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Does a supportive work environment moderate the relationship between work-family conflict and burnout among construction professionals?

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Research findings concerning the extent to which various forms of support in the workplace moderate the stressor-strain relationship are inconsistent. The effect of perceived organizational support (POS) and support from supervisors and co-workers in the relationship between work-family conflict (WFC) and burnout was examined in a sample of 202 construction professionals and managers. The results revealed that POS has a main effect on burnout and also moderates the relationship between WFC and burnout. The effect of social support did not differ according to its source. Effects for supervisory and co-worker support were similar. However, different effects were found for different types of support. Emotional support had a main effect on burnout but not a moderating effect in the WFC-burnout relationship. Practical support had a moderating effect, but not a main effect on burnout. The importance of supportive work environments to the success of interventions designed to alleviate or prevent employee burnout is discussed.

Keywords: Work-family conflict, burnout, social support, co-workers, supervisors, perceived organizational support

Introduction

Work-family conflict

In recent years the extent to which work interferes with aspects of employees' non-work lives has become a topic of great interest. Articles on work and family issues are commonplace and mostly focus on the potential for conflict between these two primary domains of adult life. Work-family conflict (WFC) has been defined as 'a form of inter-role conflict in which role pressures from the work and family domains are mutually incompatible in some respect' (Greenhaus and Beutell, 1985, p. 77). WFC has been consistently linked to negative outcomes for individuals, families and employing organizations. For example, work interference with family life has been associated with job dissatisfaction, life dissatisfaction, intention to turnover, general well-being, psychological strain, psychiatric disorders, substance abuse and problem drinking

(Netemeyer *et al.*, 1996; Frone, 2000; Grzywacz and Marks, 2000; Grant-Vallone and Donaldson, 2001; Boyar *et al.*, 2003; O'Driscoll *et al.*, 2003; Hammer *et al.*, 2004; Mikkelson and Burke, 2004).

Social role theory provides a framework for understanding how WFC affects individual well-being and organizational effectiveness (Dobreva-Martinova *et al.*, 2002). According to social role theory, employees hold various roles within and beyond work. Expectations associated with these roles are communicated by the organizational culture and by role senders (people whose expectations are relevant to the performance of a particular role). Conflict or incongruity between the demands of or behaviours expected in different roles is a form of role stress that can be detrimental to the well-being of employees and the performance of organizations.

Burnout

Burnout is one of the most commonly investigated 'outcomes' of work-life conflict. The most widely accepted definition of burnout conceptualizes the

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phenomenon as 'a syndrome of emotional exhaustion, cynicism and reduced personal accomplishment' (Maslach *et al.*, 1996). Of the three dimensions, emotional exhaustion is regarded as being the core dimension of burnout. Research suggests that burnout is associated with negative outcomes for both individuals and organizations. At an individual level, burnout has been associated with health problems, anxiety, depression, reduced self-esteem and substance abuse (Maslach *et al.*, 2001; Schaufeli and Bakker, 2004). Research also consistently links burnout to lower levels of organizational effectiveness, job satisfaction and organizational commitment as well as higher levels of absenteeism and turnover (Wright and Bonett, 1997; Maslach *et al.*, 2001; Schaufeli and Enzmann, 1998). In a recent study of Australian civil engineers, the emotional exhaustion and cynicism dimensions of burnout were strong predictors of engineers' intentions to quit their jobs (Lingard, 2003).

The WFC-burnout relationship

Recent empirical research indicates that WFC is a mediator in the relationship between work-role characteristics, such as workload, schedule demands and perceptions of organizational justice, and burnout (Guerts *et al.*, 2003; Judge and Colquitt, 2004; Lingard and Francis, in press). Indeed, longitudinal studies provide evidence of a 'loss spiral' effect, in which WFC precedes employee burnout which, in turn, reduces employees' ability to cope with work-role demands, giving rise to a greater sense of WFC and ultimately elevated burnout (Demerouti *et al.*, 2004). Intervening to prevent the onset of a 'loss spiral' effect is particularly important because, once entered into, loss spirals are likely to be difficult to break.

The construction industry

Toppinen-Tanner *et al.* (2002) report that white-collar jobs are characterized by high qualitative and quantitative workload, role problems and inter-personal conflicts. Many stressors associated with both WFC and burnout are present in the work of construction professionals and managers. For example, construction employees work long and inflexible hours and bear significant responsibility for project performance in areas such as cost, time, quality and safety. In this context, it is perhaps unsurprising that in one Australian survey, project-based construction employees reported significantly higher levels of WFC and burnout than their counterparts in the same organization's head office (Lingard and Francis, 2004). Levels of burnout among construction professionals and managers are also reported to be considerably higher than norm

scores for other professions in international comparative studies (Francis and Lingard, 2004).

