

Therapist Effects in Workplace Stress Management Interventions: A Systematic Review

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I declare that this research report is my own work and that, to the best of my knowledge and belief, it does not contain material from published sources without proper acknowledgement, nor does it contain material which has been accepted for the award of any other higher degree or graduate diploma in any university.

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Abstract

This systematic review sought to report on the level and quality of process evaluation in workplace stress management interventions (SMIs) for the period 2004 – 2013. The second aim was to determine the extent to which ‘therapist variables’ have been adequately considered for their effect on implementation and outcome in workplace SMIs. The inclusion criteria comprised empirical studies: (a) published in the English language, (b) focused on analysis of a workplace SMI aimed at changing employee’s response to job stress and (c) involving an SMI that includes face to face contact between the employee and the therapist/program provider. Forty-four studies were included in the analysis and of these around half evaluated between three and five components of process evaluation. Reporting about *fidelity*, *dose delivered* and *implementation* components, was more challenging for researchers. Around 50% of studies linked a component of process evaluation to outcome but only six studies provided a quantitative link. The majority of studies involved an external therapist, most commonly a psychologist, and most studies provided some information about therapist recruitment and background training. However, therapist demographic information, information about therapist adherence to protocol and therapeutic alliance was less often reported. It is encouraging to observe that several authors did consider the impact of therapist variables in their research and linked therapist variable to outcomes. It is recommended that future research continue to focus on the systematic planning, monitoring and assessment of process components in programme implementation, with the specific aim of identifying the process predictors of SMI outcomes. The therapist is hypothesised to be an essential component of an SMI and therefore researchers are encouraged to include therapist variables in their process evaluation framework.

Therapist Effects in Workplace Stress Management Interventions: A Systematic Review

Over the last forty years, the workplace has increasingly been a setting for the implementation of employee health interventions. This has occurred for a multitude of reasons not the least of which is the economic benefits to organisations of increased employee health and wellbeing, and reduced absenteeism (Ni Mhurchu, Aston, & Jebb, 2010). The impact of stress in the workplace is well recognised in many developed countries, including America, the United Kingdom and Australia, and the reported levels of workplace stress has increased over the last four decades (Richardson & Rothstein, 2008). As a result, the implementation of strategies to reduce stress at work has been of interest to researchers and practitioners since the late 1970s.

The effectiveness of workplace based stress management interventions (SMIs) has been examined in a number of reviews (e.g.; Bunce & Stephenson, 2000; Caulfield, Chang, Dollard & Elshaug, 2004; DeFrank & Cooper, 1987; Newman & Beehr, 1979; Richardson & Rothstein, 2008). Earlier reviews (e.g. DeFrank & Cooper, 1987; Newman & Beehr, 1979) focused on categorising and attempting to determine the most effective ‘target’ of SMIs. For example, Newman and Beehr (1979) classified interventions into categories depending on whether the intervention was (a) aimed at increasing an adaptive response to job stress (by the individual or the organisation), (b) aimed at achieving individual change or organisational change, and (c) considered preventative or curative in nature. A narrative description about the intervention used in each study and qualitative comment on the effectiveness of each study is provided in their review. However it does not appear that any of the studies included randomised controlled trials, and the bulk of the studies rely on authors’ opinions and observations about the efficacy of interventions. Therefore Newman and Beehr (1979) concluded there was anecdotal evidence for the effectiveness of workplace SMIs but expressed concern about the paucity of scientific rigour and lack of evaluative study designs in the field.

Almost a decade later, De Frank and Cooper (1987) found that this problem remained. They classified studies according to whether the study focused on individual interventions (e.g.

individual coping strategies), individual/organisational interface interventions (e.g. job control and participation) or organisational interventions (e.g. organisational structure change). In addition, they classified the outcomes of studies in the same way: individual (e.g. mood states, blood pressure), interface (e.g. job burnout) and organisational (e.g. absenteeism, turnover). Of the eighteen studies included in their review all evaluated individual level outcomes, seven evaluated interface outcomes and two assessed organisational outcomes. De Frank and Cooper also reviewed the types of interventions utilised in these studies (e.g. cognitive behavioural therapy (CBT), meditation). They found that studies involved small sample sizes and short follow-up time frames and thus the researchers concluded they were not able to determine whether the interventions had a positive and sustained effect on the targeted variables. Overall, they found there was minimal research that used an empirical study design to evaluate the efficacy of interventions for the effect on outcomes.

SIMs are now typically classified as primary, secondary or tertiary in approach (Caulfield et al., 2004). Primary approaches focus on strategies aimed at preventing work stress, secondary approaches focus on changing the individual's reaction to job stress and tertiary approaches are used to treat the symptoms of stress once they are present within an individual. By 2000, Bunce and Stephenson stated that considerable research effort had been conducted to evaluate SIMs that targeted individual workers (i.e. secondary and tertiary interventions). Their review focused on secondary and tertiary interventions with individual outcome measures. They located 27 studies. They reviewed the amount and detail of descriptive information about intervention procedures, the level of statistical power evident in study designs and whether statistically significant change was clinically meaningful and reliable. They concluded that these descriptive and statistical considerations still needed to be addressed by researchers to a far greater extent. Only a handful of studies mentioned power or effect sizes, so the extent of benefit, or otherwise, of SIMs on aspects of workers' mental health was unknown.

A meta-analysis of 48 interventions, from 45 studies (RCTs and quasi experimental studies published between 1977 and 1996) undertaken by van der Klink, Blonk, Schene and van Dijk (2001) found a combined effect size (Cohen's d) of 0.44, for interventions that focused on individual outcomes. van der Klink et al. (2001) reported that CBT interventions had the largest effect size on stress related complaints of anxiety and depression (0.52), and relaxation and multimodal interventions the largest effect size (0.36) on psycho-physiological outcomes. Richardson and Rothstein (2008) updated van der Klink et al.'s (2001) review and conducted a meta-analysis of SMI's, reporting on 36 RCT's involving 55 interventions. Analysis using the weighted average effect size from each individual intervention yielded a combined effect size of 0.526. They found that CBT programs consistently produced larger effects than other types of intervention (relaxation, organisational, multimodal and alternative). It is important to note that these effect sizes represent combined outcome measures. Due to the heterogeneity of outcome measures and multimodal treatment interventions used in SMI research, disaggregating data by outcome variable and intervention components results in a small number of studies in each condition and makes generalisability tenuous.

