Title of the article: Development and evaluation of online menopause awareness training for line managers in UK organizations.

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Accepted: 2nd December 2018

Journal: Maturitas

E-pub link: https://www.sciencedirect.com/science/article/pii/S0378512218306467?via%3Dihub

Key words: menopause, work, symptoms, knowledge, attitude, training

Highlights

- There are calls for managers and employers to have knowledge and awareness of the menopause in order to meet the needs of working women who experience problematic symptoms.
- This paper describes the development and evaluation of a brief, online menopause awareness training for managers.
- Results indicate that this may be a feasible and effective way to improve managers' awareness, knowledge and confidence in discussing menopause at work.

ABSTRACT

Objectives: To develop and evaluate a 30-minute online training for managers, in order to improve menopause-related knowledge, attitudes and confidence in having supportive discussions with women experiencing menopausal symptoms at work. The study also explored intentions and behaviour in terms of having conversations.

Study design: A prospective, pre-post design involved collecting data at three time points: pre-training, immediately after training, and four weeks post-training.

Three UK organizations (one public, two private sector) participated. On-line questionnaires collected sociodemographic and background data. Qualitative and quantitative evaluation data were collected in post-intervention questionnaires. Paired t-tests and McNemar tests examined statistical differences pre- and post-training; thematic content analysis was performed on qualitative data.

Main outcome measures: Menopause knowledge, attitudes and confidence in talking about the menopause at work, intentions, and actual behaviour.

Results: 270 staff were invited and 98 consented to participate; 62 and 61 provided data immediately and 4 weeks post training, respectively. Compared to pre-training scores, statistically significant improvements were found in menopause-related knowledge, attitude (not viewing the menopause as an embarrassing topic to talk about at work), confidence in talking about the menopause with staff, and intentions to discuss menopause, at both follow-up assessments. Over 90% of respondents reported that they found the training useful and would recommend it to others.

Conclusions: A brief menopause awareness training may be a feasible and effective way to help managers become more knowledgeable about menopause-related problems and more confident in discussing and exploring solutions with their staff.

1. Introduction

There are over 4.2 million women in employment aged between 50 and 64 in the UK [1]. The menopause occurs on average between the ages of 50–51. At any one time therefore, a significant proportion of mid-aged and older women workers will be going through the menopause and might experience symptoms whilst in employment. The menopause has been identified as an important area for consideration if older workers are to be retained in the workforce [2]. Yet, there is a general lack of awareness and communication about menopause in work settings.

Approximately 70-80% of European women experience hot flushes and night sweats at some stage during the menopause [3]. These can impact negatively on quality of life in terms of discomfort and embarrassment, and have an adverse impact on sleep [4-5]. A minority have very troublesome hot flushes, but at work many find them embarrassing and report concern about the reactions of co-workers [6]. Women often report that menopause impacts adversely

at work due to tiredness, low mood, and poor concentration and memory [7]. Although an under-researched area, there is evidence that certain work situations and physical working environments increase the intensity of menopausal symptoms [8,9]. Women are generally reluctant to divulge problems related to menopause at work [7] and discussion about the menopause at work is widely perceived as taboo [10] and, until recently, there has been little consideration of what employers could do to provide support.

In a study in 10 UK-based organizations, 896 women's experiences and recommendations for employer support were explored [7]. Their top recommendations were: (i) greater awareness among managers about menopause as a possible occupational health issue, (ii) flexible working hours, (iii) access to information and sources of support at work, and (iv) attention to work place temperature and ventilation.

Guidance and position statements for employers highlight the importance of these areas and advocate that workplaces should address them [11-14]. We have addressed (iii) in a recent publication [15]. The current study focuses on the need for greater awareness among line managers. Line managers are usually the people to whom employees report, and who are responsible for managing employees on a day-to-day basis. This study presents the development of a brief training intervention and its evaluation.

