The Effects of Burnout and Supervisory Social Support on the Relationship between Work-Family Conflict and Intention to Leave: A Study of Australian Cancer Workers

P. Rani Thanacoody
La Trobe University,
Department of Management and Marketing
School of Business,
VICTORIA 3086 AUSTRALIA
Tel: (+61 3) 9479 1299
Fax: (+61 3) 9479 5971
Email: rani_th@yahoo.com

Dr Timothy Bartram*
Associate Professor
Department of Management and Marketing
School of Business
La Trobe University
Tel: (+61 3) 9479 5837
Fax: (+61 3) 9479 5971
VICTORIA 3086 AUSTRALIA
Email: t.bartram@latrobe.edu.au

Dr Gian Casimir
Senior Lecturer
Newcastle Graduate School of Business
University of Newcastle NSW 2308 AUSTRALIA
Tel: (+61 2) 49 216 680
Fax: (+61 2) 49 217 398
E-mail: gian.casimir@newcastle.edu.au

*Corresponding author

The Effects of Burnout and Supervisory Social Support on the Relationship between Work-Family Conflict and Intention to Leave: A Study of Australian Cancer Workers

Abstract

Purpose- To examine the effects of burnout and supervisory social support on the relationship between work-family conflict, and intention to leave of cancer workers in an Australian health care setting.

Design/methodology/approach- Data collected from a public hospital of 114 cancer workers were used to test a model of the consequences of work-family conflict. The strength of the indirect effects of work-family conflict on intention to leave via burnout will depend on supervisor support was tested by conducting a moderated mediation analysis.

Findings- Path analytic tests of moderated mediation supported the hypothesis that burnout mediates the relationship between work-family conflict (i.e., work-in-family conflict and family-in-work) and intention to leave the organisation and that the mediation framework is stronger in the presence of higher social supervisory support. Implications are drawn for theory, research and practice.

Originality/value- This study applies the innovative statistical technique of moderated mediation analysis to demonstrate that burnout mediates the relationship between work-family conflict and intention to leave the organisation and that the mediation framework is stronger in the presence of lower social supervisory support. In the context of the continued shortage of many clinician groups theses results shed further light on the appropriate course of action for hospital management.

Keywords work-family conflict, social support, burnout and healthcare

Paper type Research paper

Introduction

Work-family conflict is a common source of work stress (Demerouti, Nachreiner, Bakker and Schaufeli, 2001; Smith-Major, Klein and Ehrhart, 2002; Frone, Russell, & Cooper, 1992; Kossek and Ozeki, 1999; Solomon, 1994). Work-family conflict has a positive relationship with job burnout and is often associated with a higher propensity to leave the organisation (Hang-yue, Foley and Loi, 2005; Frone et al., 1992; Maslach, 1993; Lee and Ashforth, 1996).

These issues are particularly salient in the healthcare industry, both in Australia and internationally, which is experiencing not only critical shortages of clinicians (e.g., nurses, oncologists and radiation therapists) and other para-professionals but also difficulty in retaining these groups of employees (Cunning, 2004; Pinkerton, 2003; Creegan, Duffield and Forrester, 2003). For instance, large numbers of cancer workers indicated that they were leaving the industry or reducing their working hours (Grunfeld, Zitzelsberger, Coristine, Whelan, Aspelund and Evans, 2004).

The increasing demand for oncology care in Australia and internationally has arguably not been offset by a commensurate increase in human and material resources. This imbalance has been viewed as a potential source of stress and burnout for clinicians working in oncology (Grunfeld, et al 2004). For instance, Grunfeld, Zitzelsberger, Coristine, Whelan, Aspelund and Evans (2004), in a rare study of job stress among cancer workers, argue that a major source of work stress is work-family conflict coupled with heavy workload demands. Additionally, job stress has been shown to be positively associated with absenteeism and turnover among clinicians more generally (Stordeur, D'hoore, & Vandenberghe, 2001).

Given the highly emotional and often invasive nature of cancer treatment, burnt-out and under-resourced cancer workers may be the antithesis to quality health care (Peters and Sandison, 1998). Moreover, many clinician's are leaving the public health care industry due to the inability to balance work and family domains in the face of work intensification (Cunning, 2004; Pinkerton, 2003; Creegan, Duffield and Forrester, 2003). This may compact the incidence of quality and safety problems in the health care (Sorensen, Lloyd, Van Kemenade and Harnett, 2005). Within this context, this study uses a moderated mediation analysis to investigate the effects of burnout and supervisory social support on the relationship between work-family conflict (specifically, work-in-family and family-in-work conflict) and intention to leave among 114 cancer workers. In line with Sorensen, Lloyd, Van Kemenade and Harnett (2005), this paper takes up the challenge of suggesting system wide quality improvements largely through the role of unit leaders using supervisory social support strategies.

This study makes a significant contribution to the literature and managerial practice as research on work-family conflict (i.e., work-in-family and family-in-work conflict) or on the impact of work-family conflict on burnout and intention to leave among clinicians (especially in the provision of cancer treatment) has not been conducted in Australia and in many other international settings (Pinikahana & Happel, 2004; Barrett and Yates, 2002). This is surprising given the feminised nature of many professionalised groups within the health care sector as well as the high turnover rates among many health professionals (Lumley, Stanton and Bartram, 2004). Furthermore, there is a dearth of literature unravelling the complex inter-relationships between work family conflict, social support, burnout and intention to leave among cancer workers.

Work-family conflict and burnout

Work-family conflict is generally defined as a form of inter-role conflict in which role pressures from the work and family domains are mutually incompatible because participation in one role is made more difficult by virtue of participation in the other (Greenhaus and Beutell, 1985). Work-family conflict can be conceptualised as comprising two forms: time-based and strain-based (Edwards & Rothbard, 2000). Time-based conflict is a form of resource drain, in which time or attention transferred from one domain to the other hinders performance in that domain but facilitates performance in the other (Edwards & Rothbard, 2000). Strain-based conflict suggests that increased demands from one domain make it more difficult to meet the demands of the other domain thereby adversely affecting performance in the other domain (Edwards & Rothbard, 2000). Moreover, work-family conflict can also be conceptualised as Work Interferes with Family (WIF) and Family Interferes with Work (FIW) (Greenhaus and Beutell, 1985).

