Integrating health promotion with quality improvement in a Swedish hospital

Sandra Astnell*, Ulrica von Thiele Schwarz, Henna Hasson, Hanna Augustsson, and Terese Stenfors-Hayes

Department of Learning, Informatics, Management and Ethics, Karolinska Institutet, Stockholm 17177, Sweden

*Corresponding author. E-mail: sandra.astnell@ki.se

Summary

Integration of workplace employee health promotion (HP) and occupational health and safety (OHS) work into organizational quality improvement systems is suggested as a way to strengthen HP and OHS activities in an organization. The aim of this article was to study what consequences integration of HP, OHS and a quality improvement system called kaizen has on the frequency and type of HP and OHS activities. A quasi-experimental study design was used where an integration of the three systems for HP, OHS respectively kaizen, was performed at six intervention units at a Swedish hospital. The remaining six units served as controls. Document analysis of all employees’ written improvement suggestions (kaizen notes) during 2013 was conducted. The findings show that the intervention group had more suggestions concerning HP and OHS (n = 114) when compared with the control group (n = 78) and a greater variety of HP and OHS suggestions. In addition, only the intervention group had included HP aspects. In both groups, most kaizen notes with health consideration had a preventive focus rather than rehabilitative. The intervention, i.e. the integration of HP, OHS and kaizen work, had a favourable effect on HP and OHS work when compared with the controls. The results of the study support that this system can work in practice at hospitals.

Key words: quality improvement, employee, well-being, qualitative methods

INTRODUCTION

Workplaces were described as a priority setting for health promotion (HP) in the Jakarta declaration (World Health Organization [WHO], 1997). Since then, the focus has changed from considering the workplace as an arena for reaching adults in need of individual behaviour modification, to a more comprehensive approach that recognizes that the workplace in itself affects the physical, mental and social well-being of the employees. With this view, workplace HP involves both opportunities for individual lifestyle behaviour modification, such as physical activity, diet and stress management, and for improving employee health through improvements of the psychosocial and physical work environment (WHO, 1997; Shain and Kramer, 2004). A similar development has been seen within occupational health and safety (OHS) as it has been suggested that preventing accidents and occupational diseases might not be sufficient to reach the full potential of employees’ health (European Network for Workplace Health Promotion, 2007). Instead, a combination of preventive, promotive and rehabilitating health strategies needs to be sought, thus including primary, secondary
and tertiary prevention. When HP and OHS are managed as separate entities, HP often remains a marginalized activity with limited influence on the organization at large (Johnson and Baum, 2001). Thus, it has been suggested that HP and OHS should be managed as one at the workplace to further decrease risk-related behaviours and safety hazards, increase participation, reach high-risk employees and be more beneficial to the overall outcomes of the organization (European Agency for Safety and Health at Work [EU-OSHA], 2010). However, this is not the case in either research or practice (Baker et al., 1996; Goetzel and Ozminkowski, 2008; Hymel et al., 2011; Schill and Chosewood, 2013; Sorensen et al., 2013).

Lately, an even broader view has emerged where HP is viewed as a strategy for organizational improvements (EU-OSHA, 2010; National Institute for Occupational Safety and Health, 2012). This builds on the notion of interrelatedness between an individual’s health, the physical and psychosocial work environment and organizational effectiveness, including quality (Goetzel and Ozminkowski, 2008). Hence, organizations that aim to provide high-quality services and products while being a HP organisation have been encouraged to integrate strategies for improved employee health into the quality improvement systems that are traditionally used exclusively for the development of production and performance (EU-OSHA, 2010; Sainfort et al., 2001). Today, HP, OHS and productivity and quality management are often functional silos in organizations. When organizations are exposed to many separated systems, inertia may be created, often resulting in insufficient attention to one or more of the systems, complex bureaucracy and conflicting procedures. An integrated approach may be beneficial for organizational outcomes by enhanced utilization of resources and synergies (Wilkinson and Dale, 1999; Rocha et al., 2007; Asif et al., 2010; EU-OSHA, 2010). Quality improvement systems may be particularly suitable for integration (Zwetsloot, 1995; Wilkinson and Dale, 1999; Jørgensen et al., 2006), not least because the process of managing OHS and HP is similar to the process of managing quality improvements (Sainfort et al., 2001; van Scyoc, 2008; Ikuma et al., 2011; Monroe et al., 2012; Pelikan et al., 2014). This has, for example, been employed as part of the Health Promoting Hospital (HPH) concept, where HP practices have been integrated with continuous organizational development systems (Pelikan et al., 2001, 2011b, 2014; Lee et al., 2014a, b). Integration of HP into these systems has been considered as an approach to strengthen HPH organizations’ capacity to identify new health issues and develop appropriate interventions to address them, thus, creating structures and processes for sustained HP (Dietscher, 2013). Development of 18 core strategies (Pelikan et al., 2005) and five standards (Groene et al., 2005) was done to facilitate the integration. However, systematic, descriptive data regarding these integrations are currently missing (Pelikan et al., 2011a).