Despite improvements in study designs and promising combined effect sizes found in some meta-analyses, there remains a lack of information about what purportedly successful interventions actually involve, how they are delivered, and by whom. This lack of protocol information impedes successful replication trials and hampers broader dissemination. Given the broad range of SMIs and outcome measures employed, the debate about which interventions are most effective remains contentious (Richardson & Rothstein, 2008) and it is rare for SMIs to demonstrate differential change in outcome variables as a function of the type of intervention employed (Bunce & Stephenson, 2000).

Researchers over the last decade have attempted to address these concerns by increased focus on considering process evaluation and contextual issues (Biron & Karanika-Murray, 2014). Process evaluation, or fidelity checking, is often discussed within clinical psychology research

and involves systematic measurement to determine the extent to which a particular intervention was implemented as planned and to an acceptable quality (Steckler & Linnan, 2002). This type of assessment aims to increase confidence that change in the dependant variable (i.e. employee stress) is attributable to the independent variable (i.e. the SMI). A focus on contextual issues places more emphasis on considering which variables might confound or influence the relationship between the intervention and the achieved outcomes. Improving knowledge about the process and contextual variables associated with SMIs would help to elucidate how, when and why SMIs have an effect on outcomes, and perhaps why some SMIs trials are not successful.

Process Evaluation

Over the last decade, systematic reviews of SMIs in the workplace have increasingly focused on process evaluation (e.g. Caulfield et al. 2004; Murta, Sanderson & Oldenburg, 2007; Richardson & Rothstein, 2008; Weirenga et al., 2013). Murta et al. (2007) utilised a process evaluation framework to examine SMIs in the workplace. Their inclusion criteria required studies to be published between 1977 and 2003, to include individual, interface or organisational level interventions, and an outcome evaluation. They found 32 RCTs, 16 quasi-experimental, and four pre-post study designs that met these criteria.

Murta et al (2007) found that approximately sixty percent of studies reported at least one component of process evaluation, with process components related to recruitment of participants (30%) and intervention dose received (22%) being most commonly reported. However they found that fewer than half of the studies included findings linking process evaluation with intervention outcomes, and that incomplete reporting of information relevant to process evaluation made it difficult to reliably determine the aspects of intervention and implementation that link to outcome. The review raised awareness in the field: a number of studies have cited the Murta et al. (2007) review and have used it as a basis to implement a process evaluation approach within a study protocol. For example, Page and Vella-brodrick (2013) used a process evaluation

framework in their RCT investigating the effectiveness of positive psychology training on measures of employee wellbeing.

The first aim of this review is to extend the Murta et al. (2007) review by considering an additional decade of studies (i.e. from 2004 – 2013), in order to report on whether the quality of process evaluation in empirical research about SMIs in the workplace has increased and improved in this time. The review will also explore whether an increased adherence to process evaluation has enabled improvement in explaining aspects of intervention and implementation that are most efficacious.

Contextual Issues - Therapist Variables

Research has suggested that there are a number of contextual issues that could impact outcomes in workplace health interventions, including the characteristics of program implementers (Barry, Domitrovich, & Lara, 2005). Borelli et al. (2005) suggest a number of factors to consider and report with interventions that rely on human providers. For example, information about (a) how the providers were trained, (b) whether training was standardised, and (c) how provider skill acquisition was measured and maintained. They reviewed 342 articles within health behaviour change literature and found that only 16%-25% of studies reported adequately about program provider's training and skill acquisition. They argue that without information about program providers, null results could be due to factors such as a lack of provider skill.

Within clinical psychology the therapist's unique contribution to outcome has been a focus of considerable attention, and a number of reviews have sought to summarise the percentage of outcome variance accounted for by the therapist (e.g. Elvins & Green, 2008; Lutz, Martinovich, Lyons, Leon, & Stiles, 2007; Martin, Garske, & Katherine Davis, 2000). Lutz et al. (2007) assessed the amount of variance in across-session change in symptom intensity scores explained by therapist differences. Their study involved a large sample of 1198 psychotherapy patients and 60 therapists. Results indicated that approximately 17% of total variance in patient improvement

(from patient and clinician assessments on a range of relevant outcome measures) could be attributed to therapist effects. A number of therapist variables hypothesised to explain such variance have been considered in clinical psychology research, including demographic characteristics, training and experience, theoretical orientation and therapeutic alliance (Elvins & Green, 2008; Huppert et al., 2001)

The concept of therapeutic alliance evolved from psychodynamic theory and reflects the healthy, trusting aspects of the patient – therapist relationship (Baldwin, Wampold, & Imel, 2007). Most conceptualisations of the therapeutic alliance are based on the work of Bordin (1979) who defined the alliance as including: (a) an agreement on goals, (b) an assignment of task or a series of tasks and (c) the development of bonds. Therapeutic alliance between patient and therapist has been consistently positively correlated with treatment adherence and outcome in both general medical and psychotherapy settings (Hall, Ferreira, Ferreira, Maher, & Latimer, 2010).

Elvins and Green (2008) argue there is a strong evidence base for alliance representing a common factor in a variety of therapeutic interventions. Indeed, Bordin (1979) raised the relevance of the concept in the classroom relationship between student and teacher. It is plausible that the relationship between therapeutic alliance and outcomes of workplace SMIs has not been adequately reported or understood. In the context of a SMI in the workplace the ‘therapist’ is akin to the ‘program provider/trainer’, and the ‘client’ is akin to the ‘program participant/employee’. Interestingly, Murta et al. (2007) found a trend in relation to therapeutic alliance: the more positively participant’s perceived the sessions to be in terms of warmth and a safe climate, the greater the likelihood of altering job related stress.