The training was based on four developmental studies:

First, an online survey was conducted to explore menopausal women's perspectives on supportive management practice. This generated a list of women's recommended 'do's and don'ts' relating to managers' awareness of the menopause, communication skills and behaviours. These are reported in detail elsewhere [16]. In summary, the recommendations included increasing line managers' knowledge about the menopause and how it can affect women at work, their understanding of the impact of the physical work

environment, the importance of listening, and avoiding being dismissive, patronizing, making inappropriate jokes, or making assumptions or generalizations about women's experiences.

In a second study, individual telephone interviews were conducted with 17 expert stakeholders: line managers, occupational health professionals, human resource professionals, and trade union health and safety representatives. Interviews were recorded and explored their perspectives on (i) what line managers need to know to improve the working experience of women going through their menopause, (ii) potential barriers for managers acquiring and using such information, (iii) the design and delivery of a suitable intervention, and (iv) the nature of evidence that would demonstrate an intervention's effectiveness. Responses provided information on training content (e.g. what is the menopause and how can it affect women in the work context), preferred delivery methods (e.g. online, face-to-face, or a hybrid approach), and outcome measures of interest to stakeholders (e.g. knowledge, positive attitude towards the menopause, confidence in talking about the menopause). Potential barriers and process issues were also identified, including time needed for training, buy-in from senior managers and costs.

In a third study, guidance on menopause and work published by UK professional bodies and trade unions was reviewed [14]. This guidance identified the necessity for managers to be aware of the menopause and to provide a supportive work environment, and also understand their duties in respect of relevant legislation.

The importance of managers' communication skills and behaviours was highlighted in our first development study. A fourth development study with 15 menopausal working women explored how they would prefer to have a conversation at work about menopause related-problems [17]. In telephone interviews, women described facilitators and barriers to

such conversations. They explained that they would like managers to be accepting and understanding, to show women they are being listened to with empathy and positive body language, and to look for solutions together. Women noted that managers should not be dismissive or appear uncomfortable when having such discussions. They also noted the importance of an organization-wide awareness of the menopause and aging, and proactive and supportive managers.

Two behaviour change theories informed the intervention's design. The outcomes of interest to the expert stakeholder group (knowledge, attitude, confidence) were closely aligned with Azjen's theory of planned behaviour (TPB) [18]. TPB proposes that behaviour is a direct result of an individual's intention to carry out that behaviour and their perceived control over that behaviour. Intentions are influenced by three main beliefs known as: i) behaviour beliefs, which relate to an individual's attitude toward the behaviour; ii) normative beliefs, which relate to perceptions about how others feel about the behaviour in terms of its acceptability; and iii) control beliefs, which relate to how much control or confidence an individual has over the behaviour. The theory is frequently employed in studies of social and behavioural science interventions [19] and has been shown to be effective in predicting intentions and actual behaviour in several meta-analyses [e.g. 20-23]. This theory was used to help inform both the content of training and the outcome measures (see tables 1 and 2).

In addition, the Behaviour Change Wheel framework (BCW) [24] and a systematic review of behaviour change techniques [25] were used to operationalize the behaviour change techniques employed in the intervention. We drew from the 'training' and 'education' elements of the BCW and the relevant behaviour change techniques suggested for these elements by the authors, such as providing a model and/or demonstrating the behaviour in question, and the use of prompts or cues. We also drew on the COM-B model of behaviour,

where the aim is to improve ‘capability’, opportunity’, ‘motivation’, and, in turn, ‘behaviour’ of individuals. And finally, a literature review of individual-level workplace interventions suggested a number of elements for training content and delivery, including testimonials and personal stories [e.g. 26-28].

An outline of the training was developed for the team and stakeholders to discuss and a one-day workshop held to finalize the program and outcome measures and the design. The current study aimed to investigate a brief, online menopause awareness training for line managers. The training aimed to change: i) knowledge about the menopause; ii) attitudes toward the menopause; iii) confidence in talking about the menopause to staff; and iv) normative beliefs about talking about the menopause in the work context. We also monitored the extent to which there were changes after training in v) intention to speak to someone at work about the menopause, and vi) actually speaking to someone at work about the menopause (behaviour).