A common approach to quality improvements, as they are increasingly introduced in healthcare and linked to HP (Pelikan et al., 2005), is found in lean. Lean is a production philosophy originating from the Toyota production system and widely applied across different settings (Womack et al., 1990; Poksinska, 2010). One practice that is commonly included in lean is the systematic way of working with continuous improvements known as kaizen (Pettersen, 2009; Holden, 2011). It has been suggested that kaizen may be used to reduce workplace safety hazards (van Scyoc, 2008) and improve employee health (Sainfort et al., 2001). However, with the exception of two studies showing positive effects on employee safety, ergonomic hazards, work ability and productivity (Ikuma et al., 2011), there is a lack of studies investigating the effects of integrations between HP, OHS and kaizen. In particular, little is known about how such integration affects HP and OHS activities, including what kind of actions aimed at improving employee health are initiated through the integration. This study sets out to examine the integration of HP and OHS into the quality improvement kaizen system at a hospital.

The case
The integration was conducted at a Swedish hospital with ~500 employees working across 12 units, including both acute and elective care. Since 1997, the hospital has been a member of the WHO network HPH of which one of the foci is employee health. However, for most hospitals, patient-oriented strategies have been more fully implemented than staff- and community-oriented strategies (Pelikan et al., 2011a). The employee health promoting programme at the hospital includes a hospital level health co-ordinator, one to two unit representatives for spreading information about HP activities and an exercise room (anon.). The hospital works with the protection of employee health in accordance with the current legislation (SFS, 1977). This covers the technical/physical work environment such as occupational hygiene and safety practices and the psychosocial work environment, including personal and professional development, work autonomy and participation (SFS, 1977). Identification of risks and the construction of action plans are conducted annually (safety inspections) and the hospital works with kaizen as a method for quality improvements (anon.). All employees are free to identify problems and/or improvement areas in their daily work. Employees at each unit then meet to collaboratively find solutions to the problems identified. Documentation is done on kaizen notes (see Figure 1). The
way these kaizen meetings are structured differs from unit to unit, but commonly all the kaizen notes are put up on a visual board and are analysed and followed up on a weekly or monthly basis (anon.). All units have one to three kaizen representatives who support this process, who in turn receive support from a central kaizen coordinator. The integration, as proposed, is in line with what is referred to as ‘the essential ingredient’ for success in HP initiatives by its inclusion and active participation of employees throughout the process (Côté and Alarie, 2011).

**AIM AND RESEARCH QUESTIONS**

The aim of this study is to analyse the practical implications of the integration of HP, OHS and the quality improvement system kaizen regarding the following:

1. What types of HP and OHS aspects are documented as improvement suggestions (on kaizen notes)?
2. Do the topics concern promotive, preventive or rehabilitative measures?
3. Was HP and/or OHS the primary or secondary objective of the improvement suggestion?

**METHODS**

This study is a quasi-experimental intervention (von Thiele Schwarz et al., 2015). The 12 units involved directly in patient care were matched to create six pairs, aiming to be as homogenous as possible, based on the type of unit (opening hours, acute or elective care), size and the type of working processes for kaizen. From each pair, one unit was randomly allocated to the intervention group and one to the control group.

