Workplace Stress Management Interventions and Health Promotion

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Abstract

Employee health and wellness are important for employees, their families, and their organizations. We review the literature on both stress management interventions in organizations and workplace health promotion and wellness programs, from the lens of primary, secondary, and tertiary interventions as well as the framework provided by the job demands–resources model (Bakker & Demerouti 2007). Stress management interventions tend to be ameliorative, often focusing on restoring resources that have been depleted by the work environment, whereas workplace health promotion and wellness programs tend to be more preventive, enhancing job and personal resources for all employees. There appears to be a trend toward incorporating stress management as a component of workplace wellness programs, with these programs taking more of a primary or secondary intervention approach than a tertiary approach. In addition, although organization-level interventions are still relatively rare, there is growing evidence that organizational interventions, especially when combined with individual-level interventions, can be quite effective in promoting a positive, healthy work environment. We conclude the review by offering suggestions for future research and some considerations for the design and evaluation of future interventions.

16.1

INTRODUCTION

According to the American Psychological Association's 2014 Work and Well-Being Survey, 31% of employed adults indicated that they felt tense or stressed out during the workday, although 61% of employed adults reported that they had the resources to manage the work stress that they experienced (APA 2014). So, is the glass half full or half empty? Employees continue to experience stress in the workplace; however, the majority appear to be able to manage their stress.

What were the major sources of stress among those who participated in the survey? Low salaries and lack of opportunity for growth were the most commonly reported source of work stress, and these sources of stress have been relatively stable over at least the past four years (APA 2014). Interestingly, a heavy workload dropped out of the top five sources of work stress in 2014, and job insecurity moved into the top five stressors. The other two top sources of stress in the 2014 survey were uncertain or undefined job expectations and long hours.

Organizational scholars have accumulated a large body of literature on the antecedents and correlates of work stress, and there is a growing literature on workplace stress management interventions. Yet, it appears that there is still much to be done to improve employees' work life and their well-being. It may be that we have focused too much on what Pawelski (as cited in Polly 2014) terms "red cape interventions," which are interventions designed to stop negative experiences, and not enough on "green cape interventions," which are interventions designed to grow positive experiences. In this article, we review the literature on stress management interventions. Although these interventions are typically red cape interventions aimed at reducing job demands on employees such as role overload and discrimination and personal demands such as family demands and relationship conflicts, more recent interventions focus on building employees' resources and might be considered to be green cape interventions. Then we review the effectiveness of health promotion and wellness programs and positive psychology workplace interventions. These are generally—but not entirely—green cape interventions aimed at enhancing job resources such as job control and organizational support, personal resources such as core self evaluations and physical health, and nonwork resources such as social support from family and friends. It should be noted that many health promotion and wellness programs include stress management training and interventions. To the extent possible, we try to keep these distinct while acknowledging their overlap. To conclude, we offer suggestions for future research and some guidelines on the design and evaluation of interventions to advance the translation of research into practice.

THEORETICAL FRAMEWORK

There are a number of theoretical frameworks in the occupational stress and employee well-being literature. Many of them focus on the negative aspects of the work environment, with stress management interventions aimed to offset the resulting strain and lack of well-being. Similarly, workplace health promotion and organizational wellness programs have developed to promote employees' health more from a public health perspective than in response to demands of the work environment (Tetrick 2008). To guide our thinking in this review, we have adopted the job demands–resources (JD-R) model (Bakker & Demerouti 2007), which incorporates job demands and resources as well as nonwork demands, personal resources, and nonwork resources (Xanthopoulou et al. 2007, 2013).

This dual process model reflects two mechanisms by which job demands and resources can lead to strain or motivation that subsequently affect organizational and individual outcomes. The first process in the JD-R model is a health impairment process whereby poorly designed jobs and chronic demands result in poorer outcomes for employees and organizations through the

depletion of employees' mental and physical resources. The second process is a motivational process. Resources, such as control, autonomy, and feedback, can function as motivators to the extent that they are instrumental in attaining work goals or they promote growth and development. It is this second, motivational process that allows the JD-R model to be useful in health promotion and positive interventions developed to promote well-being, not simply to "fix" problems. Therefore, resources promote work engagement, which results in better outcomes for employees and organizations.

As depicted in **Figure 1**, there are several established job demands that have been linked to burnout and strain and several resources that have been linked to work engagement and motivation (Bakker et al. 2014). The joint effect of job demands and resources originally posited has not been consistently confirmed in the empirical literature; however, the mediating effect of burnout and work engagement between job demands and resources, on the one hand, and well-being, on the other, has received support in the basic research literature. The JD-R model, surprisingly, has not served as the framework for many intervention studies per se (cf. Cifre et al. 2011), but perhaps this will change as the number of empirical evaluations of workplace interventions continues to grow, especially in Europe and North America (LaMontagne et al. 2007).

