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Studies and Research Projects

REPORT R-739



Preventing Violence Among Employees of the Same Work Organization Evaluation of a Participatory Intervention

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ABSTRACT

The phenomenon of interpersonal violence among employees of the same work organization is gaining increased recognition. In fact, a few years ago, Québec adopted a legislative framework to counter this phenomenon. The objectives of adopting such measures are to sanction inappropriate behaviours, but also, and what is of specific concern to us here, to prevent the phenomenon. Yet to date, very little theoretical and practical knowledge exists about the usefulness and effectiveness of measures put in place to prevent such violence and to reduce its impacts on the exposed personnel's health and safety. Despite their legal obligations, organizations therefore have few solid signposts to guide them as to appropriate actions for countering this phenomenon.

The aim of this study was to help fill this gap by evaluating a participatory intervention aimed at reducing interpersonal workplace violence in three Québec detention facilities of different sizes (small/medium/large). In particular, we sought (1) to describe the intervention development and implementation process, and (2) to evaluate the impacts of the intervention on organizational practices and on the prevalence of interpersonal violence. The population targeted by this study consisted of correctional officers (*agents des services correctionnels*) working in Québec's correctional services sector.

The study was carried out in three phases: (a) the development phase, during which concrete intervention targets were identified, (b) the implementation phase, during which selected interventions were implemented in three detention facilities chosen as experimental centres from among all 18 provincial centres, and (c) the evaluation phase, during which the short- and long-term impacts of these interventions were assessed.

A variety of interventions were developed (Phase 1) and implemented (Phase 2) in the three experimental centres. The interventions to be implemented were selected by joint health and safety committees referred to as "intervention support groups" (ISGs), which were formed in each of the experimental centres. Of all the interventions carried out, three more specific categories of implemented changes can be differentiated: (a) the adoption of more participatory (democratic) practices that recognize the importance of each employee, (b) the adjustment of work methods so as to provide practice guidelines, and (c) the development of ways and means to foster healthy interpersonal relations and personal well-being.

The overall intervention process was then evaluated (Phase 3). Epidemiological methods were used to compare the correctional officers (COs) in the three experimental centres to those in the 15 control centres, where no interventions were carried out in the context of this research project. Questionnaires were administered to the COs before the intervention began, and then again nearly one and three years after implementation of the changes in the workplaces. Qualitative interviews were also conducted in the experimental centres and in some of the control centres in order to collect information on the changes that had been implemented in each of these facilities, regardless of whether these interventions were related to the participatory research project.

Different types of results were obtained. In general, the interventions carried out seemed to have had a particularly significant impact on the officers' interpersonal relations with each other and

with their supervisors in the experimental centres. The results revealed a marked improvement in social support offered by persons in positions of authority, as well as a significant drop in psychological harassment and intimidation by supervisors. The interventions were also seen to have had a positive impact on the social support received in peer relationships.

Over and above the impacts of the interventions implemented in the experimental detention facilities, we observed that the intervention research process itself contributed to a number of appreciable changes extending beyond the specific facilities targeted by the research. The research team observed that the project, one of whose major foundations was worker participation in the process, contributed significantly to introducing a new dynamic within the intervention support groups, but also within the Coordination Team and the Steering Committee, which were responsible notably for addressing the problems associated with troubled social relations. Overall, we witnessed a change in mentality in several of the stakeholders who were involved either directly or indirectly in the research process. In this regard, we must underscore the major role played by the joint employer/employee process and participation, both of which were cornerstones of the entire intervention process. In some senses, these values set the tone for the changes observed.

The originality of this research lies in its participatory intervention process, which was carried out in the workplace, was solidly grounded in rigorous theoretical and methodological foundations, and underwent systematic evaluation using a recognized evaluation model. Although the intervention was carried out in detention facilities, the theoretical knowledge and practices developed may be useful in numerous other workplace environments also grappling with the problem of interpersonal violence among employees of the same work organization. In particular, this study identified organizational practices that help reduce violence among such employees. Many types of workplaces, as they too take action to address the problem in their own contexts, could draw inspiration from the proposed process and consider the organizational changes introduced in this project. The results of this study may therefore promote the implementation of joint participatory interventions for the purpose of improving the work situation of employees exposed to major tensions.

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1. INTRODUCTION

Violence in the workplace, and more specifically, violence among employees of the same work organization, constitutes an issue of growing social concern in terms of occupational health and safety, particularly with Québec's recent adoption of a legislative framework to counter the phenomenon through the amendment of labour standards. Yet to date, very little theoretical or practical knowledge exists on the usefulness or effectiveness of the measures implemented to prevent this violence and reduce its impacts on the health and safety of the exposed personnel. The originality of this research lies in its participatory intervention process, which was carried out in the workplace, was solidly grounded in rigorous theoretical and methodological foundations, and underwent systematic evaluation using a recognized evaluation model. The main objective of the study was to evaluate an intervention involving correctional officers as our previous research had shown that organizational factors were associated with interpersonal violence among employees of this work organization. The intervention involved having employees and their supervisors identify the organizational work demands at the root of this violence, as well as possible solutions for stopping and preventing the phenomenon.

2. THE PROBLEM

Clearly there is growing scientific and social concern about violence among employees of the same work organization, at both the local and international levels (BIMH, 1995; Chappel and Di Martino, 1998; Damant et al., 1997; Di Martino et al., 2003; Faulx and Delvaux, 2005). Yet the evaluation of the magnitude of this phenomenon, which we define in general terms as persistent exposure to aggressive behaviours and mistreatment by co-workers, supervisors, or subordinates (Einarsen et al., 2009), remains nebulous due to a lack of retrospective data on the subject and the many conceptual and methodological obstacles that make the phenomenon difficult to quantify (Arnetz, 1998; Braverman, 2002; Jauvin et al., 2007). Recent studies have attempted to measure the prevalence of various forms of violence in the workplace, providing data mainly by economic sector (Brun and Plante, 2004). However, nation-based data collected in one study indicated that 9% of workers in the European Union claimed to have been victims of intimidation at work in the year prior to that study (European Foundation for the Improvement of Living and Working Conditions, 2000). Closer to home, two Québec studies put the rate of exposure to different forms of psychological harassment at work at between 7% and 9% of Québec workers (Brun and Plante, 2004), while the rate of exposure to physical violence is estimated at 3% and to intimidation, at nearly 20% (Arcand et al., 2000).

Again in Québec, the scale of the phenomenon of violence among employees of the same work organization and the need to take action in this regard was officially acknowledged with the fairly recent amendment of the *Act respecting Labour Standards*. Since June 2004, the Act has included provisions regarding psychological harassment (Gouvernement du Québec, 2004). In addition to the introduction of reporting mechanisms and of the employer obligation to take action in this matter, Québec's Commission des normes du travail (labour standards board) stresses both the importance of prevention as the preferred means of countering psychological harassment in the workplace and the essential role of healthy management practices as preventive measures.

Many factors are associated with the emergence of interpersonal violence in the workplace, but to date, little consensus exists within the scientific community about these factors. Yet they warrant prompt attention if effective interventions are to be developed. Essentially what is involved is a complex, dynamic phenomenon that has no simple explanation. That said, the predominant role of organizational factors in the study of factors associated with interpersonal violence among employees of the same work organization has been cited by many authors (Einarsen and Raknes, 1997; Harvey et al., 2009; Hirigoyen, 2001; Johnson and Indvik, 1994) and empirically confirmed by others (Barling, 1996; Baron and Neuman, 1996; Barrett et al., 1997; Björkqvist et al., 1994; Cintas, 2007; Gouvernement du Québec, 2001; Leymann, 1996). For example, after analyzing more than 600 cases of probable harassment from various countries, Leymann (1996) identified three main factors that have an impact on the organizational dimension: the organization of work, job design, and the supervision and management of those who carry out the work. As Leymann noted, these factors are similar to those often identified as indicators of tension or stress^{1*}, a point reiterated by other authors

^{1*} Stress has different definitions depending on the approach taken (Davezies, 2003; Neboit and Vézina, 2002):

(Barling, 1996; Barrett et al., 1997). Studies on violence among employees thus report the increasing merit of investigating the phenomena as a collective rather than an individual problem (Bilheran, 2006; Faulx and Detroz, 2009; Harvey et al., 2008; Vartia-Vääänänen, 2003).

Found in all industrial sectors, (Brun and Kedl, 2006; Leclerc et al., 2000; Waddington et al., 2005), the phenomenon appears to be very pronounced among COs in Québec. In a questionnaire completed by more than 80% of Québec COs (2004), we identified a 62% rate of exposure to violence among employees in the correctional services sector. The forms of violence investigated in that questionnaire were physical violence, psychological harassment, and intimidation. With regard to psychological harassment at work from all sources combined (co-workers, supervisors, subordinates and inmates), 70% of Québec COs said they had been subjected to this treatment during the year prior to completing the questionnaire (Bourbonnais et al., 2005). This is a particularly high rate compared to that reported in Samak's study (2003) involving COs in the federal public service, where a 48% rate of exposure to harassment was observed over the five years prior to the study.

Exposure to different forms of interpersonal violence at work has consequences (Escartin et al., 2009). The devastating psychological and physical impacts of the acts perpetrated on both the victims and witnesses of this violence have been documented (Agervold and Mikkelsen, 2004; Di Martino et al., 2003; Hogh et al., 2003; Jauvin et al., 1999; Lutgen-Sandvik et al., 2007; Monks et al., 2009; Tehrani, 2004). Moreover, violence at work has equally harmful organizational and social impacts (Di Martino et coll., 2003; Einarsen et Raknes, 1997; Leymann, 1996; Mayhew et Quinlan, 1999; Randle, 2003), which notably translate into a work environment dominated by fear and stress (Dowden et Tellier, 2004). The price paid by individuals is often reflected in the development of long-term, incapacitating psychotraumas (Viaux, 2004). Exposure to violence is a risk factor for depressive symptoms (Niedhammer et al., 2009). As a form of voluntary disengagement, withdrawal from work is also a defensive strategy to which victims often resort (Genest et al., 2005). Based on our prior research, we observed that the high rate of sick leave among Québec COs is associated with a high prevalence of violence in the workplace (physical violence, psychological pressure, and mobbing) (Malenfant et al., 2001). This correlation is all the more evident in cases of sick leave due to a mental health diagnosis potentially related to the psychosocial environment at work (psychological pressure and mobbing).