Moderators of the stress-strain relationship

Conceptually, WFC may be regarded as a form of role stressor and burnout is one relevant stress reaction (or strain). The relationship between WFC and burnout is therefore a type of stressor-strain relationship. The nature of stressor-strain relationships has been widely discussed and studied. Most models of occupational stress purport that certain psychological resources intervene in the stressor-strain relationship to change the strength and/or direction of the relationship. For example, many theories hold that resources have a moderating effect on the stressor-strain relationship. This moderating effect is sometimes referred to as a 'buffering' effect, whereby the presence of resources weakens the relationship between the stressor and its strain outcome.

Support as a moderator

Many theories of occupational stress hold that the extent to which people enjoy various forms of support will moderate the stress-strain relationship. This effect is depicted in Figure 1. For example, the conservation of resources theory (Hobfall and Freedy, 1993) holds that stressful situations make people feel insecure about their ability to obtain or retain resources. This insecurity gives rise to emotional or physical exhaustion. In the absence of social support, the opportunity to benefit from the protective effect of positive social interactions is limited and the stressor-strain relationship is stronger. The demand-control-support (DCS) model of work stress (Johnson and Hall, 1988) also holds that the most adverse health effects occur in jobs that are high in demands, low in control and low in social support. The DCS is an extension of Karasek's job demands-control model, which held that jobs
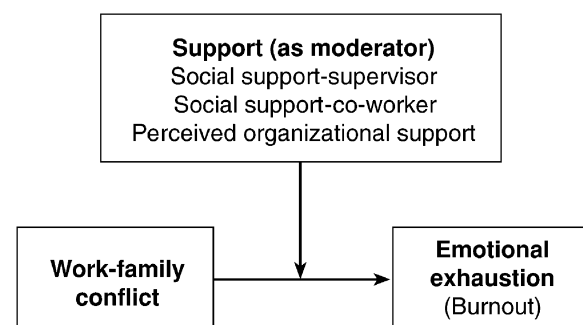
Figure 1 Contingent effects, support as a moderator of the WFC-burnout relationship (adapted from Cohen *et al.*, 2003, p458)

characterized by high demands and low control would evoke the strongest stress reactions (Karasek, 1979). The DCS model argues that job control is not the only resource available for coping with job demands and that social support, from colleagues or supervisors, can reduce the harmful impact of stressful situations at work (Schaufeli and Bakker 2004; Bakker *et al.*, 2004). It has also been postulated that employees' global beliefs about the extent to which the organization is supportive of them will also moderate the effect of work stress on individual and organizational outcomes (Jones *et al.*, 1995; Dobreva-Martinova *et al.*, 2002; Armstrong-Stassen, 2004).

Empirical evidence for the moderating effect of support

The research evidence concerning the moderating effect of support in the occupational stress-strain relationship is inconsistent. Many of the studies undertaken, indicate that social support, from supervisors, co-workers and others, does indeed act as a protective buffer in the relationship between work stress and burnout (e.g. Russell *et al.*, 1987; Burke and Greenglass 1995; Greenglass *et al.*, 1997; Pines *et al.*, 2002). However, other researchers report no evidence of a moderating effect (e.g. Cheuk and Wong 1995; Konariek and Dudek 1996). In other studies, social support is reported to have a main but not a moderating effect, such that social support has an independent effect on burnout but does not alter the nature of the relationship between work stressors and burnout (Houkes *et al.*, 2001; van Vegche *et al.*, 2004).

The evidence concerning the moderating effects of employees' global beliefs about the supportiveness of their organization is similarly mixed. Some research provides evidence of a moderating effect (e.g. Jones *et al.*, 1995). Armstrong-Stassen (2004) also reports that employees who perceived their organization to be supportive of them responded less negatively to the stressful process of organizational downsizing. However, Dobreva-Martinova *et al.* (2002) found no evidence that employees' perceptions of organizational support moderated the relationship between occupational role stress and individual or organizational well-being.

Support in the work-family literature

In the work-family literature, global perceptions about the extent to which an organization is supportive of employees' work-life balance have been linked to employees' willingness to use formal work-family benefits and consequent reductions in WFC (Thompson *et al.*, 1999; Allen, 2001; O'Driscoll *et al.*, 2003). Perceived organizational support is also reported

to moderate the relationship between WFC and some dimensions of organizational commitment (Casper *et al.*, 2002). Other studies have confirmed that the presence of social support in the workplace reduces the negative consequences of WFC (Goff *et al.*, 1990; Thomas and Ganster, 1995).

Having a supportive supervisor, in particular, is believed to attenuate the harmful effects of WFC (Thomas and Ganster, 1995; O'Driscoll *et al.*, 2003). Supervisors play a particularly important role because they typically act as gatekeepers in controlling access to alternative work arrangements (Watkins, 1995; Barham *et al.*, 2001). Further, in the absence of formal work-life benefits, supervisors may suggest informal ways to assist employees who experience difficulty in balancing work and family (Batt and Valcour, 2003).

