Using an occupational perspective to understand behaviours fostering the prevention of work-related health problems: A proposed conceptual model

Article accepted by the Journal of Occupational Science

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Abstract
Work is an occupation valued by billions of individuals across cultures and societies. As a determinant of health, work may have several positive effects on individuals’ well-being. However, it may also have negative effects as accidents, physical illnesses or transient mental disorders may occur. Workers’ preventive behaviours appear to be a lever of interest to foster the prevention of work-related health problems, but no clear definition does exist. The use of an occupational perspective (Njelesani, Tang, Jonsson, & Polatajko, 2014) seems a promising way to understand the characteristics defining preventive behaviours at work. This study aimed to define preventive behaviours at work, in order to understand their operational characteristics. To achieve this aim, secondary qualitative analysis based on data collected during three prior studies were conducted. Results identified six different types of preventive behaviours. Those are realized into a context, which involves several factors related to the person, occupation and environment. Finally, results also suggest those behaviours may lead to positive outcomes on different health indicators. Interpretation of results according to the five dimensions of the occupational perspective led to propose the Model of preventive behaviours at work. This study demonstrated how occupational science may help to understand the engagement of individuals in their actions, in relation to their context. It also shed light on how the doing may contribute to health and well-being, in an application related to the occupation of work.

Keywords
Occupational perspective, preventive behaviours, work, workers, conceptual framework

Funding
This work was supported by the author’s Fonds d’établissement de jeune chercheur from the Center for Interdisciplinary Research in Rehabilitation and Social Integration.

Acknowledgment
The author wants to acknowledge all collaborators who participated in the study and in the three studies from which data came: Pierre-Yves Therriault, France St-Hilaire, Patrice Daneau and Claudianne Laurin.

Disclosure statement
No conflict of interest to declare
Introduction.

Work is an occupation practised by billions of individuals all around the world. It is a central occupation during the human lifespan and is valued across cultures and societies (Freeman et al., 2018). Recognized as a determinant of health (OMS, 1986; Wilcock & Hocking, 2015), work may have positive effects on individuals’ well-being. For example, work may contribute to financial health, sense of self, feeling of accomplishment, social recognition or protection against physical or cognitive decline (Bosma, Van Boxtel, Ponds, Houx, & Jolles, 2003). However, work may also have negative effects on individuals’ health. Work-related health problems, such as accidents, physical illnesses or transient mental disorders, may contribute to a decrease in functioning or a reduction in quality of life (Canadian Mental Health Association, 2014). Work-related health problems may also affect organizations by reducing performance and productivity (Demerouti, Bakker, & Halbesleben, 2015). Societal impacts are also significant, as the United States disburse an estimated $ 250 billion each year to cover the costs of work-related health problems (Leigh, 2011).

Governments, unions, industries and health professionals make constant efforts to improve workers' health. Studies have been conducted to understand the determinants of success to prevent work-related health problems. Factors related to the equipment engineering, legislative system, organizational practices and workers themselves would influence the success of prevention. About workers themselves, preventive behaviours they may adopt would play an important role in occupational health success (Akselsson, Jacobsson, Bötjesson, Ek, & Enander, 2012; Cossette, 2013; Roy, Cadieux, Forter, & Leclerc, 2008; Simard & Marchand, 1994).

