



An implementation evaluation of a qualitative culture assessment tool



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ABSTRACT

Safety culture has been identified as a critical element of healthy and safe workplaces and as such warrants the attention of ergonomists involved in occupational health and safety (OHS). This study sought to evaluate a tool for assessing organisational safety culture as it impacts a common OHS problem: musculoskeletal disorders (MSD). The level of advancement across nine cultural aspects was assessed in two implementation site organisations. These organisations, in residential healthcare and timber processing, enabled evaluation of the tool in contrasting settings, with reported MSD rates also high in both sectors. Interviews were conducted with 39 managers and workers across the two organisations. Interview responses and company documentation were compared by two researchers to the descriptor items for each MSD culture aspect. An assignment of the level of advancement, using a five stage framework, was made for each aspect. The tool was readily adapted to each implementation site context and provided sufficient evidence to assess their levels of advancement. Assessments for most MSD culture aspects were in the mid to upper levels of advancement, although the levels differed within each organisation, indicating that different aspects of MSD culture, as with safety culture, develop at a different pace within organisations. Areas for MSD culture improvement were identified for each organisation. Reflections are made on the use and merits of the tool by ergonomists for addressing MSD risk.

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1. Introduction

Safety culture has been identified as a 'critical element of healthy and safe workplaces' (Blewett et al., 2012; Zohar, 2010), and as such warrants the attention of ergonomists and others tasked with injury prevention (Bentley and Tappin, 2010). However, the concept of safety culture, while an attractive idea (Hopkins, 2006), remains for many a fuzzy psychological construct (Guldenmund, 2010) with little apparent practical value. Indeed, the practical value for health and safety culture within everyday workplace health and safety problems has, with rare exceptions (Lee et al., 2010; Arcury, O'Hara, Grzwacz, Isom, Chen and Quandt, 2012), been largely ignored by researchers (Bentley and Tappin, 2010). This paper presents an evaluation of the implementation of a qualitative tool for assessing organisational safety culture as it impacts a common occupational health and safety problem: musculoskeletal disorders. The motivation for this exercise is to

contribute to the development of practitioner tools to assess cultural aspects of the work system.

1.1. Organisational safety culture

Organisational safety culture is defined by Cooper (2000, p 111) as '... the sub-facet of organisational culture that is thought to affect members' attitudes and behaviour in relation to an organisation's health and safety performance'. For some, safety culture is considered as the next era of safety, as the impact of the management systems approach on significant advances in health and safety performance appears to have reached a plateau (Hudson, 2007). Others see safety culture as a means of enlivening safety management and creating a working system (Guldenmund, 2010; Reason, 1997). Indeed, safety culture has become a familiar term and the challenge for researchers and practitioners is to leverage the growing body of knowledge in this field into practical value towards improved health and safety performance. This value is apparent for high-hazard industries (Guldenmund, 2007), such as nuclear safety (Wilpert, 2001), oil and gas (Cox and Cheyne, 2000; Høivik et al., 2009), aviation (Wiegmann, Zhang, von Thaden,

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Sharma, and Gibbons, 2004; Gordon et al., 2007), rail (Farrington-Darby et al., 2005; Blewett et al., 2012) and construction (Choudhry et al., 2007; Dedobbeleer and Béland, 1991), where safety culture has been a focus for identifying and addressing suboptimal conditions.

Perspectives on what elements comprise the construct of safety culture differ between commentators working in this field. Cooper (2000) conceptualised safety culture as a multi-faceted construct, comprising interacting psychological, behavioural and situational factors. Reason's 'just culture', incorporating reporting, learning, just and flexible culture aspects, is highly influential within the safety management profession (Reason, 1998), and is perhaps the most useful contemporary framework for applying the concept of safety culture to improving safety performance. Wiegmann et al. (2004) identified from the literature at least five global components or indicators of safety culture: "organisational commitment", "management involvement", "employee empowerment", "reward systems", and "reporting systems". Organisational, or management, commitment concerns the willingness of senior management to identify health and safety as a core value or guiding principle of the organisation (Wiegmann et al., 2004; Lekka and Sugden, 2011). This commitment at senior levels is argued to be the single most critical factor in a positive safety culture as it facilitates sufficient resourcing and support for the development and implementation of health and safety initiatives.

