

JOB CHARACTERISTICS AND COPING STRATEGIES ASSOCIATED WITH NEGATIVE AND POSITIVE WORK–HOME INTERFERENCE IN A NURSING ENVIRONMENT

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Abstract

The aim of this study is to determine which job characteristics and coping strategies predict negative and positive work-home interference (WHI) in the nursing environment. Random samples ($n = 300$) were taken of registered nurses in the Johannesburg, Klerksdorp, Krugersdorp, Potchefstroom and Pretoria regions. A self-constructed questionnaire was used to measure job characteristics. The Coping Strategy Indicator (CSI) was used to measure coping strategies, and the Survey Work-Home Interaction-Nijmegen (SWING) to measure WHI. The results show that time demands, pressure, role clarity and colleague support are the main job characteristics that predict negative WHI. Problem-solving coping predicts less negative WHI and avoidance coping predicts more negative WHI. Time demands, autonomy and role clarity are the main variables that predict positive WHI. Problem-solving coping is the only coping strategy that predicts positive WHI.

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1 Introduction

Since South Africa's first democratic election in April 1994, and especially in the last decade, vast changes have occurred in the composition of the South African work force, as well as in the nature of work itself in the country. These changes include an increase in working women, dual-career couples, single parents and fathers who are actively involved in parenting (Schreuder & Theron, 2001). There has been a simultaneous intensification of work. More women and men are working longer hours and report greater demands at their workplaces. Technological and telecommunications advances (portable computers, mobile phones etc.) have also made possible working longer hours and performing job tasks in a variety of locations (Lewis & Cooper, 2005). These demographic and structural changes in the workforce and family have not only affected interrelations between work and family roles (e.g. Sulsky & Smith, 2005), but also have had a significant impact on

individual behaviour in an organisational setting, and ultimately on organisational functioning itself (Allen, Herst, Bruck & Sutton, 2000; Houston, 2005; Lewis & Cooper, 2005).

The most widely cited definition of work-family conflict states that it is "a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible in some respects. That is, participation in the work (family) role is made more difficult by virtue of participation in the family (work) role" (Greenhaus & Beutell, 1985). It is important to study work-home interference in any field, but particularly in nursing. Nurses have a very stressful work environment, characterised by heavy workloads, long hours, low professional status, difficult relations in the workplace, difficulty in carrying out professional roles and a variety of workplace hazards (Baumann, O'Brien-Pallas *et al.*, 2001). In South Africa, nurses experience many additional stressors. Owing to rapid changes in the political, socio-economic and technological spheres of South African life in recent years, nursing has

increasingly come under pressure to improve quality of services (Gmeiner & Poggenpoel, 1996). Since 1996, publicity in the media has been increasingly negative with regard to both health care provision in state hospitals and the conditions under which nurses are working. According to Hall (2004), the nursing profession is commonly held to have one of the four most stressful work environments in the health care sector in South Africa. Nurses also tend to perceive their work environment as physically and interpersonally violent.

All these factors combine to create stressful work conditions for nurses that can interfere with their family life. A number of recent reports and research studies identify an urgent need to improve the working conditions of nurses in various countries (Wunderlich, Sloan & Davis, 1996; Nursing Task Force, 1999; Aiken, Clarke *et al.*, 2001; Baumann *et al.*, 2001; Health Canada, 2001; Advisory Committee on Healthy Human Resources, 2002; Page, 2003), but work-home interference is not often explored in the extant nursing literature (Hall & Callery, 2003).

A major limitation in the study of work-home interference, is that research almost exclusively focuses on the negative interference between the work and home domains. However, various researchers acknowledge that the work-home interface is a broad concept that also encompasses a positive side (Grzywacz & Marks, 2000; Frone, 2003; Geurts & Demerouti, 2003). For example, fulfilling multiple roles in the work and home domains may produce resources (e.g. energy mobilisation, skill acquisition, greater self-esteem) that can facilitate functioning in both life spheres in a positive way (Grzywacz & Marks, 2000). It therefore seems important to focus on both negative and positive work-home interference.

Possible antecedents of work-home interference have been much studied, and are generally classified into job-related factors, family-related factors, personality characteristics and attitudes (see Geurts & Demerouti, 2003 for a review). A large number of studies indicate that job characteristics particularly have a major impact on work-home interference (Grandey & Cropanzano, 1999; Montgomery, Peeters, Schaufeli & Den Ouden, 2003; Bakker & Geurts,

2004; Geurts, Taris, *et al.*, 2005). However, studies that investigate the influence of job characteristics on negative and positive work-home interference in a nursing environment are limited.

Various research findings contend that the ways in which people cope with stressful situations and daily living affect their psychological, physical and social wellbeing (Greenglass, 1996; Ben-Zur, 1999; Bhagat, Ford *et al.*, 2001). However, there is a lack of research in the field of Occupational Health Psychology, and empirical investigations of the role of coping strategies associated with work-home interference (Geurts & Demerouti, 2003). Investigation into which coping strategies might be effective in dealing with work-home interference is therefore needed.

In light of these deficiencies, the aim of this study is to investigate which job characteristics and coping strategies predict negative and positive work-home interference in the nursing environment (see Figure 1).