Research also suggests that social relations among co-workers impact upon employees' experience at the work-family interface. For example, co-workers may be resentful when employees with family responsibilities utilize formal work-life benefits, such as parental leave or flexible work schedules, due to the additional work this imposes upon other members of the work group (Hegtvedt *et al.*, 2002; Blair-Loy and Wharton 2002). Within work groups, social norms can develop concerning the appropriate or inappropriate use of such benefits, and social sanctions apply when people do not conform to group norms (Kirby and Krone 2002). Thus, when co-workers are not supportive of group members' work-life balance, the effects of WFC are likely to be exacerbated because constraints on the use of family-friendly strategies may be felt.

On the basis of this previous research, we investigated perceived organizational support and social support from supervisors and co-workers as moderators in the relationship between WFC and burnout (emotional exhaustion).

Type of support

Most studies of social support and burnout have investigated the impact of support from different sources, e.g. supervisors, co-workers, family or spouse. However, Pines *et al.* (2002) note that few studies have investigated the effect of different aspects of social support, such as informational, emotional or practical support (See Russell *et al.*, 1987, and Pines *et al.*, 2002, for exceptions). It is possible that the inconsistent results concerning the moderating effect of social support may arise, in part, because different types of support are being measured by researchers. Thus, in this study we focused not only on the sources of social support in the workplace (i.e. supervisors and co-workers) but also on the *type* of support provided. In particular we focused on the provision of emotional

compared to practical support. The former type of support is demonstrated by listening and being sympathetic to employees' difficulties, whereas the latter type of support involves offering practical assistance to help employees to resolve these difficulties.

Research objectives

Owing to the inconsistency of previous research concerning the moderating effect of support in the work stress-strain relationship, no *a priori* hypotheses were formulated. The objectives of the research were as follows:

- To investigate the extent to which global perceptions of the organization's supportiveness of employees (perceived organizational support) moderate the relationship between WFC and burnout among construction professionals (such as engineers, quantity surveyors and others) and managers;
- To investigate the extent to which social support from one's supervisor moderates the relationship between WFC and burnout among construction professionals and managers;
- To investigate the extent to which social support from one's co-workers moderates the relationship between WFC and burnout among construction professionals and managers; and
- To investigate the extent to which different *types* of social support (i.e. emotional and practical support) from one's co-workers and supervisor moderate the relationship between WFC and burnout among construction professionals and managers.

For the purposes of this study the emotional exhaustion dimension of burnout was used to assess the moderating effect of various types of support. Emotional exhaustion is believed to be the core component of burnout and is the component which is most commonly associated with undesirable outcomes for individuals and organizations. Thus our results refer specifically to emotional exhaustion, rather than burnout.

Research methods

Survey administration

The data were collected from employees of one public and one private sector organization in Queensland, Australia. The public sector organization is involved in the construction of large infrastructure projects and the private sector construction company is involved in both civil engineering and building projects throughout the state of Queensland. All project-based professional or managerial staff of both organizations were invited to participate in the study.

The majority of the data was collected via a World Wide Web-based survey. Paper-based surveys were made available on the website (downloadable pdf version) to allow respondents who were not comfortable completing the survey online to participate in the study. The website contained information about the study as well as privacy information. The web-based delivery of the survey was deemed appropriate for the managerial/professional employees in the sample (Dillman, 2000).

A letter from senior management explaining the purpose of the survey, and assuring confidentiality and anonymity of responses, invited professional and managerial employees to complete the questionnaire. Three weeks after this initial letter, a follow-up e-mail was sent to all potential respondents reminding them to submit their questionnaires, if they wished.

Measurement

WFC was measured using a ten-item scale developed by of Netemeyer *et al.* (1996). Items were scored on a seven-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Example items are 'The demands of my work interfere with my home and family life' and 'I often have to miss important family activities because of my job'.

Perceived organizational support (POS) was measured using a 16-item version of the scale developed by Eisenberger *et al.* (1986). Items were scored on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Example items are 'Help is available from the organization when I have a problem' and 'The organization disregards my best interests when it makes decisions that affect me' (reverse scored).

Supervisory support was measured using 13 items drawn from two larger scales (Lambert, 2000; Thomas and Ganster, 1995). The scale included statements such as 'My immediate supervisor is understanding when I have personal or family problems which interfere with my work' and 'My immediate supervisor would switch schedules (hours, overtime hours, vacation) to accommodate my family responsibilities'. Items were scored using a five-point scale ranging from 1 (not at all) to 5 (all of the time).