1.2. Linking safety culture to MSD

Most conceptualisations emphasise the critical link between safety culture and the health and safety management systems, through shared values and beliefs which influence behaviour patterns and the development of health and safety activities in the organisation (Bentley and Tappin, 2010; Blewett and Shaw, 1997). In their guide for managing OHS, the Health and Safety Executive (HSE, 2013) in the UK state that 'effectively managing for health and safety is not just about having a management or safety management system. The success of whatever process or system is in place still hinges on the attitudes and behaviours of people in the organisation' (p 12). The health and safety management system itself will also influence the work climate of the organisation (Clarke, 2000).

It is through this association between the health and safety management system and the organisation's culture that the potential value of safety culture towards the management of MSD can be understood. While the large majority of organisations will have appropriately documented systems for managing MSD, these will only be effective where the culture of the organisation supports the health and safety management system (Bentley and Tappin, 2010). For example, where systems to capture reporting of minor incidents and near-miss events are supported by a strong reporting culture, the organisation's learning about MSD will be most effective given the gradual onset of musculoskeletal symptoms and their multifactorial causation. In organisations where cultural factors do not support a reporting culture, such as where contract workers are strongly discouraged by co-workers and management to report safety incidents because of risk of contract penalties, reporting systems will be far less effective.

Work-related MSD are a consequence of sub-optimal conditions in work characteristics and organisational design, usually occurring over a prolonged period, which may also combine with individual factors. Over the past two decades, work-related MSD research has increasingly focused on three groups of risk factors – individual, psychosocial, and physical, as well as interactions between them, in seeking to explain the continued high reported incidence of MSD in many industry sectors internationally (Bernard, 1997; NRC-IOM,

2001; Tappin et al., 2008). While risk factors from all three groups can be considered as independent predictors of MSD, it is now well accepted that it is a combination of risk factors that result in MSD rather than one element of risk (Bongers, Ijmker, van den Heuvel, Blatter, 2006; Da Costa and Vieira, 2010; Hauke et al., 2011; NRC-IOM, 2001; Silverstein and Clark, 2004). Causation models continue to develop from industry-based research that also highlight some of the broader interactions that can occur in occupational settings, creating conditions under which MSD may be more likely to occur (for example, Faucett, 2005; Karsh, 2006; Lee et al., 2010; NRC-IOM, 2001; Tappin et al., 2008). Examples of such conditions might include supply chain influences on work scheduling and task exposure, and impacts of remunerations systems on workload, work pace and work hours.

In line with these advances in knowledge of MSD causation, intervention design has similarly changed among practitioners tasked with preventing workplace MSD (Denis et al., 2008). Furthermore, many practitioners understand that an MSD prevention intervention will be less effective where cultural factors are not considered (Fathallah, 2010). As Blewett and Shaw (1997) have argued, practitioners need to be aware that irrespective of the technical content of potential ergonomics solutions, consideration of the wider socio-technical workplace systems is an essential part of their successful implementation.

Assessing cultural factors in the process of analysis, design, implementation and evaluation is easier said than done, however. Indeed, many practitioners have expressed their frustration to these researchers at the lack of practical tools to facilitate investigations of MSD that address the broader work system elements, such as culture (Bentley et al., 2012). The response has been to undertake research that aims to identify an effective method for assessing an organisation's 'MSD culture'; those aspects of health and safety culture that relate to MSD risk factors and the prevention of MSD. This paper describes the evaluation of the implementation of a tool designed to assess MSD culture, using two New Zealand organisations (implementation sites) facing relatively high risk of MSD as the implementation sites for the tool: a timber processing company and a residential care provider. The MSD cultural assessment tool (MSD CAT) used in this research was derived from a qualitative safety culture assessment tool developed by the authors and evaluated in earlier research (Bentley and Tappin, 2008).

1.3. The MSD CAT framework

The qualitative methodology for the MSD Culture Assessment Tool (MSD CAT) is based on a recently published framework for the qualitative assessment of health and safety culture, which has been found to be effective in identifying the level of cultural advancement for a broad range of health and safety culture aspects (Bentley and Tappin, 2008). Adapted from a set of cultural descriptors developed for the oil industry (Parker et al., 2006), the approach is based on the conceptualisation of health and safety culture as a multi-dimensional concept, for which different cultural aspects (e.g. reporting culture, communication culture, employee involvement in MSD prevention) may develop at different levels of advancement. The framework consists of a range of *concrete* (e.g. documents) and *abstract* (e.g. experiences) aspects of safety culture, and provides descriptors from which levels of health and safety cultural advancement can be determined for a number of aspects of safety culture.

The purpose of these descriptors is to guide assessment of the level of advancement across five distinct levels (expanded from Westrum (1993) three levels of safety culture advancement), ranging from Pathological to Generative (Parker et al., 2006):

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