STRESS MANAGEMENT INTERVENTIONS

There is a growing literature on the evaluation of the effectiveness of stress management interventions. In this section, the earlier meta-analytic reviews are summarized first, and then some more recent developments in stress management interventions are presented.
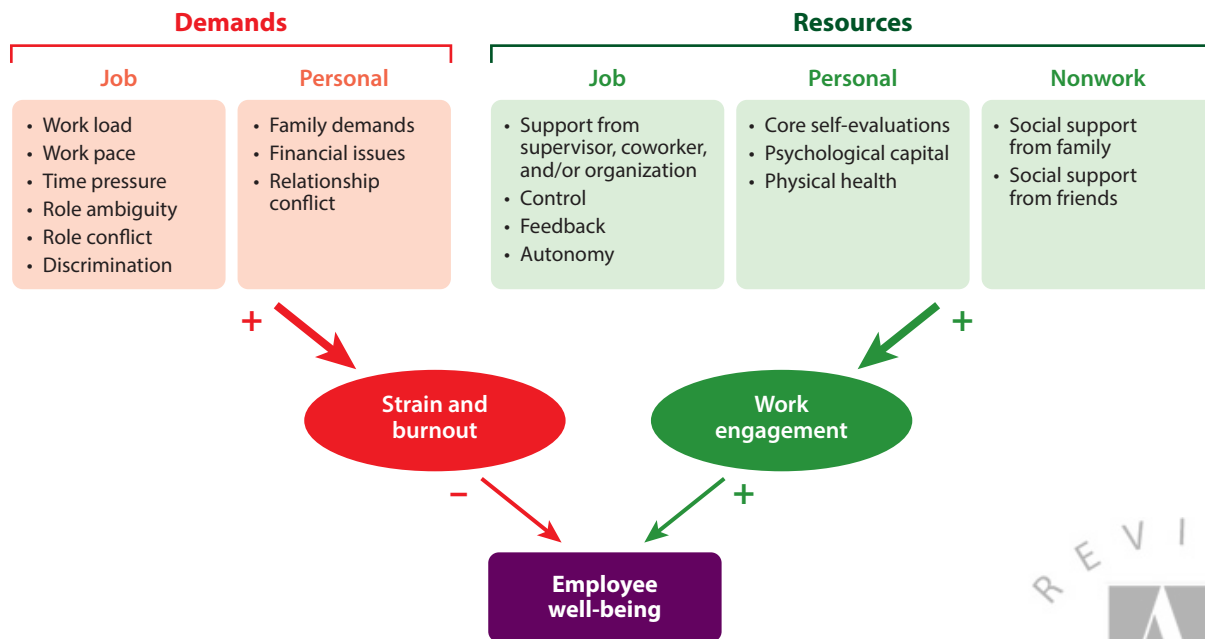

Figure 1

Theoretical framework for reviewing stress management interventions and health promotion programs.

Stress Management Interventions Through 2008

Three meta-analytic and systematic reviews of the effectiveness of workplace stress management interventions were published in the period 2001–2008. Using a structure from the public health literature, we have tried to conceptualize the types of interventions incorporated in these reviews as follows: primary interventions, secondary interventions, and tertiary interventions (Tetrick & Quick 2011) (see **Table 1**). Primary interventions are proactive and prevention oriented. They focus on all employees regardless of whether they are at risk or not. Secondary interventions focus on employees or groups of employees who are at risk. These interventions target employees who have been exposed to risk factors, seeking to eliminate the risk factor or provide employees with knowledge and skills to cope with the stressor. Lastly, tertiary interventions focus on employees or groups of employees who are experiencing distress and need assistance in recovering from stress-related symptoms. As implied by these definitions, stress management interventions can target specific individuals, specific jobs or units within the organization, or the entire organization. Generally, primary interventions focus on prevention and are more likely to take a systems approach across the organization, whereas tertiary interventions focus on individuals. Secondary interventions frequently focus on removing the risk factor either for an individual or a group of individuals. From an occupational health perspective, there is a hierarchy in which primary interventions are viewed as generally most effective, followed by secondary interventions, which in turn are more effective than tertiary interventions (LaMontagne et al. 2007). The results of the three meta-analytic and systematic reviews are shown in **Table 2**.

The first review, by Van der Klink et al. (2001), included 48 well-designed (quasi-) experimental studies that were conducted between 1977 and 1996. The second review, by LaMontagne et al. (2007), included 90 studies. LaMontagne et al. (2007) did not include the studies that were included the first review because the Van der Klink et al. (2001) meta-analysis included only intervention studies in which the employees were reporting stress-related symptoms. Similar to the Van der Klink et al. (2001) meta-analysis, LaMontagne et al. coded studies based on the degree to which the intervention took a systems approach. They gave the highest rating to studies that were both organizationally and individually focused, a moderate rating to those interventions that took an organizational perspective only, and a low rating to those interventions that took an individually oriented approach only. The third review, by Richardson & Rothstein (2008), used different inclusion criteria—most notably that the intervention must have used random assignment to treatment and control conditions. Using these more stringent inclusion criteria, only 19 of the 48 studies included in Van der Klink et al. (2001) were included. Several additional studies that were published in the ensuing decade since van der Klink et al.'s meta-analysis were added, resulting in a total of 36 separate studies and 55 interventions. Thus, the three reviews used different criteria, but there was some overlap with respect to the studies included in each review.

Stress management interventions are effective, although the effectiveness appears to depend on the outcome measured. Relaxation interventions are less effective than cognitive-behavioral interventions; yet, the former continue to be examined most often. Richardson & Rothstein (2008) posit that the lower levels of effectiveness of relaxation techniques may be because such techniques encourage individuals not to change their cognitions but instead to reduce the tension by "letting go." Cognitive-behavioral interventions, by contrast, are more proactive. Alternatively, one might argue that cognitive-behavioral interventions are more useful in restoring and enhancing personal resources or reframing demands.

Interestingly, although Richardson & Rothstein (2008) did not find that multimodal interventions were more effective than single interventions, LaMontagne et al. (2007) found that interventions that took a more systems approach, incorporating both individual and organization

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Table 1 Types of stress management interventions and health promotion programs based on a public health perspective

Intervention type	Response type(s)	Orientation	Focus	Example(s)
Primary	Proactive	Prevention or promotion	All employees and/or the organization	Conflict-management training, organization of work, wellness programs
Secondary	Proactive, potentially reactive	Primarily prevention: remove the risk factors	Employees at risk and/or organizational risk factors	Coping skills training, job redesign, employee fitness programs for those employees with known risk factors
Tertiary	Reactive		Employees in need of assistance	Cognitive-behavioral therapy, rehabilitation after illness, employee assistance programs, counseling

levels, were more effective. This seeming inconsistency may reflect the integration of the two approaches. The multimodal approach combined multiple types of interventions at the individual level, for example, including cognitive-behavioral interventions with relaxation techniques, assertiveness training, and time management. The fact that the multimodal approach was not more effective may reflect a drain on participants' resources to incorporate all of these different interventions at the same time (Richardson & Rothstein 2008). The systems approach, by contrast, integrated both individual-level and organization-level interventions, which would not necessarily drain an individual's resources (LaMontagne et al. 2007).

