for the next few years. And the Healthy Enterprise [project] fits in very well with that; that's something that's successfully conveyed in the organization* [A5MNG]

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[6] Legend for the alphanumeric codes: Letter = organization; number = participant number; MNG or KIF = participant status: either manager (MNG) or key informant (KIF).

[7] This factor is specific to only one organization, which is non-profit (NPO).

Management's commitment, reflected in its adherence to the intervention, was the specific factor most often reported by the participants (n = 15). While for the vast majority this commitment was a leveraging factor (n = 13), for two participants, the lack of management's adherence hindered the intervention.

> *The commitment of the Board of Directors, of the executive committee that helped enormously with integration, to "selling" these interventions and making them interesting and dynamic. This commitment helps people feel like it's something the employer really wants to invest energy in, and that the employer is not doing it just to obtain a label.* [A5MNG]

The adoption of an overview of the results anticipated by the organization through the establishment of *common objectives for the various parties involved* in the intervention also represented a specific facilitating factor (n = 1).

Communicating information about the specific phases in the intervention, more specifically, *promoting the intervention* within the organization, is a specific factor that was identified by nearly half of the participants in the one-on-one interviews (n = 10). It was seen as a facilitating factor when carried out (n = 8) and a hindering factor when insufficient (n = 2), as illustrated respectively by the following two excerpts:

> *I'd say that it was nonetheless explained. The employees were given the information. When we had the opportunity to meet for various activities, [this had been discussed], people knew what to expect.* [C6KIF]

> *It's not communicated; there are no posters. It was only when we had focus groups that there were posters, something to show that we needed people, but there was no more information than that passed on about the project as such.* [A3KIF]

Lastly, the structure of the intervention, reflected in the *brand image of certification* (n = 3), represented a facilitating factor. Moreover, the *complexity of the intervention* (n = 5) and *lack of ownership* (n = 3) of the intervention were regarded as two specific hindering factors. The complexity of the process is illustrated in the following excerpt:

> *I'd say that it's pretty complex. The objective of the committees at ABC [name of the organization] is [to be] a BNQ-certified Healthy Enterprise. But with certification, there are a lot of requirements to meet, which means lots of paperwork. It's a burden; it's tiresome […] Personally, I think we could have moved in that direction and done some good things, but in much less time, then we could have put more energy into activities and things that'll have an impact on people [rather than] all the energy that I put into paperwork that has no impact on anybody. I'm a bit fed up. It's becoming a burden.* [C8KIF]

Finding 2. Of the elements pertaining to the organizational context, management's commitment to the intervention was the facilitating factor most often reported by the participants. The integration of the intervention into strategic planning and good internal promotion of the intervention were also seen as facilitating factors. By contrast, geographical distance between workers, the complexity of the intervention, and strained work relations were reported as obstacles.

5.2.2. Factors in the intervention process

The intervention process was the category encompassing the most facilitating and hindering factors: there are five phases in the planned change process, divided into eight sub-dimensions and 32 specific factors.

5.2.2.1. The actors involved

The first factor concerned the presence and commitment of the opinion leaders. While the *union's commitment* was identified only as a facilitating factor (n = 3), *managers' commitment* was reported as a facilitating factor for five participants and *lack of managers' commitment* as a hindering factor by four participants (for a total of nine participants). *Employees' commitment* was reported as both a facilitating factor (n = 6) and a hindering factor (n = 4), for a total of 10 participants who identified this specific factor.

Lastly, identifying a champion of the intervention, which translates concretely into *a human resource who is in charge of the intervention*, was reported as a facilitating factor by six participants.

> *We feel pressure from her [the person in charge of the intervention], but also her support. If we have questions, we call her and usually she points us in the right direction. Like lectures [for example], she found two for us, or she gave us the information we needed to find out about them.* [B5MNG]

5.2.2.2. Description of the current situation

Regarding the description of the current situation, two participants mentioned their *apprehensiveness about the method used to identify concrete problems* (n = 2), with respect to the fact of discussing these factors in a group. Moreover, regarding the completion of the questionnaire, the fact that *the workers complete the questionnaire during working hours* (n = 5) facilitated the intervention. Four participants mentioned that the lack of detail in the presentation of the results of the diagnosis was a factor that hindered the intervention. *Ownership of the results* [of the questionnaire] *by the managers* was another factor identified by five participants, with four of them reporting that sufficient ownership facilitated the intervention.

> *I think that when they present the results, it's not just the people who work on the committee who should be there, but all managers. We've done it*

> *twice, and I always try to have managers because if they're not there, they miss part of the interpretation of the results.* [C1KIF]

5.2.2.3. Change agents

Having recourse and access to **internal** or **external expertise** were identified as factors facilitating the intervention. Specifically, several internal actors play an important role owing to their expertise. Essentially, it is the *human resources* (n = 6) and *intersite committees* (for organizations with several establishments) (n = 5) that offer support for the intervention. The presence of *experts on the health and well-being committee* (n = 1) is another, albeit less important, source of expertise. The following excerpt illustrates the expertise contributed by one of the experts on the committee:

> *We have an expert in the [Healthy Lifestyles] 0-5-30 program sitting on our committee. It's really great. She's a professional in the sector, so she came to us with ideas, things we were able to…that helped us implement our plan and not be all over the place* [C1KIF]

The participants also identified the fact of having recourse to external experts to support them in the intervention. The resources cited were very diversified, the most common being the expertise and support received from the Institut national de santé publique du Québec (INSPQ) (n = 6), primarily during the diagnosis-by-questionnaire phase. *Training on the Healthy Enterprise process* (n = 2) was another source of expertise that facilitated the intervention. *Joint sector-based associations* (n = 4), *public health resources* (n = 4), and *external consultants* (n = 3) also offered expertise and support for the intervention. Secondarily, consulting *Web-based tools* (n = 2), *research teams* (e.g., the CGSST and RIPOST[8]) (n = 2), the Commission des normes, de l'équité, de la santé et de la sécurité du travail (n = 1), or a *prevention mutual* (n = 1) also represented resources for the organizations. Some participants (n = 3) mentioned the usefulness of benchmarking against other organizations engaged in a certification process. The appreciation felt for the INSPQ's support and expertise is evidenced below:

> *Without a comprehensive survey like that of the INSPQ, we wouldn't have been able to put together such a complete one internally, so we welcomed theirs. It was sure that they'd provide us with one [a questionnaire], that they'd do the diagnosis, and that they'd give us the results, and in addition, that they'd come to explain the results to us in detail as often as we wanted, and that they'd give us really detailed copies of all that, so it really was number one!* [C7KIF]

[8] The research chair in occupational health and safety management and the Équipe de recherche sur les interrelations personnelles, organisationnelles et sociales du travail (research team on personal, organizational and social interrelations at work).

5.2.2.4. Coordination mechanisms

The intervention was coordinated mainly by the follow-up and steering committee, which was an important source of facilitating or hindering factors. First, the *formation of the health and well-being committee* (n = 8) emerged as a specific facilitating factor.

> *We have a health and well-being committee at work that meets and makes decisions, and [that] comes up with possible solutions in its role as manager, or that helps us handle little problems*. [A8MNG]

Available human and financial resources (n = 8) was also seen by the committee as a facilitating factor. The *diversity of the parties and job groups* (n = 6) represented on the committee, the *formation of sub-committees* to which certain tasks could be delegated (n = 4), and the *adaptation of schedules to members' realities* (n = 3) were other factors facilitating the process of following up on and steering the intervention. The importance of diversity among the committee members is illustrated in the following excerpt:

> *I made sure to have a variety of people on the committee, and different from myself. More rigorous, more logical, better planners... And that's good because [these people] have other things to say*. [C1MNG]

Conversely, three specific factors emerged as obstacles to the smooth functioning of the committee: *diverging viewpoints among the committee members* (n =4), *turnover in members* (n = 1), and *geographical distance between members* (n = 1). The next excerpt illustrates the diverging viewpoints between members that can hinder the committee's process.