Work and family conflict has been associated with a number of undesirable organisational and individual consequences both at work and at home (Chandola, Martikainen, Bartley, Lahelma, Marmot and Michikazu, 2004; Smith-Major, Klein, & Ehrhart, 2002). Work-family conflict has been shown to reduce work performance (Butler & Skattebo, 2004) and increase absenteeism, turnover and job dissatisfaction (Chandola et al., 2004). Work-family conflict has also been shown to reduce life satisfaction, marital and family satisfaction as well as mental and physical well-being including burnout and health problems (Demerouti, Nachreiner, Bakker, & Schaufeli, 2001, Chandola et al., 2004; Smith-Major, Klein, & Ehrhart, 2002). For example, work-family conflict is positively related to mood, anxiety and substance dependence disorders (Frone, et al 1992).

An important consequence of work-family conflict is burnout (Bakker, Killmer, Siegrist, Wilmar, & Schaufeli, 2000; Gorter, Albrecht, Hoogstraten, & Ejkman, 1998; Jassen, Scahufeli, & Houkes, 1999; Jenkins & Elliott, 2004), which has been defined as a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among employees (Maslach, 1993). According to Demerouti, Nachreiner, Bakker, and Schaufeli (2001), burnout has two critical dimensions: emotional exhaustion and disengagement. Emotional exhaustion refers to feelings of being overextended and exhausted by the emotional demands of work (Demerouti, et al., 2001). Disengagement refers to employees' engagement, identification, and willingness to remain within the same occupation.

Studying burnout is particularly crucial for employees within the healthcare sector as it is an essential service and many of its occupational groups play critical roles in saving the lives of patients (Schaefer & Moss, 1993). Clinicians such as nurses and doctors are particularly susceptible to burnout as their roles are often stressful and emotionally demanding (Bakker, Killmer, Siegrist, Wilmar, & Schaufeli, 2000; Gorter, Albrecht, Hoogstraten, & Ejkman, 1998; Jassen, Scahufeli, & Houkes, 1999; Jenkins & Elliott, 2004). Recent research has demonstrated that the experience of burnout can be alleviated by providing coping resources (Melchior, Bours, Schmitz, & Wittich, 1997). A critical coping resource is that of work support that is provided by colleagues and in particular the immediate supervisor (Melchior et al., 1997).

Work support

For a number of decades, researchers have consistently demonstrated that social support is an important resource in that it facilitates the psychological, physical and overall well-being of

individuals (La Rocco, House & French, 1980; La Rocco & Jones, 1978). Social support can be provided by three main sources: family and friends, work colleagues (Ganster, Fusilier, & Mayes, 1986), and the immediate supervisor (Berger-Cross & Kraut, 1984). Quick and Quick (1984) found that social support at the workplace can take different forms: informational—where reports can be obtained from colleagues on a critical matter; emotional—providing care, love and trust; instrumental—providing facilitation behaviours to help the person meet work tasks; and appraisal—obtaining evaluation and feedback on one's performance from one's immediate supervisor. Moreover, House (1981), in his seminal work, identified nine sources of social support: spouse or partner; relatives; friends; neighbours; service- or care-givers; self-help groups; health and welfare professionals; colleagues; and the immediate supervisor.

Work support provided by the immediate supervisor enables employees to resolve work-family conflict (Galinsky, Bond, & Friedman, 1996; Repetti, 1987). Moreover, Dunseath, Beehr, & King (1995) revealed that support from the supervisor was extremely important in helping the employees to attain job satisfaction and to prevent depression. High levels of work support especially from the immediate supervisor have been associated with lower levels of burnout in a number of studies on nurses (Cronin-Stubbs & Brophy, 1985; Kilfedder, Power, & Wells, 2001; Sullivan, 1993). Given the critical importance of supervisory social support within the work setting, it is presented as a major construct within this study.

Hypothesis Development

Work-family conflict has long been viewed as an important antecedent of burnout among employees (Allen, Herst, Bruck and Sutton, 2000; Bacharach, Bamberger and Conley, 1991;

Demerouti et al., 2001; Montgomery, Peeters, Schaufeli, & Den Oude, 2003). Theoretically, work-family conflict research has been strongly dominated by the Role Strain Theory (Goode, 1960), which suggests that tasks from both domains compete for limited time and energy resources. In contrast, Role Enhancement Theory suggests that participation in multiple roles provides wider opportunities and resources to the individual that may be used to promote growth and enhance balance in both domains (Marks, 1977; Marks & MacDermid, 1996; Sieber, 1974; Carlson, Kacmar, & Williams, 2000; Simon et al., 2004; Voydanoff, 2002). In a comprehensive review of the consequences of work and family conflict, Allen et al. (2000) found consistently strong relationships between work-family conflict and stress-related outcomes. The strongest relationships were between work-family conflict and burnout (Allen et al., 2000; Bacharach, Bamberger and Conley, 1991; Demerouti et al., 2001; Montgomery, Peeters, Schaufeli, & Den Oude, 2003). Based on these findings, the following hypothesis is proposed:

Hypothesis 1: Work-family conflict will positively correlate to burnout

Employees who experience burnout tend to report a higher propensity to leave the organisation (Pines and Malach, 1981; Muhammad and Hamdy, 2005). The Conservation of Resources Theory of Stress (Hobfoll, 1989; Hobfoll & Freedy, 1993) provides a framework for understanding many of the critical antecedents and consequences of burnout. According to this theory, burnout occurs when valued resources (e.g., social support) are lost, are inadequate to meet demands, or are unable to yield anticipated returns. The major demands of work include role ambiguity, role conflict, stressful events, heavy workload and pressure. The major resources include social support from various sources: job enhancement opportunities such as control, participation in decision-making, and autonomy and

reinforcement contingencies (Cordes & Dougherty, 1993). Conservation of Resources Theory of stress states that certain behaviours and attitudes and outcomes are likely to occur as a result of resource loss and burnout. The major outcomes include behavioural coping responses such as turnover intentions and an erosion of organisational commitment, job involvement and job satisfaction (Kahill, 1988). Several studies have demonstrated that burnout is positively related to turnover intention (Lee & Ashforth, 1996; Schaufeli & Bakker, 2004; Schaufeli & Enzmann, 1998). Based on the preceding discussion, the following hypothesis is proposed:

Hypothesis 2: Burnout will positively correlate to intention to leave

Intention to leave an organisation and search for another job are positively related to work-family conflict (Burke, 1988). Hasselhorn, Tackenberg, and Muller (2003) examined the premature departure from the nursing profession in ten European countries and found a strong association between work-family conflict and intention to leave. Furthermore, a recent study involving samples from eight European countries found a strong relationship between work and family conflict and intention to leave in most country contexts (Simon et al., 2004). Based on these findings, the following hypothesis is proposed:

Hypothesis 3: Work-family conflict will positively correlate to intention to leave

It is generally accepted in the management literature that employees who feel emotionally and practically supported by their immediate supervisor have a higher propensity to endure emotional exhaustion with less impairment than their poorly supported counterparts (Muhammad and Hamdy, 2005; Etzion, 1984; House, 1981; La Rocco and Jones, 1978). The

"buffering hypotheses" explains interactions between stress and social support by proposing that the relationship between stress and strain will be weaker for those enjoying greater social support (House, 1981; Cohen and Wills, 1985). According to Caplan and Killilea (1976: 41), social support systems improve "…adaptive competence in dealing with short-term crises and life transitions as well as long-term challenges [and] stresses..." The deleterious impact of stress on health is thus mitigated (or even eliminated) as social support increases. For example, the buffering role of social support has alleviated negative outcomes for employees who experience work stress (House, 1981). Furthermore, social support will have its strongest beneficial effect on health among people under stress and may have little or no beneficial effect for people not under stress (House, 1981).

Supervisory social support has been shown to moderate the relationship between burnout and work outcomes such as intention to leave (Muhammad and Hamdy, 2005). Moreover, van Dierendonk, Schaufeli and Buunk (2001), using a quasi-experimental design, reported that social support from work colleagues and particularly the immediate supervisor moderated the relationship between burnout and intention to leave. Specifically, turnover intention decreased with employees who reported higher levels of social support whereas turnover intention increased with employees who reported lower levels of social support. Consequently, we expect that supervisory social support will moderate the relationship between burnout and intention to leave such that the impact of burnout on intention to leave will decrease with increasing levels of supervisory social support.

Recent studies have demonstrated that the interface between work and family causes stresses and strains for many employees. According to Ngo et al. (2005), "working in a stressful environment [may] lead to depression, a sense of futility, lower job involvement and

psychological withdrawal from the work group and hence increases intention to leave the organisation." Job stressors such as work-family conflict have been found to be associated with a higher propensity to leave the organisation (Frone et al. 1992). There is also evidence (e.g., Lee & Ashforth, 1996; Schaufeli & Bakker, 2004; Schaufeli & Enzmann, 1998) that work-family conflict is an important antecedent of burnout and turnover. Recent research has demonstrated that emotional exhaustion, which is a dimension of burnout, mediates the relationship between role stressors and intention to leave the organisation (Ngo et al, 2005). Consequently, we expect that burnout will mediate the relationship between work-family conflict and intention to leave the organisation in that work-family conflict is seen as increasing intention to leave primarily because it increases burnout.

Based on the expectations that supervisory social support will moderate the relationship between burnout and intention to leave and that burnout will mediate the relationship between work-family conflict and intention to leave the organisation, the following hypothesis is proposed and the hypothesised model is shown in Figure 1:

Hypothesis 4: The strength of the indirect effects of work-family conflict on intention to leave via burnout will depend on supervisor social support. Specifically, the indirect effect of work-family conflict on intention to leave via burnout will be stronger when supervisor social support is low than when supervisor support is high.

- - - - - - - - - - - - - - - - - - - -

Insert Figure 1 about here

- - - - - - - - - - - - - - - - - - - -

Sample and Procedure

A total of 407 cancer clinicians working at an Australian metropolitan hospital were asked to complete the questionnaire. A sample of 114 clinicians including radio-therapists, radiographers and oncologists was used in this analysis. This represents a 28 per cent response rate. There are very few studies of this nature on such a sample (Grunfeld, 2004). Seventy-six per cent of the sample was employed on a full-time basis and the remainder on a part-time basis. Seventy-five percent of the sample was female. The mean age of the respondents was 39 years. The average tenure of respondents was nearly 10 years and sixty-four per cent of the sample earned over $50, 000 annually.

The researchers worked in partnership with the HR director and the HR team at the organisation to develop and market the questionnaire throughout the organisation. Respondents were informed that participation in the survey was completely voluntary and that information would be treated in the strictest confidence. Questionnaires were distributed through the pay system within the organisation (i.e., questionnaires were attached to individual payslips).

Measures

Work-family conflict. Carlson, Kacmar and Williams' (2000) 24-item scale was used to measure work-family conflict. Based on the factor analysis and internal reliabilities, 22 items were used in the analysis (an explanation is provided below). This scale measures four types of work-family conflict that can be considered along two dimensions: The first dimension addresses the interference of one domain with the other and has two categories—Work Interferes with Family (WIF) and Family Interferes with Work (FIW); the second dimension addresses the type of interference and has two categories—time-based and strain-based. The

four types of work-family conflict are thus as follows: time-based WIF, time-based FIW, strain-based WIF and strain-based FIW. Sample items are time-based WIF: "My work often interferes with my family responsibilities", time-based FIW: "I find myself making family related phone calls or running personal errands during work time", strain-based WIF: "Tension and anxiety from work often creep into my family life", stain-based FIW: "I am often too tired at work because of the things I have to do at home".