These results concur with those obtained by Kivimäki et al. (2000) with regard to hospital personnel, and by Voss et al. (2001) with regard to postal service personnel. Other data show a high prevalence of psychological distress among Québec COs (Bourbonnais, 2005). One study

-
- According to the transactional approach to work stress, stress means the interaction between an individual and his or her work environment.
 - According to the physiological approach to stress, stress is a metabolic response to exposure to a risk factor of some sort.
 - According to the causal approach, stress refers to a risk factor present in the work environment and identified as a psychological or sociological irritant, with which a certain number of mental health problems are substantively associated.

This report refers to the last definition above.

identifies a correlation between stress, psychological distress, and exposure to a form of violence at work similar to psychological harassment (bullying) among correctional services personnel (Vartia-Väänänen, 2003). Several studies of COs also show a correlation in this population between certain work demands (high psychological demands, low decision latitude, little involvement in decision making, and low social support at work) and psychological distress (Dollard and Winefield, 1994, 1995, 1998; Goldberg et al., 1996; Härenstam et al., 1988; Lasky et al., 1986).

Given the prevalence of violence among employees of the same work organization, both individuals and groups have taken an interest in the phenomenon. They have published a number of books aimed at awareness raising, prevention, and intervention, and have proposed a broad range of measures (Aurousseau, 2001; Bréard and Pastor, 2002; Courcy et al., 2004; Gouvernement du Québec, 2004; Gill et al., 2002, Neuman and Baron, 1998; Rogers and Chappell, 2003). Generally speaking, however, the interventions reported in the literature focus more on individuals and very little on organizations (Flannery, 2000, Randle, 2003). For example, Mantell and Albrecht (1994) propose instruments designed to screen for potentially violent individuals during the personnel selection process. Bush and O'Shea (1996), based on their analysis of a survey conducted of 59 companies, indicate that this screening measure is the one most often used by companies to counter internal violence (95%). However, our literature review tends to confirm that while an organizational approach is preferable, it is rarely favoured due to financial constraints or lack of commitment* from those in power positions within organizations (Vacheret, 2001). Littlechild (1995) emphasizes the importance of support within the organization, while other authors assert that reward (recognition) and the reduction of work stress may help prevent certain abnormal behaviours (Barret et al., 1997; Flannery et al., 1995). In addition to these studies, the scientific literature on the prevention of violence in the workplace essentially looks at violence perpetrated by the clientele served, and virtually all the literature concerns violence toward health care workers (Chappel et al., 2000; Mikkelsen and Einarsen, 2002; Randle, 2003). These gaps in the literature limit the conclusions that can be drawn regarding the role played by the organization of work in violence.

To date therefore, the high prevalence rate and significance of the workplace violence phenomenon has clearly been observed. There is also agreement on the relevance of preventive measures and the urgent need for their implementation, but little is known about the nature of the appropriate measures or the conditions that facilitate their implementation. (Barrett et al., 1997; Cantin and Cantin, 2004; Einarsen et al., 2003; Leclerc, 2005; Tehrani, 2001). One of the major gaps in the research in this field is precisely the lack of knowledge about evaluations of the interventions carried out to prevent workplace violence. To the best of our knowledge, only one study reports on the nature of such interventions, and even it does not assess their effectiveness (Oxenstierna and Theorell, 2003). Yet given the scarcity of systematic quality evaluations (Peiro, 2002), there is agreement about the essential need for evaluations of the proposed interventions. Most interventions fail to clarify either the link between the violence prevention measures and any theoretical framework whatsoever, or between the evaluation framework adopted and the measurable effectiveness of the interventions (Peiro, 2002; Runyan et al. 2000).

* Commitment implies support from senior management and the involvement of all levels of the hierarchy in the intervention process⁶³.

The literature also provides very little information about the contexts in which interventions aimed at preventing workplace violence are implemented. Poorly informed about the conditions conducive to the implementation of preventive measures, the strategies adopted by organizations may prove inappropriate, ineffective, and sometimes even harmful. Furthermore, as Randle points out (2003), some strategies adopted by companies fail to take into account contextual and historical factors associated with workplace violence, which, as is the case for COs, greatly limits their use or, worse still, may contribute to greater victimization of certain individuals, as we observed in an earlier phase of our research project on COs. The introduction of policies to counter violence and the abuses of authority that occur in correctional facilities contribute, in some cases, to amplifying and aggravating the prejudices against and harm done to victims who file complaints. In fact, some of these victims were subject to even greater harassment because by reporting the violence, they were seen to have violated the guards' internal code, which condemns whistle-blowing among peers (Malenfant et al., 2001).

In this research project, we sought to bridge these scientific gaps with the collaboration of all our partners in the correctional services sector. We evaluated the effectiveness of the organizational changes made in the target experimental facilities and documented the conditions conducive to their implementation.

The originality of our research process lies in its evaluative nature and its firm grounding in the framework proposed by Goldenhar et al. (2001). This methodological model has three phases: intervention development, implementation, and evaluation. These phases are based on an original combination of complementary qualitative and quantitative analyses. The results obtained upon completion of the research make it possible to quantify the reduction in organizational work demands and the impacts of an organizational intervention on anti-social behaviours, and to identify the factors facilitating or hindering the implementation of such an intervention.

The organizational work demands in detention facilities have a profound impact on social relations among personnel, as confirmed by the abundance of literature on the subject. Whether it is large distances separating the COs from the administration (Chauvenet et al. 1994), the dissemination of ambiguous administrative information (Aymard and Lhuillier, 1993; Tremblay, 1988), the absence of an opportunity and place for dialogue (Bradet, 1986; Normandeau and Vauclair, 1986; Willet, 1983), or lack of support from supervisors (Aymard and Lhuillier, 1993; Bradet, 1986; Seidman and Williams, 1999) or from co-workers (Van Voorhis et al., 1991), all these factors seriously undermine the quality of the social relations among COs and between them and their supervisors or subordinates.

The main objective of our study was therefore to evaluate an intervention aimed at reducing interpersonal violence at work in three Québec detention facilities of different sizes (small/medium/large). The concept of intervention is defined as the organizational changes implemented to reduce interpersonal violence in concrete terms.

The specific objectives of the research were as follows:

1. To describe the intervention development and implementation process;

2. To evaluate the impacts of the intervention on organizational practices and on the prevalence of interpersonal violence.

The research hypothesis was that the intervention would allow certain organizational work demands to be modified and thus help reduce violence among employees of the work organization.

3. OVERVIEW OF THE RESEARCH PROJECT

This research project originated from a request made by representatives of the Syndicat des agents de la paix en services correctionnels du Québec (SAPSCQ) and of the Ministère de la Sécurité publique du Québec (MSPQ). In light of the growing prevalence of the problems of absenteeism and employment injuries among COs, they asked the research team at RIPOST (Recherche sur les impacts psychologiques, organisationnels et sociaux du travail) to conduct a study to enhance understanding of the situation in order to address the problem more effectively. A Steering Committee comprising COs and representatives of the SAPSCQ and MSPQ was formed at the start of the process (December 1999).

The research team's work, which began in 2000, first involved drawing a quantitative picture of the situation (Bourbonnais et al., 2005; Malenfant et al., 2001). According to the data compiled in 2000, exposure to interpersonal violence among employees of the same work organization, i.e., the correctional services sector, was particularly high. In fact, it was even higher than the rates reported by other authors despite the existence, since 1998, of an internal policy aimed at countering all forms of harassment and abuses of authority at work. Of the 1,033 COs who completed the questionnaire in 2000, 24.5% confirmed that they had been subjected to such violence (intimidation, physical violence, or unwanted sexual attention) by supervisors, subordinates, or co-workers. A study of Swedish COs conducted by Thylefors (1999) identified a 22.6% rate of exposure to similar behaviours. Vartia-Väänänen (2003) later published the results of a longitudinal Finnish study in which the exposure rate was found to be 20.1%. A 16.2% rate of exposure to comparable behaviours was reported by COs in England (Mikkelsen and Einarsen, 2002). These results correspond to those obtained in studies of other workers in traditionally male employment sectors (Einarsen, 2000).

Further to the quantitative picture drawn in 2000, individual interviews (54) and group interviews (9) were conducted between 2001 and 2003 to improve understanding of the phenomenon of violence among correctional services personnel (Jauvin, 2007; Jauvin et al. 2006, Équipe RIPOST, 2003; Vézina et al., 2006). With this knowledge in hand, in 2004 we then embarked on the first phase of this vast research project with Québec COs, ultimately for the purpose of carrying out interventions targeting interpersonal violence in the workplace that would be preventive, among other things.

A population of COs constitutes a particularly interesting category of employees when it comes to studying troubled interpersonal social relations because of the high prevalence, in their work environment, of organizational work demands similar to those found in other workplaces: low decision latitude, high psychological demands, low reward (recognition), and lack of social support (Bourbonnais et al., 2005). Social relations among correctional officers are particularly tense. During the individual and group interviews conducted between 2001 and 2003, many officers emphasized that the problems they encountered at work did not stem from their relations with inmates, but rather from their relations with other staff members (Vézina et al., 2006)*.

* The following words taken from a group interview express this idea very clearly: [translation] "...sometimes you say to yourself that one-third of your mistrust is for the inmates and two-thirds for the personnel..."

4. METHODOLOGY

The study population included all Québec COs holding permanent (full-time or part-time) or casual jobs and working an average of at least 20 hours a week. These officers were distributed across the province in 18 detention facilities under provincial jurisdiction.

The methodological approach adopted in this research project constitutes a recognized method that is increasingly used to evaluate interventions aimed at improving occupational health (Bourbonnais et al., 2006; Goldenhar et al., 2001). The evaluation involved both the intervention development and implementation processes and the resulting quantifiable changes. Unlike other approaches, this particular approach compensates for the major methodological limitations of certain other studies, namely, insufficient follow-up periods and the absence of control groups (van der Hek and Plomp, 1997), as well as the absence of *a priori* risk evaluation, senior management involvement, and a solid theoretical model underpinning the interventions (Kompier and Kristensen, 2001). Together, the three phases of our research project therefore made it possible to attain the study's objective: to evaluate an intervention designed to reduce interpersonal violence at work, where again, *intervention* was defined as the organizational changes implemented to reduce interpersonal violence in concrete terms.