But what are preventive behaviours at work? Multiple definitions can be found in various fields of knowledge. The disciplines of psychology (Andriessen, 1978; Baranik & Eby, 2016; Griffin & Neal, 2000; Hayes, Perandan, Smecko, & Trask, 1998), work organization and management (Burke, Sarpy, Tesluk, & Smith-Crowe, 2002; Clarke, 2013; Fugas, Silva, & Meliá, 2011; Hofmann, Morgeson, & Gerras, 2003; Marchand, Simard, Carpentier-Roy, & Ouellet, 1998; Nahrgang, Morgeson, & Hofmann, 2011; Tucker & Turner, 2011), ergonomics (Cru & Dejours, 1983; Garrigou, Peeters, Jackson, Sagory, & Carballera, 2004; Ouellet & Vézina, 2008) and occupational therapy (Lecours, St-Hilaire, & Daneau, submitted; Lecours & Therriault, 2017) have explored the concept of preventive behaviours at work or related concepts. Psychologists most frequently present preventive behaviours (or safety behaviours) at work as two main dimensions: carefulness and safety initiatives (Andriessen, 1978; Griffin & Neal, 2000; Hayes et al., 1998). Carefulness relates
to the compliance with work-related rules, like wearing personal protective equipment. This dimension would reflect what is expected from workers for injury prevention (Snyder, Krauss, Chen, Finlinson, & Huang, 2011). The second type of behaviours described by psychologists are initiatives (Marchand et al., 1998) or participation (Griffin & Neal, 2000) related to the prevention of work-related health problems. Getting involved in an occupational health and safety committee or suggesting new safety rules are part of this dimension of preventive behaviours. Behaviours in this second dimension go beyond what is normally expected from workers; they are signs of involvement of workers in prevention and contribute to the development of a culture of prevention (Snyder et al., 2011).

In the field of work organization and management, the definition of preventive behaviours at work includes the concepts of advocacy (Tucker & Turner, 2011), communication (Burke et al., 2002), exercise of rights and responsibilities (Burke et al., 2002), proactive safety behaviours (Fugas et al., 2011) and engagement (Nahrgang et al., 2011). Literature in this field also describes preventive behaviours as safety citizenship behaviours (Hofmann et al., 2003). These behaviours are defined as individual behaviours that are discretionary, not directly or explicitly recognized by the formal reward system, and that promote safety in the organization. Examples include sharing work techniques with colleagues or suggesting strategies to improve safety.

In ergonomics, behaviours of prevention are mainly defined as “know-how of caution” which refer to the capacity of workers to apply knowledge in order to protect their own health and that of others (Ouellet & Vézina, 2008). Literature in ergonomics suggests that contextual factors, such as social support or physical working conditions, do impact on how workers may adopt preventive behaviours (Ouellet & Vézina, 2008).

One study in occupational therapy defined preventive behaviours at work (Lecours & Therriault, 2017). According to the authors, preventive behaviours at work are defined as observable and measurable actions workers may adopt to protect their own health and safety and that of their colleagues, thereby contributing to the overall occupational health. Those actions are grouped into five categories: 1) to comply with rules and procedures; 2) to be proactive, to participate, to involve and to take initiatives of prevention; 3) to maintain physical environment; 4) to care of social environment, and 5) to reflect and analyze work situations. However, this study described the behaviours workers may adopt in the perspective of preserving physical health and safety at work only.
Only one study aiming to identify behaviours workers may adopt to foster their mental health was found (Lecours et al., submitted). Based on interviews with health professionals, managers, researchers and workers, results of this study identified three large categories of behaviours workers may adopt to foster mental health, which are: 1) to adopt a reflexive practice (e.g., analyze work situations); 2) to take actions for one’s own mental health (e.g., use available resources); and 3) to take actions for the mental health of the collective (e.g., care about colleagues). This study also provided some information about individual factors (e.g., motivation) and organizational factors (e.g., management practices) influencing the adoption of preventive behaviours by workers, but the information remains scarce and concerns psychosocial aspects of health only. Since the definition of health implies a state of well-being that is physical, social and mental (OMS, 1986), it is important to define what are preventive behaviours at work in a global and holistic view of health.

Although literature offers examples of what workers may do to foster the prevention of work-related health problems, gaps are present in the current state of knowledge. First, actual literature provides limited information about contextual factors affecting workers’ capacity to adopt preventive behaviours. As human doing is not separate from the context in which it occurs (Njelesani et al., 2014), it is important to understand how contextual factors influence (i.e. promote or inhibit) the adoption of preventive behaviours by workers. Second, some models in organizational psychology (Baranik & Eby, 2016), ergonomics (Ouellet & Vézina, 2008) and occupational therapy (Townsend, Polatajko, & Craik, 2008) suggest that how people act, their behaviours have an effect on health and well-being. The definitions described above assume that preventive behaviours affect not only work participation, but also health. However, they do not adequately explain how behaviours impact on different health indicators. Third, most of the models dichotomize physical and mental health in their definition of preventive behaviours. From a holistic and global view, this representation of health is obsolete, and it is important to consider health as a whole, including its physical, social and mental dimensions.