There is some evidence to suggest that therapist variables are beginning to be more seriously considered for their impact on the success of SMIs. For example, in their review of what should be included in process evaluation of stress and wellbeing interventions, Biron and Karanika-Murray (2014) recommend considering the quality of delivery. In their recent systematic review of process evaluations in worksite health promotion programs, Wierenga et al.

(2013) identified a number of barriers and/or facilitators that can affect success. Of the 54 main barriers/facilitators mentioned, 12 relate to characteristics of the therapist. Several therapist related components (e.g. skills, knowledge and competence) were facilitators to implementation and several were barriers (e.g. heavy implementer workload).

Given the emergent consideration of therapist variables in SMIs the second aim of this systematic review is to determine the extent to which ‘therapist variables’ have been adequately considered in process evaluations of workplace SMIs in the decade of studies published since those reviewed by Murta et al. (2007).

Evaluation Framework

Research in both clinical and organisational psychology has borne a number of methodological suggestions for how to improve the study of therapist effects in future research (e.g. Barry et al., 2005; Borrelli et al., 2005; Lutz et al., 2007; Moncher & Prinz, 1991; Wierenga et al., 2013). Lutz et al. (2007) suggest it is important to (a) ensure a large enough sample size of therapists and number of clients per therapist, (b) treat therapists as a random variable in a multilevel modelling approach, (c) include appropriate and timely alliance measures (as discrete from outcome measures), and (d) record therapist demographics. Borrelli et al. (2005) developed a framework specifically for health behaviour change research in real world settings, which includes items related to program provider training and provider - participant relationship. Recommendations from this literature form the basis of the therapist variables outlined in Table 1. The current review will use the process evaluation framework from Murta et al. (2007) with the incremental addition of these therapist variables.

Table 1.

Therapist Code Definitions

Code	Definition
Recruitment of Therapist	Sources, procedures and criteria used to recruit and select the therapist, including information about whether the therapist is internal or external to the organisation, and whether the therapist is the researcher/author.
Training of Therapist	Information about how therapists were trained, level of manualised approach to training material and delivery, measure of therapist skill acquisition, ongoing supervision and maintenance of therapist skills/adherence during the intervention.
Experience of Therapist	Information about the experience level of the therapist, their professional affiliation and level of education
Demographic information	The gender and age of the therapist and any other relevant demographic information
Allocation of Therapist	Information about the study design as it relates to the therapist: number of total therapists involved, allocation of therapist (i.e. same therapist for the duration of the intervention, random allocation of therapists to treatment conditions).
Therapeutic Alliance	Any measurement of the participant's attitude to the therapist, the therapist's perception of the therapeutic alliance and the organisation's (or third parties) measure of the therapeutic alliance
Fidelity	The extent to which, or the measures taken to ensure, the intervention was delivered as planned by the therapist
Link between results and process	Information about process components relating to the therapist that can explain the success or failure of the intervention in specific outcomes or in general terms
Comments	Information about procedures used to improve intervention implementation that relate to the therapist (e.g. therapist time, engagement, support). May also include acknowledgement of barriers to implementation related to the therapist.

Method

Data Sources

A literature search was conducted in the online databases PsycINFO, PsycARTICLES, Scopus, Web of Science, ProQuest Psychology Journals, Medline, CINAHL, and Cochrane. Searches included the search terms: “occupational stress management”, “worksite stress

management”, “workplace stress management”, “work-based stress management” OR “organizational stress management” AND “intervention”, “program”, “training” OR “process evaluation”. A hand search of reference lists of all relevant identified articles was also conducted.

Inclusion Criteria

This review utilised a definition of SMIs based on that of Murta et al. (2007) but focussed solely on interventions with an individual component (i.e. secondary interventions) that involved face to face contact with a therapist. In addition, a study had to meet the following criteria to be included in the review: (a) include participants from the paid workforce/working population only (i.e. students were excluded), (b) be published in English in a peer reviewed journal between 2004 and 2013, and (c) contain a quantitative evaluation of a workplace SMI. Tertiary intervention studies that focus specifically on employees who were impaired by ill-health or injury (e.g. rehabilitation/return to work interventions) and crises intervention (e.g. debriefing interventions and employee assistance programs) were excluded. These revisions to the inclusion criteria have resulted in a narrower focus than that employed by Murta et al. (2007).

Data Extraction

Each article was coded on the components of the process evaluation framework described earlier. The first author (M.T.) coded all studies. All data was first coded in a standardised sheet and then entered into the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were calculated, followed by the categorizing of relevant qualitative information using content analysis. The methodological quality of each study will be considered by reference to the Consolidated Standards of Reporting Trials (CONSORT) (Moher et al., 2010) and the Preferred Reporting of Items for Systematic reviews and Meta-analysis (PRISMA) guidelines (Moher et al., 2009).

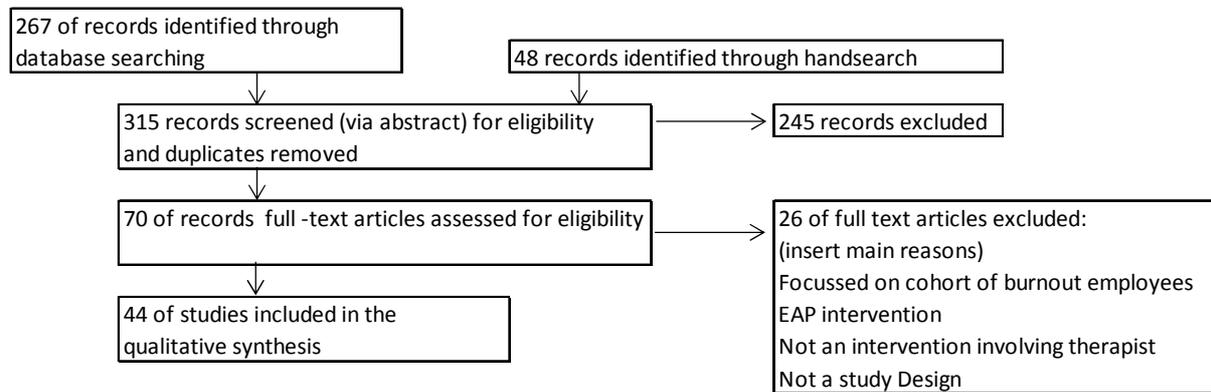
Results

The initial search identified 315 articles (see flow chart in Figure 1). Initial screening of the titles and abstracts produced 70 potentially relevant articles. Of these 26 were excluded on the