To complete this evaluation successfully, we followed the three phases of the research framework proposed by Goldenhar et al: the development, implementation, and evaluation of the intervention per se (see Figure 1). The first phase (development of the intervention) involved identifying the changes required and the best ways to bring them about. The second phase (implementation of the intervention) involved evaluating the intervention implementation process. The factors facilitating or hindering implementation were identified and the nature and magnitude of the intervention were evaluated. The third phase (evaluation of effectiveness) served to determine the extent to which the intervention reduced psychosocial constraints and the related health problems.

The research design included both qualitative processes (observations, interviews, and intervention support groups) and quantitative processes (pre-intervention questionnaire, and post-intervention questionnaires administered at 12 and 36 months).

Figure 1 – Research phases and methods

PHASES	1. DÉVELOPPEMENT	2. IMPLEMENTATION	3. ÉVALUATION
	What is the extent of the violence and what are its causes and effects?	Nature of the changes introduced: implementation.	To what extent does the change reduce: 1. organizational work demands? 2. interpersonal violence?
	What changes are needed?	Quality of the implementation?	
	What are the best ways to bring about these changes?	How many people are affected by these changes?	
APPENDIX A: METHODS			
QUANTITATIVE	<i>A priori</i> evaluation (questionnaire) M0		12 and 36 months after the intervention (questionnaire) M1 and M2
QUALITATIVE	Commitment of the experimental detention facilities <ul style="list-style-type: none"> • Participatory process (ISGs) • Observation 	<ul style="list-style-type: none"> • Follow-up of changes through ISGs in the 3 experimental centres and with the Coordination Team (CT) • Analysis of the implementation and management process • Follow-up of the changes with key informants and through observation 	Follow-up of changes through key informants

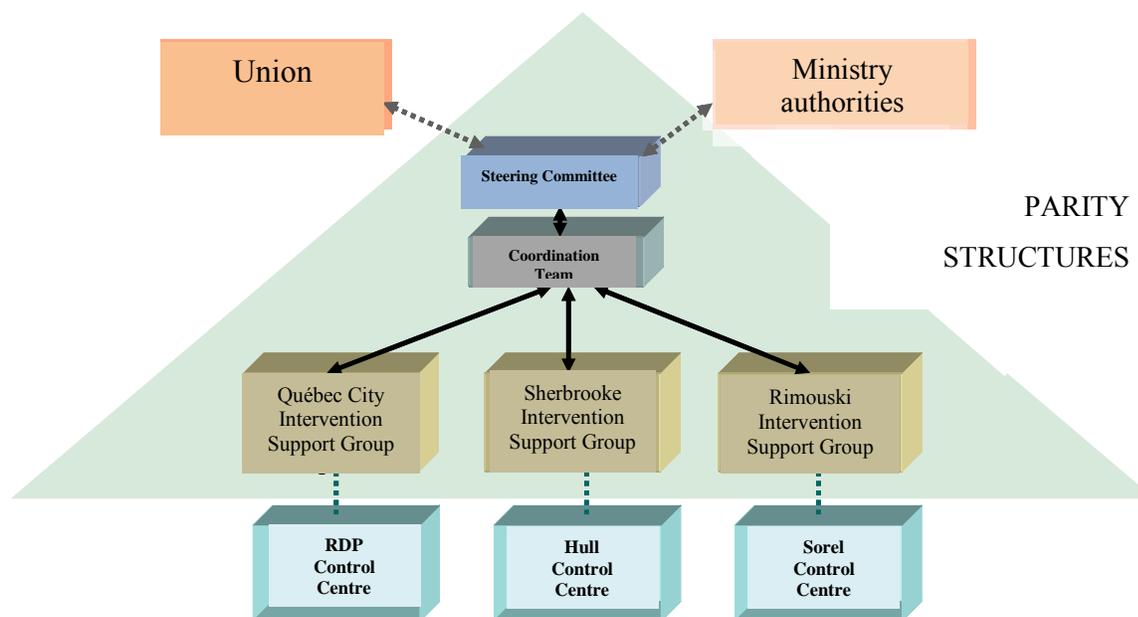
Adapted from Goldenhar et al. (2001)

The three phases of the reference model were needed to identify the factors facilitating implementation of the interventions and thus to ascertain the effectiveness of the process. The results of the evaluation, which are discussed later in this paper, were therefore based on a rigorous research process consisting of these three distinct phases. We used qualitative methods to monitor the development and implementation of the interventions in the experimental centres: observation (made possible in the context of the overall project’s participatory process), monitoring of the projects in the three centres via the Steering Committee, the intervention support groups, and the Coordination Team, and interviews with the key informants in the experimental and control centres. We used quantitative methods (in the form of questionnaires) to assess the evolution of a set of variables before and after the interventions. These variables are described in Section 4.1.

The aim of the development phase, carried out in 2004– 2005, was to identify concrete targets for preventive interventions by using quantitative and qualitative research methods. This initial phase began with obtaining a commitment from the three experimental centres where the intervention was to be carried out (small, medium, and large detention centres), specifically, a detention facility in each of Rimouski, Sherbrooke, and Québec City. These particular facilities were targeted for intervention due to the particularly pronounced presence of problems related to work organization. For each facility, in addition to agreeing to the process, this commitment involved appointing one or more project coordinators, releasing personnel to participate in the intervention support group, i.e. to attend approximately 20 meetings over a three-year period, and committing to support and facilitate implementation of the action plan. As was the case for

all the research phases, a joint employer/employee process was followed, and the implementation of the specific interventions in each of the experimental centres was the responsibility of the managers of the facility concerned. A Coordination Team was also formed, primarily to share information on the activities carried out in the three experimental centres and to return to the Steering Committee when the projects proposed for possible implementation needed to be implemented on a province-wide rather than strictly local basis. The structure of the intervention project is illustrated in the following diagram (see Figure 2). The researchers, who are not identified as such in this figure, formed part of the intervention support groups, the Coordination Team, and the Steering Committee.

Figure 2 – Structure of the intervention project



The **implementation phase** consisted mainly of carrying out the organizational interventions (introducing changes) in the three experimental centres via the intervention support groups (ISGs). Again, these groups were composed of COs, senior management personnel, and two researchers. The various ISGs met every three months on average over a one-year period. Certain changes were also made on a provincial basis through the intermediary of the Coordination Team (CT). Throughout this process, the local and provincial authorities remained responsible for implementing the proposed organizational changes.

Implementation follow-up was done using various data collection strategies, one of which was interviews of the key informants in the three experimental centres. The key informants were designated by members of the provincial union executive (in the case of the COs' representatives) and by the Corrections Branch of the provincial government's Ministère de la sécurité publique (in the case of local senior management representatives). The persons met had to fit a predefined profile, which included having a thorough knowledge of their workplace;

having recognized credibility with their co-workers, supervisors, and subordinates; holding a strategic and important position in the organization that gave them access to privileged information (e.g. president of the union and/or union co-chair for occupational health and safety, prison warden, etc.); and having been present at work on a regular basis for at least two years.

The interviews, which lasted approximately an hour and a half each, were conducted on an individual basis and were semi-structured. They made it possible to verify the extent to which the interventions had been implemented in the experimental centres. Similar interviews were conducted in the three control centres, which were paired with the experimental centres on the basis of size. These interviews of the key informants provided the opportunity to verify what organizational changes had been implemented on an ad hoc basis in the control centres.

The aim of the **evaluation phase** was to assess the impacts of the intervention by means of a quasi-experimental before/after design with control groups. Epidemiological methods were used to compare the COs in the three experimental detention centres (Québec City, Sherbrooke, and Rimouski) to those in the control centres (15), where no interventions were carried out as part of the RIPOST project. The effects sought by the intervention were evaluated in each of the groups. Impacts were then compared 12 months after completion of the intervention, i.e. during the summer and fall of 2007. Another post-intervention evaluation was carried out two years later, in the spring of 2008, to measure the long-term impacts of the intervention. The impacts of the intervention on the prevalence of psychosocial constraints and of exposure to violence from co-workers and supervisors were verified.

An *a priori* evaluation of risks, in quantitative form (a questionnaire) (see Appendix 1), was therefore performed in all Québec detention facilities between May and October 2004 (Bourbonnais, et al., 2007). This evaluation, which involved the use of validated instruments, concerned the prevalence of the target psychosocial constraints (Karasek and Siegrist models) and of violence in the workplace (see the details concerning these variables in Section 4.1). These measurements were obtained by means of self-administered questionnaires completed by all COs working in Québec detention centres.

Questionnaires were sent to all COs with more than three months of job tenure in all Québec correctional facilities (including both open- and secure-custody establishments) one year and then again three years after implementation of organizational measures aimed at improving the initial situation. As a general rule, these questionnaires, like the 2004 versions, were handed to the officers in person. Contact persons had previously been identified by the Steering Committee for the task of distributing the questionnaire in an appropriate manner. In 2004, the COs had been required to insert their completed questionnaires into depersonalized envelopes, seal them, and drop them off in boxes at specific locations. The contact persons were responsible for forwarding these boxes to the researchers. In 2007 and 2009, the same procedure was followed, but the participants also had the option of submitting their completed questionnaires by mail in a postage-paid envelope provided for this purpose. In 2004, 2007, and 2009, reminders were also sent out to encourage a larger number of officers to participate in these crucial stages of the research process.

The research team took rigorous measures to ensure participant anonymity on the questionnaires; the measures had been ratified previously by the Comité d'éthique de la recherche (research ethics committee) of the Centre de santé et de services sociaux de la Vieille-Capitale. Each correctional officer was therefore assigned a confidential code appearing solely on his² questionnaire. Only the researchers had access to the pairing of the codes with the participants' real identity. This procedure was used exclusively to facilitate distribution of the questionnaires. Similarly, when the information emerging from these questionnaires is referred to in a publication, it is always depersonalized. This practice thus allows for disclosure of group, but never individual, profiles.

4.1 The variables measured in the evaluation

The independent variables pertained to the psychosocial constraints of the work under study, specifically, job strain and effort/reward imbalance, both variables that form part of the Karasek and Siegrist models (Karasek, 1979; Karasek and Theorell, 1990; Siegrist, 2002; Niedhammer et al., 2000).