Richardson & Rothstein (2008) suggest that the type of intervention is confounded by the outcomes assessed. They argue that "matching intervention to outcome type makes sense" (p. 89). However, it does raise the question as to what effects the different types of interventions might have on other outcomes.

Organizational interventions tend to be primary interventions. They are the least studied to date. Evidence for the effectiveness of organizational interventions alone is lacking: Interventions that incorporate organization-level and individual-level interventions are more effective than interventions that focus only at the organization level or the individual level (LaMontagne et al. 2007).

The studies included in these three reviews differed on a number of characteristics, such as the length of the intervention, the time interval at which the outcomes were assessed, and the national and organizational culture in which the intervention was studied. Richardson & Rothstein (2008) found evidence for moderators of the effects they examined, but there were not sufficient numbers of studies to examine specific moderators. Also, both LaMontagne et al. (2007) and Richardson & Rothstein (2008) found that the types of interventions identified by Van der Klink et al. (2001) were insufficient to adequately describe the types of interventions being implemented, and suggested that there is a trend to integrate stress management interventions with health promotion programs in organizations.

Recent Developments in Stress Management Interventions

Since Richardson & Rothstein's (2008) meta-analysis, several stress management intervention studies have been published. We review a few of these more recent studies below. In an effort to provide an organizing framework for these developments, we classify them according to intervention type (e.g., mindfulness based) as well as whether they are best described as primary,

Table 2 Summary of meta-analytic and systematic reviews of the stress management literature

Meta-analysis	Number of interventions	Types	Approach	Outcomes	Effectiveness
Van der Klink et al. (2001)	18 of 48 interventions	Cognitive-behavioral interventions	Tended to be secondary interventions, but some could be considered primary interventions	Changing cognitions and reinforcing active coping skills	Most effective in general: effective in improving perceived quality of work life, improving psychological outcomes, and reducing complaints; not effective in reducing physiological responses
	17 of 48	Relaxation techniques	Tended to be secondary or tertiary interventions	Physical or mental relaxation as a method to with the consequences of stress	Same effectiveness as cognitive-behavioral interventions, although the effect sizes were not as large as those of the cognitive-behavioral interventions or multimodal interventions
	8 of 48	Multimodal programs	Tended to be secondary interventions	Acquisition of both passive and active coping skills	About the same as the cognitive-behavioral interventions
	5 of 48	Organization-focused interventions	Tended to be primary interventions, but some could be considered secondary interventions	Organizational development and job redesign	Not effective, except for a small effect on psychophysiological measures; there were only five studies
LaMontagne et al. (2007)	43 of 90 interventions	Individual-level intervention	Tended to be secondary or tertiary interventions	Relaxation, meditation, cognitive-behavioral skills training	Effective at the individual level but not at the organization level
	17 of 90	Organization-level intervention	Tended to be primary and secondary interventions	Working conditions, employee participation	Effective at the individual and organization levels
	30 of 90	Systems approach—both individual- and organization-level interventions	Tended to be primary and secondary interventions Note. 8 studies were integrations of stress management and health promotion	Combination of individual and organization levels	Most favorable positive effects at both the individual and organization levels

(*Continued*)

Table 2 (*Continued*)

Meta-analysis	Number of interventions	Types	Approach	Outcomes	Effectiveness
Richardson & Rothstein (2008)	7 of 55 interventions	Cognitive-behavioral interventions	Tended to be secondary interventions	Psychological and physiological outcomes	Most effective along with alternative interventions
	17 of 55	Relaxation techniques	Tended to be secondary interventions	Psychological and physiological outcomes	Not as effective as cognitive-behavioral interventions
	19 of 55	Multimodal interventions	Tended to secondary interventions	Psychological and physiological outcomes	Not more effective than single-approach interventions
	5 of 55	Organization-focused interventions	Primary interventions	Organizational outcomes (absences and productivity)	No effect was found
	7 of 55	Alternative to the above four types	Tended to be secondary interventions—increased stress management and health promotion	Psychological and physiological outcomes	Produced the largest effect sizes with cognitive-behavioral techniques

secondary, or tertiary interventions. As outlined below, these recent studies highlight a number of innovative intervention approaches that have not been examined until recently.

Mindfulness-based interventions. In recent years, there has been an increase in the number of interventions that incorporate mindfulness as a means for reducing employee stress and related outcomes. Mindfulness can be defined as "a state of being attentive to and aware of what is taking place in the present" (Brown & Ryan 2003, p. 822). Scholars assert that mindfulness may serve to reduce employee stress because mindfulness facilitates adaptive responding to stressful events by allowing individuals to attend to the event in an accepting, nonjudgmental manner (Michel et al. 2014). To explore this possibility in the context of work, several researchers have investigated primary mindfulness-based interventions as they relate to employee stress, among other outcomes. Here, we consider primary interventions to be those that are made available to all employees (as opposed to only to individuals who are at risk); as such, all of the mindfulness-based interventions described here constitute primary interventions.

Wolever and colleagues (2012) published the results of a randomized controlled mind-body stress reduction program that was carried out with employees of a large national insurance carrier. Employees who participated in the 12-week intervention were assigned to either a mindfulness-based intervention (either in person or through a virtual classroom), an intervention that involved completing therapeutic yoga, or a control group. Specifically, the mindfulness-based intervention was implemented at work and consisted of 12 weekly hour-long classes, plus a 2-h intensive session at week 10. The program focused on improving "work-related stress, work-life balance, and self-care" (p. 249) through 5–15-min practices designed for use at work. The control group received no intervention but was instead provided with a list of health-promotion resources available to employees.