basis that they did not meet the inclusion criteria. The sample used for this review therefore consisted of 44 studies published in 33 different journals.

Figure 1.

Search Strategy



The intervention and methodological features of the 44 studies are briefly described, followed by information pertaining to process evaluation. These findings are presented with comparison to the results of Murta et al. (2007) in order to demonstrate changes in studies published since their review. Finally, a review of the level of consideration of therapist variables is presented.

Intervention and Methodological characteristics of SMIs

A summary of intervention characteristics and methodologies of the studies in the current review, with comparison to the Murta et al. (2007) review, are presented in Table 2. North America and Europe remain as the location of the majority of studies, with healthcare, education and government organisations as the most common settings. The occupational group most frequently reported were health care professionals (e.g. nurses, doctors and allied professionals) with this cohort represented in over fifty percent of studies.

Forty one studies (93.2%) involved a training intervention with employees. Murta et al. (2007) found that relaxation, information on stress and health, and CBT were the main orientation of intervention strategies in their review. In the current review 27 percent of studies had a CBT

orientation and 30 percent featured relaxation techniques. In addition, Mindfulness Based Stress Reduction (MBSR) interventions (primarily based on the model developed by Kabat-Zinn, 1990) were prominent in the current review, forming the basis of 36 percent of interventions. Other meditation based interventions (9%), positive psychology (9%) and resilience based techniques (9%) also featured.

The typical SMI was implemented weekly (59%), with each session of two hours duration and lasting eight weeks. The period of time between intervention and first follow-up ranged from one month to eighteen months, with the first follow up most commonly occurring at either nine months (20.5%) or one month (13.6%) post intervention. Individual outcome measures remained consistent across reviews with psychological wellbeing and perceived stress (individual), burnout and job stress (interface) and absenteeism (organisational) being the most commonly adopted outcome measures.

In comparison with the Murta et al. (2007) review, the current studies featured less randomised controlled trials (RCTs) and more pre–post study designs. For those studies that utilised a RCT design in the current review there were significantly less ‘no treatment (inactive)’ control group conditions (25%) and increased use of ‘waitlist’ control conditions (68%). This may reflect the view that has developed in the field over the intervening years that it is ethically difficult to withhold treatment in an organisational setting or in the settings reflected in this review. For example, Pipe et al.’s (2009) study was originally intended as a RCT with an inactive control group and follow-ups at baseline, four weeks and one year. However based on the severity of stress, anxiety and depression measures within the control group at baseline, the decision was made to stop the study after the four week follow-up and offer the intervention to the control group. Similarly, randomisation appears a challenge for researchers in this setting. For example, Butterworth et al. 2006 commented that randomisation was not possible in their study because they had to incorporate the intervention into the framework of the existing employee wellness program.

Table 2.

Summary of Workplace SMIs' Characteristics and Methodologies.

	Murta, Sanderson & Oldeburg (2007) Studies 1977 – 2003 (n=52)	Current Review (2014) Studies 2004 - 2013 (n = 44)
Location	% of Studies	% of Studies
North America	57.7	43.2
United Kingdom	9.6	4.5
Europe	25	22.7
Australia/NZ	5.8	11.4
Asia	1.9	15.9
Africa	0	2.3
Setting		
Healthcare	33	47.7
Education	17	11.4
Government	6	22.8
Industry	9	13.6
Other	31	4.5
Not Reported	4	0
Study Design		
Experimental	61.5	36.4
- <i>Waitlist Control</i>	NR	68.75
- <i>Inactive Control</i>	NR	6.25
- <i>Active Control</i>	NR	25
Quasi experimental	30.8	22.7
- <i>Waitlist Control</i>	NR	30
- <i>Inactive Control</i>	NR	60
- <i>Active Control</i>	NR	10
Pre Post	7.7	40.9
Control		
Control group	76.9	61
Type:		
Inactive	52.5	25
Waitlist	45	68
Active	2.5	7
Follow-up		
Included	69.2	63.6
Single Follow-up	59.6	45.4
Outcomes		
Individual	94.2	91
Interface	63.5	26
Organisational	17.3	11

Note: NR; Not Reported.

A summary of the design and intervention features and assessed outcomes of the RCTs and Quasi Experimental studies included in this review is presented in the Appendix. Where effect sizes (Cohen’s d) were reported in studies they have been included in the table.

Process Evaluation Features of SMIs

The frequency of the reporting of key components of process evaluation for the current studies is outlined in Table 3. The table also includes data from the Murta et al. (2007) review for the purposes of comparison. Definitions of the components of process evaluation are equivalent to those used by Murta et al., and are based on Stecker and Linnan’s (2002) recommendations.

Table 3.

