



Increasing engagement with an occupational digital stress management program through the use of an online facilitated discussion group: Results of a pilot randomised controlled trial



Stephany Carolan^{a,*}, Peter R. Harris^a, Kathryn Greenwood^{a,b}, Kate Cavanagh^a

^a School of Psychology, University of Sussex, Falmer BN1 9QH, United Kingdom

^b Research and Development Department, Sussex Partnership NHS Foundation Trust, United Kingdom

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ABSTRACT

Introduction: Rates of work-related stress, depression and anxiety are high, resulting in reduced work performance and absenteeism. There is evidence that digital mental health interventions delivered in the workplace are an effective way of treating these conditions, but intervention engagement and adherence remain a challenge. Providing guidance can lead to greater engagement and adherence; an online facilitated discussion group may be one way of providing that guidance in a time efficient way. This study compares engagement with a minimally guided digital mental health program (WorkGuru) delivered in the workplace with a discussion group (DG) and without a discussion group (MSG), and with a wait list control (WLC); it was conducted as a pilot phase of a definitive trial.

Methods: Eighty four individuals with elevated levels of stress from six organisations were recruited to the study and randomised to one of two active conditions (DG or MSG) or a WLC. The program WorkGuru is a CBT based, eight-week stress management intervention that is delivered with minimal guidance from a coach. Data was collected at baseline, post-intervention and at 16-week follow-up via online questionnaires. The primary outcome measure was number of logins. Secondary measures included further engagement measures, and measures of depression, anxiety, stress, comfort and enthusiasm. Quality measures including satisfaction and system usability were also collected.

Results: A greater number of logins was observed for the DG compared with the MSG; this was a medium between group effect size ($d = 0.51$; 95% CI: $-0.04, 1.05$). Small to medium effect size differences were found at T2 in favour of the active conditions compared with the control on the DASS subscales depression, anxiety and stress, and the IWP subscales enthusiasm and comfort. This was largely maintained at T3. Satisfaction with the intervention was high with individuals in the MSG reporting greater satisfaction than individuals in the DG.

Conclusions: This study shows that access to an online facilitated discussion group increases engagement with a minimally supported occupational digital mental health intervention (as defined by the number of logins), but that this doesn't necessarily result in improved psychological outcomes or increased satisfaction when compared to access to the intervention without the group. Access to the web-based program was associated with lower levels of depression, anxiety and stress and an increase in comfort and enthusiasm post intervention; these changes were largely maintained at follow-up.

Trial registration: This trial was registered with ClinicalTrials.gov on March the 18th 2016 NCT02729987 (website link <https://clinicaltrials.gov/ct2/show/NCT02729987?term=NCT02729987&rank=1>).

1. Introduction

In the UK prevalence rates for work-related stress, depression and anxiety are high, accounting for 11.7 million lost working days (HSE,

2016) and resulting at both a clinical (Birnbaum et al., 2010; Dewa et al., 2007; Dewa and Hoch, 2015; Sanderson and Andrews, 2006) and a sub clinical level (Martin et al., 1996) in reduced work performance and absenteeism. There is evidence that these conditions are both

Abbreviations: CAU, Care as usual; CBT, Cognitive behavioural therapy; DG, Discussion group; MSG, Minimal support group; RCT, Randomised controlled trial; WLC, Wait list control; ITT, Intention to treat; CI, Confidence intervals

* Corresponding author.

E-mail addresses: sc587@sussex.ac.uk (S. Carolan), p.r.harris@sussex.ac.uk (P.R. Harris), k.e.greenwood@sussex.ac.uk (K. Greenwood), kate.cavanagh@sussex.ac.uk (K. Cavanagh).

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preventable and treatable in the workplace. A recent meta-analysis has shown that digital mental health interventions delivered in the workplace can be effective at reducing psychological distress and increasing workplace effectiveness (Carolan et al., 2017); however, despite examples of occupational digital mental health interventions that have achieved good adherence (Ebert et al., 2016; Heber et al., 2016; Thiar et al., 2015; Umanodan et al., 2014) one of the challenges of digital mental health still remains increasing adherence and engagement (Cavanagh and Millings, 2013; Eysenbach, 2005; Kohl et al., 2013). While digital interventions are typically designed for widespread accessibility, uptake can be low and the discontinuation curve steep. A randomised controlled trial (RCT) of a digital mental health intervention delivered in the workplace reported that only 5% of participants started one or more of the modules (Boiler et al., 2014), and a trial of digital mindfulness delivered in a workplace reported that between 42% and 52% of all participants in the active conditions never logged on to the program (Alexandre et al., 2016). Carolan et al. (2017) found that the mean highest reported completion across 19 studies in their meta-analysis was 45% with a range of 3% to 95%.