Results of the study suggest that individuals in both the mindfulness-based and yoga interventions experienced significant pre/post intervention reductions in perceived stress and sleep quality relative to participants in the control group. Marginal (but not significant) improvements in heart rate variability and breathing rate were also observed in the intervention groups compared with controls. The intervention did not significantly impact participants' blood pressure or work productivity. There were no differences between participants who completed the online versus in-person mindfulness intervention, except with respect to heart rate variability. This study's results suggest that a mindfulness-based mind-body stress reduction intervention is just as effective as a yoga-based mind-body stress reduction program and that mindfulness interventions conducted in virtual classrooms generally do not have a differential impact on the outcomes assessed here when compared with in-person interventions.

Hülsheger and colleagues (2013, p. 311) also examined the benefits of mindfulness in a sample of employees who could be characterized as "interactive service workers," who "face emotionally charged encounters, and need to manage their emotions as part of their job." In this study, the mindfulness intervention was self-guided and involved both mindfulness meditation and brief informal daily practices over the course of 10 workdays. Daily practices included several standardized activities from the Mindfulness Based Stress Reduction program (MBSR; Kabat-Zinn 1982) and Mindfulness-Based Cognitive Therapy (MBCT; Segal et al. 2002). For example, participants were asked to complete at least twice daily the 3-min "breathing space" (Siegel 2010, p. 318), an exercise that involves "training awareness of thoughts, feelings, and bodily sensations by paying attention to them."

Individuals who participated in the intervention were compared with a (wait-list) control group in terms of pre/post intervention job satisfaction, emotional exhaustion, and surface acting. Participants experienced significant decreases in emotional exhaustion and increases in job

satisfaction. In addition, surface acting was identified as a causal mechanism explaining the effect of mindfulness on emotional exhaustion, but not job satisfaction. This study therefore points to building the personal resource of mindfulness as one potential healthy strategy for dealing with emotionally laden job demands.

Like Hülsheger et al. (2013), Michel and colleagues (2014) tested the efficacy of a self-guided mindfulness intervention that was based on MBSR and MBCT and consisted of both mindfulness meditation practice and daily exercises that could be easily integrated into one's daily life. The intervention lasted 3 weeks, and the authors sought to examine mindfulness as a cognitive-emotional segmentation strategy, whereby it was suggested that mindfulness would "help individuals cope with work-related cognitions, emotions, and associated problems with energy levels that keep them from being fully immersed in their private roles" (p. 736). Thus, Michel et al. (2014) evaluated whether participation in a mindfulness intervention had an effect on psychological detachment during time off from work, strain-based work–family conflict, and overall satisfaction with work–family conflict. Results indicated that, relative to participants in the control group, participants who completed the mindfulness-based intervention achieved significantly greater psychological detachment from work, experienced less work–family conflict, and reported greater satisfaction with their jobs, both immediately after the intervention and 2 weeks postintervention. These findings specifically point to the role of mindfulness as one means for enhancing the personal resources necessary for effectively coping with negative work-related emotions when they enter the private space. Thus, mindfulness may serve to both increase personal resources and decrease personal demands.

Finally, in an interesting deviation from the more traditional workplace mindfulness interventions described thus far, Schutte (2014) investigated the effectiveness of a "loving-kindness" meditation intervention (Fredrickson et al. 2008), which essentially involves wishing oneself and others to be well and happy. Given the successful impact of the initial intervention conducted by Frederickson and colleagues (2008) on several personal resources, including mindfulness and optimism, Schutte (2014) sought to determine whether an abbreviated (3-week) and self-guided version of the original intervention would lead to similar outcomes in a working sample from a variety of occupations. In this study, participants in the intervention group were asked to practice the meditation for 15 min each day of the intervention following prerecorded instructions. Findings indicated that, compared with the control group, intervention participants reported significantly greater pre/post intervention positive affect, self-efficacy, and work satisfaction and less psychological distress. Again, these results imply that loving-kindness meditation, which is an offshoot of mindfulness insofar as it seeks to stimulate compassion for oneself and others, could serve to reduce job stress and related outcomes through enhancement of personal resources.

Recovery interventions.   Another broad type of intervention that has seen developments in recent years is those that focus on facilitating experiences and improving processes that help to alleviate the negative effects of job stress (Geurts & Sonnentag 2006). To date, limited research has been done to examine whether interventions can work to enhance recovery and employee well-being. One noteworthy example comes from Hahn and colleagues (2011), who studied the effectiveness of a recovery intervention program consisting of four modules, each of which was designed to promote one of the four recovery experiences suggested by Sonnentag & Fritz (2007): psychological detachment from work, mastery, relaxation, and control during off-work time. For example, the mastery module was spent encouraging employees to seek challenges during off-work time, and the control module taught employees to set goals during their off-work time so that they could spend the time how they wanted. Each module contained educational information, as well as individual and group activities. Employees were recruited from public service organizations,

private companies, and a university in Germany, and the intervention was completed in two sessions lasting 4–5 h each. Compared with a control group, the intervention group participants experienced significant increases in three of the four targeted outcomes (psychological detachment, relaxation, and control), 1 and 3 weeks postintervention. Increases in mastery were observed 3 weeks postintervention (but not at 1 week postintervention). In addition, participants experienced a significant decrease in perceived stress and negative affect, as well as a significant increase in the personal resources of self-efficacy, 3 weeks postintervention.

Another recent example of a controlled job recovery intervention was implemented by Siu and colleagues (2014) in a Chinese sample. In this study, teachers were recruited to participate in a 2.5 day on-site training program that, similar to the intervention carried out by Hahn and colleagues (2011), focused on the four recovery experiences described by Sonnentag & Fritz (2007); it also provided guidance on how to sleep well and included some components of traditional stress management interventions (e.g., effective coping strategies, emotion management, ABCDE model of stress). Posttest analyses showed that, relative to their control group counterparts, employees who completed the intervention scored higher on positive emotions and mastery recovery, and lower on emotional exhaustion and physical and psychological symptoms; however, the results were not statistically significant (except for mastery recovery).