2. Methods

Participants included line managers (and supervisors) from three large UK organisations, one public and two private sector. Organizational gatekeepers, from occupational health or human resource functions sent email invitations to 270 eligible staff members. Interested participants could opt to click on the link provided to a secure external site and participant information and consent forms. Following consent, participants were asked to complete a pre-training questionnaire (T0). They were then given a link and password to enter the training website. After they had completed the training, participants were asked to complete a quiz and second questionnaire (T1). Four weeks later, they were sent an email by the researcher with a link to a final questionnaire (T2). Each questionnaire took approximately 5-10 minutes to complete.

A combination of quantitative and qualitative self-report data was collected in the questionnaires (see Table 1). The pre-training questionnaire included sociodemographic and background questions. Outcome variables were measured in all questionnaires (apart from actual behaviour, which was measured only at T0 and T2). Participant evaluations of the training were collected both at T1 and T2.

Paired samples t-tests and a McNemar test were conducted to determine any significant changes between time points: pre- training (T0), immediately after training (T1), and 4 weeks post-training (T2). Analyses were performed in SPSS (version 24). Thematic content analysis was used to explore qualitative data. The approach of Braun and Clarke [29] was used to carry out the thematic analysis. The analysis was data-driven (inductive) and semantic (explicit meanings), and involved 5 key steps including: 1) familiarisation of the data, 2) generating initial codes, 3) searching for themes, 4) reviewing initial themes, and 5) defining and naming the themes. Excerpts for each theme were then summed to derive frequencies and percentages.

2.1 The training intervention

The training (summarized in Table 2) was web-based/online including eight videos, a quiz, and supplementary resources that could be downloaded or viewed on external websites. The videos contained images with narration, relevant information, testimonials with menopausal women and line managers, and films with actors demonstrating desirable and less desirable conversations between a ‘menopausal employee’ and ‘their line manager’. The quiz concluded the training. Overall, the training was approximately 30 minutes’ in duration and could be completed in one or multiple sittings.

3. Results

Ninety-eight line managers gave consent and completed the pre training questionnaire (T0). Of those, 62 (63.3%) provided data immediately post training (T1), and 61 four weeks post training (62.3%) (T2). No significant differences were found in sociodemographic or background variables between drop-outs and those who completed one or both of the post-training questionnaires ($p<.05$).

Participants were mostly female, of white ethnicity, and on average in their mid-forties. They were almost equally from public or private sector organizations. On average, they had been working for their employer for over 14 years, and had had managerial or supervisory responsibilities for almost ten years. Before the training, just over half (58.8%) had spoken about the menopause in a non-work context and just under half had done so in a work context (46.6%). An outline of changes between pre-training (T0), immediately post training (T1) and 4 weeks after training (T2) is provided below, and further illustrated in Figure 1 and Table 3.

Before training, approximately half of the participants (48%) agreed that they were knowledgeable about the menopause, with 8.8% strongly agreeing. Immediately after training at T1, 88.7% considered themselves to be knowledgeable, 25.8% strongly. Knowledge significantly increased from T0 to T1, and was maintained at T2.

In terms of attitude, before training, 88.8% believed menopause was a normal part of life, 73.2% did not think women aged rapidly at the menopause, and 92.8% would not prefer to avoid working with a woman who is menopausal. The distribution of responses to these items was skewed, suggesting little opportunity or need for change, so these items were excluded from further analyses. In contrast, the attitude item that explored how embarrassing the topic of the menopause was to talk about at work was normally distributed at pre-training (T0); just over half (56%) agreed that it was not embarrassing, of

those, 22.4% strongly agreeing. After training at T1, significantly more participants (75.8%) agreed it was not embarrassing, of those, 33.9% strongly agreeing. At T2, this difference was maintained at 83.6% and 37.7%, respectively.