To address the gaps in current knowledge, this study aimed to define preventive behaviours at work, in order to understand their operational characteristics. Specifically, this study aimed to document 1) what behaviours workers may adopt to foster the prevention of physical, social and mental work-related health problems; 2) what are the contextual factors that support those behaviours, and 3) what are the resulting outcomes on work participation and health.
**Theoretical framework**

An occupational perspective, as described by Njelesani et al (2014), was used to frame this study. Based on occupational science literature, these authors defined an occupational perspective as “a way of looking at or thinking about human doing” (Njelesani et al., 2014, p.234). This occupational perspective helps to understand the human being as an occupational being in relation to the environment as well as explaining the relations that unite occupation to health and well-being (Clark & Lawlor, 2009; Molineux & Whiteford, 2011; Moll et al., 2015). The work of Njelesani et al (2014) suggested five main dimensions of the occupational perspective: 1) occupations are related to doing at all levels (i.e. individual, collective or societal occupations); 2) it considers contextual factors (i.e. occupations are situated and influenced by a context; occupations may influence this context as well); 3) occupations are connected to health and well-being (i.e. occupations are seen as determinants and enablers of health); 4) it includes all types of occupational form, function, and meaning (i.e. it is inclusive of all kinds of occupations); 5) it contributes to doing, being, becoming and belonging (it is connected to an individual’s past, current and expected sense of self).

Preventive behaviours suggest workers’ actions are in relation to the work context and that they impact on health and well-being. Thus, it appears occupational science would help to uncover the construct and its operational characteristics.

**Method.**

*Design.* This study was based on secondary analysis of data collected during three prior studies. Secondary analysis of existing qualitative data is a recognized research approach to reach related, but different, objectives than those of the original studies (Heaton, 2008; Ritchie, Lewis, Nicholls, & Ormston, 2013). Figure 1 shows the general study design.
**Data sources.** The first study was a concept analysis of preventive behaviours in occupational health and physical safety based on literature (n=27 scientific articles) (Lecours & Therriault, 2017). That study identified concrete behaviours workers may adopt to foster their own health and safety and that of their colleagues, thus contributing to the health of the organization. Results highlighted the need to conduct further studies looking at contextual factors, especially those related to organizational and social environments, that may support the adoption of preventive behaviours by workers. Finally, results suggested that preventive behaviours may have an influence on health at an individual and a collective level.

The second study was a qualitative empirical project that aimed to describe occupational therapists’ practices to develop preventive behaviours among their clients (Lecours & Therriault, 2018, accepted). Interviews with thirteen occupational therapists were explored using a phenomenological analysis strategy (Giorgi, 2009). Results highlighted representations occupational therapists form of preventive behaviours in occupational health and physical safety. The study also helped identify eight different interventions provided by occupational therapists toward the development of their clients’ preventive behaviours.

The third study was an empirical study aiming to identify behaviours workers may adopt to specifically foster social and mental dimensions of health at work (Lecours et al., submitted). Interviews with 22 participants (researchers, health professionals, managers and workers) were conducted and analyzed using a template analysis strategy (Brooks, McCluskey, Turley, & King, 2015), which is a type of qualitative analysis. Results identified concrete behaviours (e.g., to use
available resources, to listen to colleagues or to express limits) workers may adopt to foster social and mental aspects of health. This study also highlighted contextual elements supporting those behaviours (e.g., availability of social networks or access to a safe and healthy environment) and outcomes related to health and well-being (e.g., pleasure at work or decrease in absenteeism).

These three studies produced a large quantity of qualitative data on preventive behaviours at work. Data about behaviours workers may adopt to foster physical, social and mental dimensions of health was available. Data about contextual factors influencing the adoption of such behaviours and about the resulting outcomes was also available.