Lastly, Hätinen and colleagues (2013) conducted a recovery intervention that, unlike the two previous primary intervention studies, can be best described as tertiary due to its inclusion of only employees who were specifically referred to the intervention for burnout. The intervention lasted 12 months, during which participants were asked to spend time at a rehabilitation center in Finland for two separate sessions (12 and 5 days). The study lacked a control group, and the researchers were did not have any authority to dictate the activities participants engaged in during the intervention. Generally, the intervention included both individual (i.e., counseling with professional health-care providers) and group programs (e.g., reflective discussions, relaxation). This lack of standardization precludes us from making definitive statements about the intervention's effectiveness; however, results of the authors' analyses indicated that exhaustion, but not cynicism or (reduced) professional efficacy, decreased over time. In addition, recovery from burnout was associated with a decrease in emotion-oriented coping.

Multimodal interventions. Several recent studies do not neatly fit into the abovementioned types; rather, they are best described as consisting of multiple components (cognitive-behavioral, relaxation based, etc.) In addition, the multimodal interventions described below can all be described as primary interventions because they describe programs that were made available to all employees.

Eisen and colleagues (2008) investigated the efficacy of a randomized controlled intervention that sought to increase personal resources (e.g., time management skills) and nonwork resources (e.g., social support). The intervention contained a combination of general stress education, stress reduction techniques (e.g., problem-solving strategies), and an abbreviated version of progressive relaxation. Eisen et al. (2008) made a unique contribution to the stress management literature by comparing the efficacy of a stress management program when conducted in either a traditional in-person group format or via a computer-based platform. The majority of studies on computer-based stress interventions compare these with no-treatment control conditions (Ritterband et al. 2003). Comparing the efficacy of group-based versus computer-based interventions may be a worthwhile endeavor insofar as computer-based interventions may be more cost-effective and may also enhance compliance through their relative convenience and privacy (Schneider et al. 1995).

Results indicated that individuals in both intervention groups experienced significant reductions in subjectively reported stress immediately following mini-relaxations that occurred after

each intervention module. However, employees did not experience a reduction in global indices of stress immediately after the intervention or 1 month later. The authors attributed the intervention's nonimpact on more global indices of stress to the fact that many employees did not practice and apply the skills they learned to their daily lives. Further, follow-up communication with those who dropped out of the computer-based group indicated that individuals did so mainly due to time constraints (32%), dislike of the computer platform (26%), and technology problems (21%). In sum, this study suggests that implementing this combination of activities in-person or online has an immediate impact on subjective stress levels, but that employees must incorporate stress management techniques into their daily lives in order to reap continuing benefits. In addition, the high rate of attrition among those employees in the computer-based group suggests that an in-person intervention may be a better option for individuals with a more dependent learning style.

At least one group of researchers (Bourbonnais et al. 2011) has sought to address a gap in the stress management literature by examining the long-term impact of a multimodal workplace stress intervention program. In this particular study, the researchers used a quasi-experimental design, with employees working in one hospital participating in the intervention and employees working in another hospital where the intervention was not implemented serving as the control group.

The intervention program targeted improvement in several psychosocial work factors identified by a preintervention risk assessment. These included psychological demands, low decision latitude, lack of social support (supervisor and coworker), effort–reward imbalance, psychological distress, and burnout (client, work, and personal) among employees. In the context of the JD-R framework, these factors can be conceptualized as personal resources (e.g., increased emotional health), job resources (e.g., social support from coworkers and supervisors), and job demands (e.g., low decision latitude, effort–reward imbalance).

The identified risk factors and their corresponding solutions were classified under six themes: team work and team spirit, staffing processes, work organization, training, communication, and ergonomics. For example, under the theme of team work and team spirit, researchers noted that nurses felt that there were unreasonable delays from physicians in answering calls. This problem was addressed by the development of permanent prescriptions and care protocols that allowed nurses more flexibility in their work, which in turn led to increased decision latitude and supervisor social support.

Three years postintervention, Bourbonnais and colleagues (2011) found that the experimental hospital employees experienced significant improvement in the majority of the factors targeted by the intervention: psychological demands, effort–reward imbalance, work quality, physical load, and emotional demands. In addition, employees in the experimental hospital experienced significant reductions in work-related stress and burnout 3 years postintervention. Overall, the intervention implemented in this study was highly successful insofar as it had a long-lasting impact on a variety of individual-level outcomes. The success of this intervention can likely be attributed, in part, to the comprehensive risk assessment that informed the development of the intervention.

At least one recent multimodal intervention study, conducted by Cifre et al. (2011), implemented a quasi-experimental intervention explicitly grounded in the JD-R model. The researchers did so by first assessing the psychosocial risk factors that correspond to the components of the JD-R model (i.e., job demands, job resources, personal resources, and a variety of positive and negative indicators of psychosocial well-being) in all areas of a Spanish organization. Results of this diagnostic analysis revealed that the main psychosocial risks in the organization were low job resources (e.g., job autonomy), innovation climate, and perceived training quality.

Based on this analysis, the researchers chose to implement a team redesign intervention targeting the risk factors identified in the assessment. The intervention involved two main reparatory actions: job redesign and training. The main objective of the job redesign portion was to reduce

any gaps between job requirements and employees' personal competencies, whereas the training portion focused on heightening awareness of the existing training program and incorporating suggestions for improvement. Both aspects of the interventions were intended to reduce job demands and increase personal and job resources, which in turn were hypothesized to increase employee psychological well-being and several team-level outcomes. This intervention can be conceptualized as a secondary intervention, as it was aimed at improving both individual and team-level outcomes. Compared with the control group, employees in the intervention group experienced significant increases in professional self-efficacy and perceived competence (personal resources), perception of innovation climate (a job resource), and work engagement (an indicator of psychological well-being).

Another multimodal primary intervention program, dubbed Workplace Triple P (WPTP), was designed specifically for employed parents. More specifically, WPTP is a group-based parenting skills training program that aims to build personal resources and coping behaviors (e.g., positive parenting, parental self-efficacy), thus reducing stress at home and at work (Sanders 2008). Traditional WPTP consists of eight weekly sessions that cover a range of topics, including an introduction to stress, strategies for balancing family and work, suggestions for promoting child development, and individualized follow-up phone consultations that help participants apply what they have learned.