Prior to training, 58.1% of the participants agreed that they were confident in talking about the menopause in a helpful way at work, with 17.3% of those strongly agreeing. At T1 almost all participants (95.2%) agreed they felt confident, half (50.0%) agreeing strongly. This significant difference was maintained at T2.

Before training, over half of the sample (58.1%) agreed that their friends and colleagues would consider it to be a good thing if they could talk to their staff about the menopause, with 30.9% of those strongly agreeing. These figures increased significantly at T1 to 90.3%, 58.1% strongly agreeing. The significance was not maintained at T2.

Pre training, around a third of respondents agreed that they intended to talk about the menopause at work with a member of their staff or colleague (37%), of which, 16.3% strongly agreed. At T1, significantly more people agreed with this intention (69.4%) and this difference was maintained at T2.

In terms of behaviour, 57 participants provided data before training and 4 weeks later on actual behaviour: ‘talking about the menopause to someone at work within the past four weeks.’ Pre-training, 47.4% had spoken about the menopause to someone at work in the last four weeks. There was no significant difference following training ($p>.05$) in the overall number of managers who had spoken to someone in the preceding four

weeks (49.1%). However, of the 30 managers who had not spoken before training, 10 had done so within four weeks of the training.

According to the TPB, knowledge, attitude, and beliefs are not only inter-related but also associated with behavioural intentions [18]. At baseline there were significant correlations between knowledge, confidence, normative belief and intention ($p<.05$), but not between attitude and intention ($p>.05$). When the baseline items for knowledge, attitude, confidence (perceived control), and normative belief were combined, the internal reliability of the variable was acceptable (Cronbach alpha=0.71). The average overall 'Menopause Awareness Measure' (MAM) showed a significant association ($p<.01$), with a small-medium effect size, with intention at baseline ($r=.42$), in keeping with the TPB. Results of the statistical analyses indicate that the overall MAM score significantly at T1 and improvements were maintained at T2.

Participant evaluation

Over 90% of participants reported that they found the training useful, would recommend the training to others, and felt that workplaces should offer training on menopause. They indicated it improved their knowledge, awareness and understanding about the menopause and how it can affect women, both at and outside of work. They felt better prepared, for example in giving them practical ideas about how they might be supportive, and how to start a conversation. Participants liked the real-life testimonials by menopausal women and line managers, and reported that role-play scenarios of good and bad conversations helped them engage and 'digest' the material. A minority (fewer than 10%) reported that they did not find the training useful, mainly because they were already aware of the menopause and therefore found the content too basic. The importance of organizational culture was noted, as

was the need for a broader awareness of menopause. Making such training on sensitive topics mandatory for all staff was also suggested.

Thirty-one participants provided comments on their experience of speaking about the menopause with a colleague or member of staff following training. Discussions were largely described as positive (77%), with participants reporting that they were useful, open, and comfortable conversations. Some (16%) described having discussion(s) where they shared their own menopausal experience (female managers), or what they had learnt from the training and their thoughts about it (both male and female managers).

4. Discussion

This study aimed to address the need for awareness of the menopause amongst line managers with a 30 minute web-based training intervention. Following the training there were significant improvements in managers' awareness, knowledge, confidence and normative beliefs. A secondary aim of the study explored whether training would increase managers' intentions to discuss menopause with staff, and whether they actually had such discussions within four weeks of the training. Intentions significantly increased but actual behaviour did not.

A meta-analysis of 10 training interventions for line managers on the topic of mental health concluded that training significantly improved managers' knowledge, attitudes and supportive behaviours [30]. These training programs employed various delivery modes (face-to-face, on-line and hybrids). However, in all cases, their duration was considerably longer than the 30 minutes employed in the current study, ranging between 2.25 and 14 hours training delivered over four to10 weeks. Future research testing the menopause training across longer time frames would be useful.