Analyses. The data corpus was examined using a thematic analytical strategy (Fortin & Gagnon, 2016; Paillé & Mucchielli, 2012). Data analysis followed a systematic six-step process. Step 1 consists of organizing data. To do so, all raw data was converted into a textual form and imported into the QDA Miner5 software for qualitative analyses. Step 2 consists of revising data. A reading of the entire corpus was undertaken to get a sense of the whole. Several other readings were then conducted to ensure a sense of immersion of the researcher into the data corpus. Step 3 consists of the initial coding. Descriptive and “in vivo” codes were used and assigned to meaning units (single ideas) found during the data corpus review. The aim and specific objectives of the study were kept in focus to ensure the relevance of the coding proposed. In doing so, codes were intended to help document 1) what behaviours workers may adopt to foster prevention of physical, social and mental work-related health problems; 2) what are the contextual factors that support those behaviours; and 3) what are the resulting outcomes on health. Step 4 consists of proposing categories and themes. Codes (micro level) were gathered into categories (meso level) and/or broader themes (macro level). Based on the occupational perspective theoretical framework, three a priori themes (i.e. 1- engagement in preventive behaviours, 2- contextual factors and 3- outcomes on health) were suggested. Codes were then assigned to the identified themes. A careful reflection to find if other categories and/or themes would emerge in an inductive manner was ensured. For example, data analyses revealed clusters of codes under the categories of person, environment and occupation in the themes of contextual factors and outcomes. Step 5 consists of generating a general structure. This step enabled the researchers to propose a structure with links between the retained codes, categories and themes. Multiple rounds of applying the raw data into the general structure made it possible to fine-tune the analytical process. Step 6 consisted of interpreting data. In this last step of the data analysis, the structure proposed in step 5 was interpreted according to the occupational perspective (Njelesani
et al., 2014). The main characteristics of this theoretical framework were included in the retained structure.

Analyses were conducted by the first author. To improve the trustworthiness of the analyses, a second individual checked the meaning units identified, the codes assigned, as well as the structure produced. Interrater agreement was verified throughout the analytical process. At the third round of coding, interrater agreement was found on more than 85% of the meaning units and codes.

Ethics. Institutional ethics approval is not required for the secondary analysis of already published data. Ethics approval had been obtained for the three studies from which the data was drawn.

Results

Thematic analysis results
The study identified six different types of engagement in behaviours to prevent physical, social and mental work-related health problems. Seven contextual factors, grouped under three categories (i.e. person, occupation, environment) were also identified. Finally, the study helped to uncover seven resulting outcomes on health that have also been grouped under the three categories of person, occupation and environment. Figure 2 shows the thematic tree resulting from the data analysis process.
Figure 2: Thematic tree resulting from the data analysis process

**Theme 1: Engagement in preventive behaviours**

Results suggest six ways of engagement workers may adopt to enhance prevention of work-related health problems. These are concrete preventive behaviours workers may adopt to foster their own health or that of others in the work organization.

1. **To adopt a reflexive practice**

   Results suggest that preventive behaviours at work begin before the action as such, starting with the engagement in a reflective process toward prevention. To adopt a reflexive practice refers to the analysis of work situations to identify risks, to then mobilize resources to be able to make the right decisions to maintain health at work. This also refers to the capacity of workers to self-assess, to analyze their operating processes and to the capacity of workers to recognize they may be experiencing signs and symptoms of health impairment. This type of engagement can also mean taking the time to think about how one defines oneself as a worker and the importance of
prevention in the worker’s life. This quote demonstrates the representation a participant has about preventive behaviour as a reflexive practice.

> It seems to me, as I understand it, that preventive behaviours at work occur when the person analyzes a work situation, understands it, recognizes the risks that may be related to it, and decides to adopt a behaviour that can reduce these risks.

1.2 To comply with rules and procedures

This type of approach toward prevention refers to the use of personal protective equipment, respect of regulated activities or adoption of appropriate working techniques. This behaviour means respecting what is prescribed. The most frequent definition found in the literature about this type of behaviours concerns “activities that need to be carried out by individuals to maintain workplace safety. These behaviours include adhering to tagout and lockout procedures and wearing personal protective equipment” (Griffin & Neal, 2000, p. 349).