The program's effectiveness has been demonstrated in several studies (e.g., Nowak & Heinrichs 2008). Most recently, in a randomized controlled trial, Hartung & Hahlweg (2011) evaluated the possible mechanisms of change that account for the effectiveness of WPTP. Results of this evaluation indicated that WPTP reduced dysfunctional parenting, which reduced general stress levels. Reductions in general stress levels then resulted in decreased work-related stress. It appears that parental training increased parental self-efficacy, which then reduced both general and work-related stress.

The study therefore points to possible causal mechanisms (reduced dysfunctional parenting and general stress) that explain the effectiveness of a stress management intervention for employed parents. It also suggests that reductions in general stress may spill over to work life and result in reductions in work-related stress. This is one of the few intervention studies examining family-to-work facilitation, and it provides evidence of another mechanism by which family-to-work facilitation can occur (Demerouti et al. 2014, Wayne et al. 2007).

Summary and Future Research

In sum, a variety of stress management interventions have been conducted since Richardson & Rothstein's (2008) meta-analysis. These include mindfulness-based interventions, recovery interventions, and multimodal interventions consisting of several different components that have been traditionally part of stress management interventions. In terms of future directions, some of the studies discussed lacked methodological rigor (e.g., inclusion of a control group), many were best described as primary interventions, and almost all the interventions tended to target individual level outcomes. In addition, most studies assessed relied on self-report measures, with only a few utilizing more objective indicators (e.g., physiological outcomes). Across all of the intervention types described above, there is a need to gain a more nuanced understanding of (a) which outcomes are affected by which types of interventions and/or activities, (b) for whom an intervention type or specific intervention activity is most beneficial, and (c) the specific causal mechanisms underlying the effectiveness of interventions. With respect to the JD-R model described above, very few of the studies examined the impact of increasing nonwork resources, such as social support from friends or family. Moreover, interventions have examined ways of decreasing specific job demands but

have not paid much attention to ways of decreasing personal demands, such as financial issues and relationship conflict.

HEALTH PROMOTION AND WORKPLACE WELLNESS PROGRAMS

Stress management programs have been characterized as red cape interventions (see Polly 2014) because they have typically taken a tertiary or (at least) a secondary intervention approach. (This perspective may be changing, as more primary interventions have emerged, especially at the organization level.) Health promotion and workplace wellness programs, by contrast, may be viewed as green cape interventions because they focus on enhancing and promoting health. From a more historical perspective, however, one might take exception to this categorization. Most histories of workplace wellness programs refer back to employee assistance programs, which clearly focused on "fixing" such difficulties as alcohol and drug abuse (Frone 2013). Regardless of how workplace wellness programs originated, many organizations implemented them in the 1970s, much later than the introduction of employee assistance programs (Rothstein 1983), with the intent of promoting employees health and reducing health care costs for the organization. All that said, workplace wellness programs currently tend to take a more primary intervention focus and often include individual- and organization-level foci.

Madsen (2003), in her review of workplace wellness programs, reported that wellness programs incorporate programs designed to enhance employees emotional, intellectual, physical, social, and spiritual wellness, where wellness is defined as functioning at the highest possible level of one's self. There are numerous wellness programs that have been implemented in workplaces. These can focus on communication and awareness, such as assertiveness training, development of communication skills, and individual coaching. Alternatively, they can include screening and assessment programs, such as blood pressure checks, fitness assessments, health risk assessment, and vision screening. A third category focuses on education and lifestyle programs, such as financial planning, on-site fitness programs, relaxation techniques, nutrition classes, and time management classes. The final category of wellness programs focuses on behavior change and support and includes such programs as anger management programs, improved lighting and air quality, stress management training, and work–family support programs (see Madsen 2003 for a more extensive list of example programs). As is apparent from the variety of workplace wellness programs, some are more clearly focused on ill health and risk factors, and others are more attuned to enhancing positive health and well-being. Whether a specific program might be classified as a red cape intervention or a green cap intervention often depends on how the program is implemented and evaluated.

Aldana et al. (2012) determined that there have been over 350 published studies describing health promotion programs, so we obviously cannot incorporate all of these studies in this review. Previous reviews have established evidence that workplace health promotion programs have financial benefits for organizations. For example, as reported in Aldana et al. (2012), one review found that comprehensive programs that raised awareness, included strategies to change employee's behavior, and attended to the development of a workplace culture for health had the highest return on investment, and those programs that included components to increase employees' awareness and change employees' behavior had nearly as high a return on investment.

The literature is somewhat less clear with respect to the actual effects on employees' behavior. This stems in part from the paucity of well-designed studies addressing specific outcomes. For example, Parks & Steelman (2008) conducted a meta-analysis of the effects of workplace health promotion programs on absenteeism and satisfaction, based on studies published in 1980–2005.

One of their inclusion criteria was a comparison of participants in the program with non-participants. The number of articles that looked at absenteeism and satisfaction dropped from 98 to only 17 based on all of their inclusion criteria. Despite the reduction in number of studies included, Parks & Steelman (2008) found that there was evidence for workplace health promotion programs reducing absenteeism and increasing satisfaction. Interestingly, they did not find evidence for a moderating effect based on the methodological quality of the study or whether the program was a comprehensive health promotion program or only focused on fitness.

There are a few exemplars of evaluations of workplace wellness programs that tend to take a more systems approach and include organizational levels of effectiveness as well as individual levels of effectiveness. These specific workplace wellness programs appear to incorporate many of the best practices recommendations in the health promotion literature (Aldana et al. 2012, Merrill et al. 2011a).