> *Sometimes we arrive, we feel motivated… and then a sense of negativity sets in… discussions take place between the union and employer sides, and that slows down the troops.* [22002G]

5.2.2.5. Financial impacts of the intervention

Only a few participants cited the financial aspects of the intervention as hindering factors, specifically, the *high costs generated by the overall intervention* (n = 2) and the specific impacts on the interventions in the work environment dimension, which refer to the *high costs of the installations* (n = 1). The following excerpt illustrates the concern about the high costs of the intervention:

> *We're wondering if we're going to continue to apply for accreditation or not. We'll see. I don't know. You pay for the accreditation, then for the diagnosis, and the maintenance audit... you pay and you pay... […] and your costs keep going up because it's one accreditation certificate per* [establishment]. *A lot of money goes into this!* [B2MNG]

Finding 3. Most of the factors hindering or facilitating the intervention designed to prevent mental health problems concerned the intervention process. Cited as extremely important was the need for firm support for the intervention by having opinion leaders (employees and managers), human and financial resources, internal and external expertise, a person in charge of the intervention, and a steering committee that includes members from different job groups.

5.2.3. Content of the intervention

Regarding the content of the intervention, it was a question of the factors facilitating and hindering implementation of the actions to be taken. There were ten specific factors pertaining to three general factors: the nature of the activities, the sequence of the activities, and assistance with implementation.

5.2.3.1. Actions to be carried out

Regarding the nature of the activities, five participants mentioned the *pertinence and value of the proposed activities*, with three of the five identifying this factor as hindering the intervention. While for some participants, the activities proposed responded to needs expressed by employees (n = 2), for others, the activities did not appear appropriate for their employees, as illustrated in the following excerpt:

> *There's a recognition program for good efforts. I meet with my coordinators, you know, there's a time of year when we do that… I ask if they have people* [names of people] *they'd like to submit. [Like] we did such and such a project… And the answer I get is, "No. Nobody's interested in that stuff, it'll just be a waste of time." So maybe the program is poorly adapted. I've never gone. Or maybe they're expressing something that doesn't represent what people feel, I don't know.* [B4MNG]

To a lesser degree, activity accessibility, which is reflected in the fact that the *activities are offered outside the workplace* (n = 1) or that they are held in a *small space on the work premises* (n = 1), was considered a hindering factor.

The second factor concerns the sequence of the activities. *Holding activities during working hours* was a point raised by five participants (n = 4 as a facilitating factor; n = 1 as a hindering factor).

> PARTICIPANT*: If we do an activity at lunch time, employees are released at 11:30 a.m.*
> INTERVIEWER: *So you mean this makes it easier to implement the intervention?*
> PARTICIPANT: *Yeah, for sure. Otherwise we'd probably never have any participants. Whereas this way, we have [good] participation.* [C4MNG]

If the *number of activities undertaken* (n = 2) is too high, that too is seen as possibly hindering the intervention.

> *In fact, we reduced the number of files,* […] *Before, we had 27 or 28 activities. People said that was too much; 'what with our work, we won't be able to manage.' So we reduced it to nine or ten* [activities]. [B5MNG]

The last factor concerns the support offered for implementing the activities. *Training for managers on management practices* (n = 2), *support from supervisors* (n = 1), and the *proximity of the resource in charge of the intervention to managers* (n = 1) represented facilitating factors. Moreover, it appears that *heavy workload* (n = 2) and to a greater degree, managers' *lack of tools for taking action* (n = 7) in terms of management practices, are specific factors seen as hindering the intervention. The lack of tools for taking action is illustrated in the following two excerpts:

> *I think that things stall because managers don't know where to begin, and the committees don't know exactly what to work on. They lack ideas about what exactly to work on, how to go about it. I think it's really a question of ignorance. Even if we talk a lot about recognition, a lot, and for a long time in our company, but that's just about the only management practice they've talked about up to now.* [B2MNG]

> *There's going to be training, starting in the fall, so that they can do a better job of promoting [the intervention] and also offer better support. That's what came out in the focus groups: that there was a lack of support. Often it's not people trained in that. Often it's just employees who are stuck with doing it* [they're neither experts nor managers]. [A3KIF]

Finding 4. The implementation of the planned actions ran into a number of factors hindering the intervention, mainly related to the pertinence of the activities and the lack of tools available to managers for taking preventive action.

5.3. Highlights of the one-on-one interviews

First, of the elements pertaining to the **organizational context**, the three main facilitating factors were management's commitment, promotion of the intervention, and its integration into strategic planning. The three main hindering factors identified were the geographical distances between workers, the complexity of the intervention, and strained relations among the parties involved in the intervention.

Next, regarding the factors related to the **intervention process**, we note the importance of internal resources (human resources and intersite committees) and external resources (various specialized resources) to assist the organization with the preventive intervention. This expertise is especially necessary as the participants underscored the complexity, and sometimes the lack of ownership of the intervention. The commitment of the actors involved, i.e., managers, employees, and unions, emerged as an important factor that facilitates the intervention, as does the need to assign a specific human resource to be in

charge of the intervention. Also stressed was the importance of supporting the process by having opinion leaders, a steering committee including members from different job groups, and a person in charge of the intervention.

Lastly, regarding the **intervention content,** the pertinence and value of the activities carried out as well as the possibility of holding the activities during working hours were factors seen as either facilitating or hindering the intervention. The main obstacle encountered was the lack of tools that would enable managers to take action.

Some specific factors stand out more than others. Table 10 lists the specific factors most often reported by the participants. The commitment of senior management, managers, and employees were three of the specific factors most often cited by participants. The promotion of the process and access to sufficient financial and human resources for the steering committee were also identified as important factors. Lastly, the lack of tools that would enable managers to take action and the geographical distance between workers were frequently reported hindering factors. Regarding the lack of tools for managers, the following section highlights the needs identified by managers in connection with the adoption of management practices that foster mental health.

Table 10 – Specific factors most often reported by participants

Specific factors	Facilitating		Hindering		Total
	N	%	%	N	N
Management's commitment	13	59	9	2	**15**
Promotion of the intervention	8	36	9	2	**10**
Employees' commitment	6	27	18	4	**10**
Managers' commitment	5	23	18	4	**9**
Formation of a steering committee	8	36	---	---	**8**
Financial resources available	8	36	---	---	**8**
Geographical distance between workers	---	---	32	7	**7**
Lack of tools to enable managers to take action	---	---	32	7	**7**

5.4. Managers' needs if they are to be able to take preventive action

The managers who completed one or the other of the questionnaire-based measures were interviewed about their needs in terms of what would enable them to adopt management practices that foster people's health. Table 11 summarizes the needs they identified and their overall frequency (at both questionnaire-based measurement times).