Burnout. Demerouti et al (2001) eight-item scale was used to measure burnout. This scale measures Exhaustion and Disengagement. A sample Exhaustion item is "After my work, I tend to need more time than in the past in order to relax and feel better" and a sample Disengagement item is "Lately, I tend to think less during my work and just execute it mechanically".

Supervisory social support. House's (1981) four-item scale was used to measure supervisory social support. A sample item is "My supervisor is willing to listen to my work-related problems".

Intention to Leave. Meyer, Allen and Smith (1993)'s three-item scale was used to measure Intention to leave the organisation. A sample item is "I often think of quitting the organisation". A five-point Likert scale (i.e., 1=strongly disagree to 5=strongly agree) was used with all of the measures.

Results

The results are presented in three sections. The correlations between the variables are reported in the first section. The second section contains the findings from principal component analyses and internal reliability analyses. The findings from the analyses that were conducted to test the hypotheses are presented in the third section.

Table 1 contains the means and standard deviations for the variables as well as their correlations and internal reliabilities where appropriate. The following findings are evident in Table 1: i) intention to leave has a non-significant correlation with age, gender, tenure, employment status and income; ii) intention to leave has a significant positive correlation with both work-family conflict and burnout and has a significant negative correlation with supervisor support; iii) work-family conflict has a significant positive correlation with burnout and a significant negative correlation with supervisor support; and iv) burnout has a significant negative correlation with supervisor support.

- - - - - - - - - - - - - - - - - - - -

Insert Table 1 about here

- - - - - - - - - - - - - - - - - - - -

As shown in Table 1, Hypothesis 1, which stated that work-family conflict will correlate positively to burnout, was supported. Hypothesis 2, which stated that intention to leave will correlate positively to burnout, was supported. Hypothesis 3, which stated that work-family conflict will correlate positively to intention to leave, was supported.

Principal components analyses were conducted on all of the scales. Due to the size of the sample, separate analyses were used to assess the scales for Workplace-Family Conflict, Supervisor-Support, Burnout, and Intention to Leave. The results of these analyses are presented in Table 2. A cut-off value of 0.55 was used for the component loadings based on

Hair, Anderson, Tatham and Black's (1998) recommendation that items with loadings of .55 or greater are satisfactory for a sample size of 100.

- - - - - - - - - - - - - - - - - - -

Insert Table 2 about here

- - - - - - - - - - - - - - - - - - -

A four-component Varimax setting was used to examine the Workplace-Family Conflict scale. All of the items from the Work-Family Conflict sub-scales load satisfactorily and appropriately with the exception of two items from the sub-scale for time-based family interferes with work. An overall score for Workplace-Family Conflict was calculated by averaging the scores for the 22 Workplace-Family Conflict items that loaded satisfactorily on their respective sub-scales. A two-component Oblimin setting was used to examine the two-dimensional Burnout scale as the components of Burnout have been shown to be highly correlated (e.g., Demetroui et al., 2001). All of the items from the Burnout scale load satisfactorily and appropriately. An overall Burnout score was calculated by averaging the scores for the eight items for Disengagement and Exhaustion. All of the items from the Support scale load satisfactorily onto a single component. An overall score for Supervisor-Support was calculated by averaging the scores for the four items in this scale. All of the items from the Intention to leave scale load satisfactorily on a single component. An overall score for Intention to leave was calculated by averaging the scores for the three items in this scale.

The Cronbach's internal reliability coefficients for the scales are as follows: Time-based WIF, alpha = .92; Time-based FIW, alpha = .87; Stress-based WIF, alpha = .88; Stress-based FIW Work, alpha = .93; Exhaustion, alpha = .72; Disengagement, alpha = .72; Support from Supervisor, alpha = .90; and Intention to Leave, alpha = .87. According to Nunnally (1978), a

Cronbach's alpha larger than .7 is satisfactory. All of the scales therefore have acceptable internal reliability.

A single-component test was conducted on all of the items shown in Table 2 to test for single-source common method bias. This analysis revealed that the first component accounted for 26.9% of the total variance in the items, which indicates that common source/method variance does not explain the majority of the covariance between the items.

Hypothesis 4 was tested by conducting a moderated mediation analysis as outlined by Muller, Judd and Yzerbyt (2005). This analysis involves the following three regressions: i) Regression 1—the dependent variable is regressed on the independent variable, the moderator, and their product-term (i.e. IVxMo); ii) Regression 2— the mediator is regressed on the independent variable, the moderator, and IvxMo; and iii) Regression 3—the dependent variable is regressed on the independent variable (IV), the moderator (Mo), IVxMo, the mediator (Me), and MexMo. Each product-term was calculated using standardised scores for both of its constituents; this procedure reduces the collinearity between the product-term and its constituents (Jaccard, Turrisi, & Wan, 1990). The results of this analysis are presented in Table 3.

- - - - - - - - - - - - - - - - - - - -

Insert Table 3 about here

- - - - - - - - - - - - - - - - - - - -

According to Muller et al. (2005), support for the moderated mediation model depicted in Figure 1 can be claimed if the following four conditions are met: i) the independent variable significantly predicts the dependent variable in Regression 1; ii) the IVxMo product-term in Regression 1 is not significant; iii) the independent variable significantly predicts the

mediator in Regression 2; and iv) the MexMo product-term significantly predicts the dependent variable in Regression 3.

As shown in Table 3a, the independent variable (i.e., work-family conflict) significantly predicts the dependent variable (i.e., intention to leave) in Regression 1—Condition 1 has been met; ii) the IVxMo (i.e., work-family conflict x supervisor support) product-term in Regression 1 is not significant—Condition 2 has been met; iii) the independent variable significantly predicts the mediator (i.e., burnout) in Regression 2—Condition 3 has been met; and iv) the MexMo (i.e., burnout x supervisor support) product-term significantly predicts the dependent variable in Regression 3—Condition 4 has been met marginally.