Overall, the training appeared to have the most impact on changing line manager knowledge and confidence in talking about the menopause at work in a helpful way, followed by intention to discuss the menopause at work. This suggests that the content and techniques used in the training were effective in focusing on capability and influences of behaviour. It is possible that the training could be developed to address other factors which, according to BCW, are known to be related to behaviour change, such opportunity and policy [24]. Increasing awareness amongst all staff may create a menopause-friendly work culture. In turn, this may influence the likelihood of transfer or training into practice. Organizational culture is an important element to consider as it generally refers to the 'way things are done' [31]. If the culture of a workplace is one that is not open to discussing difficulties at work, then women and line managers may be unwilling to have conversations about the menopause and may not discuss possible adjustments that may helpful for women who are experiencing difficulties in relation to their menopausal symptoms [17]. Future research exploring these factors would be useful.

The TPB has been subject to criticism in recent years; an 'intention-behaviour gap', where people's intentions to carry out behaviour increase but no change in actual behaviour occurs, has been noted in many studies [32]. Strategies, such as goal setting, progress monitoring and self-regulation of goals have been recommended to help reduce the gap [32]. The main aims of the current study were to increase awareness and knowledge, and to moderate negative attitudes; the training largely achieved this, as well as demonstrating a positive effect on behavioural intentions. Future research into training programs that incorporate intention-to-behaviour translation would be useful, as well as those addressing broader influential factors, such as opportunity and policy within the workplace [24].

The skewed responses to some of the attitude items suggested that these line managers already had some positive attitudes about the menopause in a work context. It is possible that this reflected socially desirable responses. However, responses to the item 'the menopause as an embarrassing topic to discuss at work' were more evenly spread and significantly changed after training. Feeling embarrassed talking about the menopause in a work context has been highlighted by working women as a key barrier to disclosure [17]. This reflects both women's own embarrassment and their concerns that managers would be embarrassed. We suggest that combining the key four items from the TPB items (knowledge, attitude, confidence, and normative beliefs) might be used as a brief measure of menopause awareness (Menopause Awareness Measure) in future research. The new measure also showed acceptable internal reliability across the time points.

This study had a number of strengths including its novelty, thorough intervention development, and the use of quantitative and qualitative data to explore effectiveness, feasibility and acceptability. Some limitations should be noted. Study participants were generally positive in terms of their pre-training attitudes; half were already actively engaged in menopause discussions at work. Their responses may not be typical of line managers and they may already have had an interest in the topic, which may affect the generalizability of results. The sample size was relatively small and we used an uncontrolled pre-post design. The study should be replicated in a larger cohort with a broader representation of knowledge, attitudes, and beliefs, and with a control arm (e.g. a group or section of an organization without the training).

Further research might explore the effectiveness of the training in a wider range of organizations, for example, sectors that are particularly male-dominated, such as engineering

or construction. In addition, the impact of training on women whose managers had undergone training should be explored. Finally, some participants in our study suggested that menopause training should be offered to all staff, and that a hybrid delivery would be helpful. It is recognized however, that face-to-face training is likely to have a far smaller reach than on-line training.

In conclusion, the results of this study suggest that a brief menopause on-line training can be an effective and acceptable approach for increasing line manager awareness of the menopause and confidence in having supportive discussions with those women who may be having menopause-related problems that affect their working lives.

Contributions

C Hardy contributed to the study design, data collection, analyses, and write up of the paper.
A Griffiths contributed to the study design and write up of the paper.
MS Hunter contributed to the study design, analyses, and write up of the paper.
All authors had full access to all of the data (including statistical reports and tables) in the study and can take responsibility for the integrity of the data and accuracy of the data analysis.

Conflict of interest: The authors have no conflicts of interest to declare.

Funding: The study was funded by a project grant from Wellbeing of Women, UK. The funders had no role in how the research was conducted or where published.

Ethical approval: Ethical approval was given for this study by King's College University Research Ethics Committee (Ref: LRS-16/17-5044)

Data statement: Data will be available from the corresponding author on request.

Participant consent

We confirm that consent was obtained from participants in the study.

Acknowledgements

The authors would like to thank the participating organizations and managers, and the funding charity: Wellbeing of Women.