**The intervention: an integration of HP, OHS and the quality improvement system**

In the intervention units, an integrated system was implemented in order to broaden the HP programme and to bridge the gap between HP, OHS and the quality improvement activities (anon.). The intervention included no new structures or processes, but instead expanded the work with kaizen in two ways: (i) to include identification of HP and OHS activities and improvements in the kaizen work; and (ii) to analyse all proposed solutions, regardless of area, with regard to expected effects on employees’ health. By building on an existing system, the need for adequate infrastructure was met (Pelikan et al., 2011a, 2014). Additionally, the kaizen representatives and health representatives at the units started to work together instead of managing separate processes. The intervention was launched in February 2012. A few months before this, the hospital management decided that all units should transfer documentation from the annual safety inspections onto
kaizen notes and then manage them according to the usual kaizen process (anon.). This meant that the hospital’s OHS work procedures concerned with annual safety inspections were similar for both the intervention and the control units. The control units however were not instructed to consider health consequences related to other changes, as the intervention units were, or to continuously document risks on the kaizen notes. Thus, OHS was only integrated to a limited extent in the control units, whereas it was fully integrated in the intervention units.

In order to support the implementation of the intervention, two main activities were performed: three workshops and continuous coaching. The workshops aimed to inform and support the kaizen and health representatives, and the managers, in the intervention units. The coaching was offered as needed to the kaizen and health coordinators, and to the unit managers, by a coach certified in healthcare improvement. The coordinators and unit managers then functioned as coaches for the kaizen and health representatives at the units.

**Data collection and analysis**

All kaizen notes from 2013 from both the intervention and the control groups were collected. At this time, the project had been running for nearly 1 year, making it more probable that the findings would reflect a sustainability of the intervention rather than an initial, and temporary, peak of interest and awareness among the staff. Kaizen notes were scanned and transcribed. A direct deductive content analysis (Hsieh and Shannon, 2005) was then performed to categorize the kaizen notes. This was done using a categorization matrix containing four columns: ‘physical work environment’ and ‘psychosocial work environment’, based on the Swedish Work Environment Act (SFS, 1977); ‘health promotion’, based on the definition derived from Shain and Kramer (Shain and Kramer, 2004) and ‘unspecifc’, for cases where health and safety were mentioned, but the content did not allow any further classification. Notes with no content relating to employee health were excluded from further analysis. For kaizen notes categorized into ‘physical work environment’, ‘psychosocial work environment’ or ‘health promotion’, the manifest content was directly condensed and abstracted into subcategories. These were created guided by the Swedish Work Environment Act (SFS, 1977), and the following provisions from the Swedish Work Environment Authority: psychological and social aspects of the working environment (AFS, 1980); violence and menaces in the working environment (AFS, 1993); first aid and crisis support (AFS, 1999); workplace design (AFS, 2009) and physical ergonomics (AFS, 2012). Any kaizen notes that could not be coded with the help of these selected guidelines were analysed to see if they made up a new category related to HP or OHS. The kaizen notes categorized as ‘unspecifc’ were analysed separately using latent content analysis (Graneheim and Lundman, 2004) by reading through the kaizen notes, comparing their content with the categories and subcategories created in the manifest analysis, and then condensing and abstracting them into categories and subcategories in a similar way as in the manifest analysis. ‘Unspecifc’ notes that could not be sorted into any subcategory were marked ‘non-classifiable’.

To answer the two last research questions, the notes were matched to stages of prevention: rehabilitation after an occurrence of ill health or accident; prevention of identified risks of ill health or accidents or promotion of health. In addition, all notes were analysed from the perspective of whether health was suggested as a primary or secondary outcome. Kaizen notes in the ‘unspecifc’ category were not included, as they did not contain these types of data. Lastly, the incidences of all categories were quantified by calculating frequencies.

An inter-rater reliability test was performed by the first and the fourth author with a randomly selected 10% of the kaizen notes from each unit. Inter-rater agreement above 70% was achieved for all categories. The results were then compared and where congruence was not met, the classifications were discussed until consensus was reached. This process helped develop the definitions and guided further categorization. Ethical approval was granted by the local ethical review board (2011/1420-31/5).

**RESULTS**

A total of 403 kaizen notes were collected and analysed, of which 217 (54%) were from the intervention group and 186 (46%) from the control group.