The product-term has low power (Jaccard et al. 1990), which means that it is likely to yield a non-significant interaction effect when in fact there is one. In order to more closely examine the moderating effect of supervisor on the relationship between burnout and intention to leave, supervisor support was split into a low group (n = 53) and a high group (n = 61), and the difference in the correlation between burnout and intention to leave for the low and high supervisor-support groups was examined using Fisher's Z-transformation technique. The low group comprised participants with scores of three or less (i.e., scores were on the disagree-side of neutral and included neutral) whilst the high group comprised participants with scores greater than three (i.e., scores were on the agree-side of neutral).

Although burnout has a significant positive correlation with intention to leave for the low supervisor-support group ($r = .65$, p < .001) and the high supervisor-support group ($r = .34$, p < .01), Fisher's technique revealed a significant difference between the groups in terms of the

correlation between burnout and intention to leave ($Z = 2.15$, $p < .05$). Take together, the findings support Hypothesis 4.

To further examine the overall model depicted in Figure 1, Hypothesis 4 was tested separately for the two components of work-family conflict: Work Interferes with Family (WIF) and Family Interferes with Work (FIW). The results of these analyses are presented in Table 3b and Table 3c and reveal similar results for both components of work-family conflict: i) the independent variable significantly predicts intention to leave in Regression 1—Condition 1 has been met; ii) the IVxMo product-term in Regression 1 is not significant—Condition 2 has been met; iii) the independent variable significantly predicts burnout in Regression 2—Condition 3 has been met; and iv) the MexMo product-term significantly predicts intention to leave in Regression 3—Condition 4 has been met marginally.

Discussion and Conclusions

This study used a moderated mediation analysis to investigate the effects of burnout and supervisory social support on the relationship between work-family conflict (i.e., WIF and FIW) and intention to leave among 114 cancer workers. It has been well documented in the healthcare literature that the problem of work-related stress could have serious and negative consequences for clinician performance, the provision of quality patient care, as well as the recruitment and retention of clinicians (Creegan, Duffield and Forrester, 2003). Our results clearly demonstrate that burnout mediates the relationship between both types of work-family conflict and intention to leave the organisation and that the mediation framework is stronger in the presence of lower social supervisory support. These findings have a number of important implications for managers within the healthcare sector.

First, the potential impact of burnout on the quality of patient care has been well documented among health management academics and practitioners (Fulop et al. 2002; Woodward et al, 1999). Given the significant association between burnout and intention to leave, inadequately addressing the antecedents of burnout may potentially contribute to the challenges associated with attracting and retaining critical clinicians. The findings demonstrate that work-family conflict among cancer workers is strongly associated with burnout. Suggestions for addressing work-family conflict are expanded below.

Second, with respect to supervisory social support, hospital management may choose to implement strategies aimed at improving the health and well-being of clinicians by promoting supervisor communication and support. An important initial step may require hospital leaders to conduct a comprehensive self-assessment and to identify problem areas in communication, hierarchy and leadership (Schroeder and Worrall-Carter, 2002). An obvious means of facilitating supervisor social support is the provision of forums for communication between employees and their supervisors. For example, weekly functional-area meetings may be scheduled to discuss work-related issues. Further, the formal "handover" between shifts used to exchange patient-related information could be extended to include a five to ten minute informal "handover" between relevant staff to reduce conflict/ambiguity over patient care issues (Schroeder and Worrall-Carter, 2002).

Third, developing and harnessing relationships are an essential part of clinical activities and a teamwork model may be an important vehicle for building social support networks between both nurses themselves and between management and clinicians. Contemporary management literature underscores the importance of developing managers' teambuilding, coaching and leadership skills to facilitate greater mutual respect and open communication at the ward

level (Stordeur et al., 2001). The implementation of formal mentoring programs may also provide a means of developing support networks between clinicians with different levels of experience. For example, Schroeder and Worrall-Carter (2002) found that mentoring was an invaluable resource as it provides nurses with pertinent work-related feedback and emotional support in the workplace.

Fourth, alleviating large workloads may require systemic changes such as the establishment of workload standards (e.g., nursing patient ratios) (Grunfeld et al., 2004). Other steps associated with the amelioration of burnout may include improved recruitment and retention of new trainees and the introduction of productivity aides such as enhanced information systems (Grunfeld et al., 2004).

Fifth, our results demonstrate that high supervisory social support can "buffer" and ameliorate the effects of WIF and FIW conflict on burnout and intention to leave. These results are supported by the findings of several studies (e.g., Muhammad and Hamdy, 2005; van Dierendonk, Schaufeli and Buunk, 1998). Given that many of the cancer workers in our sample are female with dependents or of child-bearing age, the development of "family-friendly" human resource management policies that enable clinicians to balance their work and family domains are crucial (Demerouti et al., 2001, Smith-Major, Klein, & Ehrhart, 2002). For example, an assessment could be conducted amongst current permanent cancer clinicians to assess problems within their workplace and strategies that they consider would improve the attractiveness of their working environment. Such a strategy could improve the retention of existing permanent cancer clinicians and might also enhance the recruitment of casual or part-time clinical staff to permanent positions. In fact, many cancer clinicians elected to work casually/part-time owing to the flexibility that it offers, particularly in

balancing work and family domains. Therefore, it might be advantageous for hospital managers to consider setting shifts according to individual needs, providing alternative starting and finishing times where feasible, removing the requirement to rotate onto night duty or providing extra incentives to work night duty.

There are several limitations to the findings of this study that need to be mentioned. Firstly, the use of a cross-sectional design makes it difficult to discuss issues of causality. For instance, it is likely that employees who are suffering from burnout may be more moody and difficult to get along with than those who are not and this may adversely affect the relationships with their supervisors thereby rendering the supervisors less likely to be supportive towards them. Another limitation of this study is that all of the data were obtained from a single source and this may have inflated the correlations between the variables. Finally, the entire sample was drawn from a single hospital and thus the generalisability of the findings is questionable as there may be specific contextual factors that are unique to the hospital that influence the relationships between the variables examined.