Two scales were used to measure social support from co-workers. Co-workers are defined as the people with whom respondents had the most contact within the company, excluding their immediate supervisor. Faith in peers (Cook *et al.*, 1981) was measured using three items. Responses were scored on a seven-point scale, ranging from 1 (no, I strongly disagree) to 7 (yes, I

strongly agree). Example items included 'If I got into difficulties at work, I know my workmates would try and help me out' and 'I can trust the people I work with to lend me a hand if I need it'. Item scores were summed and a high score was indicative of a high level of practical support from co-workers. Three additional items were used to measure peer support. These items were taken from the peer leadership section of a survey of organizations questionnaire developed by Taylor and Bowers (cited in Cook *et al.*, 1981). Items were scored on a five-point scale, ranging from 1 (to a very little extent) to 5 (to a very great extent). Example items were 'How friendly or easy to approach are the persons in your work group?' and 'To what extent are persons in your work group willing to listen to your problems?' Item scores were summed and a high score was indicative of a high level of emotional support from co-workers.

Emotional exhaustion was measured using the relevant items from the Maslach Burnout Inventory (MBI). Following Maslach *et al.* (1996), since the response formats of intensity and frequency have been found to be highly correlated, only frequency ratings were used. Items were rated on a seven-point scale ranging from 0 (never) to 6 (every day). Example items are 'I feel emotionally drained from my work' and 'I feel used up at the end of the work day'.

Statistical procedures

In order to test for moderation effects, we used procedures described by Baron and Kenny (1986). First, interaction terms between each of the support variables and WFC were created. Next, hierarchical regression analyses, including the multiplicative interactions, were carried out so that main effects were controlled for in the analysis (Aiken and West, 1991). In step one of each regression, we entered the independent variables (i.e. the relevant support variable and WFC). In step two, we entered the two-way interaction term (the relevant support variable x WFC). If the interaction term was significant, above and beyond the independent variables, a moderating effect was apparent. However, if the interaction term was not significant, no moderation was apparent.

Prior to testing for moderation effects, all continuously measured predictor variables were centred. Centring is a linear transformation method which eliminates problems associated with multi-collinearity. It is achieved by subtracting the mean value for a variable from each score for that variable.

Significant interactions were plotted by calculating regression lines, using procedures described by Cohen *et al.* (2003). Regression lines were plotted at high

(+1 SD), average (SD) and low (−1 SD) levels of the moderator variable.

Initially we tested whether emotional exhaustion differed by industry sector, age or gender. No significant differences existed, so we did not include any of these variables in the regression analyses as controls.

Results

Sample demographics

Two hundred and two complete and useable questionnaires were returned. Of the total responses, 63 (31.2%) were from the private sector and 139 (68.8%) were from the public sector. The mean age of the sample was 39.8 years (SD=10.7) ranging from 22 to 67 years. The average age of public sector employees was 40.2 years (SD=10.8) and private sector employees was 39.0 years (SD=10.5). Of the 202 respondents, 178 (88.1%) were male and 24 (11.9%) were female.

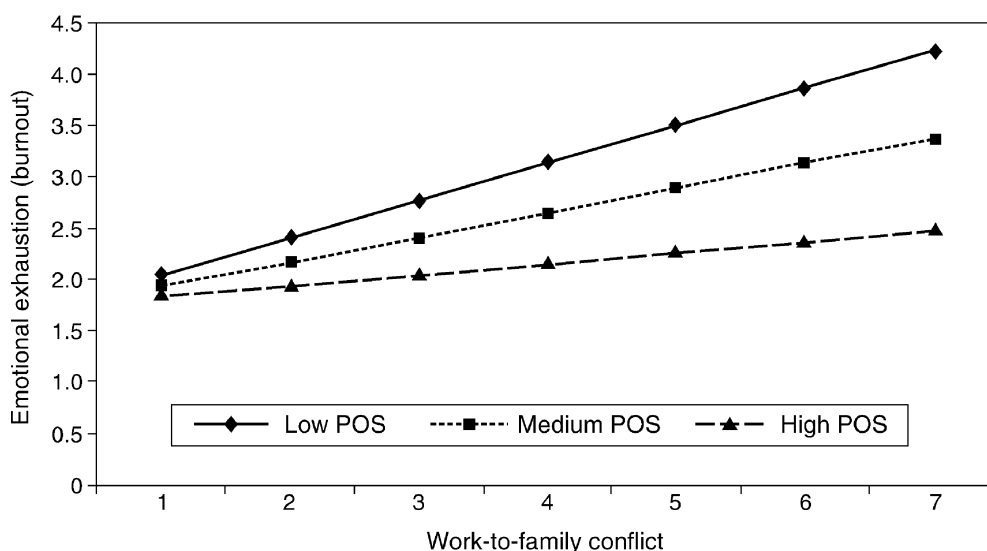### Perceived organizational support (POS)

Table 1 shows POS had a significant main effect on emotional exhaustion, i.e. employees who perceive their organization as being supportive of them are less emotionally exhausted. The interaction between WFC and POS also had a significant effect on emotional exhaustion, indicating that POS does moderate the relationship between WFC and emotional exhaustion.