**Identified aspects of HP and OHS on kaizen notes**

A total of 192 (48%) of the kaizen notes [intervention group: 114 (53%) and control: 78 (42%)] concerned HP or OHS aspects. As shown in Figure 2, most notes in both groups represented psychosocial aspects of the work environment. The control group had no kaizen notes concerning HP. The latent analysis of the category ‘unspecifc’ showed that these concerned either the physical or the psychosocial work environment (Table 1). The intervention group had kaizen notes in 28 (incl. latent analysis: 30) of the subcategories and the control group in 21 (incl. latent analysis: 25) subcategories, illustrating a slightly wider scope of aspects relating to HP and OHS as recognized in the intervention group. As can be seen in Table 1, nine (incl. latent analysis: nine) subcategories were...
exclusively represented by the intervention group and two (incl. latent analysis: one) subcategories exclusively by the control group. ‘Physical ergonomics’ (latent analysis: ‘organisation of work processes’) was the most common subcategory in both groups.

**Frequency of HP, prevention and rehabilitation on the kaizen notes**
The majority of the kaizen notes from the intervention group concerning the physical and psychosocial work environment focused on prevention (24 respective 35). In the physical work environment, one note also concerned rehabilitation in response to an occurrence of ill health (subcategory: physical ergonomics). The remaining eight notes in the intervention group (three on psychosocial work environment and five on HP) focused on promotive activities. All of the kaizen notes in the control group had a preventive focus.

**HP and/or OHS as a primary or secondary objective of the kaizen notes**
Gains in health as a secondary outcome were identified in 14 (21%) of the notes in the intervention group categorized as a physical or psychosocial work environment. In the control group, one note (2%) from the psychosocial work environment category recognized gains in health as a secondary outcome.

**DISCUSSION**
This study investigated an intervention that was in line with three core strategies for HPH: (i) staff empowerment regarding promoting self-care, (ii) ownership and management of health promoting work processes and (iii) promoting a supportive and safe setting (Pelikan et al., 2005, 2014). The findings showed that the intervention had a favourable effect on HP and OHS work. This was mainly seen in (i) more suggestions concerning employee HP and OHS; (ii) a greater variety of HP and OHS suggestions; (iii) increased identification of HP and OHS aspects as a secondary outcome when suggesting solutions to other organizational problems or when suggesting organizational changes and (iv) increased inclusion of HP aspects. It could also be noted that the intervention group had more kaizen notes than the control group during the study period, which may imply that the intervention also stimulated the general quality improvement work within the units. This would be in accordance with previous studies showing that organizational outcomes related to, e.g. services and