Table 11 – What might help you to adopt management practices that foster employees' health? (needs identified by managers who completed at least one of the two questionnaires, N = 192)

	TOTAL
NEEDS PERTAINING TO SKILL DEVELOPMENT	195
Training for managers	112
Training *(topic not specified)*	98
Management practices (personnel management)	3
Stress management in the workplace	1
Balancing personal and professional life	1
Mental health in the workplace	8
New techniques (technologies) on the market	1
Training for senior management	2
Training *(topic not specified)*	2
Training for employees	3
Training *(topic not specified)*	2
Mental health in the workplace	1
Coaching	77
Coaching (topic not specified)	69
Management practices	2
Treatment of problem cases (for specific situations)	4
Topics related to human resources management	2
NEEDS PERTAINING TO MANAGERS' PSYCHOSOCIAL ENVIRONMENT	66
Social support	60
Manager assistance program	41
Forum for discussion/exchange among coworkers (internal co-development)	12
Exchanges with managers from other organizations	2
Support from Human Resources Department	2
Support from senior management	3
Workload	4
Reduced workload	3
Better task distribution	1
Decision latitude	2
Flexibility in work (opportunity to decide when and how)	1
Development of projects concerning problems present in the organization *(topic not specified)*	1
NEEDS PERTAINING TO HELP WITH MENTAL HEALTH	10

PROBLEMS	
Psychological support (psychologist)	9
Programme « Sentinelle » (suicide prevention program)	1
NEEDS PERTAINING TO RESOURCES	37
Human	30
External consultant	16
Additional personnel	5
Access to competent, specialized resources	9
Time	7
More time for meeting with subordinates	3
More time for personnel management	2
More time to do one's work (fewer meetings)	2
NEEDS PERTAINING TO TOOLS	11
Tools *(types of tools not specified)*	4
Procedures (explaining how and why to do things, etc.)	1
EAP	1
Intervention plan	4
Internal communication channels	1
NEEDS PERTAINING TO SENIOR MANAGEMENT	21
More respect for employees	6
Commitment	6
Better understanding of the work by senior officers	1
Greater openness on the part of directors	2
Consistency between what is said and what is done	6
ORGANIZATIONAL-LEVEL NEEDS	6
Integrate the action plan into the organizational strategy	3
Target workplace mental health as an organizational priority	1
Ensure stability within work teams	1
NEEDS PERTAINING TO INFORMATION	3
Having information about the EAP (the scope, when/how to refer someone, etc.)	1
Better knowledge of resources available	1
Better knowledge of the benefits of the intervention	1
NEEDS PERTAINING TO THE WORKPLACE	2
Physical improvements in the work environment *(improving what or how is not specified)*	1
Having all members of a given work team at the same location	1

Skill development needs were the most frequently cited factor. Managers stressed training for themselves and coaching as the primary needs in their workplaces. However, the majority did not specify the topics to be covered in these training or coaching sessions.

Regarding their psychosocial environment, managers cited primarily their needs for social support and workload adjustments. As for social support, respondents mentioned needing a manager assistance program, a forum for discussions among themselves, and opportunities for co-development. The following section looks at this particular aspect.

Several of the managers also mentioned their need for human resources in order to act preventively, especially their need for access to external consultants. Some also expressed the need for access to qualified specialized resources. By expressing these two needs, the managers underscored their need for human resources capable of supporting and assisting them in the performance of their duties to enable them to take more preventive action.

Lastly, other managers cited their needs for respect, commitment, and consistency on the part of senior management. These needs highlight the important role played by senior management's actions and attitude in managers' adoption of management practices that foster health.

Finding 5. The most frequently cited needs were for training and coaching, social support (for example, through a manager assistance program and co-development groups), and human resources (particularly access to an external consultant).

5.5. Factors influencing the adoption of management practices that foster mental health

5.5.1. Adoption of new practices, problems encountered and perceived effects on employees (hypothesis 1)

Of the managers surveyed by questionnaire at Time 2, 35% (N = 58/166) indicated having participated in the information session on PC management offered by the researchers. At that session, they had to identify a practice they would implement with their employees over the next three months.

The questionnaire administered at Time 2 included a question on the adoption of new practices: [free translation] "Further to the information session on mental health and psychosocial constraints, did you try to implement one or more of the PC management practices in the past three months?" **It should be noted that this question differs from what we call "adoption of practices that foster health," which is an 18-item scale measuring usual management practices.**

Of the participants, 63.2% reported having tried to implement one or more new management practices following the information session. Hypothesis 1, to the effect that managers who attended the training session would subsequently try out new management practices, was confirmed. Moreover, of the 58 respondents who attended the information session on PC management tools, 64% indicated that they had familiarized themselves

with the content of the binder, which included 25 tools handed out by the researchers at the training meeting. Table 12 summarizes these practices and how frequently they were adopted. These newly adopted practices were categorized according to the three types of management practices established following a factorial analysis. Those most frequently adopted, i.e., by 64% of the managers, concerned communication, training, or recognition.

Finding 6. Following the information session on PC management tools offered by the researchers, 63% of the managers adopted a new practice. The practices most frequently adopted pertained to communication, training, or recognition (64%).

Table 12 – New management practices adopted by participants who attended the training session on PC management

Which psychosocial constraint management practice(s) did you implement in your team during the past three months? (Number of respondents)	Number and percentage of the total (%)
Team management practices	9 (32.1%)
Created a team atmosphere and sense of belonging (1)	
Revised participation processes/roles/mechanisms (e.g., standardized file processing) (3)	
Mobilized personnel (2)	
Held an activity on support (2)	
Held a group meeting (debriefing after a traumatic event) (1)	
Management practices that foster communication/training/recognition	18 (64.2%)
Held an activity on recognition (9)	
Held one-on-one meetings (found out about expectations; encouraged empowerment; talked about team work, workload, employment status, the preventive process under way) (4)	
Offered access to refresher training (1)	
Took the time to socialize and be a good listener (said hello, took the time to listen to and smile at a minimum of one person a day) (4)	
Management practices concerning the technical organization of the work	9 (32.1%)
Offered flexibility in the work schedule (1)	
Modified the work station (1)	
Revised the workload (6) (including one failed attempt)	
Held an activity on the organization of work (1)	
Other	2 (7.4%)
Focussed on solutions rather than problems (1)	
Fostered tolerance and respect (1)	

Note: The total may be greater than 100% because the respondents were allowed to name several interventions.

Of the respondents to the questionnaire at T2 who indicated they had implemented a practice during the previous three months (N = 36), 60.7% were partly inspired by the organizational diagnosis carried out in their organization, 10.7% were totally inspired by it, while 28.6 % were not at all inspired.

At least one of the new practices adopted constituted a minor change for 86.2% of the managers.

Slightly over one-third (34.5%) of the managers who implemented a new management practice confirmed having encountered problems during implementation (Table 13), but the vast majority (85.7%) observed positive impacts on their personnel.

Table 13 – Problems encountered during implementation of the management practice and perceived effects on employees

Problems were encountered when implementing this practice (number of respondents)	**Agree/Totally agree (34.5%)** Difficulty accepting the change (3) The team's impatience (1) The team did not agree with the proposed changes (1) Difficulty implementing the practice on a daily basis (2) Variable participation (1) Perception that it was an initiative whose success depended solely on the management team (1) Lack of time (1) Subject that was difficult to talk about (1) People did not want to talk about it (1)
Perceived effects on employees	**Positive (85.7%)** Appreciated by most of the employees (5) Fewer conflicts/Better atmosphere (7) Employees less stressed/frustrated (2) Some employees took the time to say thank you for the positive comments we made to them (1) More commitment, greater efforts to achieve management's objectives (3) More delegation of tasks on my part (1) Openness on the part of employees, greater trust (1) More optimistic and more productive (1) Increased awareness on both sides (2) **Negative (10.7%)** Not taking ownership/Blaming others for problems (1) Increased negativity (1) Fatigue, lack of time (1) Implementation not completed; delays in schedules: people got impatient (1) **No effect 3.6%**

Finding 7. Of the participants, 34.5% encountered problems implementing this new practice, but 85.7% noted positive impacts on their teams.

5.6. Changes observed during the study (three months) in managers who completed both questionnaire measures

Given that a preventive intervention was under way in each of the organizations, we wanted to verify whether any changes could be observed in the participants. These analyses were not the subject of specific hypotheses, but served instead to contextualize the subsequent analyses that were the subject of hypotheses. Table 14 describes the changes between the two measures reported by all the managers who completed both questionnaires. They reported, on average, more training sessions on people management in their organizations (F (1, 108) = 4.50, p = .04). The mean score for psychological distress declined during the study (F (1, 110) = 5.53, p = .02). They also reported greater readiness for the changes brought about by the preventive intervention under way and had fewer and fewer expectations of it (F (1, 109) = 8,37, p = .004).