Frequency of Reporting on Components of Process Evaluation

Components of Process Evaluation	Murta, Sanderson & Oldeburg (2007) (n=52)	Current Review (2014) (n = 44)
	% of Studies	% of Studies
Recruitment	30	71
Dose Received	22	59
Participant Attitude	19	47
Reach	13	80
Fidelity	5	5
Dose Delivered	2	16
Context	9	38
Implementation	0	0

There has been a marked improvement on the reporting of all components of process evaluation since the earlier review, with the exception of *implementation* which was not reported in any study in either review. Of the 44 studies, around half evaluated between three and five components of process evaluation. The maximum number of process evaluation components addressed was six, completed for six studies (Brady, O’Connor, Burgermeister & Hanson, 2012; Foureur, Besley, Burton, Yu & Crisp, 2013; Gardner, Rose, Mason, Tyler & Cushway, 2005; Klatt, Buckworth & Malarkey, 2009; Mattila, Elo, Kuosma & Kyla-Setälä, 2007; Page & Vella-Brodrick, 2013). Page & Vella-Brodrick (2013) in particular implemented a comprehensive process evaluation.

The biggest quantum of increased reporting has occurred in the reporting of *reach*, with 79.5% of the current studies reporting on attendance to the intervention. This was most commonly reported (31.8% studies) via either a figure for average attendance per participant or an overall figure of total percentage of attendance. In addition, 14 studies indicated the total population from which the sample was drawn.

The component of *recruitment* was well reported, with 70.5% of studies giving information about how participants were recruited to participate in the study. The majority of studies used one to two recruitment methods (43.2%) and the most common methods were via posters (15.9%), newsletters/bulletins (29.5%) and email correspondence (22.7%).

The *dose received* was reported in 59.1 % of studies. The most common methods of assessing dose received (31.8%) was a quantitative analysis of the amount of participant practice of intervention techniques (e.g. from a diary of self-reported home practice) and/or through specific questions in participant feedback about adherence to intervention material. Three studies (Hahn, Binnewies, Sonnentag & Mojza, 2011; Shimazu, Umanodan & Schaufeli, 2006; Umanodan et al., 2009) formally tested participants' increased knowledge.

Reporting of *dose delivered* was more difficult to categorise. Dose delivered refers to the amount or proportion of the intended intervention that is actually delivered to program participants (Steckler & Linnan, 2002). Whilst 57% of studies gave an indication that an intervention was delivered (e.g. stated how many sessions were conducted) only 16% of studies reported delivery of an intervention with specific reference to what was originally intended. Four studies (Klatt, Buckworth & Malarkey, 2009; McGarrigle & Walsh, 2011; Milllear, Liossis, Shochet, Biggs & Donald, 2008; Page & Vella-Brodrick, 2013) had adherence to the intended delivery protocol completed by the facilitator at the end of each session as evidence of dose delivered.

Significantly fewer studies reported a *fidelity* measure. In order to measure fidelity Steckler and Linnan (2002) suggest completion of a checklist of predetermined core intervention

components. Using this criterion, two studies (Milliar et al. 2008; Page & Vella-Brodrick, 2013) reported fidelity measures and specific a priori fidelity measurement strategies. Steckler and Linnan (2002) also suggest that there may be multiple indicators of fidelity and that creative thinking about ways to measure fidelity is required. By applying more liberal criteria about what might be considered an evaluation of fidelity, the reviewer found that 18 (40.9%) studies did consider at least one indicator of fidelity. For example, 14 studies included qualitative analysis of the participant's views about the most useful components of the program and the experience of participating.

Twenty two (50%) studies presented information that linked a component of the process evaluation to outcomes, with the majority of these focusing on the process evaluation component of dose received. Six studies presented a quantitative link (Bazarko, Cate, Azocar & Kreitzer, 2013; Bormann et al. 2006; Oman, Hedburg & Thoresen, 2006; Ponce et al. 2008; Scanera, Bosco, Soleti & Lancioni, 2009; Yung, Fung, Chan & Lau, 2004). For example, Scanera et al. (2009) calculated a global measure of effectiveness of the intervention from participants' feedback about their frequency of use and perceived effectiveness of the trained techniques, and found that this measure negatively correlated with the depersonalisation component of burnout. This suggests a relationship between participants' enactment of the intervention and the outcome. In addition, four studies quantitatively evaluated the link between session attendance and outcomes. Three studies (Hahn et al. 2011; Ponce et al. 2008; Umanodan et al. 2009) found a significant link between attendance level to the intervention and study variables. Conversely, one study (Butterworth, Linden, McClay & Leo, 2006) found that the number of sessions completed by participants did not independently predict outcome.

Qualitative analysis of participant feedback was commonly used as a tool to interpret quantitative outcomes, and to determine the components and process of intervention that were most useful. The most often cited participant feedback about process that authors' linked to outcome, related to feedback about program attendance (e.g. time to attend, convenient location),

practice of the techniques (time to practice), and comprehension of the techniques (quality of materials, most useful components of program). For example, Page and Vella-Brodrick (2013) found that the focus on strengths (in the course material) and the group delivery modality were the most effective components of their program, according to participant feedback. Overall, 21 studies included some form of participant questionnaire, with 30% asking about the credibility of the intervention and 45.5% asking about intervention usefulness.

Additional aspect of Process Evaluation: Consideration of Therapist variables

All articles were reviewed for the therapist variables described earlier and a high level summary of the results is displayed in Table 4.

Table 4.

Percentage of studies that reported on Therapist Variables

Therapist Variables	Current Review (n = 44) % of Studies
Recruitment	70.5
Training	39
Professional Affiliation	54.5
Demographics (age, gender or qualification)	29.5
Assessment of Therapist skills and Adherence	13.6
Measure of Therapeutic Alliance	13.6

In terms of information about how therapists were sourced, this was reported in 31 studies (70.5%). The majority (61.4%) of studies involved therapists who were external to the organisation and of these, seventeen studies indicated that the therapist/s were the author/s or co-author/s of the research. Only one study had internal therapists who were employed as wellness coordinators (with specialisation in behaviour change and health promotion programmes). Three studies (Logan & Ganster, 2005; Oman et al., 2006; Umanodan et al., 2009) involved a combination of internal and external therapists. Information beyond this, for example about the selection criteria and process for recruiting the therapist, was scant: only one study provided this

information. Oman et al. (2006) stated that co-instructors were recruited by the main instructor based on their level of formal training, experience with the tools and small group facilitation skills.