![Fig. 2: The number of kaizen notes related to employee health and safety, distributed by the main categories.](image-url)
<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>Citation from KN</th>
<th>Intervention n of notes (incl unspecified)</th>
<th>Control n of notes (incl unspecified)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical work environment</td>
<td>First aid</td>
<td>No access to defibrillator at staff gym</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Hygiene and contagion</td>
<td>Drugstore trolleys are very dirty and blotched from liquids and medicines</td>
<td>2 (1)</td>
<td>1 (1)</td>
<td></td>
</tr>
<tr>
<td>Lighting</td>
<td>Unsatisfying lighting outside drug storage room</td>
<td>1 (1)</td>
<td>1 (0)</td>
<td></td>
</tr>
<tr>
<td>Locker room</td>
<td>Students and part-time employees lack possibility to shower and change clothes in 'private'</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Needles and sharp injuries</td>
<td>No place for discarded needles, knifes etc. in the operation theatre</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Noise and acoustics</td>
<td>Loud noise from paper shredder</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Physical ergonomics</td>
<td>Recurrent work with arms above shoulder height when unloading goods</td>
<td>9</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Protective equipment</td>
<td>Risk of eye contamination when opening dishwasher detergent</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Safe premises</td>
<td>Unattached objects in premises can cause fall injuries for staff</td>
<td>2 (1)</td>
<td>3 (2)</td>
<td></td>
</tr>
<tr>
<td>Thermal comfort</td>
<td>Examination rooms become very hot during summer</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Ventilation</td>
<td>The unpleasant smell arising when cleaning with sodium hypochlorite can be disturbing for staff and patients</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Psychosocial work environment</td>
<td>Access to safety routines</td>
<td>Written safety routines for blood infections and other infectious diseases are lacking</td>
<td>2 (0)</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Arrangement of devices and equipment</td>
<td>Drugs are not stored in a uniform way</td>
<td>4 (5)</td>
<td>0 (5)</td>
<td></td>
</tr>
<tr>
<td>Arrangement of information</td>
<td>Before surgery we have to search for health records</td>
<td>3 (6)</td>
<td>0 (4)</td>
<td></td>
</tr>
<tr>
<td>Collaboration between units</td>
<td>Want to feel secure when working ‘across borders’</td>
<td>0 (1)</td>
<td>1 (0)</td>
<td></td>
</tr>
<tr>
<td>Maintenance of premises</td>
<td>Equip the kitchen for a more pleasant environment. Lack of glasses, etc.</td>
<td>1 (3)</td>
<td>2 (1)</td>
<td></td>
</tr>
<tr>
<td>Organization of premises</td>
<td>A new room for the physiotherapist (…) the physiotherapist becomes located closer to the patients</td>
<td>1 (5)</td>
<td>0 (2)</td>
<td></td>
</tr>
<tr>
<td>Organization of work processes</td>
<td>Physicians forget to write prescriptions. It takes a lot of time for both us and other physicians to handle the problem</td>
<td>7 (8)</td>
<td>2 (10)</td>
<td></td>
</tr>
<tr>
<td>Participation in workplace development</td>
<td>Hard to participate in the 2 pm kaizen-meeting when most of us are still in the operating theatres</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Personal and professional development</td>
<td>Colleagues do not have enough knowledge to use technical devices and aids</td>
<td>3</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Rest and recovery</td>
<td>At lunchtime and breaks we talk about work/patients/referrals, etc. Hard to relax and recover</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Frequency of intervention group</td>
<td>Frequency of control group</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Safety alarm</td>
<td>Lack of possibility to sound the alarm in some locations</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Safety routine education</td>
<td>The routine for use of protective equipment when preparing antibiotics is not followed (. . .) The routine should be clarified at a staff meeting</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Work instructions</td>
<td>Lack of routine for introduction of newly employed</td>
<td>1 (3)</td>
<td>1 (1)</td>
<td></td>
</tr>
<tr>
<td>Working schedule</td>
<td>Improved fairness when scheduling</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Workplace community</td>
<td>There is no common afternoon coffee anymore which causes a decreased feeling of community</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Workplace violence</td>
<td>During the safety inspection, it was noted that accounting of the cash-register is done in the reception. (This causes a risk of threat/violence at an eventual theft.)</td>
<td>2 (1)</td>
<td>1 (0)</td>
<td></td>
</tr>
<tr>
<td>Access to devices and equipment</td>
<td>Too few sterile tweezers to use for catheterization</td>
<td>0 (4)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Information of safety precautions</td>
<td>Insufficient information regarding free hepatitis B vaccination for personnel</td>
<td>0 (1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Organization of developmental work</td>
<td>The nursing workload measurement does not reflect the reality</td>
<td>0 (3)</td>
<td>0 (1)</td>
<td></td>
</tr>
<tr>
<td>Staffing</td>
<td>If there in the future is supposed to be 17 admitted patients on Saturday mornings, it is not enough with 4 personnel</td>
<td>0 (1)</td>
<td>0 (0)</td>
<td></td>
</tr>
<tr>
<td>Nutrition</td>
<td>Order a basket of organic fruit for the sake of health and environment!</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Physical activity</td>
<td>Tournament in soccer or rounders</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Preventive healthcare</td>
<td>Include massage in the preventive healthcare discount</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

The results of the manifest content analysis and the latent content analysis (used for the 'Unspecific' category) are shown separately. Numbers in parenthesis refers to the categorization following the latent analysis of the unspecified health kaizen notes.

*Italic text refers to subcategories added following the latent content analyses of the unspecified health kaizen notes. In addition, categorization was not applicable for two notes from the intervention group and four in the control group.*
production may also benefit from a health promoting intervention (Pelikan et al., 2001; Asif et al., 2010; EU-OSHA, 2010; Ikuma et al., 2011; Monroe et al., 2012).