According to the first model, Karasek's demand-latitude model, job strain occurs when a high psychological demand is accompanied by low decision latitude. These demands have been associated in many prior studies with a series of impacts on physical and mental health (Amick et al., 1998; Cheng et al., 2000; Fuhrer et al., 1999; Niedhammer et al., 1998; Stansfeld and Candy, 2006; Van Der Doer and Maes, 1999). This model highlights the importance of the control that a person has over his work. A third dimension is added to the model: social support at work (assistance and collaboration from peers and supervisors), which moderates the impact of job strain on health (Johnson, 1996; Johnson et al., 1989).

Siegrist's effort/reward imbalance model focuses on the imbalance between the efforts made at work and the reward earned (esteem, respect, and control over one's occupational status) (Marmot et al., 2002; Siegrist and Peter, 2000; Siegrist et al., 1990). The adverse effects of effort/reward imbalance are usually observed at the emotional and physiological levels (Niedhammer and Siegrist, 1998; Peter, 2002; Siegrist, 2002).

Psychological demands

Nine questions taken from Karasek's Job Content Questionnaire (JCQ) (1985) were used to measure the psychological demands made on the COs (see Figure 3). A score that rated exposure to high psychological demands was calculated from the aggregate score for these items, using a Québec reference threshold. Psychological demands were considered high if the score equalled or was greater than the median (around 50%) observed in the Québec workforce.

1. The masculine gender is used throughout this document solely to facilitate reading and has no discriminatory intent.

Figure 3 – Psychological demands: details of the items measured

My job requires working very fast.
My job requires working very hard.
I am not asked to do an excessive amount of work.
I have enough time to get the job done.
I am free from conflicting demands that others make.
My job requires long periods of intense concentration on the task.
My tasks are often interrupted before they can be completed, requiring attention at a later time.
My job is very hectic.
Waiting on work from other people or departments often slows me down on my job.

Low decision latitude

Nine questions from the JCQ (Karasek, 1985) were used to measure decision latitude (see Figure 4). This latitude is reflected in the use and development of skills and control over work, and implies autonomy at work and participation in decision making.

Figure 4 – Decision latitude: details of the items measured

My job requires that I learn new things.
My job requires a high level of skill.
My job requires me to be creative.
My job involves a lot of repetitive work.
I get to do a variety of different things on my job.
I have an opportunity to develop my own special abilities.
My job allows me to make a lot of decisions on my own.
On my job, I have very little freedom to decide how I do my work.
I have a lot of say about what happens on my job.

A score that rated exposure to low decision latitude was then calculated in relation to a Québec reference threshold. Decision latitude was considered low if the score obtained was equal to or less than the median.

Social support at work

Eleven items from the JCQ were used to measure social support (Karasek, 1985). This instrument measures social support from those who provide supervision (social support from supervisors), as well as social support from co-workers. Figure 5 shows the details of the items measuring this dimension. The first five items measure social support from supervisors, while the last six evaluate support from co-workers.

Figure 5 – Social support: details of the items measured

My supervisor is successful in getting people to work together.
 My supervisor is concerned about the welfare of those under him.
 My supervisor pays attention to what I am saying.
 I am exposed to hostility or conflict from my supervisor.
 My supervisor is helpful in getting the job done.
 People I work with are competent in doing their jobs.
 People I work with take a personal interest in me.
 People I work with are friendly.
 People I work with are helpful in getting the job done.
 I am exposed to hostility and conflict from the people I work with.
 People I work with encourage each other to work together.

Low reward (recognition)

The question of reward (recognition) was measured by the 11 reward items on the Siegrist questionnaire (Niedhammer et al., 2000; Siegrist, 2001), which measure esteem, respect, and control over occupational status, mainly monetary rewards, prospects of promotion, and job security (see Figure 6).

Figure 6 – Reward (recognition): details of the items measured

I receive the respect I deserve from my superiors.
 I receive the respect I deserve from my colleagues.
 I experience adequate support in difficult situations.
 I am treated unfairly at work.
 I have experienced or I expect to experience an undesirable change in my work situation.
 My job promotion prospects are poor.
 My job security is poor.
 My current occupational position adequately reflects my education and training.
 Considering all my efforts and achievements, I receive the respect and prestige I deserve at work.
 Considering all my efforts and achievements, my work prospects are adequate.
 Considering all my efforts and achievements, my salary/income is adequate.

Effort/reward imbalance

According to Seigrist's effort/reward imbalance model, all workers legitimately expect to earn some form of reward for the efforts they make at work. When this expectation is not met, an imbalance is created between the efforts expended and the reward anticipated. Effort here is measured by psychological demands. There are three types of rewards: monetary, in the form of remuneration; social, in the form of esteem and respect at work; and organizational in the form of prospects of promotion, including "deskilling" and being assigned a job that does not correspond to the person's skills, and job security.

The dependent variable in our study was that of violence at work. A few dimensions of the questionnaire administered to the COs in 2004, 2007, and 2008 allowed us to evaluate the extent to which these workers considered themselves to have been exposed to behaviours analogous to violence at work during the 12 months prior to the administering of the questionnaire. Of these dimensions, we opted to look specifically at psychological harassment and intimidation.

Intimidation

Intimidation was measured by means of the following question: [translation] “*In the last 12 months, when you were at work, were you subjected to intimidation on the part of... (a) supervisors, (b) subordinates, (c) co-workers, or (d) inmates and/or their families?.*” In this regard as well, we looked specifically at two main perpetrators of intimidation: supervisors (vertical intimidation) and co-workers (horizontal intimidation).

Psychological harassment

Psychological harassment was evaluated using the question shown in Figure 7. A definition of psychological harassment was provided along with the question³ in order to clarify what we wanted to evaluate. We also looked at two main perpetrators of harassment: supervisors (vertical harassment) and co-workers (horizontal harassment).

Figure 7 – Psychological harassment: details of the question asked

[translation] In the last 12 months, in your current job, were you the target of psychological harassment* on the part of:

(a) supervisors, (b) subordinates, (c) co-workers, (d) inmates and/or their families?

(Rating scale: never, occasionally, often, very often)

***PSYCHOLOGICAL HARASSMENT IS DEFINED AS FOLLOWS:**

ANY VEXATIOUS BEHAVIOUR IN THE FORM OF REPEATED AND HOSTILE OR UNWANTED CONDUCT, VERBAL COMMENTS, ACTIONS OR GESTURES, THAT AFFECTS YOUR DIGNITY OR PSYCHOLOGICAL INTEGRITY AND THAT RESULTS IN A HARMFUL WORK ENVIRONMENT FOR YOU, AND THAT HAS RESULTED FOR YOU IN STRESSFUL WORKING CONDITIONS, LAYOFF, DISMISSAL OR FORCED RESIGNATION.

³ This definition was taken essentially from section 81.18 of Québec’s *Act respecting Labour Standards*.

4.2 Analysis

4.2.1 *Qualitative analyses*

Inductive analysis was used to describe the development, implementation, and management of the interventions more accurately. It also allowed us to identify in greater depth the contextual elements that provided a better understanding and shed clearer light on the quantitative data collected simultaneously, through the testimonials obtained from the persons met and the observations made during a participatory process witnessed by the researchers via the various committees. This qualitative part of the analysis further enabled us to explore at closer hand the factors conducive or detrimental to the implementation of such interventions.

The data collected then underwent a vertical and horizontal thematic analysis (Blanchet and Gotman, 1992), after which we interpreted the data for each experimental establishment and for the entire intervention process.

Each interview was written up in a memorandum that summarized the content as faithfully as possible and noted some of the researcher's reflections on the interview content. The cross-reading of these memoranda provided a broader overview of the qualitative data collected. Also, after each interview, a report citing the information provided by each key informant was written by the research team members and mailed to the participant concerned, followed by telephone validation. Once the necessary corrections were made, a summary report was written to document all organizational changes by establishment. Each participant from the various establishments received a copy of this report.

During the research process, specifically, at the different steps in the analysis process, the members of the various committees, including both COs and employer representatives, were met in order to present them with the completed analysis and to compare it to their assessment as stakeholders within the workplace. In this step, the correspondence between the preliminary analysis results and the perception held by the correctional centre employees was verified.

4.2.2 *Statistical analyses*

The prevalence of psychosocial constraints in the work environment and of health problems was measured (Rothman and Greenland, 1998). The different items were grouped under indicators associated with each of the factors, and an aggregate score was calculated for each indicator. Psychological distress was deemed high if the score fell in the upper quintile of the score distribution observed in the Québec workforce (≥ 28.57 for women and ≥ 23.81 for men) (Bellerose et al., 1995). Psychological demands were deemed high if the score was equal to or higher than the median observed in the Québec workforce (≥ 9), while decision latitude was considered low if the score was equal to or lower than the median observed in this same population (≤ 72) (Larocque et al., 1998). This is the method proposed by Karasek for purposes of dichotomous analysis (Karasek, 1985). Effort/reward imbalance was calculated as the ratio of psychological demand to reward (recognition). This measure was then adjusted using a correction factor (to eliminate the discrepancy pertaining to the number of questions, which

differed in the numerator and the denominator), as recommended by Siegrist (2001). For the other factors, the distribution of the scores for all the COs was divided at the median to delineate an exposed group and a non-exposed group, with the exception of three variables: intrinsic work efforts for which the exposed workers had scores equal to or higher than the upper tertile of the distribution; risks related to work in detention facilities for which the exposed workers had scores equal to or higher than the upper quintile; and low social support outside of work for which the exposed workers had scores in the lower quintile. The other questions concerning the risks specific to COs were each treated as a dichotomous variable indicating the presence or absence of the factor or the subject's agreement or disagreement with the statement. The data from the 1998 Québec Health and Social Survey (ESS) were weighted using the method recommended by Santé Québec (ISQ, 2000) to obtain a sample representative of the non-institutionalized Québec population at the time the survey was conducted.

We used generalized estimating equation (GEE) procedures to compare the prevalences of psychosocial demands, high psychological distress, and work-related burnout in both groups (experimental and control) (Everitt and Rabe-Hesketh, 2001; Tabachnick and Fidell, 1996). These types of analyses made it possible to take into account the correlation between the measures taken for a given individual at different times. The effects evaluated in this model were the group effect, time effect, and group/time interaction effect. When the interaction effect was statistically significant, the group effect was evaluated separately for each of the three times. Otherwise, the group effect was analyzed globally for the entire period. The confounding effect and the effect modifying the cofactors were then evaluated using these models. The prevalence ratios were estimated using a 95% confidence interval in order to compare the groups at each measurement time or overall, depending on the case.