Systems Approaches to Workplace Wellness Programs

Most evaluations of workplace health promotion programs look at relatively short-term effects. In their evaluation of the effects of a comprehensive workplace health promotion program, Byrne et al. (2011) examined annual assessments over a 7-year period. The program being evaluated had a primary intervention focus and included a health risk assessment and an educational video, with these two components essentially seeking to increase employees' awareness. The program also included a lifestyle management tool designed to get employees to set specific goals to reduce health risk and maintain their health. Participants could receive up to $20 per month the following year for completing the major components of the program. The program had three primary goals: a participation rate of at least 80% of eligible employees, increasing the participation rate of employees who had low risk scores, and increasing the wellness scores based on the health risk assessments. Although they did not have a control group per se, the authors were able to compare the participants in the program with state and United States statistics on physical activity, seat belt use, smoking, and obesity. Also, they compared participants in any given year with participants who participated in all 7 years.

Byrne et al. (2011) found that most of the risk factors improved over time, although the largest improvements were between the first year in which the program was initiated and the second year. After the second year, there was a trend of continued improvement, but the gains were not as sizable. There appeared to be quite similar trends for the cohort group and the aggregated group. Support for a lasting improvement, at least over 7 years, in increased physical activity, improved nutrition, decreased smoking rates, and increased seat belt usage was evident, and most of the costs of this program were covered by the design of the health plan.

The implementation of workplace health promotion programs started in the 1970s, and it is estimated that approximately 70% of large organizations and more than 50% of medium-sized organizations have workplace wellness programs. However, only about 45% of small organizations offer such programs; Lincoln Industries is one small organization that implemented a comprehensive workplace health promotion program in 1990, and it has received considerable attention (Merrill et al. 2011b).

The primary purpose of Lincoln Industries' wellness program is to promote better physical fitness and diet, as well as to create a sense of community and improve employee satisfaction. It is a comprehensive workplace health promotion program that requires quarterly health screenings. In addition, there are three primary activities that employees may participate in, and these activities generally have high participation rates. Employees with the highest level of

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participation, based on participation and health measures, receive an all-expenses-paid mountain climbing trip to Colorado (Merrill et al. 2011b). Merrill et al. (2011b) observed, for the period 2007–2009, significant improvements in employees' body fat, blood pressure, and flexibility, with the largest improvements being shown by older employees as well as those employees who had the highest level of risk factors in 2007. Unfortunately, this evaluation did not have a comparison group. However, in a parallel study, Merrill et al. (2011a) compared Lincoln Industries employees' responses on the Gallup-Healthways Well-Being Index with a sample of working adults in Lincoln, Nebraska, where Lincoln Industries is located. The authors found that Lincoln Industries employees reported greater physical health, greater mental health, and more healthy behaviors than the comparison group. Taken together, these two studies provide evidence that a comprehensive workplace health promotion program can be effectively implemented in a small business. One of the factors contributing to the success of this program is the culture for health that has been created by the top leadership at Lincoln Industries (Aldana et al. 2012).

A third workplace health promotion program that has been demonstrated to have positive effects on employees' health and the organization's health is the comprehensive workplace wellness program in the Department of Justice in Nova Scotia, Canada. As Makrides et al. (2011) reported, this program was voluntary and included an annual health risk assessment, competitions among employees to improve their health, incentives, health fairs, and other programs and policies to support healthy behaviors. In an economic analysis, Makrides and colleagues (2011) found that, from 2004 to 2008, employees whose risk scores went from low levels of risk to high levels of risk had the highest increases in both drug costs and absences and that those individuals whose risk scores went down had the lowest increase in drug costs. Individuals who maintained a low level of risk across the 4 years had the lowest levels of absences. Thus, the program provided economic benefits not only in reducing risks but also in maintaining low levels of risk.

Most health promotion programs take a medical perspective focusing on known health risk behaviors. Some have incorporated components that enhance employees' personal resources to develop and maintain their well-being. Few programs have incorporated growth and development activities or incorporated principles from positive psychology.

Positive Psychology Workplace Interventions

Work-related stress management interventions have focused primarily on reducing negative aspects of well-being (e.g., stress). With the growing interest in positive psychology, researchers have begun to investigate the effectiveness of so-called positive psychology interventions. Scholars distinguish these from stress management interventions in that as positive psychology interventions focus on increasing positive aspects of well-being (e.g., engagement), as opposed to solely mitigating negative outcomes. One potential advantage of these interventions is that they typically entail activities that individuals can do themselves, without support from either another individual (e.g., a coach or program facilitator) or the organization itself. Examples include expressing gratitude, savoring experiences, and identifying and using one's personal strengths. An accumulating body of research outside of organizational science suggests that these simple and seemingly trivial activities lead to significant and lasting increases in indicators of well-being (e.g., Seligman et al. 2005, Sin & Lyubomirsky 2009).

Despite these noteworthy findings, only a handful of studies have adapted these positive psychology activities for use in the workplace to explore their impact on different aspects of employee well-being (e.g., job satisfaction, workplace positive emotions, withdrawal, etc.). One recent study conducted by Kaplan and colleagues (2013) tested a positive psychology intervention

among university employees, assigning employees to either a gratitude or increasing social ties experimental group. Those in the gratitude group were instructed to record two things that they were grateful for at work, whereas employees assigned to the increasing social ties group were asked to engage in an activity aimed at increasing social connectedness (e.g., talking to a coworker in person as opposed to speaking to him/her via email). Both groups completed these activities three times a week for 4 weeks. Results showed that those in the gratitude group experienced a significant increase in gratitude and positive job-related affective well-being immediately after the intervention. Participation in both exercises was associated with a reduction in workplace absence due to illness. The authors did not include a formal control group, but the differential impact of the two interventions on certain outcomes suggests that the results do not reflect demand characteristics or a general placebo effect.