References

[1] A05 NSA: Employment, unemployment and economic inactivity by age group (not seasonally adjusted) [dataset]. 2018 Aug 14 [cited 2018 Aug 18]. Available from: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/employmentunemploymentandeconomicinactivitybyagegroupnotseasonallyadjusteda05nsa

[2] Altmann R. A new vision for older workers: retain, retrain, recruit. London: Department for Work and Pensions; 2015.

[3] Freeman EW, Sherif K. Prevalence of hot flushes and night sweats around the world: a systematic review. Climacteric 2007;(10,3):197-214.

[4] Gartoulla P, Bell RJ, Worsley R, Davis SR. Moderate-severely bothersome vasomotor symptoms are associated with lowered psychological general wellbeing in women at midlife. Maturitas 2015;(359):487-92.

[5] Ayers B, Hunter MS. Health-related quality of life of women with menopausal hot flushes and night sweats. Climacteric 2012;(15):1-5.

[6] Smith MJ, Mann E, Mirza A, Hunter MS. Men and women's perceptions of hot flushes within social situations: are menopausal women's negative beliefs valid? Maturitas 2011;(69):57–62.

[7] Griffiths A, MacLennan SJ, Hassard, J. Menopause and work: An electronic survey of employees' attitudes in the UK. Maturitas 2013;(76):155-159.

[8] Jack G, Riach K, Bariola E, Pitts M, Schapper J, Sarrel P, Menopause in the workplace: what employers should be doing, Maturitas 2016;(85):88–95.

[9] Brewis, J, Beck V, Davies A, Matheson J [internet]. The effects of menopause transition on women's economic participation in the UK - Research report July 2017. UK: Department of Education, Available from: https://www.gov.uk/government/publications/menopause-transition-effects-on-womens-economic-participation

[10] Paul J. Health and Safety and the Menopause: Working Through the Change. London: Trades Union Congress, 2003. Available from: http://www.tuc.org.uk/workplace/tuc-6316-f0.pdf

[11] Griffiths A, Ceausu I, Depypere H, Lambrinoudaki I, Mueck A, Pérez-López FR, van der Schouw YT, Senturk LM, Simoncini T, Stevenson JC, Stute P. EMAS recommendations for conditions in the workplace for menopausal women. Maturitas 2016;(85):79-81.

[12] Griffiths A, Hunter MS. Psychosocial factors and menopause: The impact of menopause on personal and working life. In Davies SC, Annual Report of the Chief Medical Officer 2014, The Health of 51%. London: Department of Health 2015, p.109-20. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/595439/CMO_annual_report_2014.pdf

[13] Faculty of Occupational Medicine of the Royal College of Physicians. Guidance on menopause and the workplace, 2016; Available from:

https://www.som.org.uk/sites/som.org.uk/files/Guidance-on-menopause-and-the-workplace.pdf.

[14] Hardy C, Hunter MS, Griffiths A. Menopause and work: an overview of UK guidance. Occupational Medicine (in press).

[15] Hardy C, Griffiths A, Norton S, Hunter MS. Self-help cognitive behaviour therapy for working women with problematic hot flushes and night sweats (MENOS@Work): a multicenter randomized controlled trial. Menopause 2018;25(5):508-19.

[16] Hardy C, Griffiths A, Hunter MS. What do working menopausal women want? A qualitative investigation into women's perspectives on employer and line manager support, Maturitas 2017;101:37-41.

[17] Hardy C, Griffiths A, Thorne E, Hunter MS. Tackling the taboo in the UK: talking menopause-related problems at work. (accepted/in press).

[18] Ajzen I. The theory of planned behaviour. Organizational Behaviour and Human Decision Processes 1991; 50(2):179-211.

[19] Davis R, Campbell R, Hildon Z, Hobbs L, Michie S. Theories of behaviour and behaviour change across the social and behavioural sciences: a scoping review. Health Psychology Review 2015;9(3):323-44.

[20] Armitage CJ, Conner M. Efficacy of the theory of planned behaviour: A meta-analytic review. British Journal of Social Psychology 2001;40(4):471-99.