5. RÉSULTS

This section presents the main results of the intervention research we conducted regarding Québec COs. These results cover all three phases of the process. The results for phases 1 and 2 (development and implementation) are presented in the form of an assessment of the qualitative analyses carried out. The results presented for phase 3 are those obtained from administering questionnaires before and after the intervention. The combination of qualitative and quantitative analyses provides a descriptive and comprehensive picture of the results of the overall process.

The first sub-section (5.1) concerns the results of the intervention process itself, while the second sub-section presents the results of the intervention effectiveness evaluation.

5.1 Intervention development and implementation: qualitative component, phases 1 and 2

5.1.1 Intervention development

It is first appropriate to provide a succinct picture of the main categories of actions developed in the context of this research project, as well as a few examples of these actions (see Figure 8). All the details of the interventions were described in a previously published research report (Équipe de recherche Ripost, 2007). Figure 8 provides various examples of the actions taken in one or another of the experimental centres. These actions are divided into three main categories derived from analysis of the content of the interventions developed in the three experimental centres: adoption of more participatory practices that recognize the importance of each individual involved; adjustment of the work methods in order to provide practice guidelines; and development of ways and means to foster the formation of healthy interpersonal relations and personal well-being. Examples of the actions developed are presented under each category. This list is not exhaustive and additional details can be found in the aforementioned published report (Équipe de recherche Ripost, 2007).

Figure 8 – Examples of actions implemented in one or another of the experimental centres**Adoption of more participatory (democratic) practices that recognize the importance of each individual involved**

- Put personnel consultation processes in place
- Encourage greater transparency
- Improve communication processes
- Create opportunities and places for discussion (e.g. regular work meetings)
- Identify and introduce formal methods of reward

Adjustment of work methods so as to provide practice guidelines

- Improve personnel training
- Enhance the new-employee orientation process
- Develop rules and clear guidelines governing the work
- Prioritize a more regular presence of supervisory personnel on the work premises, on the “floor”
- Review evaluation methods

Development of ways and means to foster healthy interpersonal relations and personal well-being

- Inform personnel of the values subscribed to by the organization regarding healthy interpersonal relations, and sanction workers who fail to respect the established standards
- Set up a mentoring system between more junior and senior officers
- Organize activities that serve to strengthen ties within the group

As evidenced by the testimonials and other qualitative data collected throughout the research process, the interventions implemented locally in the experimental centres and developed as part of the work carried out within the intervention support groups were selected in light of the specific problems encountered in each centre, the variables measured by the study, and the feasibility requirements. It is worth noting that several of the projects aimed at countering psychological demands at work had to be sidelined because the obstacles were too big to make them feasible (financial, logistical, regulatory, etc.). As well, as most of the persons interviewed attested, the correctional environment is heavily regulated, and the amounts of money spent to bring about the changes were often insufficient to fulfil some of the participants’ ambitions.

Moreover, several of the actions taken in the experimental centres sought to improve social support from co-workers and supervisors, which was deemed priority by the participants. They perceived certain deficiencies in the relations between employees and managers as being at the root of the interpersonal violence at work. In the next section, we will see, thanks to the quantitative evaluation methods used, that these actions in particular bore fruit. Regarding the control centres, the interviews with key informants revealed that for the most part, few changes were implemented in the absence of a targeted intervention by the research team.

A handful of large-scale projects were carried out at the provincial level: a peace officer badge was given to all COs; the COs as a whole were linked to a humanitarian cause, the Club des petits déjeuners; and lastly, the initial training for new COs was improved. These interventions

had some impact on all the COs, as we observed in the field and in our contact with the key informants.

We also observed from the overall evaluation process that the scope of the intervention went beyond simply implementing specific projects, whether local or provincial. In addition to the organizational changes introduced, the intervention research process per se contributed to certain changes being made in the detention centres investigated. Through both the testimonials collected in the interviews and the observation process conducted throughout the study, the research team observed that the research project itself helped introduce a new dynamic into the intervention support groups, the Coordination Team, and the Steering Committee, which were notably responsible for investigating the problems associated with troubled social relations. In the participants' view, the joint employer/employee process and participation formed the cornerstones of the intervention process led by the research team. In the working groups, the researchers, COs, and managers all focused on the same objective: that of improving relations among detention facility personnel. As the correctional environment is generally administered in a somewhat autocratic or bureaucratic manner and in a spirit of either confrontation or negotiation, the participants from that environment put aside their usual ways of doing things to adopt a new way of tackling a shared problem. The proposed process was designed to be completely joint (i.e. employer/employee), transparent, and highly participatory.

However, again as confirmed by the persons met—but also as we ourselves observed in the field within the various committees—this change in mentality did not take place overnight. It required great open-mindedness on the part of the participants and a willingness to work together, which was not a given in an environment where many past projects had generated more expectations than results and had only increased the COs' confusion and resistance regarding any intervention. The recruitment of participants for the project was thus a crucial step in the process. And, despite all the good will shown by the participants, the participants had to be “called to order” several times during the discussions when they strayed from the groups' objective or veered away from the joint representation and participatory framework they had adopted. It was not always easy to retain the idea that all efforts had to focus on one objective, that of improving interpersonal relations among correctional personnel.

One of the challenges often cited by several of the intervention participants was that of sharing these participatory values with all the other employees and managers in the correctional centres. Within the intervention support groups, it was not always easy to institute this new method of functioning, which very often broke with the old, often more autocratic ways of doing things. The task was also made more difficult by turnover in the management personnel involved in the intervention support groups and in the detention facilities. The extent to which this participatory and innovative mode of functioning caught on often hinged on the management philosophy espoused by the prison wardens in place. Some were readier to move forward with this new process, as the interviews with various participants attest, while others were less amenable. The challenge faced was, of course, considerable, given the very hierarchical structure of the correctional services environment, which derives from a military tradition.

Lastly, despite the participants' desire to see the measures implemented, throughout the process the financial requirements remained an obstacle that was difficult to overcome.

The arrival of the research team and the formation of the intervention support groups sparked a degree of dynamism in the three intervention facilities and province-wide. Other interventions were therefore implemented or are planned for the centres according to the same principles as those introduced during the research project, but in a completely independent manner. This catch-on effect attests to the fact that the correctional services sector has assumed a certain measure of responsibility for the issue and to the dynamic effect of the intervention project.

5.1.2 Summary of the factors facilitating and hindering the process

Based on our analyses, we were able to compile a list of the different factors that at one time or another facilitated or hindered the implementation of the interventions. These main facilitators and hindrances to the intervention process in Québec correctional facilities, both locally and province-wide, were documented in an earlier publication (Bourbonnais et al., 2009). The primary results of this analysis are presented here in a table that divides all these factors into two categories. This table is the outcome of the combined analysis of the entire development and implementation process. It reflects the information collected through the key informant interviews, the observation process, and the researchers' participation in the different committees formed for the research project (intervention support groups, Coordination Team, and Steering Committee).

Figure 9 – Summary of the factors facilitating or hindering implementation of the interventions

<p>Factors facilitating the intervention process:</p> <ul style="list-style-type: none"> ☉ Support from senior management ☉ Employees’ participation in the process ☉ Formal commitment made by the partners ☉ Genuine willingness to work together ☉ A rigorous process and a degree of transparency ☉ Fulfillment of commitments ☉ The necessary release of personnel, in terms of time, to participate in the intervention activities ☉ Financial support when necessary ☉ Mutual respect ☉ The maturity of the intervention participants ☉ Open and transparent communication ☉ Feedback obtained from all the workers ☉ An open-mindedness that gradually led to a change in mentality <p>Factors possibly hindering the intervention process:</p> <ul style="list-style-type: none"> ☉ Mistrust on the part of the workplace ☉ A degree of disillusionment based on prior experience ☉ New directions being pursued by senior management ☉ Possible “political” pressures applied to hinder the process ☉ Frequent changes in managers ☉ A context in which the workload is already heavy ☉ Lack of human and financial resources ☉ Complexity and duration of the process ☉ Lack of power of those participating in the process ☉ Turnover of staff sitting on the committees ☉ Results not always in the direction that was expected ☉ Traumatic events (e.g. a co-worker’s suicide) ☉ A context of tense work relations (e.g. difficult collective bargaining)

5.2 Evaluation of intervention effectiveness: quantitative component, phase 3

The section presents the results obtained from the questionnaires administered at three points in time: before the intervention, in 2004; one year after the intervention, in 2007; and three years after the intervention, in 2009. The data presented reflect the answers given on the questionnaires by all the COs who responded at each measurement time. In other words, it does not reflect the answer of a cohort of subjects whom we followed over the years, but rather all the data collected from all the COs who completed the questionnaire at each measurement time.

5.2.1 Questionnaire response rate

In 2004, 1,515 of the 1,881 COs who were solicited answered the questionnaire, representing a response rate of 81%. In 2007, 1,288 persons answered the questionnaire out of the 1,764 officers expected to participate. The response rate for this first post-evaluation questionnaire was therefore 74%. Lastly, in 2009, a total of 953 COs out of the 1,949 officers solicited answered the questionnaire, giving a response rate of 49%. Moreover, as can be seen in Table 1, the response rates varied significantly from one centre to the other.

The response rates obtained in both 2004 and 2007 were high, providing a relatively accurate picture of the overall reality of Québec COs for these years, while not depicting the reality of all COs. The total response rate obtained in 2009, however, obliges us to regard the results presented in this document with caution. We cannot affirm with certainty that the 49% of the officers who answered the questionnaire in the last phase of the research project were representative of the entire correctional officer population. That said, we were able to establish a degree of representativeness by comparing the participants and non-participants using the information available.

Table 1 – Rate of participation in the research project, by correctional facility (%)

Facility	2004	2007	2009
DSTC*	54	58	25
RDP	77	70	35
Montréal	86	69	36
Sherbrooke	83	76	40
Amos	67	83	42
Trois-Rivières	71	61	47
Québec	80	75	50
St-Jérôme	82	76	54
Baie-Comeau	88	79	58
Tanguay	82	83	60
Sept-Îles	88	52	60
Valleyfield	81	75	61
New Carlisle	91	89	63
Hull	84	65	64
Chicoutimi	95	90	77
Sorel	90	80	78
Roberval	97	94	83
Rimouski	96	85	88
Average	81	73	49

* DIRECTION DES SERVICES DE TRANSPORT ET COMPARUTIONS (transportation services and court appearances division)

5.2.2 Sociodemographic characteristics

This section of the report presents the sociodemographic data obtained from the questionnaires completed by the COs in 2004, 2007, and 2009. By comparing the pre-intervention data from 2004 with the post-intervention data from 2007 and 2009, we can track the changes in the composition of the correctional officer population sample that participated in the different evaluation phases of the research project.