Of the 44 studies, seventeen (39%) gave some information about how therapists were trained. In most cases this information was brief and centred on the accreditation the therapist held, for example stating the therapist was 'MBSR accredited' or 'CBT trained'. Four studies (Cohen-Katz et al., 2005; Goodman & Schorling, 2012; Klatt et al., 2009; Willert, Thulstrup & Bonde et al., 2011) gave information about therapist training/accreditation and level of experience with the content. For example, Klatt et al. (2009) stated that the therapist participated in seven days of MBSR professional training under the direction of Kabat-Zinn and Santorelli, and has been using mindfulness practices since 1995. An additional three studies gave only an indication of the number of years of experience of the therapist, and four studies referred to an 'experienced therapist' without quantifying the level of experience. Twenty four (54.5%) studies indicated the professional background of the therapist. Of these, the majority were psychologists (50%), with other health professionals (25%), counsellors/social workers (8%) and wellbeing/human resources professionals (8%) also featuring.

There was a paucity of data about therapist demographics reported. The education level of the therapist was reported in only six studies (13.6%), gender was reported (or could be deduced) in 13 studies (29.5%), and the age of therapist reported in one study.

In terms of considering therapist effects in the design of the study, only one study had random allocation of therapists to treatment conditions (Cheng, Kogan & Chio, 2012). Twenty four studies (54.5%) provided information about whether the same therapist was used for the whole treatment condition, and twenty nine (65.9%) reported on how many therapists were used in the study.

Six studies (13.6%) reported on process evaluation methods which were designed to ensure therapist adherence to the intervention protocol. Three studies implemented checklists that the facilitator completed at the end of each session to record adherence to protocol (McGarrigle &

Walsh, 2010; Millear et al., 2008; Page & Vella-Brodrick, 2013). Cheng et al. (2012) and Butterworth et al. (2006) both included independent observers who rated aspects of the therapist's instruction. Oman et al. (2006) implemented several steps in an attempt to maximise instructor skill level and maintain adherence: an hour long orientation was conducted with all co-instructors prior to the start of the program (as distinct from their formal training in the intervention), at each session the main instructor circulated among the co-instructor led groups, and an email message was sent to co-instructors prior to each session (with reminders about topics, suggested questions, and reflections on how the course was progressing). They note that a formal competency based assessment of instructor's skill level was not included, and acknowledge the lack of such formal assessment of instructor competency as a limitation of their study.

Of the 44 studies, twenty six (59.1%) reported that the intervention involved a manualised approach to content and training delivery. A number of authors stated that a manualised approach was used to promote uniform delivery of the intervention between groups and across therapists, in order to strengthen standardisation (e.g. Hahn et al., 2011; Willert et al., 2011). Cheng et al. (2012) advised the instructor to refer closely to the manual to ensure standardisation of practice, and they reminded the instructors not to include content from the alternate treatment condition. They tested instructor adherence via two blind judges who observed and rated ten percent of cases in a treatment condition, with both judges correctly categorising the rated sessions into the correct condition.

Five studies (Broome, Orme-Johnson & Schmidt-Wilk, 2005; Judkins, Reid & Furlow, 2006; Klatt et al., 2009; Page & Vella-Brodrick, 2013; Roeser et al., 2013;) included a participant rating of therapeutic alliance. For example, Roeser et al.'s (2013) participant evaluation included a rating of the instructor's 'genuineness, trustworthiness, domain specific expertise and effectiveness at presenting the material'. Similarly, Broome et al.'s (2005) participant evaluation included a rating of the quality of the 'participant's relationship with the course leader'. In two studies (Roeser et al, 2013; Page & Vella-Brodrick, 2013) the authors went on to suggest a link

between positive feedback about the therapist and participants' engagement and adherence with the program. Roeser et al. (2013) state that participants indicated a strong acceptance of the program in terms of benefits, quality of the instructor and curriculum, and there was high attendance to the program and compliance with homework tasks. Page and Vella-Brodrick's (2013) process evaluation indicated the facilitator used a positive, affirming facilitation style and that the facilitation style of the program was appreciated by participants. They concluded that participants were effectively engaged in the program.

Two studies included a therapist rating of the therapeutic alliance. Page & Vella-Brodrick (2013) specifically measured whether the therapist used a positive and affirming style that supported participants' autonomy. In McGarrigle & Walsh's (2010) study the group facilitator kept a journal of observations about the group and group processes. No study had an independent rating of alliance.

Discussion

The framework of Steckler and Linnan (2002) continues to be a useful tool for conducting a systematic review of process evaluations of SMIs. Whilst there is still room for improvement, there has been an increase in the inclusion of process evaluation components in reported research since the Murta et al. (2007) review, particularly in reporting recruitment methods, dose received, participant attitude, reach and context. Reporting about fidelity, dose delivered and implementation remains more challenging for researchers.

A similar result between reviews was found for the number of studies linking process evaluation variables with outcome evaluation. This suggests that whilst authors are increasingly recognising the value of process evaluation in assisting with the integrity of study delivery and as a tool to gather information about aspects of an intervention that were helpful, there is still insufficient analysis to reliably identify the process predictors of SMI outcomes.

In their review Murta et al. (2007) suggested that it would be useful to consider the introduction of other components to the Steckler and Linnan (2002) framework. This review has

added components related to the therapist, hypothesising that therapist variables may account for some of the variance in intervention outcomes. Whilst the intervention itself is the primary change agent, the therapist is part of the implementation system that contributes to outcome (Chen 1990, as cited in Barry, Domitrovich & Lara, 2005). Therapist skill, motivation and consistency can be barriers to effective implementation (Barry et al., 2005).