Regarding management practices, **the following analyses are based on the "management practice that fosters health" variable, i.e., a scale measuring 18 practices recognized in earlier studies as fostering health** (Gilbert-Ouimet et al., 2009; Gilbert-Ouimet et al., 2011). **These practices are therefore usually used by managers and do not constitute new practices specifically related to the information session on PC management tools (Table 6).**

As shown in Table 14, hypothesis 2 was rejected: there was no significant change in the adoption of management practices that foster health following the information session on PC management tools.

Table 14 – Longitudinal changes observed in managers between the two questionnaire-based measures (N = 192)

	Mean T1 (SD)	Mean T2 (SD)	F
Organizational context			
Psychosocial safety climate	2.58 (0.04)	2.59 (0.04)	0.10
Learning organization	3.87 (0.07)	3.82 (0.06)	0.42
Access to training on people management	2.32 (0.05)	2.42 (0.05)	4.50*
Psychosocial work environment			
Psychological demands	2.87 (0.04)	2.82 (0.04)	1.94
Decision latitude	3.13 (0.03)	3.09 (0.03)	2.48
Social support	3.09 (0.03)	3.09 (0.03)	0.00
Recognition	2.80 (0.03)	2.78 (0.03)	0.60
Relationships with subordinates	3.15 (0.04)	3.09 (0.04)	2.59
Perceptions and mental health			
Readiness for the changes related to the	2.92 (0.04)	2.79 (0.04)	8.37**

intervention			
Psychological distress	0.96 (0.05)	0.87 (0.05)	5.53*
Adoption of management practices that foster health (total)	2.86 (0.03)	2.82 (0.03)	1.49
Team management practices	2.77 (0.04)	2.77 (0.04)	0.01
Communication/Training/Recognition	3.10 (0.04)	3.04 (0.04)	2.15
Technical organization of work	2.72 (0.05)	2.69 (0.05)	0.57

Note: * $p < .05$, ** $p < .01$

Finding 8. 1) During the study period (three months), the managers reported more access to people management training in their organization and a decrease in psychological distress.

2) However, they were less ready for the changes brought about by the organization's preventive intervention and had fewer expectations of the intervention.

3) There was no change in their usual management practices aimed at fostering health.

5.7. What impacts did the information session have (hypothesis 3)?

As mentioned earlier, the information session offered by the researchers was designed to present the managers with a compendium of tools to help them deal with their employees' psychosocial constraints and provide them with intervention opportunities. Given that the preventive interventions varied from one organization to the other and that reducing PCs was not a priority for all of them, the information session sought to spark the managers' interest in implementing new practices and make them aware of the impact of their current management practices on their employees' PCs. At these sessions, 25 PC management tools were presented to the managers, who were asked to try, over the next three months, to read the material in the binder and adopt at least one new PC management practice.

First, we verified whether at the outset **the characteristics, at Time 1, of the managers who had participated in the information session differed from those of the managers who had not participated.** Compared to the latter, the managers who had attended the information session on PC management tools were more favourable right from the outset to the changes brought about by the organization's preventive intervention (F (1, 115) = 6.59, p = .01). At Time 1, the managers who had attended the information session reported a lighter workload (F (1, 116) = 4.96, p = .03) than those who had not participated. No other difference was noted between the characteristics of participants at Time 1 versus those of non-participants.

To verify whether the **longitudinal changes observed varied according to participation or not in the information session, we examined and compared the interaction effects between the groups** (participants in the information session on PC management tools versus *vs* non-participants) and Time. There was no significant interaction between the fact of having participated in the information session and Time. Participants in the training

session did not adopt any more management practices that foster mental health at Time 2 than non-participants.

Finding 9. Participants in the information session on PC management tools did not adopt any more practices to foster their employees' mental health than non-participants. However, those who participated in the session were readier for the changes brought about by the preventive intervention and reported a lighter workload than non-participants.

5.8. What characteristics of managers and their work environment at Time 1 predicted adoption of practices at Time 2?

To verify which factors predicted the adoption, at Time 2, of practices that foster health, multiple regression analyses were performed for each group of independent variables: (1) contextual factors, (2) psychosocial work environment, and (3) factors pertaining to the person, his or her characteristics, and his or her mental health.

5.8.1. Contextual characteristics (hypothesis 4)

Table 15 shows that the organizational context at Time 1 was significantly associated with the adoption, at Time 2, of management practices that foster health, and that the psychosocial safety climate played a key role in this prediction ($\beta = 0.29$, $p = 0.00$). This result partly confirms hypothesis 4, which stated that all contextual variables would be significantly associated with the adoption of management practices that foster health.

5.8.2. Characteristics of the managers' psychosocial work environment (hypothesis 5)

The managers' psychosocial work environment at Time 1 had a very significant influence on the adoption, at Time 2, of management practices that foster health. Managers having the greatest decision latitude at Time 1 adopted more of these practices at Time 2, and this association was very strong ($\beta = 0.41$, $p = 0.00$), thus partly confirming hypothesis 5.

Moreover, managers who reported having harmonious interpersonal relations with their subordinates and very open-minded subordinates at Time 1 adopted more management practices that foster employee health ($\beta = 0.22$, $p = 0.01$) at Time 2.

5.8.3. Personal characteristics (hypothesis 6)

Regarding the managers' own mental health, those who adopted more practices that foster health at Time 2 had reported less psychological distress at Time 1 ($\beta = -0.23$, $p = 0.01$).

Regarding sociodemographic characteristics, gender ($\beta = 0.11$, $p = 0.03$) and age ($\beta = 0.11$, $p = 0.05$) significantly predicted the adoption of management practices that foster health at Time 2 (male managers and older managers were more inclined to adopt such practices).

Table 15 – Prediction of adoption, at Time 2, of management practices that foster health based on personal characteristics and on characteristics of the psychosocial work environment and the organizational context at Time 1

	R^2	Standardized estimates (Beta)	F	Degrees of freedom
Organizational context				
Psychosocial safety climate		0.29**		
Learning organization		0.11		
Training on people management		0.00		
	0.13		5.42**	3.109
Psychosocial work environment				
Psychological demands		0.06		
Decision latitude		0.41***		
Social support		0.04		
Effort-reward balance		0.11		
Relationships with subordinates		0.22*		
	0.34		10.91***	5.106
Personal characteristics				
a. Related to perceptions and mental health				
Readiness for changes brought about by the preventive intervention		-0.02		
Psychological distress		-0.23**		
	0.05*		3.14*	2.110
b. Sociodemographic				
Gender		0.21*		
Age		0.21*		
Number of employees supervised		0.07		
Tenure in the organization		0.17		
Education		-0.00		
Position (first-line *vs* middle or senior management)		-0.08		
	0.19		4.04**	6.103

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Finding 10. The managers who adopted management practices that foster health at Time 2:

1) saw their organization as concerned about mental health in the workplace, at Time 1;

2) reported having greater decision latitude at Time 1;

3) reported having less psychological stress at Time 1;

3) had better relations with their subordinates at Time 1; and

4) male managers and older managers were more inclined to adopt practices that foster employees' health.

5.9. What characteristics of the managers and their work environment at Time 1 predicted their degree of decision latitude at Time 2?

Given that decision latitude appeared to be the most important predictor of the adoption of management practices that foster employees' mental health, additional regression analyses were performed to determine which contextual, psychological, and personal factors at Time 1 predicted decision latitude at Time 2 (Table 16).

5.9.1. Contextual characteristics

The organizational context at Time 1 was significantly associated with the managers' decision latitude at Time 2. The psychological safety climate, i.e., the fact of perceiving the organization as being concerned about mental health and that it was a clear priority in which everyone participated, constituted the key determinant of the managers' decision latitude ($\beta = 0.34$, $p = 0.001$).