There are many opportunities for further research in this field. For example, further research within a hospital setting is required to explore other social support mechanisms (e.g., friends and partners) and their impact on other occupational stressors. Further research would also be useful to better understand the impact of social support structures on other key outcome variables and among other clinician groups, such as nursing absenteeism, retention rates and the quality of patient care. An examination of the role of effective clinician mentoring programs on key outcome variables, particularly work-related stress, may provide useful outcomes for both academics and practitioners. Qualitative research should also be conducted

within a hospital setting to better understand and develop appropriate social support and empowerment interventions.

In conclusion, hospital administrators and managers may find it productive to encourage and develop strong social support networks among supervisors and clinicians such as radiotherapists, and implement organisational practices that reduce work-family conflict among cancer workers. Against a background of difficulties in recruiting and retaining many groups of cancer workers in the healthcare industry (Creegan et al, 2003; Fitzgerald, 2002) coupled with the crucial role clinicians play in that industry, the development of management practices that reduce both types of work-family conflict should be seen by administrators and managers as a fundamental part of hospital management.

TABLE 1

Means (S.D.) and correlations[a] for the measured variables

	Mean (S.D.)	1	2	3	4	5	6	7	8
1. Age	38.81 (11.1)								
2. Gender	-------	-.10							
3. Tenure	9.73 (10.7)		.65	.04					
4. Employment Status	-------	.06	.17	-.10					
5. Income	-------	.33	-.28	.36	-.52				
6. Work-family conflict	2.83 (0.62)	.01	-.14	-.01	.02	-.12			
7. Burnout	2.83 (0.58)	.01	-.06	-.04	.05	-.22	.47		
8. Supervisor Support	3.40 (0.96)	-.08	-.05	-.16	-.02	.08	-.24	-.41	
9. Intention to Leave	2.38 (1.04)	-.06	-.05	.05	.00	-.09	.29	.57	-.53

[a] Significance: $r > .16$, $p < .05$; $r > .21$, $p < .01$; $r > .28$, $p < .001$.

TABLE 2

Results of the principal components analyses

	Principal Component			
	1	2	3	4
Work-Family Conflict				
Time-based WIF1	.82			
Time-based WIF2	.83			
Time-based WIF3	.83			
Time-based WIF4	.79			
Time-based WIF5	.79			
Time-based WIF6	.80			
Stress-based FIW1		.84		
Stress-based FIW2		.81		
Stress-based FIW3		.81		
Stress-based FIW4		.82		
Stress-based FIW5		.75		
Stress-based FIW6		.75		
Stress-based WIF1			.68	
Stress-based WIF2			.72	
Stress-based WIF3			.77	
Stress-based WIF4			.84	
Stress-based WIF5			.81	
Stress-based WIF6			.55	
Time-based FIW1				.77
Time-based FIW2				.86
Time-based FIW3				.81
Time-based FIW4				.71
Burnout				
Exhaustion1	.79			
Exhaustion2	.62			
Exhaustion3	.75			
Exhaustion4	.80			
Disengagement1		.68		
Disengagement2		.78		
Disengagement3		.68		
Disengagement4		.63		
Supervisor Support				
Supervisor Support1	.91			
Supervisor Support2	.86			
Supervisor Support3	.85			
Supervisor Support4	.88			
Intention to Leave				
Intention to Leave1	.91			
Intention to Leave2	.86			
Intention to Leave3	.91			

[a] Loadings greater than .40 are shown
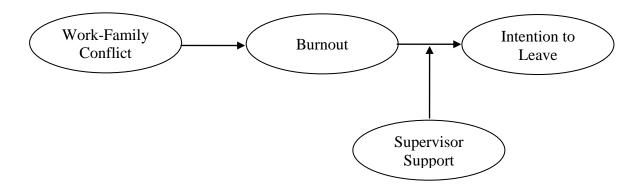
TABLE 3

Least Squares Regression Results for the Moderated Mediation Analyses

3a	Equation 1 (criterion: ITL)		Equation 2 (criterion: Burnout)		Equation 3 (criterion: ITL)	
Predictors	b	t	b	t	b	t
WFC	.244	2.81**	.253	5.20***	.083	0.93
SS	-.487	-5.77***	-.172	-3.64***	-.309	-3.49**
WFCxSS	-.147	-1.65	-.043	-0.86	-.055	-0.62
Burnout					.388	4.22***
BurnoutxSS					-.122	-1.66†

3b	Equation 1 (criterion: ITL)		Equation 2 (criterion: Burnout)		Equation 3 (criterion: ITL)	
Predictors	b	t	b	t	b	t
WIF	.353	4.26***	.458	5.58***	.218	2.45*
SS	-.404	-4.79***	-.248	-2.97**	-.269	-3.10**
WIFxSS	-.139	-1.87	-.019	-0.26	-.065	-0.81
Burnout					.320	3.51**
BurnoutxSS					-.128	-1.71†

3c	Equation 1 (criterion: ITL)		Equation 2 (criterion: Burnout)		Equation 3 (criterion: ITL)	
Predictors	b	t	b	t	b	t
FIW	-.039	-0.46	.187	2.20*	-.106	-1.39
SS	-.551	-6.33***	-.394	-4.48***	-.311	-3.49**
FIWxSS	.009	0.11	-.025	0.29	.011	0.15
Burnout					.449	5.38***
BurnoutxSS					-.115	-1.75†

† p < .10, * p < .05, ** p < .01, *** p < .001
WFC = work-family conflict, SS = supervisor support, WIF = work interferes with family, FIW = family interferes with work.

FIGURE 1

Overall Model

References

Allen, T. D., Herst, D. E. L., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work - to family conflict: a review and agenda for future research. *Journal of Applied Psychology, 5*(2), 278- 308.

Bacharach, S. B., Bamberger, P., & Conley, S. (1991). Work-home conflict among nurses and engineers: mediating the impact of role stress on burnout and satisfaction at work. *Journal of Organisational Behavior, 12*, 39-53.