The majority of studies in the current review tried to correct for such problems by use of a manualised and standardised approach to delivery. If it is the treatment itself that ‘works’, the implication is that a carefully specified treatment manual detailing a standardised treatment process is all that is required (Hill, 2006). However, if the therapist has a greater role in determining change, then the focus should be on selecting good therapists, training therapists to conduct the programme effectively, and providing ongoing support, supervision and assessment of the therapists as the programme is delivered (Jané-Llopis, Barry, Hosman, & Patel, 2005). In the current review, the majority gave some information about the source of therapists and their background training, however they provided little information about how the therapists were selected and trained to conduct the programme effectively, and little attention was paid to monitoring adherence to the intervention protocol.

Seventeen studies (38.6%) featured therapists who were authors or co-authors, and the majority of studies used external therapists. Luborsky et al. (1999) suggest that a researchers’ allegiance to a particular intervention may distort outcomes. Researchers may be biased in their selection of therapists. They may also inadvertently create bias within the therapist through positive reinforcement of the therapist in their preferred treatment condition. There is also the obvious potential for bias when the researcher *is* the therapist. A high number of studies in this review potentially have these methodological flaws. A challenge for future researchers will be to mitigate this risk, for example by ensuring that the therapist does not have a dual therapist/researcher role and that the researchers in a study represent a mix of different therapy allegiances. Similarly, it is recommended that the researcher does not select the therapist or

alternatively therapists for each treatment mode could be selected and supervised by those who represent the same treatment mode. Ideally the best approach would be to adopt a double blind study design for therapists.

It is encouraging to observe that several authors considered the impact of therapist variables in their research. Specific mention was made about aspects of therapeutic alliance and how it may have impacted outcomes in seven studies. For example, Cohen-Katz et al. (2005) reflected on the possibility that a positive teacher-student relationship in their study created a positive response bias. Similarly, Pipe et al. (2009) designed their study to ensure that control participants has the same period of contact with the facilitated learning experience in order to provide an “attention control condition”, that is, to rule out the impact of the social interaction aspects of intervention.

Limitations of the current review should be acknowledged as they may influence the interpretation of the results. Firstly, there was a bias towards published studies. As has previously been reported (Higgins et al., 2011) published studies tend to over-represent significant and positive results. Secondly, the review focused on interventions that involve face to face SMIs with essentially healthy working employees, as the researcher was specifically interested in the potential role of therapist effects with this cohort. This narrow focus may limit findings about the organisational and/or employee variables that may be important in ensuring the success of an intervention. Finally, all studies were reviewed and coded, and data analysed by one author which may have impacted the reliability of the results.

From this review, the increased focus on process evaluation is encouraging. It is recommended that future research in the area of workplace stress management continue to focus on systematic planning, monitoring and assessment of process components in programme implementation. A focus on process contributes to data about the obstacles and facilitating factors, or aspects of the ‘implementation system’, that support outcomes. The therapist is hypothesised to be an essential component of this system, and therefore researchers are encouraged to include

consideration of therapist variables as an incremental contribution to their process evaluation framework.

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Appendix

Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Study	Participants & Design			Treatment		Outcomes						
	N	N Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Randomised Controlled Trials – Inactive Control Group												
Logan & Ganster (2005)	64	1 INT 1 ICG	8mth	5x2hours (16 weeks)	DCS	0	0					* control perception ¹ + job satisfaction ² 0 somatic complaints
Mino et al. (2006)	58	1 INT 1 ICG	0	2x2hrs + ?ind. contact (12 weeks)	CBT+email counselling	0	+		0			0 effort reward imbalance 0 social support
Page & Vella-Brodrick (2013)	50	1 INT 1 ICG	6 months	6x1hr weekly (6 weeks)	POS		+		+			0 Work related wellbeing

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Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Study	Participants & Design			Treatment		Outcomes						
	<i>N</i>	<i>N</i> Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Wolever et al. (2012)	239	2 INT 1 ICG	0		1. MBSR 2. Yoga	X	0			X		X Sleep Difficulty Heart Rhythm 0 Productivity Pain
						X	0			0		X Sleep Difficulty Heart Rhythm Pain 0 Productivity

Appendix

Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Study	Participants & Design			Treatment		Outcomes						
	N	N Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Randomised Controlled Trials – Active Control Group												
Pipe, Bortz & Dueck (2009)	33	1 INT 1 ACG	0	5x2hr weekly (5 weeks)	MBSR	+						+ Caring Efficacy
Randomised Controlled Trials – Wait List Control												
Cheng, Kogan & Chio (2012)	161	2 INT 1 WLC	4mth	6x2hr fortnightly (12 weeks)	1. CS 2. CBT		+		+			
Cohen-Katz et al (2005)	27	1 INT 1 WLC	3mth	8x2.5hr weekly+1x6hr day (8 weeks)	MBSR	0				+		+ emotional exhaustion x personal accomplishment
Flaxman & Bond (2010)	191	1 INT 1 WLC	3mth	2x3hr weekly + 1 x 3hours (12 weeks)	ACT	* ³ (0.34)						

Appendix

Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Study	Participants & Design			Treatment		Outcomes						
	<i>N</i>	<i>N</i> Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Gardner et al (2005)	138	2 INT 1 WLC	3mth	3x3.5hr weekly (3 weeks)	1. CS (Behavioural) 2. CS (Cognitive)	* ³ (0.65)		0 Behavioural				0 cognitive appraisal
						# + ⁴ (0.81)		0 Behavioural				0 cognitive appraisal
Klatt et al (2009)	161	1 INT 1 WLC	0	6x1hr weekly (6 weeks)	MBSR	+ (0.73)				+ (0.56)		0 sleep 0 salivary cortisol
Oman & Hedberg (2006)	58	1 INT 1 WLC	5 months	8x2hr weekly (8 weeks)	MED	+ ⁵ (0.84)			0		0	+ Mental health 0 Vitality, Job satisfaction