5.9.2. Characteristics of the managers' psychosocial work environment

The managers' psychosocial work environment at Time 1 was very closely associated with their decision latitude at Time 2. More specifically, the managers who reported having greater decision latitude at Time 2 were those who, at Time 1, faced heavier psychological demands ($\beta = 0.17$, $p = 0.10$), received more support from their coworkers and supervisors ($\beta = 0.30$, $p = 0.001$), and had more harmonious relations with their subordinates ($\beta = 0.29$, $p = 0.01$).

5.9.3. Personal characteristics

Regarding sociodemographic characteristics, the older managers ($\beta = 0.34$, $p = 0.001$) with longer tenure in the organization ($\beta = 0.23$, $p = 0.05$) had greater decision latitude.

Table 16 – Prediction of decision latitude at Time 2 based on personal characteristics and on characteristics of the psychosocial work environment and the organizational context at Time 1

	R^2	Standardized estimates (Beta)	F	Degrees of freedom
Organizational context			8.58***	3.112
Psychosocial safety climate		0.34***		
Learning organization		0.12		
Training on people management		-0.08		
	0.19			
Psychosocial work environment			8.75***	4.109
Psychological demands		0.17 [a]		
Social support		0.30***		
Effort-reward balance		0.08		
Relationships with subordinates		0.29**		
	0.24			
Personal characteristics				
a. Related to perceptions and mental health			1.05	2.113
Readiness for changes brought about by the preventive intervention		-0,00		
Psychological distress		-0.13		
	0.02			
b. Sociodemographic			5.58***	6.106
Gender		-0.04		
Age		0.34***		
Number of employees supervised		-0.06		
Tenure in the organization		0.23*		
Education		-0.03		
Position (first-line vs. middle or senior management)		0.04		
	0.24			

Note: [a] $p < 0.10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Finding 11. The managers reporting greater decision latitude at Time 2 were those who saw their organization as more concerned about mental health at Time 1. These managers also reported heavier psychological demands, more support from their coworkers and supervisors, better relations with their subordinates, and less psychological distress at Time 1. In addition, older managers with longer tenure in the organization reported having greater decision latitude.

6. DISCUSSION

6.1. Principal findings

This longitudinal study was carried out in four organizations, including three in the public sector and one non-profit organization. They were all engaged in an intervention designed to prevent mental health problems in the workplace, and had carried out a process of diagnosing psychosocial constraints. The study aimed to document the interventions currently under way and to provide managers with psychosocial constraint management tools in order to highlight intervention opportunities. It also sought to evaluate the conditions that facilitate and hinder adoption of organizational interventions and management practices that foster mental health. The study yielded 11 main findings. Each finding will now be discussed in light of the literature on the evaluation of organizational interventions, psychosocial constraints, and planned change.

Finding 1: All the organizational interventions designed to prevent mental health problems sought to modify management practices, but the adoption of management practices that foster health was not always part of a structured organizational intervention.

The first objective of this study was to document the interventions under way in the organizations. Of all the organizations approached, those retained were engaged in a preventive intervention that included a diagnosis of the psychosocial constraints. In three of the four organizations, a Healthy Enterprise certification process was either in the start-up phase or already completed. The Healthy Enterprise certification process constitutes a key mechanism for preventing mental health problems in the workplace because it helps structure the preventive intervention and the various phases in its progression. It also ensures the presence of key factors for the success of the intervention, such as management commitment, stakeholder participation, and communication about the activities carried out. These factors emerged as crucial in our study and are also found in all the theoretical models on organizational interventions aimed at preventing stress or promoting mental health (Cox et al., 2010; Giga, Faragher, & Cooper, 2003 ; Jordan et al., 2003; Nielsen & Abildgaard, 2013; Nielsen & Randall, 2012b). Since basic certification in the Healthy Enterprise process requires the implementation of activities in at least two out of four areas of activity[9], not all enterprises are active in all four areas. The "management practices" area remains the most difficult for managers and steering committees. Indeed, the following comment made by participant B2MNG clearly illustrates the challenge that organizations face in this area: *"I think things get bogged down because managers don't know where to begin, and the committees don't know exactly what to work on; they lack ideas about what exactly to work on and how to go about it."* This study further reveals that activities related to recognition, communication, and training are those most

[9] The four areas of activity involved in the Healthy Enterprise certification process are employee lifestyle, the workplace, work-life balance, and management practices.

frequently reported, possibly because they are more concrete and easier to implement than activities related to work organization, working conditions, or team management.

It is worth noting that the managers who completed one or the other of the questionnaires and/or interviews and who had to describe the interventions under way in their organization cited primarily (1) activities relating to the Healthy Enterprise standard; (2) the Employee Assistance Program (which involves tertiary prevention as it addresses individuals already experiencing problems, and not primary prevention, which seeks to eliminate psychosocial demands at the source); (3) the steering committee; and (4) recognition activities. In other words, they reported what is visible and what is structured. However, PC management practices are often "invisible." They are in fact practices adopted often unconsciously on a daily basis. For example, managers who take the time to greet their employees, hold team meetings, or meet one-on-one with their employees are not necessarily thinking about the effects of these management practices on their staff's mental health. Yet this type of practice has a determining effect on health, as has been shown in recent studies using the same scale to measure management practices as we used in this study (Gilbert-Ouimet et al., 2011).

Not all PC management practices are thus recognized as being part of a structured intervention designed to prevent mental health problems.

Finding 2. Of the aspects pertaining to organizational context, management commitment to the intervention was the facilitating factor most often reported by the participants. Integration of the intervention into strategic planning and good internal promotion of the intervention were also cited as facilitating factors. On the other hand, geographical distance between workers, the complexity of the intervention, and strained work relations were cited as hindering factors.

Finding 3. Most of the factors facilitating or hindering the intervention designed to prevent mental health problems concerned the intervention process. Stressed above all was the importance of solid support for the intervention by the presence of opinion leaders (employees and managers), human and financial resources, internal and external expertise, a person in charge of the intervention, and a steering committee whose members come from different job groups.

Finding 4. The implementation of the planned actions ran into several hindering factors, mainly concerning the pertinence of the activities and the managers' lack of tools for taking preventive action.

Findings 2, 3, and 4 emerged from the one-on-one interviews with managers and key informants, the purpose of which was to establish the factors facilitating and hindering the overall intervention. The general dimensions of the context, process, and content were classified on the basis of a more general model of change, i.e., the planned change model. The persons interviewed stressed the importance of management commitment, of

integrating the intervention into strategic planning, and of good promotion of the intervention. They also mentioned that the geographical distance between workers, the complexity of the intervention, and strained work relations among the stakeholders constituted an obstacle to prevention. In terms of the process, the importance of being able to benefit from internal and external expertise and the participation of all stakeholders in the intervention were cited. The participants also reported that the activities implemented must be seen as pertinent. Lastly, managers appear to lack tools for acting preventively.

These factors are raised and discussed by Brun et al. (2009) as being among the strategic elements to be considered during organizational interventions designed to prevent mental health problems. More recently, the model proposed by Nielsen and Abildgaard (2013) includes these same factors relating to process and context, but their model excludes the content of the interventions. Jauvin et al. (2014) analyzed three participatory interventions implemented during the past 10 years and identified the factors that facilitated and hindered the interventions. Their three studies were conducted in a hospital (N = 674 employees), a public organization operating in the insurance sector (N = 1300 employees), and a correctional centre (N =445). The three projects used a quasi-experimental design with mixed methods (qualitative and quantitative data). Their studies revealed factors similar to those identified in this study. In terms of context, they stressed the importance of the initial request for intervention coming from the organization, signalling the recognition of a need for change. The commitment of management, unions, and managers was also a determining factor. Regarding process, Jauvin et al. (2014) reported that employee participation in the entire process, the presence of external (neutral) resources, the support of managers during the entire process, and the implementation of communication and information processes were found to be factors that impact the success of the intervention. While our results are similar to those obtained by Jauvin et al. (2014), the lack of tools for acting on management practices is a factor specific to our study and was not identified in the earlier studies.