Bakker, A. B., Killmer, Siegrist, J., Wilmar, B., & Schaufeli, W. B. (2000). Effort-reward imbalance and burnout among nurses. *Journal of Advanced Nursing, 31*(4), 884-891.

Burke, R.J. (1988) Some Antecedents and Consequences of Work-family Conflict, Journal of Social Behavior and Personality, 3: 287-302.

Butler, A. B., & Skattebo, A. (2004). What is acceptable for women may not be for men: The effect of family conflicts with work on job-performance ratings. *Journal of Occupational and Organisational Psychology, 77*(4), 553-565.

Caplan, G. and Killilea, M. (1976) S*upport Systems and Mutual Help: Multidisciplinary Explorations*, New York: Harcourt Brace Jovanovich.

Carlson, D. S., Kacmar, K. M., & Williams, L. J. (2000). Construction and Initial Validation of a Multidimensional Measure of work-Family Conflict. *Journal of Vocational Behavior, 56*, 249-276.

Chandola, T., Martikainen, P., Bartley, M., Lahelma, E., Marmot, M., Michikazu, S., et al. (2004). Does conflict between home and work explain the effect of multiple roles on mental health? A comparative study of Finland, Japan and the UK. *International Journal of Epidemiology, 33*(4), 884-893.

Cohen, S., & Wills, T. A. (1985). Stress, Social Support, and the Buffering Hypothesis. *Psychological Bulletin, 98*(2), 310-357.

Cordes, C. L., & Dougherty, T. W. (1993). A review and an ingetration of research on job burnout. *Academy of Management Review, 18*(4), 621-656.

Creegan, R., Duffield, C. & Forrester, K. 2003, Casualisation of the nursing workforce in Australia: driving forces and implications, *Australian Health Review*, vol 26, no 1, pp 201-208.

Cronin-Stubbs, D., & Brophy, E. B. (1985). Burnout: can social support save the psychiatrics nurse? *Journal of Nursing and Mental Health Services, 23*(7), 8-13.

Cunning, S.M. (2004) Recruitment and retention report: avoid common management pitfalls, *Nursing Management*, 35(2), 18.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Scahufeli, W. B. (2000). A model of burnout and life satisfaction amongst nurses. *Journal of advanced Nursing, 32*(2), 454-464.

Demerouti, E., Nachreiner, F., Bakker, A. B., & Schaufeli, W. B. (2001). The Job Demands-Resources Model of Burnout. *Journal of applied Psychology, 86*(3), 499-512.

Dunseath, J., Beehr, T., A., & King, D., W. (1995). Job Stress-Social Support Buffering Effects Across Gender, education and Occupational Groups in a Municipal Workforce: Implications for EAP's and Further Research. *Review of Public Personnel Administration, 15*(1), 60-83.

Etzion, D. (1984). Moderating Effect of Social Support on the Stress-Burnout Relationship. *Journal of Applied Psychology, 69*(4), 615-622.

Falkenberg, L. E., Monarchello, M. L., & Edmund, L. C. (1991). What is needed to help women balance work and family responsibilities? *Equal Opportunities International, 10*(3), 33-37.

Frone, M. R., Russell, M., & Cooper, L. M. (1992). Antecedents and Outcomes of Work-Family Conflict: Testing a Model of the Work-Family Interface. *Journal of Applied Psychology, 77*(1), 65-78.

Fulop, N., Protopsaltis, G., Hutchings, A. (2002) Process and Impact of Mergers of NHS Trusts: Multicentre Case Study and Management Cost Analysis, British Medical Journal, 325: 246-249.

Galinsky, E., Bond, J. T., & Friedman, D. E. (1996). The Role of Employers in Addressing the Needs of Employed Parents. *Journal of Social Issues, 52*(3), 111-136.

Ganster, D. C., Fusilier, M. R., & Mayes, B. T. (1986a). Role of Social Support in the Experience of Stress at Work. *Journal of Applied Psychology, 71*(1), 102-110.

Goode, W., J. (1960). A theory of role strain. *American sociological review, 25*, 483-496.

Gorter, R. C., Albrecht, G., Hoogstraten, J., & Ejkman, M. A. J. (1998). Workplace characteristics, work stress and burnout among Dutch dentists. *European Journal of Oral sciences, 106*(6), 999-10005.

Greenhaus, J. H., & Beutell, N. J. (1985). Sources of Conflict Between Work and Family Roles. *Academy of Management Review, 10*(1), 76-88.

Greenhaus, J. H., & Kopleman, R. E. (1981). Conflict Between Work and Nonwork Roles: implications for the Career Planning Process. *Human Resource Planning, 4*, 1-10.

Grunfeld, A., Zitzelsberger, L., Coristine, M., Whelan, T.J., Aspelund, F. and Evans W.K. (2004) Job Stress and Job Satisfaction of Cancer Care Workers, Psycho-Oncology, 14: 61-69.

Hang-yue, Foley, S. and Loi, R. (2005) Work Role Stressors and Turnover Intentions: A Study of Professional Clergy in Hong Kong, International Journal of Human Resource Management, 16(11): 2133-2146.

Hasselhorn, H. M., Tackenberg, P., & Muller, B. H. (2003). *Investigating pre-mature departure from the nursing professions in Europe- the European NEXT-Study*. Stockholm, Sweden: Antional Institute for working Life.

Hobfoll, S. E. (1989). Conservation of Resources. A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.

Hobfoll, S. E., & Freedy, J. (1993). Conservation of resources: A general stress theory applied to burnout. In W. B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional burnout: recent developments in theory and research* (pp. 115-129). Washington DC: Taylor and Francis.

House, J. S. (1981). *Work Stress and Social Support*. University of Michigan: Addison-Wesley.

Jaccard, J., Turrisi, R., & Wan, C. K. 1990. *Interaction effects in multiple regression*. Newbury Park: Sage.

