

# Pilot study of a randomised trial of a guided e-learning health promotion intervention for managers based on management standards for the improvement of employee well-being and reduction of sickness absence: the GEM (Guided E-learning for Managers) study

Stephen A Stansfeld,<sup>1\*</sup> Lee Berney,<sup>1</sup> Kamaldeep Bhui,<sup>1</sup> Tarani Chandola,<sup>2</sup> Céire Costelloe,<sup>3</sup> Natalia Hounsome,<sup>3</sup> Sally Kerry,<sup>3</sup> Doris Lanz<sup>1</sup> and Jill Russell<sup>3</sup>

<sup>1</sup>Centre for Psychiatry, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, London, UK

<sup>2</sup>Cathie Marsh Centre for Census and Survey Research, School of Social Sciences, University of Manchester, Manchester, UK

<sup>3</sup>Centre for Primary Care and Public Health, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, London, UK

\*Corresponding author

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## Scientific summary

### A guided e-learning health promotion intervention for managers: the GEM study

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# Scientific summary

## Background

There is empirical evidence including several meta-analyses which shows that the psychosocial work environment has an impact on employee well-being and mental health and risk of sickness absence. There is a consensus that employee health is a public health priority and the responsibility of employers and employees as well as health services. So far, evaluations of organisational interventions for workplace stressors are limited. Reviews of interventions within organisations have shown mixed evidence of benefit on health outcomes: a meta-analysis of 48 studies of occupational stress interventions showed that the majority of interventions were delivered to individuals rather than targeting the organisation or management.

At the organisational level, teamworking interventions have demonstrated improvements in the work environment by increasing support, but there have been insufficient methodologically robust randomised controlled trials to test whether or not organisational-level interventions are effective in improving the well-being of employees and reducing sickness absence. This study, built on the Health and Safety Executive (HSE) management standards, is piloting an organisational-level management intervention using an e-learning program for managers.

## Objectives

The overall aim of the main randomised trial as laid out in the pilot study protocol was to evaluate whether an e-learning health promotion intervention using management standards applied by managers improves employees' well-being and reduces sickness absence in clusters selected from an organisation compared with similar clusters in the same organisation where it has not been applied. In this pilot study we tested the acceptability of the trial, the feasibility of recruitment, the components of the intervention, adherence and the likely effectiveness of the intervention within separate clusters of the same organisation.

## Methods

We adopted a cluster randomised design for this study. We recruited an organisation receptive to using a continuing professional development (CPD) approach to adopting management standards and identified separate clusters within the organisation. Our inclusion criteria included the organisation's ability to provide usable data on sickness absence and to allow internet access at work for managers. We aimed to recruit 100 employees from four clusters; three clusters were randomised to the intervention and one cluster was randomised to the control arm. We excluded from data collection employees for whom the intervention was unlikely to have an effect because they would not remain in the organisation for the duration of the study: the long-term sick, those with a notified pregnancy and employees on contracts due to expire during the course of the trial.

The intervention used in the study was an established e-learning program for managers based on management standards to be conducted over 2 to 3 months, guided by a facilitator and accompanied by two face-to-face meetings.

We used quantitative and qualitative methods of data collection and analysis. Our primary quantitative outcomes were employee well-being measured by the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) and sickness absence. Sickness absence data were collected from the participating organisation's human resources (HR) reporting systems. Questionnaire data on employee well-being, psychological distress,

psychosocial work characteristics and self-reported sickness absence were gathered by online or paper questionnaires soon after consent. Recruitment took place between June and October 2013. We aimed to consent and collect baseline data before randomisation but as recruitment took longer than planned this was not always possible. Employees were contacted to complete a second questionnaire in January 2014. The e-learning program was introduced to managers in October 2013 and was accessed until December 2013. The hosting system for the program enabled us to gather uptake data to assess manager adherence to the intervention and to measure managers' knowledge gained from the intervention by analysing e-learning quiz scores. Qualitative in-depth interviews were completed with key informants, managers and employees to explore their views about workplace stress and manager competencies, experiences of specific instances of stress, the acceptability of the trial and the intervention and the context in which the study was taking place. A focus group was held with intervention group managers and observational data were collected from meetings held during the study period. We also assessed the overall costs and benefits of the pilot study intervention to judge whether or not these would support a full trial.