Finding 5. The most frequently cited needs were training and coaching, social support (for example, through a manager assistance program and co-development groups) and their need for human resources (particularly access to an external consultant).

Finding 6. Following the information session on PC management tools offered by researchers, 63% of the managers adopted a new practice. The new management practices adopted pertained mostly to communication, training, and recognition (64%).

Finding 7. A total of 34.5% of the managers encountered problems in implementing this new practice, but 85.7% observed positive impacts on their team.

The questionnaire respondents identified needs in terms of tools for preventing mental health problems among their employees. The managers reported more particularly their need for training, coaching, social support, and human resources to help them adopt PC

management practices. These results provide a clearer understanding of what is meant by managers' lack of tools for taking preventive action, as demonstrated in the interviews. It is interesting to note that after the information session on PC management tools offered by the researchers, most of the managers said that they had adopted a new management practice, particularly concerning recognition. This result corresponds to the analysis of intervention records made by Gilbert-Ouimet et al. (Gilbert-Ouimet et al., 2009; Gilbert-Ouimet et al., 2011), whose extensive study showed that of all the changes implemented in a large Québec organization with 1,659 white collar workers, the most frequently reported concerned recognition and social support. They found that changes involving workload were seen as more complex and costly, especially in a work intensification context.

Finding 8. 1) During the study period (three months), the managers reported greater access to training on people management in their organization and a decrease in psychological stress.
2) However, they were less ready for the changes brought about by the organization's preventive intervention and had fewer expectations of the intervention.
3) There was no change in their usual management practices aimed at fostering health.

Finding 9. The participants in the information session on PC management tools did not adopt any more management practices to foster their employees' mental health than non-participants. However, they were readier for the changes brought about by the preventive intervention and reported a lighter workload than non-participants.

Contrary to expectation, the training session on the 25 tools on PC management practices was not associated with increased adoption of management practices that foster health. The managers adopted new practices (finding 6) and observed positive impacts, but their usual management practices did not change during the study period (three months). Several hypotheses could explain this result. First, the study might have been too short to allow any change to be detected. Second, as the participants reported a lack of tools for taking action, our training session was probably not detailed or long enough to bring about real changes in practices. Third, the 74 managers at each information session were unanimous that the session was too short and covered too much content (25 tools in 3 hours). Given that they identified above all the need for training, coaching, and co-development groups (finding 5), it appears that more customized training was needed. Various types of training are given in some of the participating organizations on, for example, leadership, recognition, or topics related to mental health, which may explain the change observed between the two measures regarding access to training on people management and mental health (finding 8, point 1).

Finding 10. The managers who adopted management practices that foster health at Time 2:
1) saw their organization as concerned about mental health in the workplace at Time 1;
2) reported having greater decision latitude at Time 1;
3) reported less psychological distress at Time 1;

4) had better relations with their subordinates at Time 1; and
5) male managers and older managers were more inclined to adopt management practices that foster their employees' health.

Finding 11. The managers reporting greater decision latitude at Time 2 were those who had seen their organization as more concerned about mental health at Time 1. These managers had also reported higher psychological demands, more support from their coworkers and supervisors, better relations with their subordinates, and less psychological distress at Time 1. The older managers and those having longer tenure in the organization also reported having greater decision latitude.

In concrete terms, the ownership of an organizational intervention designed to prevent mental health problems translated into the managers' adoption of PC management practices. The results of the two questionnaire-based measures revealed (1) the importance of the psychosocial safety climate; (2) the influence of the managers' psychosocial work environment, specifically, of their decision latitude and the quality of their relations with their subordinates; (3) the importance of good mental health (less psychological distress at Time 1); and (4) the stronger inclination of male managers and older managers to adopt management practices that foster health at Time 2. Regarding the psychosocial safety climate, it is important to recall that this construct refers to "policies, practices, and procedures for the protection of worker psychological health and safety" (Dollard and Bakker, 2010, p. 580). Psychosocial safety climate is built around four sub-dimensions, namely (1) management commitment to mental health; (2) the priority placed on this issue compared to productivity objectives; (3) communications on this topic, including listening to employees' concerns; and (4) the participation, consultation, and commitment of all stakeholders, such as unions, occupational health and safety professionals and practitioners, and Human Resources departments. This factor is regarded as a [free translation] "cause of causes," given that several studies have shown the psychosocial safety climate to be a macro factor influencing psychosocial constraints, mental health, and commitment. In this study, the managers who perceived a strong psychosocial safety climate at Time 1 reported adopting more PC management practices and benefiting from greater decision latitude at Time 2. This result concurs with those of previous studies on the importance of the psychosocial safety climate in the implementation of interventions (Dollard & Bakker, 2010; Dollard, 2012; Dollard & Karasek, 2010; Dollard, Opie, et al., 2012; Dollard, Tuckey, et al., 2012; Hall et al., 2010; Idris & Dollard, 2011; Idris et al., 2012; Law et al., 2011).

Decision latitude is the pre-eminent factor determining the adoption of PC management practices. Contrary to what is frequently asserted, it is not so much managers' work overload that prevents them from adopting these practices, but rather their lack of leeway in this regard. This leeway is, however, influenced by the psychosocial safety climate, workload, support from coworkers and supervisors, and the quality of relationships with subordinates. Regarding the latter, our study concurs with previous studies showing that support from managers has a positive effect on employees' well-being, but that employees with a higher level of psychological well-being receive more support from their supervisor (Van Dierendonck, Haynes, Borrill, & Stride, 2004). In our study, the "supportive"

management style was measured using nine scales and involved practices such as offering feedback, coaching, and support; clarifying roles; and being a respectful person of integrity, who encourages and accepts fair and equitable viewpoints and those that differ from one's own. It is easier for managers to adopt PC management practices when they have good relations with their subordinates. Yet the need to adopt such practices is even greater when these relations are strained.

6.2. Contributions

From a theoretical perspective, this study helps advance knowledge on models for evaluating organizational interventions designed to prevent mental health problems in the workplace. This recent research field is burgeoning, and our study enhances understanding of how interventions can be implemented through managers' actions.

One of the main challenges of interventions designed to prevent mental health problems concerns the limited development of related theories and concepts. This may stem from the fact that most studies to date have focussed solely on evaluating the effectiveness of these interventions in improving various indicators such as psychological distress, absenteeism, and the reduction of psychosocial demands in the work environment. Many researchers have criticized the lack of attention paid to the intervention process and context as they are key factors in the success or failure of preventive interventions (e.g., Biron, Karanika-Murray & Cooper, 2012; Cox et al., 2007; Egan et al., 2009; Griffiths, 1999; Nielsen & Abildaard 2013; Biron & Karanika-Murray, 2013; Nytrø et al., 2000; Saksvik, Nytrø, Dahl-Jorgensen & Mikkelsen, 2002). To be effective, interventions must be properly implemented, which places heavy demands on managers and their management practices. Given that interventions involve components of work organization, lifestyle habits, work/life balance, and the workplace, interventions designed to prevent mental health problems are complex to evaluate. This study highlights the determining factors in planned change, which involve the intervention content, context, and implementation process, in addition to identifying the personal, psychosocial, and contextual elements influencing the adoption of PC management practices. **The study thus opens up the "black box" of interventions and their implementation.** A systematic review by Egan et al. (2009) revealed that, to date, the lack of attention paid to the implementation process has resulted in the underdevelopment of tools for evaluating this process, particularly regarding more complex social interventions. Considering the high costs of interventions and of mental health problems, this study offers greater insight into the main factors to be included in the evaluation of the intervention process, context, and content. The use of these "mainstays" to analyze interventions helps structure the information to be collected during intervention evaluation, which is an improvement over existing evaluation models (Nielsen & Abildgaard, 2013; Nielsen & Randall, 2012b). The Context-Content-Process-Outcomes model provides a means of structuring the available information in order to understand what influences the effectiveness of interventions. While context, content, and process each have their own effect on an intervention's success or failure, these factors also interact. For example, a financial crisis (the intervention context) may have an effect on managers' willingness (the process) to implement a new mode of work organization (the content of the intervention), thus causing an overall deterioration in the team's morale (the outcome). Likewise, the participants' commitment (process) may help in the

implementation of an intervention program (content) or be a criterion for intervention effectiveness (outcome). Future research could focus on assessing how these factors interact to influence the outcomes of the interventions, which was not the aim of this study.