Jassen, P. P. M., Scahufeli, w. B., & Houkes, I. (1999). Work-related and individual determinants of the three burnout dimensions. *Work and Stress, 13*(1), 74-86.

Jenkins, R., & Elliott, P. (2004). Stressors, burnout and social support: nurses in acute mental health settings. *Nursing and health care management and policy, 48*(6), 622-631.

Kahill. (1988). Symptoms of professional burnout: A review of the emperical evidence. *Canadian Psychology, 29*, 284-297.

Kossek, E. E., & Ozeki, C. (1999). Bridging the work-family policy and productivity gap: a literature review. *Community, Work and Family, 2*(1), 7-32.

La Rocco, J. M., House, J. S., & French Jr., J. R. P. (1980). Social Support, Occupational Stress and Health. *Journal of Health and Social Behavior, 21*(3), 202-218.

La Rocco, J. M., & Jones, A. P. (1978). Co-Worker and Leader Support as Moderators of Stress-Strain Relationships in Work Situations. *Journal of Applied Psychology, 63*(5), 629-634.

Lee, R. T., & Ashforth, B. E. (1996). A meta-analytic examination of the correlates of the three dimensions of job burnout. *Journal of Applied Psychology, 81*(2), 123-133.

Lumley, C., Stanton, P. and Bartram, T. (2004) Casualisation Friend or Foe? A Case Study Investigation of two Australian Hospitals, New Zealand Employment relations Journal, 29(2),: 33-49.

Marks, S. R. (1977). Multiple Roles and Role strain: Some Notes on Human Energy, Time and Commitment. *American Sociological Review, 42*(0), 921-936.

Marks, S. R., & MacDermid, S. M. (1996). Multiple Roles and the self: A Theory of Role Balance. *Journal of Marriage and Family, 58*, 417-432.

Maslach, C. (1993). Burnout: a multidimensional perspective. In W. B. Schaufeli, C. Maslach & T. Marek (Eds.), *Professional Burnout: recent developments in theory and research*. Washington: DC: Taylor and Francis.

Melchior, M. E. W., Bours, G. J. J. W., Schmitz, P., & Wittich, Y. (1997). Burnout in psychiatric nursing: a meta-analysis of related variables. *Journal of Psychiatric and Mental Health Nursing, 4*, 193-201.

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to Organizations and Occupations: extension and test of a Three-Component Conceptualization. *Journal of Applied Psychology, 78*(4), 538-551.

Montgomery, A. J., Peeters, M. C. W., Schaufeli, W. B., & Den Oude, M. (2003). Work-home interference among newspaper managers: its relationship with burnout and engagement. *Anxiety, Stress and Coping, 16*, 195-211.

Muller, D., Judd, C., and Yzerbyt, V. (2005) When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89(6), 852–863.

Muhammad, A.H. and Hamdy, H.I. (2005) Burnout, Supervisory Support and Work Outcomes: A Study From an Arabic Cultural Perspective, 15(3 & 4): 230-242.

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.

Pines, A. and Maslach, C. (1981) Burnout, From Tedium to Personal Growth, New York: MacMillan.

Pinkerton, S. (2003), Recruitment and retention: mentoring new graduates, *Nursing Economics*, 21(4), 202-203.

Quick, J. C., & Quick, J. D. (1984). How good working relationships can help relieve pressures on the job. *Management Review, 73*, 43-45.

Repetti, R. L. (1987). Individual and Common Components of the Social Environment at Work and Psychological Well-Being. *Journal of Personality and Social Psychology, 52*(4), 710-720.

Peters, J. and Sandison, G. (1998) Quality Assuring Professional Practices: A Case Example from a Cancer Treatment Centre, *Managing Service Quality*, 8(4), 231-234.

Schaefer, J. A., & Moss, R. M. (1993). Work stressors in health care: contexts and outcomes. *Journal of Community and Applied Social Psychology, 3*, 235-242.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *Journal of Organisational Behavior, 25*, 293-315.

Schaufeli, W. B., & Enzmann, D. (1998). *The burnout companion to study and research: A critical analysis*. London: Taylor and Francis.

Schroeder, M. and Worrall-Carter, L. 2002, Perioperative managers: Role stress and strategies for coping, *Contemporary Nurse*, vol 13, no 2-3, pp 229-238.

Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review, 39*, 567-578.

Simon, M., Kummerling, A., & Hasselhorn, H. M. (2004). Work-Home Conflict in the European Nurisng Profession. *International Journal of Occupational and Environemental Health, 10*(4), 384-391.

Solomon, C. (1994) Work?Family's Failing Grade: Why Today's Initiative Aren't Enough, Personnel JOurnal, 73: 72-87

Sorensen, R., Lloyd, A.J., Van Kemenade, C. and Harnett, P.R. (2005) managing Quality in cancer Services: Why Improvement Isn't Easy, *Australian Health Review*, 29(4): 406-415.

Stordeur, S., D'hoore, W. and Vandenberghe, C. 2001, Hospital nursing staff, *Journal of Advanced Nursing*, vol 35, no 4, pp 533-542.

Sullivan, P. J. (1993). Occupational stress in psychiatric nursing. *Journal of Advanced Nursing, 18*, 591-601.

Tepper, B., Duffy, M., Henle, C., and Lambert, L. (2006). Procedural injustice, victim precipitation and abusive supervision. *Personnel Psychology*, 59, 101-123.

Van Dierendonck, D., Scahfeli, W.B. and Buunk, B.P. (2001) Towards a Process Model of Burnout: Results From a Secondary Analysis, European Journal of Work and Organizational Psychology, 10: 41-52.

Voydanoff, P. (2002). Linkages between the work-Family Interface and work, Family and Individual Outcomes. An Integrative Model. *Journal of Family Issues, 23*(1), 138-164.

Woodward, C.A., Shannon, H. and Cunningham, C. (1999) The Impact of Re-engineering and Other Cost Reduction Strategies on the Staff of a Large Teaching Hospital, *Medical Care*, 37(6): 556-569.