Appendix

Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Study	Participants & Design			Treatment		Outcomes						
	<i>N</i>	<i>N</i> Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Roeser et al (2013)	113	1 INT 1 WLC	3 months	11x3.5hrs (11 sessions)	MBSR	+	+			+	+	+
						(0.73)				(0.87)	(0.68)	(0.62) compassionate mindset (0.15 – 0.33) attention, working memory 0 absenteeism, physiological measures
Shapiro et al. (2005)	38	1 INT 1 WLC	0	8x2hrs weekly (8 weeks)	MBSR	+					0	+
						Perceived stress 0 psycholog ical distress				life satisfaction		self-compassion

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Study	Participants & Design			Treatment		Outcomes						
	<i>N</i>	<i>N</i> Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Willert et al (2009)	102	1 INT 1 WLC	9 months	8x3hrs (4xweekly then 4xfortnightly) (12 weeks)	CBT	+		0 Behavioural				+ Cognitive reappraisal 0 emotional support, instrumental support, active coping, planning
Willert et al (2010)	102	1 INT 1WLC	6 months	8x3hrs (4xweekly then 4xfortnightly) (12 weeks)	CBT							+ (0.64) Quality of Sleep (0.57) Cognition 0 Memory Time in Bed

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Study	Participants & Design			Treatment		Outcomes						
	N	N Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Willert et al (2011)	102	1 INT 1 WLC	4 months	8x3hrs (4xweekly then 4xfortnightly) (12 weeks)	CBT							x Absenteeism (Self-reported) 0 Absenteeism (organization recorded) Return to work
Quasi-Experimental – Active Control Group												
Broome, Orme-Johnson & Schmidt-Wilk (2005)	86	2 INT 1ACG 1ICG	5.5 months	4x2hours (consecutive days)	1. MED 2. RT	+ ⁶ 0						
Quasi Experimental – Inactive Control												
Angelo & Chambel (2012)	104	1INT 1 ICG	4 months	3x7hrs (consecutive days)	DCS							# Demand + Social Support + Vigor

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Study	Participants & Design			Treatment		Outcomes						
	<i>N</i>	<i>N</i> Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
Butterworth, Linden, McClay & Leo (2006)	276	1 INT 1 ICG	0	30 min session, ave. 2.7 sessions per participant	MI				+ Mental health + Physical health			
Gardiner, Lovell & Williamson (2004)	210	1 INT 1 ICG	0	5x3hours weekly (5 weeks)	CBT	+ psycholog ical distress					0 Work related distress	0 Work related morale Quality of work life
Sui, Cooper & Phillips (2014) (Study 2)	98	1 INT 1 ICG	0	2x7hr + half day (2.5days)	MUL	0 Physical/p sychologi cal symptoms			0 Positive emotions		0 Emotional exhaustion Detachment	+ Mastery Recovery 0 Job satisfaction

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Study	Participants & Design			Treatment		Outcomes						
	<i>N</i>	<i>N</i> Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
van Dierendonck, Garson & Visser (2005)	72	1 INT 1 ICG	9 months	10x8hrs (12 weeks)	PS				+		+	+
									Positive Affect Negative Affect			Emotional Intelligence Spirituality 0 View of career
Yung, Fung, Chan & Lau (2004)	65	2 INT 1 ICG	1 month	4 x 20mins weekly (4 weeks)	1. RT (Progressive muscle relaxation) 2. RT (visualization)	+			0			
						State Anxiety Trait Anxiety			General health			
						+			+			
						State Anxiety Trait Anxiety			General health			

Appendix

Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Study	Participants & Design			Treatment		Outcomes						
	N	N Cond.	F/up End point	Sessions Frequency, No., length (Duration)	Format Components	Stress	Mood	Coping.	Well- being	Mindfulness	Burnout	Other
					Quasi Experimental – Waitlist Control							
Hahn, Binnewies, Sonnentag & Mojza (2011)	135	1 INT 1 WLC	3 weeks	1x5hrs + 1x4hrs (2 weeks)	MUL	X Perceived stress			X Negative affect		0 Emotional exhaustion	+ Recovery experiences (detachment, relaxation, control). Self- efficacy, sleep quality X (mastery)
Shimazu, Umanodan, Shaufeli (2006)	300	1 INT 1 WLC	2 months	1 x 2hrs	CS	*7 (.21) Psycholog ical distress 0 Physical distress		+	(0.25) Coping skills			
Walach et al. (2007)	29	1 INT 1 WLC	2 months	8 x 2.5 hrs + 1 x 6hr (8weeks)	MBSR			X (0.98) Positive 0 Negative	0 Life satisfaction			0 Somatic Complaints Locus of Control View of Workplace

Appendix.

Summary of Stress Management Interventions in the Workplace: Design and Intervention Features and Assessed Outcomes

Note. ¹ Increased perception of job control for those participants who have a supportive supervisor (i.e. supervisor support moderated effect of intervention on perceived control); ² Perception of job control mediates the interaction of the intervention and supervisor support on job satisfaction; ³ Significant for participants who had clinically significant score on the distress measure pre-treatment; ⁴ Reduction for WLC distress score during intervention (T2) but not maintained at follow-up (T3); ⁵ Treatment effects on stress were mediated by adherence to practice; ⁶ Treatment effect only when compared to offsite active control group, not with onsite inactive control group; ⁷ An adverse intervention effect was found for psychological distress but was moderated by job control. +, significant differences between intervention and control; * significant differences between intervention and control for a subgroup only; X, significant difference between conditions at initial follow-up, but not maintained to final assessment; 0, no significant difference between intervention and control condition; blank spaces indicate outcomes not measured; #, indicates control group patients improved across follow-ups. INT, intervention; WLC, wait-list control; ICG, inactive control; ACG, active control; CS, coping skills training, CBT, cognitive behavioural training ; RT, relaxation training, MBSR, Mindfulness Based Stress Reduction training; ACT, Acceptance & Commitment Therapy Training; DCS, Job Demand, Control, Support training; MED, Meditation based training; POS, Positive Psychology based training; MI, Motivational Interviewing; MUL, Multi-faceted stress management training; PS, Psychosynthesis training.