Table 2 – Sociodemographic characteristics in 2004, 2007, and 2009

	% in 2004	% in 2007	% in 2009
Gender			
Female	40.8	43.6	44.8
Male	59.2	56.4	55.2
Age			
18– 24 years	6.8	3.5	5.2
25– 34 years	35.5	32.6	31.0
35– 44 years	30.9	33.5	33.1
45 years and over	26.8	30.4	30.7
Level of education			
Elementary/Secondary	19.0	16.8	13.9
CEGEP	48.6	52.4	55.5
University, undergraduate (certificate or bachelor’s degree)	31.5	30.8	29.3
Occupational status			
Permanent full-time	57.1	63.7	75.9
Regular part-time	41.9	35.0	23.0
Casual part-time	0.7	0.9	0.8
Other	0.3	0.5	0.2
Years of seniority			
2.5 years and less	26.4	11.6	17.2
Between 2.6 and 5.5	24.3	32.5	11.4
Between 5.6 and 15.5	26.4	24.7	41.8
More than 15.5	22.9	31.2	29.7

The data in this section reveal the changes in the sociodemographic profile of peace officers working in Québec correctional services between 2004, which marked the start of the experimental phase of the project, and 2009. However, due to the low rate of participation in the 2009 questionnaire, a degree of caution must be exercised when interpreting the data obtained at this last measurement time.

Overall, we first observed a trend toward feminization of the personnel over time. We also observed a transformation in the age structure, where the officers were generally older in 2007

than in 2004; this was followed by a degree of stabilization in the age structure between 2007 and 2009. In addition, the level of education of the correctional personnel slightly increased over time. Lastly, we noted a drop in the proportion of officers having few years of experience within correctional services. Nearly 50% of the officers in 2004 had fewer than five and a half years of experience, whereas this rate dropped to nearly 40% in 2007 and nearly 28% in 2009.

5.2.3 The main variables measured and their evolution between 2004, 2007, and 2009

This section presents the results obtained for five specific dimensions taken from the models used in this study: psychological demands, low decision latitude, low reward (recognition), effort/reward imbalance, and lastly, low social support at work. Bear in mind our hypothesis that an improvement in the psychosocial constraints of the work (the intermediate impacts of the intervention) should reduce the prevalence of interpersonal violence (final impacts of the intervention). First, we shall examine the intermediate impacts of the intervention to ascertain whether the organizational changes introduced in the experimental centres in fact had the desired effect of reducing the prevalence of these work demands.

5.2.4 The intermediate impacts: job strain and effort/reward imbalance

This sub-section presents the results obtained for four important dimensions of the Karasek and Siegrist models on which we based our research since the first survey questionnaire was administered to the COs in 2000. More specifically, we examine the changes that took place in the work situation of COs between 2004, 2007, and 2009. In particular, we compare the results obtained in the three experimental centres with those obtained in the 15 control centres. It is important to remember that the experimental facilities had been selected at the beginning of the project on the basis of the magnitude of the problems they were facing.

Table 3 – Rate of exposure to high psychological demands (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	51%	58%*	61%**
Control centres	42%	56%****	51%***

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

The statistical analyses performed use the generalized estimating equation (GEE) procedures with a log-binomial regression to test H0:

(Prevalence at M1* – Prevalence at M0) = 0 for a given facility compared to H1: (Prevalence at M1 – Prevalence at M0) is different from 0 for a given facility, i.e. either bigger or smaller; and H0: (Prevalence at M2 – Prevalence at M0) = 0 for a given facility compared to H1: (Prevalence at M2 – Prevalence at M0) is different from 0 for a given facility, i.e. either bigger or smaller.

*M0=2004, M1=2007, M2=2009

Table 3 shows that the level of exposure to psychological demands among all the COs was high, whether or not they worked at a facility where interventions were carried out. It is also important to note that the levels of exposure to psychological demands grew particularly significantly between 2004 and 2007 in all the control centres, rising from 42% to 56%, which represents a leap of 12%. In 2009, this rate of exposure had dropped again to 51%, which was still higher than in 2004. In the experimental groups, we noted a rise, albeit a more moderate one, at all phases of the research, with the rate of exposure to psychological demands rising from 51% to 58% and then to 61%. Thus, both the experimental and control groups experienced a rise of 10% in their rates of exposure to high psychological demands between 2004 and 2009. The workload increased gradually and significantly in all the centres, meaning that the situation worsened for all the COs with respect to this dimension.

Table 4 – Rate of exposure to low decision latitude (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	90%	90%	88%
Control centres	90%	90%	86%**

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

Table 4 shows the very high rate of exposure to low decision latitude among the COs at both the control and experimental centres in 2004 and 2007. In fact, the proportion of low decision latitude, which was 90% in 2007, was similar in 2004 among the officers at both the control and experimental centres. A slight improvement in the situation was noted in 2009, mainly in the control facilities, where the rate of exposure to low decision latitude dropped to 86%. All in all,

the COs had, and still have today, little opportunity to use or develop their skills and to exert any control over their work.

Table 5 – Rate of exposure to low reward (recognition) (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	70%	71%	60%**
Control centres	64%	71%****	57%**

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

The data in Table 5 show the rate of exposure to low reward among the COs. Reward (recognition) is qualified as low when the score obtained is equal to or lower than the median observed in the COs in 2004. Table 5 shows that in 2007, 71% of the COs, whether or not they worked at the experimental centres, considered that they benefited from low reward. For the experimental facilities, this represented a 7% increase from 64% to 71%, a statistically significant difference. In 2009, the situation had improved in both the experimental and control centres. In the experimental centres, the rate of exposure to low reward dropped to 60%. In 2009, a slightly bigger improvement was noted in the situation in the control centres, with a 57% rate of exposure.

Table 6 – Rate of exposure to effort/reward imbalance (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	66%	69%	61%
Control centres	55%	70%****	58%

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

Table 6 shows the data on effort/reward imbalance. First, we observe that a similar proportion of COs in the control centres (70%) and experimental centres (69%) experienced effort/reward imbalance in 2007. However, over time this phenomenon evolved very differently in the control and experimental centres. In fact, while the rate of exposure was 55% in 2004 among COs at the control centres, it rose to 70% in 2007, representing a 15% increase, whereas the experimental centres saw an increase of only 4%. Thus, we see that in 2007, the COs in the control centres, despite a more enviable situation initially, had caught up to the officers in the experimental centres three years later.

However, in 2009, the situation at both the experimental and control centres had improved relative to 2007, although mostly in the control centres. In the experimental centres, the rate of exposure to effort/reward imbalance dropped to 61%, an improvement over the pre-intervention measure of 2004 (66%). In the control centres, the final situation in 2009 (58%) was similar to, although a little less favourable than, the initial situation in 2004 (55%). Overall, regarding

effort/reward imbalance, we observed a positive evolution for the COs in the experimental centres and a slightly negative evolution for those in the control centres.

Table 7 – Rate of exposure to low social support from co-workers (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	67%	69%	56%**
Control centres	65%	65%	66%

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

Table 7 shows the incidence of low social support from co-workers as experienced by the COs, according to whether they worked in the experimental or control centres. In both types of centres, we observed some stagnation in the situation between 2004 and 2007. In the control centres, the situation had evolved little by 2009. However, in the experimental centres, the situation had improved by 2009. In fact, 56% of the officers experienced low social support from co-workers in 2009, compared to 67% in 2004 and 69% in 2007.

Table 8 – Rate of exposure to low social support from supervisors (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	62%	58%	48%***
Control centres	53%	60%***	55%

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

Regarding low social support from supervisors (Table 8), the situation at the experimental centres gradually improved over time. The rate of exposure went from 62% in 2004 to 58% in 2007, and then dropped to 48% in 2009. The final situation (2009) was much more favourable than that in 2004.

The situation was somewhat different, however, in the control centres. While it deteriorated between 2004 and 2007, with the rate of exposure to low social support from supervisors rising from 53% to 60%, it had improved somewhat by 2009, with a 55% rate of exposure. This final situation (2009) did not, however, represent an improvement over the initial situation (2004).

Table 9 – Proportion of aggregate low social support (supervisors and co-workers) (2004, 2007, and 2009)

	2004	2007	2009
Experimental centres	57%	54%	44%***
Control centres	51%	54%	50%

! **** $p \leq 0.0001$; *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$.

Overall, considering the factors of low social support from both supervisors and co-workers, the experimental centres' situation improved gradually from 2004 to 2009 (Table 9). The 57% rate of exposure in 2004 dropped to a rate of 54% in 2007, and finally, to 44% in 2009.

In the control centres, first, the situation deteriorated between 2004 (15%) and 2007 (54%), but then improved by 2009 (50%) to approach the initial 2004 exposure rate.

All the data presented in this sub-section and collected in 2007 and 2009 in the course of this study reveal that the COs are still highly exposed to psychosocial constraints, despite the interventions put in place to reduce them. Comparing the 2004 situation to that of 2009, however, a few improvements were observed in the facilities where organizational changes targeting work demands were introduced (i.e. the experimental centres).

First, the rate of exposure to high psychological demands increased by 2009 in both the control and experimental groups relative to the baseline situation in 2004. The rate of exposure to low decision latitude remained unchanged in both groups over the years. Regarding the rate of exposure to low reward, it improved in the experimental centres, and to a lesser degree, in the control centres between 2004 and 2009. This contributed to a slight improvement in terms of rate of exposure to effort/reward imbalance in the experimental facilities. Lastly, while the experimental facilities saw an improvement in social support offered by co-workers and supervisors between 2004 and 2009, the situation in the control facilities remained unchanged.

These data reflect the challenge posed during implementation of the intervention project and corroborate the need to step up efforts to improve the psychosocial work environment of COs. Despite the many projects carried out to improve the work demands faced by the COs in the experimental centres, other changes in the work environment may have had the opposite effect.