1.3 To participate, to involve and to take initiatives for prevention

The preventive behaviour related to the participation, involvement and initiatives for prevention refers to actions taken to improve the collective health of individuals in the workplace. This behaviour involves going beyond what is prescribed, doing actions that exceed what is minimally expected from workers toward prevention. For example, it may refer to workers being involved in the health and safety committee to propose solutions and make changes. A professional participant explained how she tries to develop this behaviour with her worker clients: “I try to get clients to be proactive in their environment and work team. [I want them] to teach others the safe work methods we have tried together because everyone should benefit from it in the end”.

1.4 To adopt a healthy lifestyle

This behaviour is a more individual one referring to the benefits of physical activity, sleep, food and balance between professional and personal life. The premise of this behaviour is that for health to be good at work, it must be good in other aspects of workers' lives. A participant expressed how to have a balance between professional and personal life is a significant facilitator of health.

> If you have nothing else in your life of interest [than work], it may be that you give everything to work [...]. Because basically, if you're tired at night, it's not so bad because you go to bed. But if you have an outing, if you have a hobby, if you have a yoga class, if you have a dance class or whatever, it's going to
help you to think: “It would be nice if I still have some energy to hang out with my friends tonight or to go to my karate class or whatever.”

1.5 To care about others
The fifth type of behaviour workers may use to foster health is toward other individuals in the organization. This behaviour refers to care about others, such as being attentive to others, offering help or recognizing others. This extract exposes the idea that workers should care about others: “Colleagues who see people changing in their mental health status, in their functioning, have a responsibility to go talk to the person and say, ‘What’s going on?’.”

1.6 To communicate
The last behaviour is to communicate. This refers to naming needs, limits and problems, to ask for help or to report health risks to colleagues and supervisors. Participants mentioned the importance to “raise the hand” or “to raise the flag” when workers have reached their limit or when they need help.

Theme 2: Contextual factors
Analysis of the data highlighted different contextual factors that may influence how workers engage in prevention. These factors are related either to the person, occupation or environment.

Concerning the person, to be able to take actions for health, workers must value health, safety and well-being. A participant clearly demonstrated this idea in the following quote:

I think that wanting to improve his lot, I think that the worker must have that personality, that vision. I know that not all workers are like me in the sense that I really care about this, my happiness, happiness of others and personal well-being.

It is also important that workers have personal psychological resources to act for prevention of work-related health problems, such as self-confidence or maturity. Finally, skills are required to be able to adopt preventive behaviours, such as decision-making processes or relational skills.

Concerning the occupation, it is important that the work requirements are known and well defined to support workers in the adoption of preventive behaviours. This idea has been mentioned by several professional participants as one of the first steps to reach when they meet a new client. They will go to “get the tasks’ description with the union and the employer” or “use available documents” so that they and the client understand well work requirements.
Concerning the environment, civility in the workplace appears to be of influence in the ability of workers to foster prevention of work-related health problems. Factors related to respect in relationships, tolerance of individual differences and openness to others are relevant. Organizational practices must also favour prevention, by allowing leeway, ensuring a safe physical environment or by giving recognition. A participant expressed the importance of the recognition to enable workers to act for prevention: “To give them the right to speak, to recognize their right to speak and the importance of their words, that’s central [for them to be able to act]. To respect them in what they are and for what we chose them.” Finally, the availability of social networks inside and outside the workplace is a relevant context factor affecting workers’ capacity to adopt preventive behaviours, as reported by a participant: “I think we need to have colleagues or family, a network giving that support to be able to make the necessary changes [in our behaviours].”

Theme 3: Outcomes on health
Health outcomes that may occur if the context is favourable and if workers engage in preventive behaviours were identified through data analysis.
Concerning the person, preventive behaviours at work may increase satisfaction for work, well-being and motivation toward prevention. For example, a participant said that caring about colleagues have had “created a certain satisfaction”; that she felt good to “have helped her team”. Concerning the occupation, the main outcome is a safer work activity and a subsequent decrease in work-related health problems. This positive outcome of preventive behaviours has been found in scientific writing more than 40 years ago. The oldest paper we found was published in 1978 and concerns a study conducted on 207 workers in the construction industry in which the author concluded that preventive behaviours “really do contribute to accident reduction” (Andriessen, 1978, p.1).
Concerning the environment, preventive behaviours at work may lead to the development of a culture of prevention and to a higher organizational performance toward health, safety and well-being. Finally, an improvement in work climate may occur. This improvement in the work climate was noted by a participant who spoke about preventive behaviours related to communication: “When workers are able to have frank discussions and name what is wrong, it makes the work climate healthier.”