Figure 2 shows the relationship between WFC and emotional exhaustion in conditions of high, medium and low POS. When POS is high, the relationship between WFC and emotional exhaustion is relatively weak. However, when the level of POS is low, the slope of the regression line is steeper, representing a stronger positive relationship between WFC and emotional exhaustion. Thus, for POS, the moderation hypothesis was supported in our sample.

Table 1 Multiple regression for work-to-family conflict and perceived organizational support (POS) as predictors of emotional exhaustion (burnout)

Step and predictors	ΔR^2	F-change	Dfs	β
1. Independent variables				
Work-to-family conflict (WFC)	.247	32.575	199	.262***
Perceived organizational support (POS)				−.378***
2. Interaction				
WFC × POS	.020	5.515	198	−.147*

* $p=<.05$, *** $p=<.001$.

Figure 2 The moderating effect of perceived organizational support (POS) on the relationship between work to family conflict and emotional exhaustion (burnout)

Supervisory support

As the supervisory support items used in the present study were derived from two different scales, a principal components analysis (with varimax rotation) was carried out to determine the modified scale's factorial structure. One item double loaded on factors 1 and 2, so was removed from the analysis because it could not be reliably interpreted. Table 2 shows the factor loadings for the remaining items in the scale. This three-factor solution explained 69.2% of the variance in

our sample. These factors were labelled 'emotional support,' 'practical support' and 'criticism/resentment' and had average scores of 3.7 (SD=.833), 3.25 (SD=.996) and 2.28 (SD=.457) respectively. The factor scores are considered separately in the regression analyses. The Cronbach's alpha coefficients for the three supervisory support factors were .92, .86 and .66 respectively. Thus the internal consistency reliability for the criticism/resentment factor was rather low and, consequently, results associated with this dimension of supervisory support should be treated with caution.

Table 2 Factor analysis for supervisor support

	Factor 1	Factor 2	Factor 3
	Emotional support	*Practical support*	*Criticism*
Is concerned about me as a person.	.838		
Feels each of us is important as an individual.	.833		
Would help me to figure out how to solve a problem.	.762		
Is helpful to me when I have a family or personal emergency.	.740		
Is helpful to me when I have a routine family or personal matter to attend to.	.637		
Is understanding when I have personal or family problems which interfere with my work.	.625		
Appears to know a lot about company policies that help employees manage their family responsibilities.	.623		
Would switch schedules (hours, overtime hours, vacation) to accommodate my family responsibilities.		.864	
Is willing to juggle tasks or duties to accommodate my family responsibilities.		.837	
Is critical of my efforts to combine work and family.			.825
Shows resentment of my needs as a working parent.			.689
Would hold my family responsibilities against me.			.645

The moderation hypothesis was tested for each of the three dimensions of supervisory support revealed in the factor analysis. The results of the regression analyses are shown in Tables 3, 4 and 5.

Table 3 reveals that the emotional dimension of supervisory support exhibited a main effect on emotional exhaustion, i.e. employees whose supervisors provide more emotional support are less emotionally exhausted. However, the interaction term was not significant, indicating that the emotional dimension of supervisor support does not moderate the relationship

Table 3 Multiple regression for work-to-family conflict and supervisor emotional support as predictors of emotional exhaustion

Step and predictors	ΔR^2	F-change	dfs	β
1. Independent variables				
Work-to-family conflict (WFC)	.134	15.393	199	.299***
Supervisor support – emotional (SS-E)				−2.419*
2. Interaction				
WFC × SS-E	.008	1.799	198	−.093

* *p*=<.05, *** *p*=<.001.

Table 4 Multiple regression for work-to-family conflict and supervisor practical support as predictors of emotional exhaustion

Step and predictors	ΔR^2	F-change	dfs	β
1. Independent variables				
Work-to-family conflict (WFC)	.120	13.612	199	.308***
Supervisor support – practical (SS-P)				−.111
2. Interaction				
WFC × SS-P	.073	17.947	198	−.285***

*** *p*=<.001.

Table 5 Multiple regression for work-to-family conflict and supervisor criticism/resentment as predictors of emotional exhaustion

Step and predictors	ΔR^2	F-change	dfs	β
1. Independent variables				
Work-to-family conflict (WFC)	.124	14.124	199	.312***
Supervisor support – criticism and resentment (SS-CR)				.060*
2. Interaction				
WFC × SS-CR	.042	9.971	198	.201**

* *p*=<.05, ** *p*=<.01, *** *p*=<.001.

between WFC and emotional exhaustion. Thus, for emotional support from one's supervisor, the moderation hypothesis was not supported in our sample.