The situation in the correctional facilities has apparently deteriorated over the past few years, notably due to a lack of personnel, a growing problem of overcrowding in these facilities, the emergence of new problems (particularly that of street gangs), and the lack of means to overcome these difficulties. Based on our discussions with the personnel and management representatives of the facilities targeted by the research project throughout the process, we observed that these problems are persistent.

5.2.5 The final impacts: violence in the workplace

One of our specific objectives was to evaluate the intervention’s impacts on organizational practices, and in turn, on the prevalence of interpersonal violence.

Table 10 – Rate of exposure to intimidation (2004, 2007, and 2009)

	Intimidation by co-workers			Intimidation by supervisors		
	2004	2007	2009	2004	2007	2009
Experimental centres	34%	34%	31%	47%	33%****	37%**
Control centres	35%	36%	35%	32%	41%****	31%

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

As can be seen from Table 10, the experimental and control centres had comparable rates of exposure to intimidation from co-workers in 2004 and 2007. In the control centres, the situation was unchanged in 2009, whereas in the experimental centres, the situation had slightly improved, with a 31% rate of exposure to intimidation by co-workers versus 34% in 2004 and 2007. However, this difference is not statistically significant.

Again referring to Table 10, we note that intimidation by supervisors diminished considerably in the experimental centres between 2004 and 2009. While 47% of the COs said they were subjected to intimidation by their supervisors in 2004, this proportion dropped to 37% in 2009. In 2007, an even bigger improvement was observed (33%). By contrast, in the control centres, the 2004 situation (32%) had significantly deteriorated by 2007 (41%), and then returned in 2009 to a level (31%) similar to that in 2004.

Table 11 – Rate of exposure to psychological harassment (2004, 2007, and 2009)

	Psychological harassment by co-workers			Psychological harassment by supervisors		
	2004	2007	2009	2004	2007	2009
Experimental centres	32%	32%	30%	38%	28%***	30%*
Control centres	37%	37%	32%*	31%	35%*	28%

! ****p ≤ 0.0001; ***p ≤ 0.001; **p ≤ 0.01; * p ≤ 0.05.

Table 11 shows that in both the experimental and control facilities, exposure to psychological harassment by co-workers remained unchanged between 2004 and 2007, but decreased by 2009. The decrease was small and statistically insignificant in the experimental centres (-2%), whereas it was both bigger and statistically significant in the control centres (-5%).

Psychological harassment by supervisors decreased in the experimental centres between 2004 and 2009, dropping substantially from 38% to 30%. This decrease was in fact statistically significant. An even bigger improvement had been achieved between 2004 and 2007. In the control centres, while the situation had somewhat deteriorated between 2004 and 2007, with exposure to psychological harassment from supervisors rising from 31% to 35%, it improved by 2009, when it dropped to 28%.

As the interpretation of the data in this section focuses particularly on violence at work, we can see that the situation in the experimental centres improved in many regards between 2004 and 2009. Contrarily, in the control centres, the situation remained unchanged overall or underwent only slight improvements during the same period.

Exposure to intimidation by co-workers slightly improved in the experimental centres but remained unchanged in the control centres. Intimidation by supervisors also stagnated somewhat in the control centres, whereas it improved considerably in the experimental centres. Psychological harassment by co-workers improved only slightly in both the experimental and control groups. Lastly, while the rate of exposure to psychological harassment by supervisors dropped slightly in the control group, we observed a bigger decrease in the experimental group. As a whole, we note that it was mainly relations with supervisors that improved in the experimental centres. In fact, exposure to intimidation and harassment by supervisors dropped considerably.

We can infer that the improvements observed in the experimental centres with regard to social relations at work related largely the interventions carried out there. We can also postulate that the absence of specific interventions in all the control centres resulted in a stagnation in their situation. It must be recalled that the interventions implemented in the experimental centres were aimed at improving relations between co-workers and with supervisors, and at preventing violence among staff members.

6. DISCUSSION

The purpose of this research project was to evaluate a participatory intervention aimed at reducing violence in the workplace. Several variables related to workplace violence were seen to evolve in the COs studied. These variables, which were targeted as work demands, are increasingly recognized as being related not only to mental health problems in the workplace, but also to a deterioration in social relations. From a quantitative viewpoint, we observed that the organizational changes introduced in the experimental centres had a positive impact primarily on reward (recognition) and social support from co-workers and supervisors. Decision latitude also improved, but to a lesser degree. We also noted that psychological demands continued to deteriorate over time, meaning that the COs' working conditions are growing more burdensome. This deterioration can only have hindered the impacts of the interventions implemented in the experimental centres for the purpose of improving the quality of social relations in the workplace. Even so, the impacts of the interventions were palpable. More specifically, as regards violence, the main factors that diminished significantly were intimidation and psychological harassment by supervisors. Intimidation and psychological harassment by co-workers also decreased, but to a degree that was statistically insignificant.

By contrast, while the situation in the control centres greatly deteriorated from 2004 to 2007 when no interventions were taken, the improvements noted in 2009 compared to 2007 probably resulted in part from the interventions implemented province-wide by the Ministère de la Sécurité publique in light of the intervention support groups' work in the experimental centres.

The light shed by the qualitative component of the research, as well as by observations and the testimonials collected from the interview participants, provided us with a better understanding of the results obtained from the questionnaires. In fact, these qualitative data put into perspective not only the development and implementation of the interventions but also the evaluation of the changes noted between the pre- and post-intervention measurement times.

For example, by simultaneously analyzing the changes in the work environment specifically identified in the testimonials collected in the experimental centres and the changes noted in the interpersonal relations at work, we were better placed to interpret these qualitative data. For example, we are able to confirm that the participatory nature of the project, the implementation of more democratic practices, the increase in, for example, consultation with workers, and the provision of more structured discussion opportunities, all contributed to the changes noted specifically in the experimental centres. We also know from the qualitative information collected that other province-wide changes (e.g. increased openness to consultation in certain forums, the arrival of managers who adopted different practices) in turn impacted the results, as the research project was conducted in a dynamic environment subject to constant change and outside influences.

This qualitative component of the research helped us to better understand and contextualize the virtual absence of changes in the other variables that were much more difficult to act upon, notably workload. In an environment such as a correctional facility, where work is traditionally organized in a very "strict" manner largely due to security constraints but also to pressures associated with inmates' rights, very little leeway exists for acting on workload. And when these

constraints are coupled with budgetary constraints, which require cutbacks and are exacerbated by a flagrant shortage of personnel to perform tasks, the options for action remain limited. In fact, over many years in the field, we have observed a significant increase in the workload. These conditions further complicate interpersonal relations that are formed in a context where major tensions exist regarding the work to be performed.

6.1 Scope and limitations of the study

This study identified organizational practices that help reduce the prevalence of violence among employees of the same work organization. Based on the rigorous evaluation conducted, we can confirm the role played by deficient work organization in the emergence of anti-social behaviours at work, given that intervention studies are usually regarded as more conclusive than observational studies in terms of causality (Kristensen, 2005). In addition to the other penal institutions not involved in our study, all workplaces affected by the phenomenon could therefore benefit from these results and draw inspiration from the organizational changes implemented in this study for purposes of taking action in their own contexts. The research protocol we used has in fact encouraged the targeted facilities to take charge of the intervention process in such a way as to continue taking action on their own, if necessary, when the research project ends.

Other workplaces could adopt the *modus operandi* used in this intervention as a model. Although this study was conducted in the correctional setting, all workplaces may well be interested in such a process as they too may witness violence among the employees of their work organizations. In this sense, while work conducted in the correctional environment has its own particularities that must be heeded, numerous work demands deemed to be at the root of violence in this setting are similar to those found in other workplaces.

The researchers who conducted this study identified three main limitations. First, statistically, it would have been worthwhile to do follow-up of the COs who completed the three study questionnaires. Tracking a cohort of subjects over a number of years requires a larger sample, which is particularly difficult to obtain in the context of an intervention research study. In fact, that type of study would have required a major investment of time and money on the part of the researchers, who were unable to increase the number of intervention support groups due to the limited resources (mainly time) available to them. In addition, sustaining the subjects' interest over a long period of time poses a difficult challenge in an organizational context characterized by heavy work demands and high staff turnover. If we had had a cohort, we would have been in a better position to establish correlations between work demands and organizational violence.

Second, given that few intervention measures targeted psychological demands, it is difficult to ascertain whether such measures would have been effective in reducing violence among staff members. While the psychological demands constantly deteriorated (i.e. increased) over the study period, we can only conjecture that fewer gains were achieved in terms of interpersonal violence than if a more favourable context had existed.

Lastly, mention must be made of one last limitation associated with this type of study, which is conducted in work organizations that are in a constant state of flux and where researchers cannot control the actions taken by the organizations outside of the study. Apart from the interventions

carried out by the intervention support groups in the three experimental centres and the provincially initiated interventions that affected all the centres, other actions may thus have been taken in the control centres, but also in some instances, in the experimental centres. These initiatives may have influenced the evaluation of the process, but also the evaluation of the impacts of the intervention, making it difficult to distinguish accurately those impacts brought about specifically by the research initiatives. Also, over and above the interventions carried out in one or another of the centres, certain events (over which the researchers had no control) may have been detrimental or favourable to the actions taken. The suicide of an employee at the workplace may, for instance, modify the desired impact of certain interventions. The same applies, for example, to decisions made by the provincial authorities, which in some cases can potentially undermine the efforts made during the implementation of certain projects.

7. CONCLUSION

All work organizations, irrespective of type, are likely to encounter situations involving interpersonal violence among members of their staff at one time or another. Clearly some organizations are more exposed than others to conditions that foster the emergence of interpersonal tensions—and in some cases, the eruption of violence in the literal sense—as, for example, in the correctional facility environment that we studied, but all organizations are at risk. Regardless of the workplace, a preventive process must be put in place to stop violent situations from occurring. However, before investing in such preventive measures, a key question must be asked: what actions should be prioritized to prevent the emergence of interpersonal violence in the workplace?

To date, little theoretical and practical knowledge has been developed on the issue of preventing interpersonal violence at work. Unfortunately, therefore, in many Québec workplaces, which today are being asked to take actions to prevent such violence or to intervene when prevention fails, actions are being taken that in fact have very little connection with the actual root of the interpersonal violence, i.e. the conditions that contributed to its emergence. In view of this reality, we considered it important to examine the nature of the actions required to reduce interpersonal violence in the workplace. We developed this research project for the purpose of evaluating a participatory intervention aimed specifically at reducing this form of violence. More specifically, we sought first to evaluate the intervention implementation process, and second, to evaluate the impacts of the intervention on organizational practices and on the prevalence of interpersonal violence.

