

# **CPH News and Views**

*A semi-monthly column on emerging topics related to healthy workplaces*

## **Issue # 30: Training at the workplace improves cleaners' internal resources for handling demanding work**

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Individuals with high physical demands at work experience muscle pain more frequently than people with low physical work demands. This increase may either be a direct result of the work exposure (fatigue, injury, etc.) or due to an increased sensitization of the muscles to the effort required during work.

Cleaning assistants or janitors perform physically demanding work with tasks such as pushing, pulling, squatting and postures with twisted back or bent neck. Cleaning work is not as physically strenuous as construction work, nor as repetitive as assembly line work, but it does involve day-long walking and standing, often in awkward postures (Unge et al. 2007). In addition, cleaning work is usually organized in a very constrained way, with little opportunity for cleaners to schedule their own work time or to take part in organizing training or being responsible for work quality. Cleaners also report frequent muscle pain, especially in the neck/shoulders and low back. Several ergonomic adjustments have been introduced to reduce the physical load among cleaners (e.g., Søgaard et al. 2006). Because the ergonomic adjustments have shown limited benefits to date, alternative preventive strategies should also be considered.

Two types of initiatives have been shown both to empower individuals (i.e., increase their internal resources) and to reduce musculoskeletal pain. These are physical training (Hayden et al. 2005) and cognitive behaviour therapy (Morley et al. 1999). Both training programmes have the potential to improve cleaners' coping skills or other "internal resources" for dealing with their jobs.

### **What is physical training therapy?**

Physical training therapy empowers workers by improving their physical capacity, thereby reducing the relative physical load of the work. Usually it involves both strengthening exercises and exercises to enhance muscle-joint coordination, similar to physical therapy. It has been introduced as therapy against pain for two reasons. First, strength training increase tissue regeneration and thus the repair of deteriorated muscle fibres. Second, training that improves physical capacities (e.g., muscle strength and coordination) can reduce the relative loading of muscles during work and prevent recurrence of pain.

*A typical exercise that develops both physical strength and coordination is the plank, in which you position yourself at all fours (feet and hands) and keep the body stable while lifting one arm at a time. The exercise requires attention to the stability of the trunk and tension of the abdominals at the same time as balance is challenged while the arm is lifted.*

### **What is cognitive behaviour therapy?**

Cognitive behaviour therapy empowers workers in their ability to cope with muscle pain by reducing fear of pain during work and physical activity ("kinesiophobia"). It usually includes short teaching sessions on the physiology and psychology of pain perception, exercises to modify thinking about a painful situation, and relaxation techniques. It has been introduced to reduce pain-related thinking, behaviours and psycho-social reactions and thereby improve function and quality of life despite pain. It can be presented through either individual or group sessions, guided by psychologists or other trained coaches.

*One example of an exercise to challenge workers' cognitions is the "black, white and grey-scale" exercise, in which a dilemma is presented with two obvious solutions (black and white). Then you work in a group to find possible "grey" or in-between solutions. For example, the dilemma could be whether or not to go to work, if you're feeling unwell (the black and white solutions). The group would analyse the pro's and con's for the obvious choices and suggest other solutions such as go to work, but ask colleagues for help with certain tasks, or stay home but stay physically active, so you might recover more quickly.*

## **Are physical training and cognitive behaviour therapies useful strategies for cleaning workers?**

### **Effectiveness**

A workplace study among 363 Danish cleaning assistants from 9 different workplaces applied physical coordination training to one third of the group, cognitive behavioural training to another third and no program (control group) for the last third. Cognitive behavioural training was found to improve pain coping. In addition, physical coordination training improved muscle strength and coordination (Jorgensen et al. 2011a) compared to the control group and reduced chronic neck/shoulder pain (Jorgensen et al. 2011b).

### **Feasibility**

The Danish study also evaluated whether the training programs could be implemented at the workplace, to achieve an acceptable frequency of training attendance throughout the program duration, and to attract a high-risk group of cleaners. The training programmes did attract a relevant group of cleaners. Those who participated in the project had more frequent musculoskeletal pain, higher body mass index (BMI) and more frequent chronic diseases compared to non-participating cleaners (Jorgensen et al. 2010). These results differ from some previous health promotion projects that have reached primarily the healthiest fraction of employees (Robroek et al. 2009) and indicate that health promotion programmes should focus on work environment or health challenges that are specifically perceived as relevant among the target population.

However, implementation of the training programmes was only moderately successful. Attendance rates fell during the study. Low attendance was associated with a high number of unanticipated events and structural changes at the workplace (Jorgensen et al. 2012). The training sessions in the current programme were organized as 2-3 sessions per week during working hours and were therefore not easily incorporated into the daily routine. Activities that are unrelated to the working tasks or daily routines may be more vulnerable to organizational or structural changes at the workplace. Since organizational change is a constant factor in today's businesses, programs should anticipate this issue and try to protect themselves. This might be achieved by conducting thorough implementation planning before the program starts; by conducting thorough risk assessments and action plans towards estimated risks, such as management turnover; or by building programmes that are easier to integrate into daily routines at the workplace.

In conclusion, physical training and cognitive behavioural training seem to be relevant initiatives for reducing pain among cleaners and improving their internal resources to handle demanding work. It is possible to reach a high-risk group of workers through health promotion, but the practical implementation process is important. For example, health promotion initiatives should be sufficiently robust to survive unanticipated events at the workplace, but also sufficiently flexible to adjust to structural changes in the work context. Finally, building workers' internal resources should not stand alone, but be seen as an additional tool to the inevitably on-going work of reducing occupational hazards and sources of fatigue.

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