Table 4 reveals that the practical dimension of supervisory support did not exhibit a main effect on emotional exhaustion. However, the interaction between supervisors' practical support for employees' work-family balance and WFC was significant, indicating that practical support from one's supervisor does moderate the relationship between WFC and emotional exhaustion.

Figure 3 shows the relationship between WFC and emotional exhaustion in conditions of high, medium and low supervisory practical support. When the level of practical support received from one's supervisor is high, the relationship between WFC and emotional exhaustion is relatively weak. However, when the level of practical supervisory support is low, the slope of the regression line is steeper, representing a stronger positive relationship between WFC and emotional exhaustion. Thus, for practical supervisory support, the moderation hypothesis is supported.

Table 5 reveals that supervisors' criticism or resentment of employees' family commitments has a significant main effect on emotional exhaustion. Thus, employees whose supervisors are critical/resentful of their family commitments are more emotionally exhausted. The interaction between supervisors' criticism/resentment and WFC was also significant, indicating that criticism/resentment from one's immediate supervisor also moderates the relationship between WFC and emotional exhaustion.

Figure 4 shows that when supervisors' criticism/resentment of employees' family obligations is low, the relationship between WFC and emotional exhaustion is relatively weak. However, when supervisors' criticism/resentment is high, the slope of the regression line is steeper, representing a stronger positive relationship between WFC and emotional exhaustion. Thus, for supervisory criticism/resentment, the moderation hypothesis is supported.

Co-worker support

Table 6 reveals that emotional support from co-workers was found to have a significant main effect on emotional exhaustion. Employees whose co-workers are supportive are less emotionally exhausted. However, the interaction term was not significant, indicating that co-workers' emotional support does not moderate the relationship between WFC and emotional exhaustion. Thus for emotional support from co-workers, the moderation hypothesis was not supported in our sample.
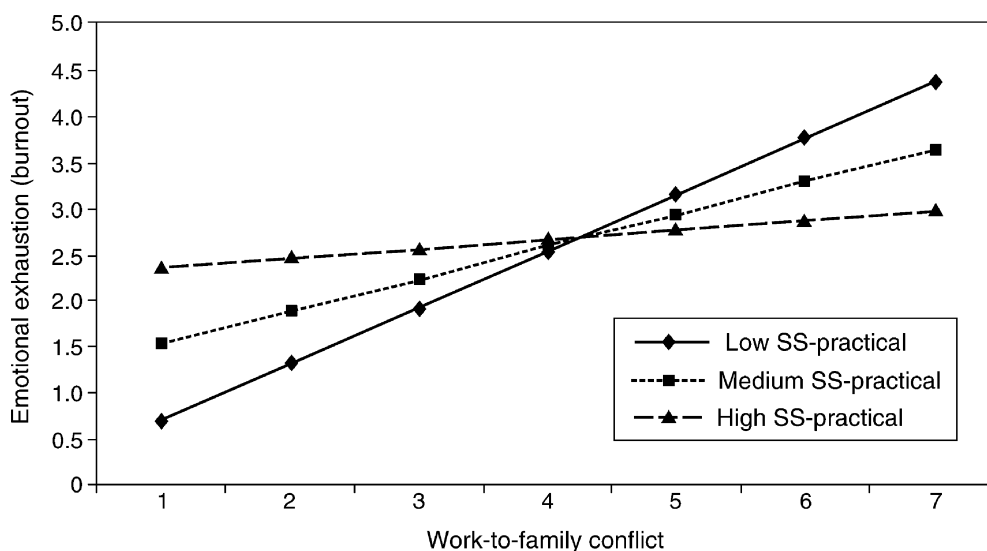
Figure 3 The moderating effect of practical support from one's supervisor (SS) on the relationship between work to family conflict and emotional exhaustion (burnout)
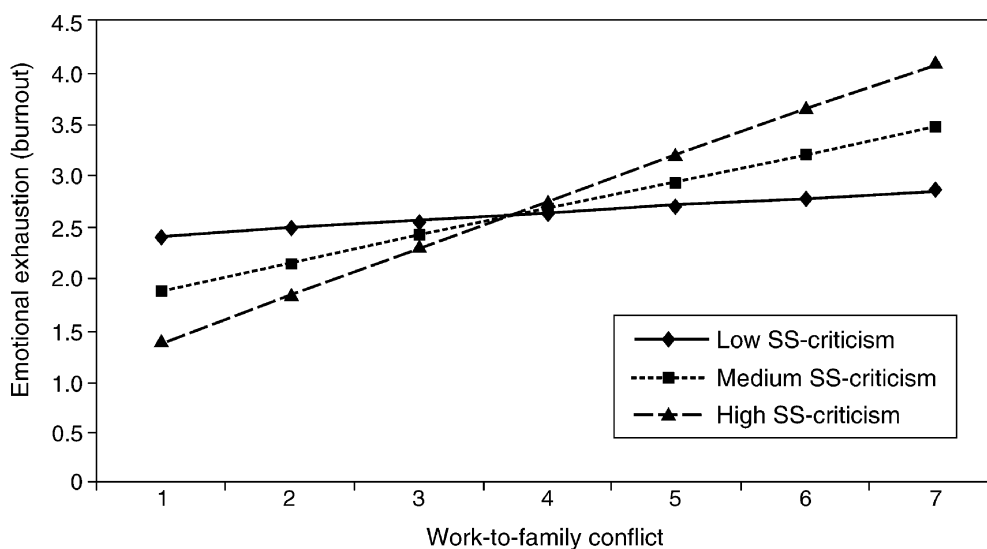
Figure 4 The moderating effect of supervisor criticism/resentment of employees' family obligations on the relationship between work to family conflict and emotional exhaustion (burnout)

