
Susan Stocka,b, France Tissofä, Faïza Lazrega
a Scientific Group on Work-related Musculoskeletal Disorders, Quebec Institute of Public Health
b Department of Social & Preventive Medicine, University of Montreal
CANADA

Introduction

In Quebec, prevention of work-related musculoskeletal disorders (WMSD) is an objective of the provincial public health program. In 2008, a WMSD prevention program was integrated into the work of Quebec's local public health occupational health (OH) teams who regularly visit workplaces in priority sectors, identify work exposures that pose a health risk to workers and, in collaboration with company representatives, develop a preventive health hazard action plan (HHAP) for the company. These OH teams include physicians, nurses and hygienists or hygiene technicians. In some regions, teams had access to a consulting regional ergonomist and, in a few larger regions, ergonomists were integrated into local teams. The WMSD prevention program included a 3-part summary evaluation of the presence of WMSD or associated risk factors in the workplace; if WMSD risk were identified and this health hazard was retained in the HHAP, then the OH teams were expected to carry out information sessions with workplace parties aimed at encouraging companies to implement preventive measures; if ergonomist resources (or other OH professionals with expertise in ergonomists) were available, they could also assist companies in more in-depth ergonomic evaluations and help them identify and implement solutions. In 2010-2012, our research team carried out a participatory research study to evaluate the degree of implementation of the WMSD prevention program by Quebec's Public Health Network in Occupational Health (QPHNOH) professionals and identify factors influencing implementation of program activities.

Methods

Mixed quantitative and qualitative methods were used. The project had 3 components:

1. content analysis of all health hazard action plans proposed by network teams in 2010 that identified and retained WMSD as a health hazard;
2. surveys of all QPHNOH professionals who carry out health hazard assessments and all managers and ergonomists of OH teams to collect information about the organisation of WMSD prevention activities, and perceptions about the program;
3. interactive workshops in each region with QPHNOH professionals and managers, to present results 1.5 years after the surveys, discuss interpretation, identify how WMSD prevention activities had evolved in each region since the surveys and to discuss suggestions for improving the program.

The research team gathered information all HHAP evaluations completed in 2010. The content analysis of these health hazard action plans permitted the calculation of the proportion of all HHAP that retained WMSD as a hazard, the proportion that proposed WMSD preventive actions such as information sessions or ergonomic support. It also explored variations in practice among the teams, particularly across the 18 health regions of the province.

The three online surveys included provided quantitative and qualitative information about:
- the regional and local organisation of WMSD prevention activities carried out by the OH professionals and/or ergonomists and the nature of the activities carried out;
- the perceptions of all professionals and managers of the program and the obstacles and factors facilitating its implementation;
- the perceived needs of OH professionals and ergonomists with respect to the WMSD prevention program;
- suggested strategies to improve the WMSD prevention program.

Statistical analysis of the HHAP data and the data from the 3 surveys allowed us to study the variations in results by region and by occupation. It also allowed us to study the influence of contextual factors (such as organisational factors, regional factors, characteristics of the companies evaluated and
characteristics of the OH professionals) on the decision to retain WMSD risks in the HHAP and propose at least one information activity or ergonomic support action.

The interactive workshops allowed researchers to interact face to face with OH teams in each region and provided additional qualitative information about perceptions of OH professionals, ergonomists and managers about the WMSD prevention program that complemented data collected from the HHAP and from the surveys.

Results
Over 80% of QPHNOH members surveyed perceive that WMSD are an important problem and that the network should play a role in preventing them. Thirty percent of the 1378 hazard evaluation action plans carried out in 2010 retained WMSD risks and among these, 71% proposed at least one information or ergonomic support activity in the action plan (75% in regions with at least one ergonomist, 48% in regions without an ergonomist). However, the program is not well established in some areas of the province, especially in regions without an ergonomist and there is great variability in the implementation of each element of the program. There is considerable consensus on which strategies to pursue to improve the program. Inadequate training and a lack of time to provide adequate support to workplaces were the most frequently perceived obstacles to implementation. Consensus was lacking on the respective roles of the various OH professions and ergonomists in providing ergonomic support to workplaces. The surveys and workshops identified the need of local OH team members for practical, interactive training to identify which WMSD hazards pose significant risks to health and on how to effectively mobilize workplace actors towards prevention. OH team members would also like ergonomic intervention tools and guidelines for specific risk factors or industries, accompanied by practical training in their use. Based on this study, 10 specific recommendations were proposed.

Discussion
This study suggests that undertaking activities to prevent WMSD by public health OH teams is feasible but requires additional training of practitioners and support of ergonomists. It demonstrated that a high proportion of QPHNOH practitioners and managers perceive the prevention of WMSD as an important public health problem that they should address. It also showed that, despite considerable variation in practices and intensity of effort, a high proportion of OH teams integrated WMSD risks into their evaluations and identified companies at risk. The results suggest that many non-ergonomist OH practitioners, even in regions with access to an ergonomist, but especially if there is no access to an ergonomist, have difficulty identifying whether WMSD risk factors present in the workplace are significant enough to warrant preventive interventions.

There is still much we do not know about which type of intervention and what intensity of intervention is enough to mobilize employers to seriously commit to modifying working conditions to prevent WMSD in an ongoing, durable way. How should interventions vary with respect to the stage of “change” and receptivity of the company? We also don’t know which ergonomic-related intervention activities, that will be effective in mobilizing employers, can be performed by non-ergonomist OH practitioners and which activities require a professional ergonomist; can non-ergonomist OH practitioners carry out ergonomic interventions, under the supervision of an ergonomist, that will be effective in mobilizing workplace stakeholders to modify working conditions associated with WMSD? Will such public health interventions, whether carried out by the ergonomist alone or in collaboration with the other OH practitioners, lead to a measurable decrease in incidence of WMSD and improvement in working conditions?

Once the program is revised, it will be very important to evaluate the effectiveness of the resulting public health ergonomic interventions and to compare different types of interventions and of different intensity, while taking into account the stage of receptivity/stage of change of the workplace and the sector.

References