Research has consistently shown that providing guidance can lead to greater adherence to web-based interventions (Andersson and Cuijpers, 2009; Brouwer et al., 2011; Baumeister et al., 2014; Hilvert-Bruce et al., 2012; Mohr et al., 2011). An online facilitated discussion group may be one way of providing that guidance in a time efficient way. Previous studies (Andersson et al., 2005; Berger et al., 2011; El Alaoui et al., 2015) have incorporated discussion groups into their interventions but have failed to identify the impact of the group on the effectiveness of the intervention.

In this study we therefore compare engagement with a minimally supported CBT based digital mental health program (WorkGuru) delivered in the workplace with and without access to a facilitated discussion group, and to a wait list control (WLC), and explore whether increased engagement suggests increased effectiveness. The trial was conducted as a pilot trial to gain greater confidence in predicting effect size, refining optimum engagement of the intervention (adherence), understanding accuracy of engagement measures, and understanding the challenges of conducting the trial in the workplace.

2. Methods

2.1. Trial design

A three-arm randomised controlled trial was conducted comparing a minimally supported web-based CBT based stress management intervention (WorkGuru) delivered with and without an online facilitated bulletin board, with a wait list control (WLC). Randomisation was conducted on a ratio of 1:1:1. All participants had unrestricted access to care as usual (CAU). The trial was conducted to examine the effect of an online facilitated discussion group on engagement with a minimally supported digital stress management intervention delivered to employees, and to look at the estimated potential effectiveness of the program. Assessment took place at baseline (T1), at post treatments (8 weeks, T2) and at follow-up (16 weeks after randomisation, T3). Participants in the active conditions completed a credibility and expectancy questionnaire at two weeks following randomisation. All assessments were completed online.

This trial was conducted and reported in line with the CONSORT eHealth checklist (Eysenbach and CONSORT EHEALTH group, 2011). Further information about this trial is available from the trial protocol (Carolan et al., 2016). The study was approved by the University of Sussex Science and Technology Cross-School Research Ethics Committee (reference number ER/SC587/1), and registered with ClinicalTrials.gov NCT02729987.

2.2. Participants and procedure

UK based organisations that had subscribed to the WorkGuru mailing list were invited to participate in this study. Participating organisations circulated a statement to staff inviting them to follow a link or contact the first named author (SC) for more information. Participating organisations were encouraged to offer employees a minimum of 1 h a week over the eight-week period to complete the program. Participants who were: i) aged 18 or over, ii) employed by a participating organisation, iii) willing to engage with a web-based CBT based stress management intervention, iv) had access to the Internet, v) had access to a tablet or computer, vi) had an elevated level of stress, as demonstrated by a score of ≥ 20 on the PSS-10 (Cohen et al., 1983), were recruited to the study between March and June 2016. No exclusion criteria were set. The cut off of 20 on the PSS-10 represents one standard deviation (6.53) above the mean (13.02) in a large ($n = 2387$) US general population sample (Cohen and Williamson, 1988). Participants who met the inclusion criteria were invited to complete a baseline questionnaire that was completed online. A consent statement was included on the front page of the questionnaire; participants gave consent to take part in the study by completing the questionnaire. Participants were informed that their participation was confidential and their organisation would not be informed of which employees were participating in the study. On completion of the baseline questionnaire, participants were randomised to one of the three study arms. An allocation schedule was created using a computer generated randomisation sequence (random.org). An independent researcher allocated each group (A, B, or C) as an active condition (with or without a facilitated bulletin board) or the WLC. The study researchers were blind to the group allocation. Participants allocated to the Minimal Support Group (MSG) were able to access the intervention immediately. Participants allocated to the discussion group were also able to access the intervention immediately, but were asked to wait for up to three weeks for the start of the group. The delay in starting the facilitated group was to enable an optimum number of participants to begin the group together; participants were encouraged to access the bulletin board and take part in an introductory exercise while they were waiting for the group to start. Participants allocated to the WLC were able to access the intervention after 16 weeks.

2.3. Intervention

A more detailed description of the web-based CBT based stress management program WorkGuru is available from Carolan et al. (2016). The program was presented on a secure platform that participants logged-on to using an email address and a self-generated password. The eight-week program was based on the psychological principles of CBT, positive psychology, mindfulness and problem solving. It consisted of seven core modules that all participants were encouraged to complete and three additional modules. The core modules included information and exercises on stress, resilience, values, cognitive restructuring, automatic thoughts, unhelpful thinking styles and time management. The additional modules contained information on mindfulness, problem solving and imagining the future self. Participants completed the modules at their own pace. They could either complete a questionnaire and receive suggestions of which modules that they might find useful, or choose the modules that they wished to complete themselves. The modules consisted of a combination of educational reading, audio, short animations and interactive exercises. Participants could also complete eight self-monitoring standardised questionnaires, including the Perceived Stress Scale (Cohen et al., 1983), the Subjective Happiness Scale (Lyubomirsky and Lepper, 1999), and the Brief Resilience Scale (Smith et al., 2008). They were also able to opt-in to a weekly motivational email (the “Monday Morning Message”) that contained a motivational quotation and advice on staying well in the workplace, and could set themselves email reminders to visit the site.

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