Proposed Model of preventive behaviours at work
Based on an occupational perspective, interpretation of this study’s results let to propose the *Model of preventive behaviours at work*, as shown in figure 3. This model defines preventive behaviours at work as six different types of engagement in prevention. These behaviours are realized into a context, which involves several factors related to the person, the occupation and the environment. The model suggests preventive behaviours may lead to several positive outcomes on different health indicators related to the person, the occupation and the environment. Figure 3 shows that engagement in preventive behaviours is embedded in the context and that this dynamic leads to health outcomes. It also illustrates that the three main components of the model (contextual factors, engagement in preventive behaviours and outcomes) influence each other.

![Figure 3. Proposed Model of preventive behaviours at work](image-url)

**Discussion**

The aim of this study was to define preventive behaviours at work, in order to understand their operational characteristics. Those operational characteristics are comprised under the three large themes of 1) engagement in preventive behaviours, 2) contextual factors and 3) outcomes on health. Results identified behaviours workers may adopt to foster their global health, including
physical, social and mental dimensions. It has also been possible to identify the contextual factors influencing those behaviours as well as various outcomes on different health indicators. An occupational perspective was used to guide the analysis, allowing an enriched understanding of the concept, and culminating in a conceptual model that considers the five different dimensions of occupations.

The first dimension of the occupational perspective (Njelesani et al., 2014) implies that occupations are related to doing at all levels. The proposed Model of preventive behaviours at work matches with this vision of occupations. First, preventive behaviours refer to doing in the sense that they relate to an active engagement in concrete actions. This definition of preventive behaviours is shared by previous researchers. Most of the previous work has presented preventive behaviours as actions to meet requirements toward health, safety and well-being at work (e.g., Andriessen, 1978; Snyder et al., 2011) or as actions going beyond what is prescribed, to contribute to enhancing prevention in the workplace (e.g., Griffin & Neal, 2000; Marchand et al., 1998). The model presented in this paper suggests that engagements in preventive behaviours imply actions at an individual level (e.g., to adopt a healthy lifestyle) or at a collective level (e.g., to participate, to involve and to take initiatives for prevention). Behaviours can be either adopted toward oneself (e.g., to comply with rules and procedures) or others (e.g., to care about others).

This finding proposes that preventive behaviours occur at multiple levels and are multi-dimensional, which is similar to previous findings on the topic (Andriessen, 1978; Burke et al., 2002; Griffin & Neal, 2000; Hofmann et al., 2003; Marchand et al., 1998; Simard & Marchand, 1997). Results of this study added the idea that the engagement of workers in preventive behaviours may foster their own health, and that of their colleagues, thereby contributing to the health of every individual in the organization. Although this contribution has received little attention of other authors, it supports the idea of the collective responsibility toward health at work that is promoted in the current literature (Éditeur officiel du Québec, 2017; Lowe, 2010; OMS, 2007).