Table 6 Multiple regression for work-to-family conflict and co-worker emotional support as predictors of emotional exhaustion

Step and predictors	ΔR^2	F-change	dfs	β
1. Independent variables				
Work-to-family conflict (WFC)	.123	13.976	199	.333*
Co-worker support – emotional (CWS-E)				−.121*
2. Interaction				
WFC × CWS-E	.007	1.539	198	−.083

* $p=<.10$.

Table 7 reveals that practical support from co-workers did not exhibit a significant main effect on emotional exhaustion. However, the interaction between co-workers' practical support for employees' work-family balance and WFC was significant, indicating that practical support from one's co-workers moderates the relationship between WFC and emotional exhaustion.

Figure 5 shows the relationship between WFC and emotional exhaustion in conditions of high, medium and low co-worker practical support. When the level of practical support received from one's co-workers is high, the relationship between WFC and emotional exhaustion is relatively weak. However, when the level

Table 7 Multiple regression for work-to-family conflict and co-worker practical support as predictors of emotional exhaustion

Step and predictors	ΔR^2	F-change	*dfs*	β
1. Independent variables				
Work-to-family conflict (WFC)	.116	13.025	199	.327***
Co-worker support – practical (CWS-P)				−.085
2. Interaction				
WFC × CWS-P	.047	11.132	198	−.238***

*** $p = <.001$.

of practical co-worker support is low, the slope of the regression line is steeper, representing a stronger positive relationship between WFC and emotional exhaustion. Thus, for practical co-worker support, the moderation hypothesis is supported in our sample.

Discussion

The results of the study highlight the importance of creating a supportive work environment for the prevention of employee burnout in the construction industry.

The extent to which employees perceive that the organization is supportive of them has a main effect on emotional exhaustion (the core dimension of burnout). Perceived organizational support also changes the nature of the relationship between WFC and emotional exhaustion, such that high POS acts as a protective buffer against emotional exhaustion.

The results also show that social support from one's co-workers and supervisor is also very important in the prevention of burnout. However, the results indicate that the role of social support differs according to the type of support experienced. Interestingly, emotional support from both co-workers and supervisors showed an independent main effect on employees' emotional exhaustion, such that employees who enjoy emotional support are less emotionally exhausted. However, neither emotional support from co-workers nor from supervisors altered the nature of the relationship between WFC and emotional exhaustion. In contrast, practical support from co-workers and supervisors exhibited no independent main effects on emotional exhaustion, but practical support from both co-workers and supervisors did moderate the relationship between WFC and emotional exhaustion. Thus, when employees experience practical support from either their co-workers and/or their supervisors, the relationship between WFC and emotional exhaustion is significantly weaker than when practical support is lacking.