Bono and colleagues (2013) conducted a study that used an exercise similar to the gratitude activity utilized by Kaplan et al. (2013); they asked health-care workers to complete a positive reflection exercise at the end of each workday, starting at the midpoint of the study (participants served as their own controls). During this daily exercise, workers recorded three good things (either personal or work-related) that happened to them that day and also described why they thought the event happened. Results of this experience sampling study indicated that workers reported reduced stress, fewer mental and physical health complaints, and increased detachment from work in the evenings on days when they completed the intervention. Interestingly, although Bono et al. (2013) also recorded participants' ambulatory blood pressure, their analyses indicated that the exercise did not serve to reduce blood pressure. In addition, the researchers tested the possibility that the reflection exercise had a buffering or enhancing effect on negative and positive outcomes, respectively. Results of this analysis suggested that, although the intervention was not helpful in protecting employees from the effects of negative work events (or enhancing the benefits of positive events experienced), the exercise did work to reduce the negative effects of work-to-family conflict on mental health and blood pressure.

Beyond gratitude interventions, another stream of workplace positive psychology research has focused on psychological capital (PsyCap), which is posited to consist of four malleable components: (a) self-efficacy, (b) optimism, (c) hope, and (d) resilience (Luthans et al. 2006). Luthans and colleagues (2010) developed a 2-h online intervention designed to enhance PsyCap (see Luthans et al. 2010 for a full description). The effectiveness of the intervention among employees across a variety of industries was evaluated in a randomized controlled study (Luthans et al. 2008). Results demonstrated that the training led to significant increases in PsyCap among the intervention group. In 2010, an in-person version of the PsyCap intervention was tested and revealed similar results: Compared with a control group, managers who underwent the training intervention experienced significant increases in self-reported PsyCap and job performance (Luthans et al. 2010). Avey and colleagues (2010) also demonstrated that PsyCap has a positive relationship with well-being over time.

Summary and Future Research

In summary, preliminary research on workplace positive psychology interventions suggests that these interventions may be successful in health promotion as well as stress management. Still, there is a need to replicate the results of existing studies and determine whether the benefits of these interventions endure over time. Similar to stress management interventions, these interventions have focused on the individual level of analysis; as such, additional interventions at the organization level of analysis should be investigated. Researchers should also evaluate factors that may account for the effectiveness of these interventions. For example, there is little information

regarding whether these types of interventions are more or less effective for some employees, as a function of, for example, demographic variables, disposition, or organizational factors. Relatedly, questions remain surrounding the causal mechanisms underlying their apparent effectiveness. Investigating such moderators and mediators not only would be theoretically meaningful but also would help practitioners make optimal decisions regarding the implementation of such interventions, especially as a supplement to existing stress reduction programs.

FUTURE RESEARCH DIRECTIONS

As is clear from the review above, we do have evidence that stress management interventions and workplace health promotion and wellness programs can be effective. There are a growing number of well-designed evaluation studies, but more are needed to address important questions. However, we suggest that before the intervention studies are designed, better theoretical models need to be developed to provide an integrative structure to interventions that include the specific, hypothesized effects of an intervention both at the individual level and at the organization level, identifying the causal mechanisms through which the intervention activities operate.

It also seems that the disparate literature from public health, occupational health psychology, industrial and organizational psychology, clinical psychology, organizational behavior, and organizational design needs to be integrated to provide a more integrated systems perspective for understanding employees' experiences both in and outside of the work environment, as well as the effects of these experiences on employees, their families, and their organizations. To date, our perspectives have been relatively static and have only recently begun to incorporate a more dynamic perspective on these experiences and their outcomes. Most of our theories remain silent on the time in which an effect might occur and the lasting nature of these effects. Ideally, longitudinal assessments can be conducted to serve as a barometer for organizations as to the health of their employees and the work environment and also to inform practice on the temporal aspects of employee well-being. Without better theoretical frameworks to guide the design of our interventions and the evaluation of them, empirical evidence in support of the interventions will continue to be lacking.

Research on stress management and health promotion and wellness programs suggests that there may be important moderators of the effects. More studies are needed in order to test potential moderators. Some moderators that have been mentioned are cultural contexts: These could be national culture or organizational culture; there may also be professional and occupational cultures that play a role in enhancing and promoting employee and organizational health. Most of the intervention research to date continues to be conducted in Western Europe and North America. Cross-cultural studies are beginning to emerge suggesting cross-cultural similarities as well as differences (Liu et al. 2007). It is not yet clear how these might inform stress management interventions and workplace health promotion programs.

The literature indicates that the quality of intervention studies is improving. The gold standard of the randomized control trial in outcome research is still quite rare (cf. Wolever et al. 2012), and some might argue that it is not possible in an organizational setting, at least if the intervention is at the job, unit, or organization level. However, we need to strive to identify comparison groups. There have been some creative examples of identifying comparison groups, as mentioned above. These have drawbacks relative to a randomly assigned control group, but they are stronger than a simple pre/post design without a comparison group.

When designing an intervention, it is important to determine the focus of the intervention, and the literature suggests that interventions that take a systems approach and include both an individual and an organizational component are more effective. It is important, however, to ensure

that components in the intervention are properly aligned such that the effects of one component do not interfere with another component. Although it is important to align the intervention with the desired outcome, it would advance our understanding of the effects of various interventions if multiple outcomes were measured. This would help identify the underlying mechanisms by which the intervention has an effect.

The literature suggests that primary interventions may be more effective in the workplace. In some cases, allowing all employees to participate may be the only feasible way to implement the intervention. One workplace wellness program we reviewed above mandated that all employees be screened quarterly, and despite there being no penalty for not participating, the participation rate was 99% (Merrill et al. 2011b). One of the major challenges for most intervention programs appears to be getting employees to participate. Short of requiring people to participate, the literature suggests that key factors include incentives, matching program components to employees' interests, top leadership support, and a culture for health (Aldana et al. 2012).

Based on our review of the literature in this article, the job demands–resources model with its positive motivational mechanism and its negative resource depletion mechanism appears to be a useful framework. Recognition of multiple domains (work, family, and other nonwork domains) and different kinds of resources (job resources, personal resources, family resources, and perhaps other sources of resources) is a useful extension, especially for understanding employees' well-being. This framework allows the integration of recovery interventions as well as health promotion programs, without treating negative experiences at work and positive experiences at work as simple opposite ends of the same continuum.

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