## Results

Participants were recruited from four clusters (within a mental health trust) over a period of 4 months. A total of 1116 employees worked in the four targeted clusters, of whom 649 attended recruitment meetings and 424 consented to taking part, 65% [95% confidence interval (CI) 62% to 69%] of those approached. These employees were managed by 60 different managers. In total, 41 managers out of 49 in the three intervention clusters consented to take part. Of those employees consenting, 350 (83%, 95% CI 79% to 86%) completed a baseline assessment and 291 (69%, 95% CI 64% to 73%) completed the follow-up questionnaire. Sickness absence data were available from HR for 393 employees, 93% (95% CI 90% to 95%) of those consenting. Consent and completion rates were similar in the control and intervention clusters, with rates of 64% and 66%, respectively, for consent, 81% and 83%, respectively, for baseline completion and 72% and 68%, respectively, for follow-up completion.

Adherence to the intervention was defined operationally during the study as completion of at least three of the six main e-learning modules. In total, 21 managers adhered to the intervention. These managers had 120 employees contributing complete well-being data and 113 employees contributing self-reported sickness absence data.

The scores for well-being, as measured by the WEMWBS, fell slightly in both groups, from 50.4 to 49.0 in the control group and from 51.0 to 49.9 in the intervention group. The overall intervention effect after adjusting for clustering and baseline values was very small, with a difference of 0.5 points between the intervention group and the control group (95% CI -3.2 to 4.2 points).

Sickness absence data were provided anonymously by HR departments so could not be linked to any other data, limiting any analysis by engagement of the managers. The mean number of days taken off sick (excluding absences of > 21 days) was 1.2 in the intervention group and 0.9 in the control group at baseline, rising to 1.6 and 1.0, respectively, at follow-up. An intervention effect of 0.6 (95% CI -1.4 to 2.6) in favour of the control group was observed. In total, 27% of employees from the control group and 30% from the intervention group were registered as taking sickness absence at baseline from the central HR database. This increased to 37% and 35%, respectively, at follow-up.

The mean number of self-reported days off sick was 1.2 in the control group and 1.0 in the intervention group at baseline. At follow-up, the mean number of self-reported days off sick was 1.3 in both groups. No evidence of any intervention effect was seen. The mean 12-item General Health Questionnaire (GHQ-12) score decreased slightly in the control group between baseline and follow-up whereas it increased slightly in the intervention group between baseline and follow-up, although these differences were not statistically significant. There was a non-statistically significant decline in supervisor support in the intervention group compared with the control group.

Employees whose managers did not adhere to the intervention (either who did not consent or who did not complete at least three modules) had a worse WEMWBS score at baseline (49.6 vs. 51.9, adjusted difference  $-2.3$ , 95% CI  $-4.2$  to  $-0.4$ ) and the fall in WEMWBS score was significantly less among employees whose managers adhered to the intervention than among employees whose managers did not ( $-0.7$  vs.  $-1.6$ , adjusted difference  $1.6$ , 95% CI  $0.1$  to  $3.2$ ).

The mean number of self-reported days off sick was 0.7 at baseline among employees whose managers were adherent to the program compared with 1.6 among employees of managers who were not adherent to the program. The self-reported number of days off sick increased in employees whose managers were adherent and decreased in employees whose managers were not adherent, although differences were very small. There was a small reduction in mean GHQ-12 score between baseline and follow-up among employees in the intervention group whose managers were adherent compared with employees of managers who were not adherent. Supervisor support improved slightly between baseline and follow-up among employees whose managers were adherent to the program compared with employees whose managers were not adherent to the program.

The qualitative study found that key sources of workplace stress identified by both managers and employees were organisational change and culture, job insecurity, poor communication, insufficient resources to deal with an increased volume of work, the physical environment, the inherent nature of mental health work and the pressures of family life events and ill health. Emotional sensitivity and the ability to juggle between competing demands and roles were identified as critical manager competencies for dealing with stress at work.

The e-learning program was considered by managers who participated as easy to access and straightforward to use and the content was deemed to be relevant. Managers were ambivalent about e-learning, identifying benefits and disadvantages. They favoured a 'blended' approach and welcomed the opportunity to share experiences in a face-to-face group.

The key identified value of the e-learning program was how it 'backed up' existing knowledge and encouraged reflection on managerial practice. In recounting instances of supporting employees, managers drew broadly on 'experiential knowledge', probably based on past experience of dealing with support for employees, rather than attributing specific learning to the intervention.

Managers reported insufficient time to engage with the intervention and a lack of senior management 'buy-in'. The intervention was thought to need better integration into organisational processes and practice.

## Discussion and conclusions

### *Acceptability*

The study was found to be acceptable by participants with many respondents making positive comments about the conduct of the trial and the intervention. Nevertheless, we do not know whether or not managers who did not take part would have found it acceptable.