Our results contradict those of other researchers which show that emotional support has a stronger moderating effect in the stressor-strain relationship than other types of social support. One reason for this might be the context in which the study took place, because Pines *et al.* (2002) suggest that the effect of social support may be subject to cultural differences. It is noteworthy that many of the studies that report a moderating effect of emotional support were undertaken in the human service professions, including
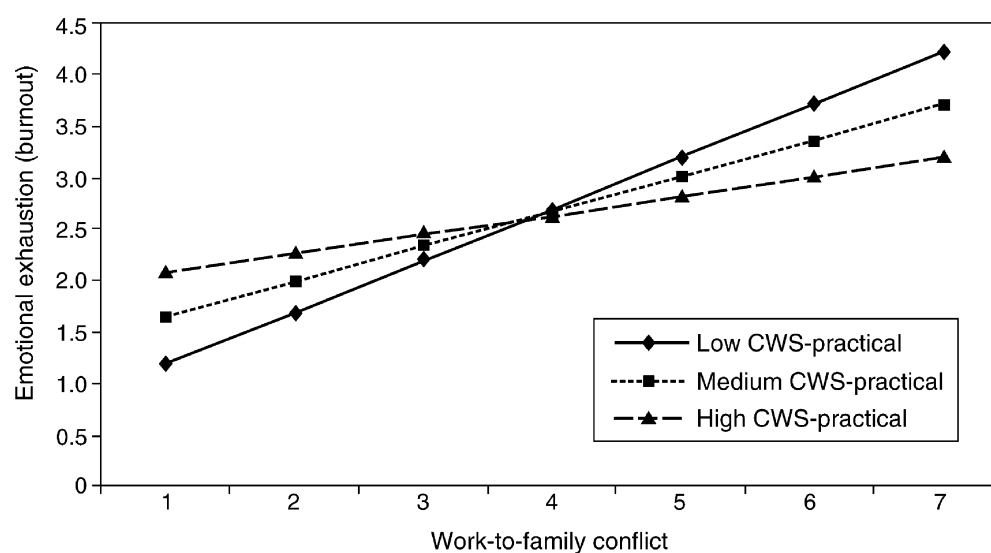
Figure 5 The moderating effect of co-worker practical support on the relationship between work to family conflict and emotional exhaustion (burnout)

health-care workers, teachers and social workers. Our results indicate that, in the culture of the construction industry, emotional support from co-workers and supervisors does not have a moderating effect in the relationship between WFC and emotional exhaustion. However, practical support from both co-workers and supervisors does have a moderating effect. The implication of this finding is that merely listening and being sympathetic to subordinates' and co-workers' work-family balance difficulties is insufficient. In order to protect employees who experience WFC against burnout, it will be necessary to provide assistance of a practical nature.

Despite the absence of a moderating effect, the provision of emotional support does have a main effect upon emotional exhaustion. As such, emotional support is also important in the prevention of employee burnout and empathy and listening skills should be encouraged. However, caution must be exercised because previous research shows that emotional support can take different forms, depending upon the content of the conversations between support givers and receivers. In some cases, emotional support can actually exacerbate employees' feelings of hopelessness and increase burnout (Zellars and Perrewé, 2001). A more fine-grained analysis of the role of different types of emotional support is therefore recommended.

The results suggest that supervisors' criticism or resentment of subordinates' family responsibilities is likely to have a particularly harmful effect upon burnout among employees. Not only was supervisory criticism/resentment directly related to employees' emotional exhaustion, but criticism/resentment also moderated the relationship between WFC and emotional exhaustion. Thus, where supervisors are critical/resentful of employees' family obligations the relationship between WFC and emotional exhaustion is significantly stronger than where such criticism/resentment is not apparent. The importance of this dimension of supervisory support suggests that supervisors should be targeted for sensitivity training. This training should focus on organizational policy and procedures for work-life balance and explain to supervisors the importance of accommodating employees' family obligations and, in what circumstances, practical support should be given.

Previous research has also revealed that social support moderates the effectiveness of other intervention strategies designed to reduce or prevent employee burnout. For example, Van Dierendonck *et al.* (1998) report that interventions designed to reduce burnout have a more immediate and stronger effect when social support is high. Similarly, Janssen *et al.* (2001) report that social support moderates the extent to which job control acts as a buffer in the relationship between job demands and burnout. Thus, employees are more likely

to exercise control over their work arrangements when they perceive that social support is available. These results suggest that the provision of social resources and a supportive work environment should be part of *any* intervention designed to alleviate or prevent employee burnout. Our results confirm the importance of a supportive work environment but future research should also examine the extent to which different types of support influence employees' adoption of coping strategies or take-up of organizationally available work-life balance benefits.

Conclusions

Our results suggest that interventions designed to alleviate or prevent employee burnout in the construction industry should focus, at least in part, on the creation of a supportive work environment. Such interventions should focus on directly reducing emotional exhaustion by enhancing employees' perceptions that the organization is supportive of them and fostering a caring workforce that is willing and able to provide appropriate emotional support to co-workers and subordinates. Burnout mitigation interventions should also include strategies to increase the amount of practical support provided by co-workers and supervisors to employees with work-life balance difficulties. Assistance of a practical nature appears to have a moderating effect, decreasing the extent to which employees who experience WFC suffer from emotional exhaustion.

Limitations and future research

The research was limited in one important respect. The survey was cross-sectional. As such, it is impossible to determine the direction of causal relationships. It is possible, for example, that the direction of causal relationships is actually the reverse. For example, emotional exhaustion could precede WFC, rather than the other way around. It is important that this study be followed up by a longitudinal study in order to clarify the direction of causal relationships. This longitudinal study should also test for the 'loss spiral' effect discussed by Demerouti *et al.* (2004). Should loss spirals be found to occur in the construction industry, the role of a support in breaking these spirals should be explored.

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