Many of the aspects stated in the Swedish Work Environment Act (SFS, 1977) were covered by the issues in the kaizen notes. All the technical/physical aspects of the act were included in some form, although first aid was only mentioned within the control group, and for the psychosocial aspects all except autonomy in, and variability of, work tasks were included. One finding regarding psychosocial work environment aspects was that issues related to the organization of work, such as the arrangement of devices and equipment, the arrangement of information and the organization of work processes, were apparent in the intervention group but rarely mentioned in the control group. This could be a sign of an increased awareness of how organizational changes relate to employee health within the intervention group, which is one part of a holistic workplace HP that often is neglected (Chu et al., 2000). However, the latent analysis of the kaizen notes in the ‘unspecific’ category showed an equal number of examples from both groups for these subcategories. The latent analysis also added two new subcategories concerning the organization of work: organization of developmental work; and access to devices and equipment. These two subcategories were more prominent in the intervention group. This implies a more explicit awareness of how organizational improvements can affect employee health in the intervention group than in the control group.

In many organizations, HP, OHS and organizational effectiveness, including quality issues, are functional silos. The overall aim of the intervention under study was to create a system where these aspects were more integrated. Two aspects of the findings from this study provide examples of how this may have been achieved. First, the intervention group integrated examples of all three types of activities: promotion, prevention and rehabilitation, whereas the control group only integrated preventive activities. This suggests that the intervention was successful in creating the broad view of what HP may entail, as part of the purpose of comprehensive approaches to HP such as integrative approaches (Schill and Chosewood, 2013). Second, the intervention group identified HP and OHS as secondary outcomes when addressing other organizational problems more frequently than the control group. This may indicate that the integrative system had positive impact on employees’ understandings of how work and health interrelate. This is a perspective on integrated systems that seldom have been investigated and imply that the effects of integrated systems may go beyond the one’s that has been investigated to date.

**Methodological considerations**

Units were matched before randomization to ensure that intervention units and control units were similar in regard to features likely to affect the integration, such as type of unit (i.e. acute or elective care, opening hours and size) and kaizen work process (i.e. frequency of kaizen meetings and how actively they worked with kaizen). However, it is possible that other features could also affect the integration. Because of the limited number of units, we could not match all the possible features that could affect the integration.

Some uncertainty regarding the categorization emerged when a kaizen note was marked as concerning HP or OHS, but no further explanatory information was given. The areas ‘work environment’ and ‘staff and climate’ on the kaizen note did sometimes seem to be interpreted by staff to mean sustainable environment, e.g. recycling, or concerning patient safety. These kaizen notes were sorted into the ‘unspecific’ category, which may be a reason for why that category contained so many notes in both groups. Owing to the nature of the kaizen notes, an in depth latent analysis of the data was not possible, nor the aim of this article. Further qualitative research may provide valuable additional insights to this work.

As all units in both the intervention and control group had been asked to integrate some OHS aspects into their kaizen work, it could have been suspected that there would not be any difference between the groups. Indeed, the results indicate that both groups used the kaizen notes for OHS. However, the intervention group showed a consistent pattern, implying small but potentially important improvements in how this was performed. One intriguing possible explanation is that this is because the intervention group, in contrast to the control group, was asked to consider HP and OHS as one entity. Thus, merely integrating OHS and HP separately may not be sufficient to increase employees’ understanding of the interrelatedness of health and work, in the broader sense that both HP and OHS are moving toward. This is in line with previous research suggesting that kaizen work by its nature is inclusive of aspects concerning physical work environment (James et al., 2014), whereas other aspects of health may be less self-evident, requiring more effort to integrate. For example, the additional implementation activities in the intervention group may have been an important activity in this regard.

**CONCLUSIONS**

This study contributes to existing holistic approaches to workplace-based HP with an example from clinical
practice of what the integration of HP, OHS and quality improvement systems entails in practice. As suggested by the previous literature and implied by the findings in this study, a closer integration between these three processes may broaden employees’ understanding of HP and OHS, particularly in terms of relationship between work and HP. An integration may also have implications on psychosocial aspects of the work environment. These aspects may increasingly be considered not only from a preventive perspective, but also from a rehabilitative, or promotive perspective. Finally, this kind of integration may increase awareness of health consequences secondary to other changes in the workplace.

ACKNOWLEDGEMENTS

The authors thank the hospital staff and management for their support and contribution to this project.

FUNDING

This work was supported by AFA insurance.

REFERENCES