[21] Godin G, Kok G. The theory of planned behaviour: a review of its applications to health-related behaviours. American Journal of Health Promotion 1996;11(2):87-98.

[22] Hardeman W, Johnston M, Johnston D, Bonetti D, Wareham N, Kinmonth AL. Application of the theory of planned behaviour in behaviour change interventions: A systematic review. Psychology and Health 2002;17(2):123-58.

[23] Hausenblas HA, Carron AV, Mack DE. Application of the theories of reasoned action and planned behaviour to exercise behaviour: A meta-analysis. Journal of Sport and Exercise Psychology 1997;19(1):36-51.

[24] Michie S, Atkins L, West R. The behaviour change wheel. A guide to designing interventions. Great Britain; Silverback Publishing; 2014.

[25] Abraham C, Michie S. (2008). A taxonomy of behaviour change techniques used in interventions. Health Psychology 2008;27(3):379-87.

[26] Campbell MK, Tessaro I, DeVellis B, Benedict S, Kelsey K, Belton L, Sanhueza A. Effects of a tailored health promotion program for female blue-collar workers: health works for women. Preventive Medicine. 2002;34(3):313-23.

[27] Quinn MT, Alexander GC, Hollingsworth D, O'Connor KG, Meltzer D, Corporate Contributions for Life Consortium. Design and evaluation of a workplace intervention to promote organ donation. Progress in Transplantation. 2006;16(3):253-9.

[28] Pinfold V, Toulmin H, Thornicroft G, Huxley P, Farmer P, Graham T. Reducing psychiatric stigma and discrimination: evaluation of educational interventions in UK secondary schools. British Journal of Psychiatry 2003;182(4):342-6.

[29] Braun V, Clarke V. Using thematic analysis in psychology. Qualitative research in psychology. 2006;3(2):77-101.

[30] Gayed A, Milligan-Saville JS, Nicholas J, Bryan BT, LaMontagne AD, Milner A, Madan I, Calvo RA, Christensen H, Mykletun A, Glozier N. Effectiveness of training workplace managers to understand and support the mental health needs of employees: a systematic review and meta-analysis. Occupational and Environmental Medicine 2018;75(6):462-70.

[31] Schein EH. Organizational culture. American Psychological Association 1990;45(2):109-119.

[32] Sheeran P, Webb TL. The intention–behaviour gap. Social and Personality Psychology Compass. 2016;10(9):503-18.

Table 1. Questions included in pre-training (T0), immediately post-training (T1) and 4 weeks post-training (T2) questionnaires

Question(s)		**Questionnaire**
Sociodemographic and background:		
Age		T0
Gender		T0
Ethnicity		T0
Tenure (years)		T0
Tenure with managerial/supervisory responsibilities (years)		T0
"Have you spoken to anyone in your personal life about the menopause in the last 4 weeks?"	"Yes/no"	T0
Outcome variables:		
Knowledge: "How knowledgeable are you about the menopause?"	7-point Likert scale, 0="Not at all" to 6="Extremely"	T0, T1, T2
Attitude: "Menopause is a normal part of life", "Women age rapidly at the menopause"(R), "Menopause is not an embarrassing topic to talk about at work", "If I had a choice, I would rather not work with a menopausal woman"(R)	4 items, 7-point Likert scale, 0="Strongly disagree" to 6="Strongly agree"	T0, T1, T2
Confidence: "If I need to talk about the menopause with a colleague or member of staff I am confident I can do it in a helpful way"	7-point Likert scale, 0="Strongly disagree" to 6="Strongly agree"	T0, T1, T2
Normative belief: "My friends/colleagues would think it would be a good thing if I can talk to my staff about the menopause"	7-point Likert scale, 0="Strongly disagree" to 6="Strongly agree"	T0, T1, T2
Behavioural intention: "In the next 4 weeks I intend to talk to a member of staff/colleague about the menopause"	7-point Likert scale, 0="Strongly disagree" to 6="Strongly agree"	T0, T1, T2
Actual behaviour: "Have you spoken to anyone at work about the menopause in the last 4 weeks?"	"Yes/no"	T0, T2
If yes, please tell us about this and how you feel it went.	Open-ended	T2
Evaluation questions:		
Did you find the training useful?	"Yes/no"	T1, T2
Why was this?	Open-ended	T1, T2
Was there anything you found unhelpful? Why?	Open-ended	T1, T2
How could the training be improved?	Open-ended	T1, T2
Would you recommend the training to others?	"Yes/no"	T2
Should all workplaces offer training about the menopause at work?	"Yes/no"	T2
Any other comments?	Open-ended	T1, T2