This study was conducted in, with, and for the workplaces that we approached for the purpose of implementing such interventions. If we were able to carry out our research and develop new knowledge in this area, it was most particularly thanks to the participation of our partners in the Québec correctional services sector. Our association with that sector since 2000 has been built on the basis of a solid partnership forged between the researchers and representatives of the union and the Ministère de la Sécurité publique. At both the provincial and local levels, this partnership translated mainly into the creation of the experimental projects launched in the three correctional facilities. We are convinced that this partnership constitutes an important foundation for implementing such intervention projects and a prerequisite for their success. Without the partners' formal but also factual commitment, it would not have been possible to implement the changes, which were mostly organizational in nature.

We carried out our work in three phases: a) the development phase, during which concrete intervention targets were identified; b) the implementation phase, during which the selected interventions were implemented in three correctional facilities designated as “experimental” centres and selected from among all 18 provincial facilities; and c) the evaluation phase, during which the short- and long-term impacts of the interventions were evaluated. The first two phases used qualitative evaluation methods while the third used quantitative methods.

Three separate facilities were targeted for the research project: one small facility, one medium-sized facility, and one large facility. A joint health and safety committee, called an intervention support group (ISG), was formed in each facility to assume responsibility for identifying specific

and concrete intervention targets in their facility, prioritizing the actions to be taken, and implementing them. A variety of interventions was therefore selected and implemented independently in each of the experimental centres.

Similarities were noted between some of the actions chosen by each of the centres, despite their development in distinct environments. Among other things, we were able to divide the interventions carried out into three major categories: a) adoption of more participatory (democratic) practices that recognize the importance of each individual involved; b) adjustment of work methods so as to provide practice guidelines; and c) development of ways and means to foster healthy interpersonal relations and individual well-being.

Concurrently with local project implementation, provincial projects also emerged from the work done by the local ISGs. Given that these actions, which encompassed all the correctional facilities, could not be taken on a local basis, they were put in the hands of a mid-level authority known as the Coordination Team. Such was the case, for example, with the project of giving all provincial COs a badge.

In addition to doing a qualitative evaluation of the development and implementation phases, the researchers also evaluated the impacts of the interventions. This evaluation involved using recognized epidemiological methods, which allowed the COs at the three experimental centres to be compared to those in the 15 control centres, which did not participate directly in the intervention. This evaluation, involving a questionnaire, was carried out at three points in time: before commencing the intervention, one year later, and then approximately three years after intervention implementation began in the three facilities. Qualitative interviews were also conducted in these experimental centres and some of the pilot centres to collect information on the changes implemented in each of these facilities, whether or not these interventions were related to the participatory research project led by the RIPOST researchers.

Through our research, we were able to develop original knowledge on the prevention of interpersonal violence in the workplace. We were also able, on a broader note, to develop knowledge on participatory intervention methods, which are applicable in other research and intervention contexts. This knowledge will have to be compared, if not amalgamated, with other knowledge developed by the team researchers, but also with that of other researchers in order to enhance knowledge in the participatory intervention research field and to draw full benefit from it so that it can ultimately be made more readily available to workplaces.

More specifically, based on our evaluation, we observed that the interventions implemented in this study had a positive impact on the workers in the experimental facilities. The principal positive impacts include the marked improvement in the interpersonal relations between the COs specifically targeted by the interventions and their supervisors. The results obtained on the post-intervention questionnaires indicate, for example, a significant improvement in the social support offered to the COs by the persons in authority in the experimental centres. They also show (and this is of more direct interest in this study) a significant drop in psychological harassment and intimidation by supervisors, again with regard to the officers in the experimental centres. Regarding relations with co-workers, a positive impact was also noted in terms of the social support received.

These particularly positive results for social relations and violence are consistent with a broader observation we made regarding the research process as a whole. In fact, in our view, the research project, one of whose key foundations was worker participation in the process, contributed significantly to creating a new dynamic within the intervention support groups, but also within the Coordination Team and the Steering Committee, which were mainly responsible for tackling problems related to troubled social relations. Overall, we witnessed some change in mentality in several of the stakeholders directly or indirectly affected by the research process, notably, the supervisory personnel. In some centres, this change in mentality or attitude partly transformed the atmosphere by, for example, introducing more democratic practices in which the workers' viewpoint gained in importance.

It must be emphasized that this type of change takes time. And, as we observed, it is built on positive experiences on both sides that in certain situations justify opting gradually for new, less oppositional or confrontational practices where communication, dialogue, and transparency gradually take precedence, which, particularly for the correctional sector, does not characterize their usual practices. We believe that this approach to developing more democratic practices is especially conducive to improving social relations at work, and that it can secondarily have an impact on many other tension-related factors in organizations. Worker participation in processes and decisions therefore appears to be an important feature to retain in planning interventions.

Despite certain limitations related to sample size and population type, we firmly believe that the knowledge acquired here on intervention methods aimed at addressing interpersonal violence may be transferable to numerous workplace environments also encountering interpersonal tensions of this nature. This knowledge is all the more relevant because workplaces in Québec are now subject to legislation governing psychological harassment at work. The senior management of work organizations, occupational health professionals, union representatives, and of course, workers employed in organizations where violence is present may well benefit from this knowledge and apply it to their own workplaces. The type of intervention chosen and the practices developed in this research project may not only prove useful for violence intervention, but also in dealing with other conditions that are at the root of major job strain, and ultimately in improving worker health and safety.

While each organization will have to identify its own intervention targets focused on its specific needs and challenges, several types of the interventions implemented in the correctional setting and the processes used to do so may inspire the development of actions in a variety of organizations. It is essential, however, to conduct this examination of the specific workplace where the interventions are desired because each organization and each workplace setting has its own characteristics that can mean an intervention's success or failure. Simply duplicating interventions without going through this reflection process can have its own consequences. In the correctional environment, for example, the process of identifying possible interventions to counter interpersonal violence had to take into account the characteristics specific to the target facility, while obviously basing itself on broader observations. It must be remembered, by way of illustrating the need for this close attention to the specific circumstances of the particular workplace involved, that well before the Québec legislative amendments were made in this regard, the Québec correctional services sector had adopted a policy regarding violence but that, given the unwritten rules of the workplace (often called the "prison guard's code"), the

reporting (whistle-blowing) implied in this policy was such that many workers did not want to apply it because reporting on a co-worker was likely to have major consequences for the claimant, possibly even leading to worse violence in his regard.

One of the major findings of our study, which was grounded in the principles of participation and a joint employer/employee process, is the importance of trying to adopt more democratic processes and practices within organizations and work groups. This democratization fosters a degree of appropriation of power by workers and the necessary adjustments to management styles so that the work to be done can be mapped out more effectively and greater respect promoted for the organization's values—including those impacting more directly on interpersonal relations—which will then be shared among the various stakeholders (management and workers). A more democratic process should also be reflected in employee participation in decision making, more extensive communication, greater transparency, information sharing, and/or the participation of all parties (or their democratically designated representatives) in the organization's various functions. One strategy that could be given priority is that of giving the different employees of the organization opportunities and places where they can speak, interact, and discuss, regardless of their status, while being sure to actually take their suggestions into account by implementing concrete organizational changes. These orientations should also promote better work organization, which involves, for example, more clearly defined, formal procedures that are shared collectively. All these measures could have impact, at the source, on the organizational factors most often at the root of violence in the workplace and thus prevent it from occurring.

This research report will close with several recommendations intended to pave the way to the development, over the next year, of a transfer tool that translates the main knowledge developed in the area of participatory intervention research into practical terms. These recommendations are therefore general in nature and will hopefully induce the reader to give more in-depth thought to the issues, but also to possible actions that could translate into perceptible improvements in workers' health and safety in the field.

In conclusion, based on this research project as a whole, we would like to emphasize a number of avenues that we consider it important to pursue:

- First, it is above all crucial to listen to the workers in order to understand the violence they are experiencing or witnessing and to identify appropriate courses of action that are likely to have an impact on the factors at the root of the problem.
- The identification of the work demands specific to the workplaces involved will make it possible to act on the conditions most often at the root of interpersonal violence.
 - In fact, in most cases, violence cannot be prevented by acting solely on individual factors.
- In our view, it is therefore important to focus first on possible solutions that involve primarily the organization of the work, specifically:
 - greater worker participation in decision-making process;
 - changing practices and implementing ways and means to foster healthy interpersonal relations.

- The implementation of interventions built around the concept of power sharing, or of seeking more democratic processes and practices within organizations and work groups, is a key element.
 - An important objective we identified is that of giving everyone access to resources rather than leaving the privileges in the hands of a few individuals or specific work groups.
- One general conclusion that emerges from our research is clearly the importance of worker participation in both the processes under way and in the introduction of changes.
- Interventions cannot be implemented without the commitment and participation of all stakeholders concerned, for without this, projects risk being abandoned along the way. The involvement of management staff is a fundamental asset in an intervention process in the workplace, particularly when the actions to be taken specifically affect work organization.
- These intervention projects take a certain amount of time to implement because they are based on a true understanding of the factors at play and on the implementation of corrective actions in a difficult or complex context. This requires patience.

One of the issues related to the introduction of such processes is, as is becoming increasingly apparent to us, is the issue of the assumption of responsibility for and management of the interventions once the research project has ended. We therefore urge the employer and union representatives who participated in this extensive intervention research project to continue, on a sustained joint employer/employee basis, the efforts made to date to improve the quality of interpersonal relations among COs at work. While some of the targets of the study saw improvements, others did not (notably, workload). The correctional services sector must assume responsibility for and manage the preventive approach to workplace violence developed in this research project in order to foster employees' health and safety.

This major challenge is inevitably present in a research context, but also in any intervention initiative taken at a given point in time by a specific group, which risks being interrupted or losing interest due to major organizational changes such as new policies or directions adopted by management, rotation of management personnel or of union representatives, and budget cuts. Sustainability must therefore remain an overriding concern throughout the process, and whenever possible, the necessary commitments must be made to ensure assumption of responsibility for and management of the process over a long enough period of time, ultimately, to allow the interventions to succeed and transform the workplace for the long term.

List of scientific articles published in the context of this project

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