One of the major benefits that the occupational perspective has brought to the understanding of preventive behaviours at work is the interdependence between the actions and the context in which workers operate. In fact, it is important to understand that workers are part of that context. Several contextual factors, related to either the person, the occupation or the environment, may influence how workers act toward prevention, but these workers’ actions may also have an influence on the context. As an example, a supporting social network is a lever for workers in their
actions toward the prevention of work-related health problems. In the same way, if workers care about others, this may contribute to enhancing the quality of social support in the organization. The use of the occupational perspective let to understand that there is also a reciprocal influence between the outcomes, the context and the behaviours. In fact, as the organizational practices may support workers’ engagement in preventive behaviours, leading to outcomes, such as the development of a culture of prevention in the organization, a reverse influence is also possible. The culture of prevention may support organizational practices and workers’ behaviours toward prevention. It is a dynamic reciprocal system that contributes to improving health. Results of this study provide a deeper understanding of preventive behaviours, focusing not only on observable manifestations but also on the contextual factors that lead to them. To our knowledge, this is the first study to examine both behaviours’ specificity and contextual factors in the field of work-related health problems prevention. In fact, previous studies on the topic focussed mainly on the behaviours workers may adopt (Andriessen, 1978; Burke et al., 2002; Griffin & Neal, 2000; Hofmann et al., 2003; Marchand et al., 1998; Simard & Marchand, 1997). Some studies addressed the role of the context or the potential outcomes (Lecours et al., submitted; Lecours & Therriault, 2017; Ouellet & Vézina, 2008; Snyder et al., 2011) but not in a precise and dynamic manner. This study helped to uncover factors additional to concrete behaviours, contributing to a deeper understanding of this type of human doing.

The third dimension of the occupational perspective, which is the assumption that occupations are connected to health and well-being, is also supported by the model. The influence of the contextual factors and the engagement of workers in preventive behaviours lead to outcomes on several health indicators. The actions taken by workers may improve health, safety and well-being at different levels, whether it is individual (e.g., satisfaction at work) or organizational (e.g., performance in occupational health, safety and well-being). The proposed model has a global and holistic view of health. Analysis highlighted that several workers’ behaviours may have an influence on all dimensions of health, whether it is physical (e.g., decrease in work-related health problems, such as accidents), social (e.g., improved work climate) or mental (e.g., increase in well-being and motivation). To date, studies have focussed specifically on behaviours toward physical health and safety (e.g., Burke et al., 2002; Clarke, 2013; Marchand et al., 1998) or on mental health (e.g., Lecours et al., soumis), thereby failing to recognize health as a global construct (OMS, 1986). The proposed model also considers the form, function and meaning of occupation. In fact, it proposes different behaviours to adopt to foster the prevention, but doesn’t prescribe a specific
way to perform those. For example, the behaviour related to the participation, involvement and initiatives for prevention may be actualized through the involvement in a health and safety committee, through the participation in a specific training or through the proposal of solutions to enhance well-being at work. The function of behaviours is also considered in the model as the proposed behaviours may contribute to different areas of prevention of work-related health problems. Finally, the model takes into account of the meaning of occupation, as it considers individual values, reflexivity, as well as the culture of the organization.

Finally, the results of this study show the engagement in preventive behaviours contributes to doing, being, becoming and belonging, which constitute the last dimension of the occupational perspective. *Doing* refers to the action of engaging (Wilcock & Hocking, 2015). Doing mobilizes various individual or collective resources (e.g., mental, physical, emotional, social) to accomplish an occupation. In the model, three types of engagement in preventive behaviours represent the Doing, which are 1) to comply with rules and procedures, 2) to participate, to involve and to take initiatives for prevention, and 3) to adopt a healthy lifestyle. In fact, these three behaviours mobilize various individual and collective resources.

*Being* refers to the time of rest, reflection and personal meditation necessary to carry out the Doing (Wilcock & Hocking, 2015). Being provides an opportunity for individuals to take a time to reflect on their past, present and future as occupational beings. Being is a spiritual characteristic of the occupation, allowing the person to bring out ideas and formulate plans related to occupations. The Being is represented by the adoption of a reflexive practice in the model, as it comes before the action.

*Belonging* refers to the social dimension of the occupation; to places and social groups supporting the individuals’ occupations (Wilcock & Hocking, 2015). Caring about others and communicating are examples of belonging that are present in the Model of preventive behaviours at work.

Finally, *Becoming* refers to processes of change, transformation and development of the person related to the occupation (Wilcock & Hocking, 2015). In the model, Becoming is the dynamic change process leading to the different outcomes on health. It reflects the way the context and the workers’ behaviours may lead to positive transformation for health at work. Those characteristics of occupations influence the health and well-being of a person physically, mentally and socially by bringing about a state of satisfaction and accomplishment (Wilcock & Hocking, 2015).