From a practical perspective, by identifying the factors facilitating or hindering managers' implementation of interventions, it should be possible to rectify the intervention process to prevent pitfalls at the early stages. The managers and key stakeholders participating in this study emphasized the lack of decision latitude, support, and tools for taking preventive action, thus providing direction for future efforts aimed at improving interventions. The study's inventory of 25 concrete tools for managing psychosocial constraints also constitutes a noteworthy contribution.

6.3. Limitations

Despite its scope, the study has some limitations that must be mentioned. First, the study concerns primarily an analysis of interventions related to the Healthy Enterprise certification process. While not in itself a limitation, this fact does somewhat colour the type of interventions analyzed. Three of the four organizations studied were involved in this process, while the fourth was split into three establishments, one of which was also involved in the process. The certification process covers four areas of activity, whereas our focus was on only one of these areas, i.e., "management practices." This remains the most difficult and nebulous area of activity for managers. The selection of organizations to comprise our sample was based on the inclusion criterion that the enterprises had to be carrying out an intervention and to have at least completed a diagnosis of psychosocial constraints. As it turned out, most of the organizations we approached that met this criterion were involved in the certification process.

Second, regarding the qualitative material collected, it was difficult to obtain concrete information from the managers regarding their PC management practices. As mentioned earlier, these practices are often invisible or adopted unconsciously by the managers without being the subject of any structured intervention. The managers therefore spoke mainly about what was visible, which included structured activities such as lectures on a variety of topics and formal activities. Our use of a study design involving mixed methods partly compensated for this shortcoming because the questionnaire used a solid tool to measure PC management practices. In fact, previous studies have shown that employees who see themselves as having been exposed to these practices (Hasson et al., 2014) and that organizations in which these practices were noted in an intervention logbook (Gilbert-Ouimet et al. 2011) demonstrated significant changes at the levels of psychological demands and mental health.

Lastly, it would have been preferable to analyze the quantitative data using structural equation models in order to identify mechanisms and processes influencing the adoption of management practices. For example, the psychosocial safety climate appears to influence the adoption of PC management practices, decision latitude, and the quality of relationships with subordinates. Certain variables probably play a moderating or mediating role, but this was not evaluated in our study. This decision is explained by our study objectives, which were not to evaluate these mechanisms but rather to highlight the various

personal, psychosocial, and contextual factors influencing the adoption of management practices. New analyses should allow us to reflect further on the mechanisms influencing the adoption of PC management practices.

7. CONCLUSION AND RECOMMENDATIONS

Based on the 11 findings of this study, the following recommendations seem appropriate. **Management's sustained commitment is essential for all three recommendations.**

Recommendation 1. Implement preventive interventions aimed at the managers' psychosocial environment.

This study highlights the importance of good mental health and a healthy psychosocial environment, particularly managers' need for decision latitude and for good interpersonal relationships with their employees. There appears to be a cascade effect in that managers who see their organization as concerned about mental health are more inclined to adopt management practices that foster health. Moreover, the adoption of these practices is influenced by their own mental health and psychosocial environment. If management plans preventive interventions for managers, conceivably these interventions will have a cascade effect and a positive influence on the mental health of the individuals whose work they supervise (figure 1).

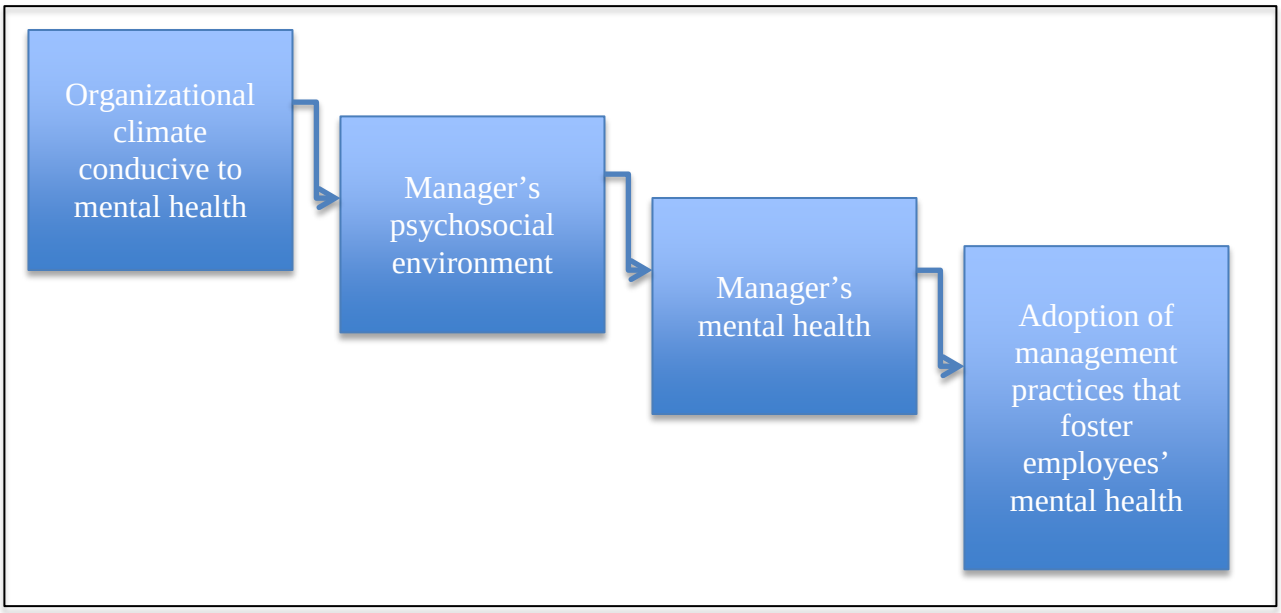

Figure 1. Logic model of the influence of the psychosocial safety climate (PSC) on the adoption of management practices that foster employees' mental health

Recommendation 2. Support the implementation of interventions on psychosocial constraints by providing managers with tools and resources.

Several findings generated by our study make reference to the lack of tools and of internal and external resources regarding psychosocial constraint management practices aimed at preventing mental health problems. The needs cited by managers include training, coaching, and social support, for example, by means of co-development groups.

Recommendation 3. Identify the relationships between the various organizational interventions under way and employees' mental health.

Management practices are often informal, unstructured, and not regarded as an integral part of preventive interventions. Conversely, a number of organizational initiatives could be seen in terms of their effects on mental health, without being formally labelled as such.

In conclusion, this innovative study uses planned change theories and a conceptual evaluation framework highlighting elements of the intervention context, content, and implementation process to identify the factors facilitating and hindering interventions designed to prevent mental health problems. The organization's psychosocial safety climate, reflected in management's and stakeholders' commitment to the intervention, constitutes a key factor in the success of the intervention. The adoption of PC management practices reflects managers' ownership of the interventions. The psychosocial safety climate, decision latitude, and good relationships with subordinates are the factors that determine the adoption of PC management practices. By highlighting these elements, this study allows for theoretical advances in the evaluation of organizational interventions aimed at fostering mental health, itself a flourishing new field of research. Future research will be able to use these elements to evaluate how they interact with each other and how they influence intervention outcomes.