Table 2 Summary table of the menopause awareness training for line managers

Delivery and duration	**Content**	**Change techniques[a]**
Web-based/Online delivery. One webpage. Approximately 30 minutes	Introductory text. Eight videos containing slides with images or text and (male) narration, or interviews, role play videos: 1. Why do you need to know about the menopause? 2. What is the menopause? 3. How do menopausal symptoms affect women at work? 4. Why is the menopause an important issue at work? 5. How can you help? 6. Interviews and example conversations. 7. What next? 8. Well done and thank you. Short quiz (8 multiple choice questions) and certificate (offered). Downloadable additional resources and useful web links: Infographic: line manager guide. Guidance documents from professional bodies and previous research. CBT for menopause Factsheet. Healthtalk.org website link.	Provision of information about: behaviour health links, consequences, others' approval. Intention formation. Barrier identification. Instruction. Model/demonstrated the behaviour. Use of prompts or cues. Opportunity for social comparison. Testimonials, personal experiences.

Table 3 Means (SDs) for menopause knowledge, beliefs, attitude, confidence, and intention to speak with a colleague at work at: pre-training (T0), immediately post-training (T1), and 4 weeks post-training (T2). Paired t-tests with CIs are included between pre-training (T0) and post-training time comparisons (T1, T2).

Dependent variables	Time comparisons	N	Mean (SD)	Mean difference [95% CI]	t	P value
Knowledge	T0	62	3.31(1.62)	1.29		
	T1	62	4.60(1.18)	[.92-1.67]	6.89	0.000***
	T0	61	3.28(1.66)	1.46		
	T2	61	4.74(1.15)	[1.08-1.84]	7.59	0.000***
Attitude	T0	62	3.86(1.82)	0.47		
	T1	62	4.32(1.87)	[-.00-.93]	2.00	0.050*
	T0	61	3.75(1.92)	0.80		
	T2	61	4.56(1.77)	[.26-1.34]	2.98	0.004**
Normative belief	T0	61	4.43(0.21)	0.84		
	T1	61	5.26(0.13)	[.49-1.18]	4.81	0.000***
	T0	60	4.37(1.67)	0.45		
	T2	60	4.82(1.52)	[-.02-.92]	1.91	0.061
Confidence	T0	62	3.77(0.24)	1.53		
	T1	62	5.31(0.11)	[1.08-1.98]	6.81	0.000***
	T0	61	3.67(1.96)	1.43		
	T2	61	5.10(1.31)	[.83-2.03]	4.74	0.000***
Menopause Awareness Measure (MAM)	T0	62	3.84(1.17)	1.03		
	T1	62	4.87(0.84)	[.80-1.26]	8.95	0.000***
	T0	61	3.77(1.26)	1.04		
	T2	61	4.80(1.04)	[0.69-1.39]	5.88	0.000***
Behavioural intention	T0	62	2.92(0.29)	1.47		
	T1	62	4.39(0.24)	[.98-1.96]	5.96	0.000***
	T0	59	2.88(2.27)	1.07		
	T2	59	3.95(1.98)	[.56-1.57]	4.23	0.000***

*p≤.05, **p<.001, ***p<.0001.

Fig. 1. Line graphs showing mean scores over time for the self-rated dependent variables menopause knowledge, attitude, normative beliefs, confidence, overall awareness and behavioural intention.