### *Feasibility*

The study supported the feasibility of employee recruitment to a trial. Recruitment targets for employees and managers were met but there was a notable lack of adherence by recruited managers. There was a fall-off in the participation of employees between consent and completion of the baseline questionnaire but a high retention rate between completion of the initial questionnaire and follow-up. A sizeable proportion of managers dropped out at the beginning of the study. Our findings on recruitment and participation need to be interpreted within the wider context: considerable organisational change and uncertainty within the trust, resulting in particular pressures on staff time and resources, and low levels of trust between staff and senior management.

The study found some evidence that managers who were more engaged in the sense of completing more of the e-learning program were managing employees who had higher employee well-being scores both at baseline and at follow-up. It could be that the group of managers who were more 'effective' at managing stress in their employees were more likely to participate in the study; it could also be that in some settings stress levels were very high, employee well-being levels were low and the managers were too stressed to complete the intervention. It is notable that the levels of psychological distress were high among employees from both the intervention group and the control group compared with rates in the general population.

It was feasible to collect sickness absence data using the trust's HR system and to obtain sickness absence data from social services when employees were employed by social services rather than the trust.

### **Components of the intervention**

In the qualitative study, managers identified benefits and limitations of e-learning. Most favoured a 'blended' approach, with more emphasis on face-to-face learning than was the case with the guided e-learning intervention. Managers liked the face-to-face meetings and found this shared learning experience supportive.

Managers found that the modules reaffirmed existing knowledge rather than necessarily providing significant amounts of new knowledge. The program was considered no less useful for this; indeed, managers welcomed the opportunity that the material provided to reflect on practice.

The study found a contrast between the focus of the e-learning materials on the competencies as defined by the HSE management standards and the kind of competencies that respondents identified when recounting specific instances of stress and managerial support. Respondents emphasised competencies such as compassion, listening skills, 'being human' and so on, aspects of 'emotional sensitivity' implicitly but not explicitly referred to in the e-learning program.

Employees and managers highlighted factors affecting stress at work that they felt were beyond line managerial control: family pressures and personal health, the physical environment and the specific pressures of working in a mental health trust.

### **Adherence**

Only half of the managers 'adhered' to the intervention (i.e. completed three or more modules). Time appeared to be a major factor. Those managers who adhered indicated that they had insufficient time to complete the suggested activities that formed part of the learning materials.

The finding that there were higher levels of well-being among employees of 'adherent' managers, both before and after the intervention, implies that these managers were already having an impact on their employees' well-being, irrespective of the intervention. In this sense, adherence could be considered a marker for positive qualities as a manager.

### **Likely effectiveness**

We did not expect to test the effectiveness of the intervention in this pilot study and were not powered to do so. The lack of a positive effect of the intervention on well-being and sickness absence must be interpreted in this context. However, our study provided a wealth of learning about the possible factors influencing the likely effectiveness of the intervention, including a seasonal effect, random variability, selection effects at baseline, the sensitivity of our well-being measure, the short time interval between the intervention and follow-up well-being measurement, the confounding effects of organisational change, the characteristics of this particular group of managers and shortcomings in the educational intervention itself and in the study's logic model.

### ***Economic evaluation***

The economic evaluation concluded that the costs of e-learning were high but would be reduced in a larger sample. Health economics data collection was shown to be feasible but will require a full trial for a detailed cost–benefit analysis.

### ***Limitations***

The limitations of the pilot study included being unable to explore differences in sickness absence in subgroups of employees, the lack of a quantitative measure of the impact of the intervention on managers themselves, a lower than expected level of manager adherence and an adherence measure that did not take account of managers' adherence to the recommended additional learning activities in the e-learning program.

### ***Recommendations***

In a further mixed-methods study we would want to improve manager adherence, collect a well-being score for managers, define a measure of organisational change, modify the educational intervention to encourage more active and interactive learning, ensure that the intervention is better embedded into organisational processes and modify the study timetable to give more time for any changes in employee well-being to take effect and reduce the possibility of a seasonal effect.

### ***Overall conclusion***

We conclude that the next step should be a further mixed-methods study to develop the intervention. It is feasible to carry out an economic evaluation of the intervention. The mixed-methods approach that we adopted in this study was valuable in illuminating the acceptability of the intervention and the reasons for adherence and non-adherence and for understanding the influence of the study context.

## **Trial registration**

This trial is registered as ISRCTN58661009.

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