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APPENDICES

Appendix A – Questionnaire measurement scales, description of items and response scales, internal consistency coefficients, and references for the scales

Scale and items	Response scale	Cron-bach's alpha
Psychosocial safety climate (12 items) (Hall et al., 2010) 1. In my workplace, management acts quickly to correct problems/issues that contribute to employees' psychosocial health. 2. Management acts decisively when a concern of an employee's psychological status is raised. 3. Senior management show support for stress prevention through involvement and commitment. 4. Psychological well-being of staff is a priority for this organization. 5. Management is genuinely concerned about workers' psychological well-being. 6. Management considers employee psychological health to be equally as important as productivity. 7. There is good communication here about psychological safety issues which affect me. 8. Information about workplace psychological well-being is always brought to my attention by my manager/supervisor. 9. My contributions to resolving occupational health and safety concerns in the organization are listened to. 10. Participation and consultation in occupational health and safety occurs with employees, unions and health and safety representatives in my workplace. 11. Employees are encouraged to become involved in psychological safety and health matters. 12. In my organization, the prevention of stress involves all levels of the organization.	1 (Strongly disagree) – 4 (Strongly agree)	0.89
Psychological demands (6 items) (Karasek, 1985; Larocque et al., 1998; Vézina et al., 2011) 1. My job requires working very fast. 2. I am asked to do an excessive amount of work. 3. I have enough time to get the job done. 4. I receive conflicting demands from others. 5. My job requires working very hard.	1 (Strongly disagree) – 4 (Strongly agree)	0.77

6. I am often interrupted or disturbed when performing my tasks		
Decision latitude (5 items) (Karasek, 1985; Larocque et al., 1998; Vézina et al., 2011) 1. My job requires that I learn new things. 2. My job requires a high level of skill. 3. My job involves a lot of repetitive work. 4. My job allows me to make a lot of decisions on my own. 5. I have a lot of say about what happens on my job.	1 (Strongly disagree) – 4 (Strongly agree)	0.57
Social support (7 items) (Karasek, 1985; Larocque et al., 1998; Vézina et al., 2011) 1. People I work with are helpful in getting the job done. 2. At work, I feel like I am part of a team. 3. I am exposed to hostility and conflict from the people I work with. 4. My supervisor is successful in getting people to work together. 5. My supervisor pays attention to what I am saying. 6. My supervisor is helpful in getting the job done. 7. I am exposed to hostility or conflict from my supervisor.	1 (Strongly disagree) – 4 (Strongly agree)	0.78
Social support from coworkers (3 items) (Karasek, 1985; Larocque et al. 1998; Vézina et al. 2011) 1. People I work with are helpful in getting the job done. 2. At work, I feel like I am part of a team. 3. I am exposed to hostility and conflict from the people I work with.	1 (Strongly disagree) – 4 (Strongly agree)	0.65
Social support from supervisor (4 items) (Karasek, 1985; Larocque et al., 1998; Vézina et al., 2011) 1. My supervisor is successful in getting people to work together. 2. My supervisor pays attention to what I am saying. 3. My supervisor is helpful in getting the job done. 4. I am exposed to hostility or conflict from my supervisor.	1 (Strongly disagree) – 4 (Strongly agree)	0.82

Reward (recognition) (8 items) (Siegrist, 1996; Vézina et al., 2011) 1. I receive the respect I deserve from my superiors. 2. My job promotion prospects are poor. 3. My job security is poor. 4. Considering all my efforts and achievements, I receive the respect and prestige I deserve at work. 5. Considering all my efforts and achievements, my work prospects are adequate. 6. Considering all my efforts and achievements, my salary/income is adequate. 7. My efforts are sufficiently appreciated at work. 8. I am treated fairly at work.	1 (Strongly disagree) – 4 (Strongly agree)	0.74
Learning organization (Marsick & Watkins, 2003) 1. In my organization, people are rewarded for learning. 2. In my organization, people spend time building trust with each other. 3. In my organization, teams/groups revise their thinking as a result of group discussions or information collected. 4. My organization makes its lessons learned available to all employees. 5. My organization recognizes people for taking initiatives. 6. My organization works together with the outside community to meet mutual needs. 7. In my organization, leaders continually look for opportunities to learn	1 (Almost never) – 6 (Almost always)	0.86

Adoption of management practices that foster health (Gilbert-Ouimet et al., 2009) [free translations] 1. Create committees and workshops and encourage team meetings. 2. Meet with employees one-on-one and follow up on issues (adjust workload and nature of tasks, and discuss difficulties). 3. Hold work recognition/reward activities. 4. Highlight jobs well done by employees. 5. Hold interpersonal activities. 6. Revise processes. 7. Introduce new work tools to simplify tasks. 8. Implement organizational changes progressively. 9. Add personnel (on a temporary or permanent basis). 10. Replace employees during their absence [a]. 11. Promote flexible working arrangements and/or the implementation of a flexible work schedule. 12. Enrich tasks (rearrange tasks/encourage versatility/adaptability). 13. Review/revise task complexity. 14. Encourage staff coaching/ mentoring. 15. Encourage participation in training activities. 16. Communicate about issues, objectives, and mandates. 17. Define and distribute policies and action plans that are useful for employees. 18. Manage workforce planning.	1 (Never corresponds to my practices) – 4 (Very often corresponds to my practices)	0.86
Adoption of management practices that foster health – Managing teams 1. Create committees and workshops and encourage team meetings. 2. Hold work recognition/reward activities. 3. Hold interpersonal activities. 4. Revise processes. 5. Introduce new work tools to simplify tasks. 6. Implement organizational changes progressively.		
Adoption of management practices that foster health – Communication/Information 1. Meet with employees one-on-one and follow up on issues (adjust workload and nature of tasks, and discuss difficulties). 2. Highlight jobs well done by employees. 3. Encourage staff coaching/mentoring.		

4. Encourage participant in training activities. 5. Communicate about issues, objectives, and mandates. 6. Define and distribute policies and action plans that are useful for employees.		
Adoption of management practices that foster health – Managing the organization of work 1. Add personnel (on a temporary or permanent basis). 2. Promote flexible working arrangements and/or the implementation of a flexible work schedule. 3. Enrich tasks (rearrange tasks/encourage versatility/adaptability). 4. Review/revise task complexity. 5. Manage workforce planning.		
Quality of relationships with subordinates (items developed for this study) [free translation] 1. My subordinates are open-minded. 2. I have good relationships with my subordinates.	1 (Strongly disagree) – 4 (Strongly agree)	N/A
Training/information on people management (2 items) (items developed for this study) [free translation] 1. I receive information on a regular basis to help me better manage the people on my team. 2. In my organization, there are regular training sessions on people management.	1 (Strongly disagree) – 4 (Strongly agree)	
Readiness for change (4 items) (Randall et al., 2009) [free translation] 1. I feel confident that this health intervention will improve my working conditions. 2. I have high expectations about the impact of this health intervention on my working conditions. 3. I look forward to seeing the changes that will be implemented as part of this health intervention. 4. I am ready to accept the changes that will be implemented as part of this health intervention.	1 (Strongly disagree) – 4 (Strongly agree)	0.74

Psychological distress (Kessler et al., 2002) During the last 30 days, how often did you feel: 1. Nervous? 2. Hopeless? 3. Restless or fidgety? 4. So sad that nothing could cheer you up? 5. That everything was an effort? 6. Worthless?	1 (None of the time) – 5 (All of the time)	0.80