**Contribution to the advance of knowledge**
To our knowledge, this study is the first to propose a holistic model of preventive behaviours at work which includes contextual factors, behaviours and outcomes on all dimensions of health. Although further studies are needed to establish clearer links between those contextual factors, behaviours and outcomes, it brings a valuable contribution to knowledge in the field of occupational science. In fact, as occupational science is a macroscopic and paradigmatic approach regarding human beings’ occupations, the proposed model exposes a more operational way to understand individuals as occupational beings in relation to their environment. The model also describes relations linking occupations to health and well-being, which are significant topics in occupational science (Clark & Lawlor, 2009; Molineux & Whiteford, 2011; Moll et al., 2015). The conceptual Model of preventive behaviours at work may be seen as a tangible application of occupational science in the field of work.

The use of the occupational perspective has provided a new depth of understanding about the complexity of workers’ preventive behaviours. In fact, the occupational perspective has helped to shed light on the dynamic and reciprocal influences between the different factors related to preventive behaviours. This framework has also permitted to recognize the importance of contextual factors and the impact of preventive behaviours on health and well-being. These results reinforce the importance that the various stakeholders involved in occupational health put efforts together to create a context favourable to the adoption of prevention behaviours by workers, since the benefits are positive for the health and well-being.

This study provides concrete levers to enhance the prevention of work-related health problems at various levels of prevention. First, governments, labor organizations and unions now have levers to promote prevention behaviours that are most likely to contribute to occupational health and thus identify and manage work-related problems risks at the source. The results presented in this article can even be used in prevention training offered on school benches to provide prevention upstream of exposure to occupational risks. Finally, by being able to identify the concrete behaviours to be promoted among workers, by being aware of the contextual factors to put in place and the consequences of preventive behaviours, rehabilitation professionals have new tools to intervene with injured workers to support a healthy and sustainable return to work.

The spin-offs of this study are thus present in all the actors of society.

**Study limitations**
One study limitation is that the author is the principal investigator of the three studies used in data sources, which may introduce a bias. Also, the author is an occupational therapist and it may have influenced the analytical process and the resulting outcomes. Specifically, the proposed model includes categories related to the person, the environment and the occupation, which are three main constructs in occupational therapy (Law et al., 1996). To limit those biases, several strategies were used. First, a research journal helped to externalize initial and preconceived ideas of the researcher. This means enables researchers to distance themselves from their preconceptions ensuring the interpretations made accurately reflect the data (Fortin & Gagnon, 2016). Also, regular discussions took place with collaborators through peer-debriefing meetings. This regular communication between collaborators guarded against the undue influence of any one person’s perspective. Also, a second person reviewed the analyses and interrater agreement was calculated. Finally, data analysis was described with several details to ensure transparency. Another limitation of this study is the bias of social desirability that may have been present during data collection. Results of this study are partly based on the analysis of interview data and it is possible that participants have amplified or exaggerated preventive behaviours they adopt. Observing participants behaviours may have helped to diminish this bias. Finally, the study design does not allow to link contextual factors with the specific behaviours and with the outcomes. A correlational quantitative study could deepen the understanding by making links between some contextual factors, behaviours and outcomes. Although the proposed model is based on theoretical and empirical data, it remains to be validated by experts and knowledge users (e.g., professionals or workers). This is the next step of research.

**Conclusion**

Using an occupational perspective to guide data analysis has led to propose the Model of preventive behaviours at work, a complex, rich and relevant conceptual model for improving workers’ health. The occupational perspective has helped to uncover the interaction of contextual factors and engagement in preventive behaviours, leading to positive outcomes on health. The model also includes ways workers may individually and collectively engage in prevention, as well as impacts of those engagements on the physical, social and mental dimensions of health. Finally, the model considers the meaning of the occupation which is an important characteristic of the occupational perspective. This model improves knowledge about workers’ preventive behaviours
and can be useful for all professionals interested in engagement toward prevention of work-related health problems. This study has demonstrated how occupational science can help to better understand the engagement of individuals in their actions and how the doing may contribute to health, in an application related to the occupation of work.
References


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