1.1 Work-home interference, job characteristics and coping

Although it seems that work and home often influence each other negatively, various scholars agree that the almost exclusive focus on the negative impact of work and home is a serious limitation in the extant work-home interaction (WHI) literature (Barnett, 1998; Grzywacz & Marks, 2000; Frone, 2003; Geurts & Demerouti, 2003). Recently, several researchers have argued that positive interference between work and family lives also exists and that employees may benefit from combining these two domains (e.g. Kirchmeyer, 1993; Hochchild, 1997). Empirical findings also seem to support this contention. For example, full-time workers experience better health than their reduced-hours counterparts (Wethington & Kessler, 1989; Moen, Dempster-McClain & Williams, 1992; Barnett, 1998). Crosby (1982) and Bersoff and Crosby (1984) also find that married employed women with children are *more* satisfied with their jobs than either single employed women or married employed women without children. Taking both negative and positive interference into account, Geurts *et al.* (2005) define the work-home

interface as an interactive process in which a worker's functioning in one domain (e.g. home)

is influenced by (negative or positive) load reactions that have built up in the other domain (e.g. work).

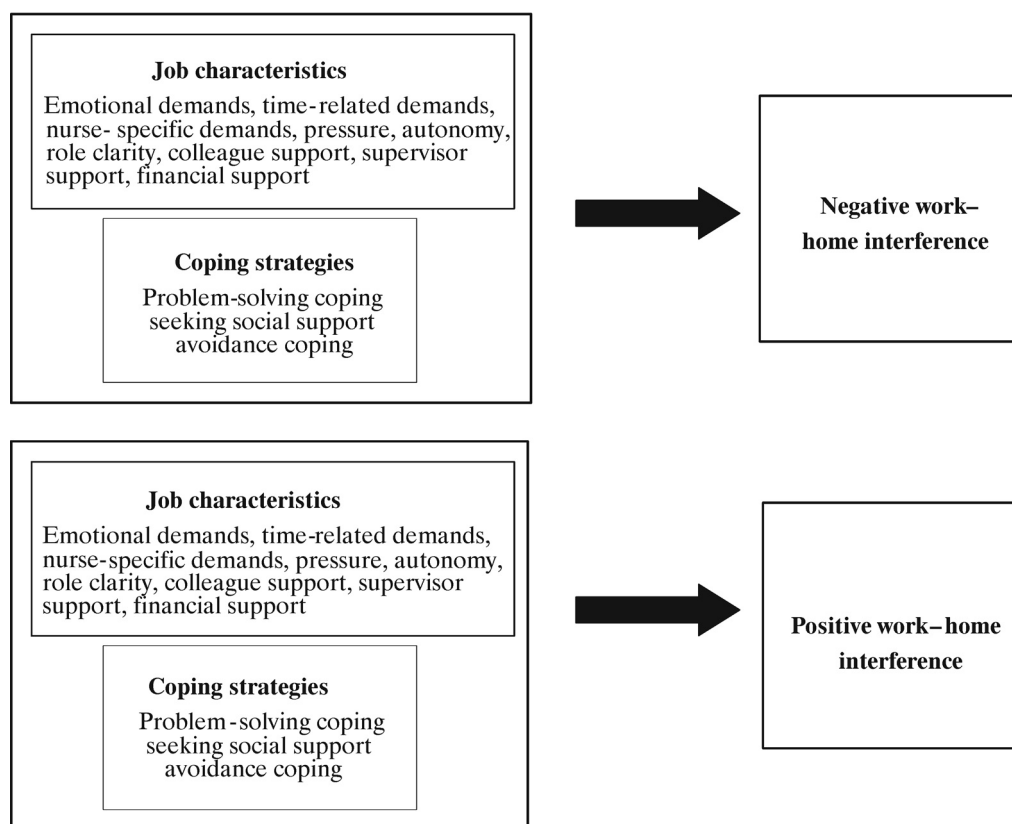


Figure 1

The relationship between job characteristics, coping strategies and work-home interference

Various research findings indicate that job characteristics are associated with work-home interference. Increased hours of work, including overtime, tend to be associated with higher levels of negative work-home interference (e.g. Burke, Weir & Duwors, 1980; Pleck, Staines & Lang, 1980; Judge, Boudreau & Bretz, 1994). Geurts, Rutte and Peeters (1999) also find that having a partner who works overtime is frequently associated with negative work-home interference. On the other hand, motivational characteristics such as higher levels of job control and work social support are associated with less conflict between both domains (Kinnunen & Mauno, 1998; Grzywacz & Marks, 2000; Geurts & Demerouti, 2003). Research by Grzywacz and Marks (2000) suggests a

relationship between job control, job support and work-home interference, but shows that job control is more strongly related to positive than to negative spill-over between work and family. In a similar vein, Demerouti, Geurts and Kompier (2004) find that job control and particularly job support are associated with positive work-home interference.

Coping is a central theme in stress research and numerous studies focus on the individual's coping responses to various stressors, including stressors in the workplace. Using certain coping strategies to deal with stressful job characteristics that could have an impact on the home domain could be important. A wide variety of coping strategies exist, and the most familiar and widespread coping taxonomy was

proposed by Lazarus and Folkman (1984). These authors define coping as a person's constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding that person's resources. According to Lazarus and Folkman (1984), problem-focused coping strategies aim to deal actively with the problem. In contrast, emotion-focused coping tries to deal with the emotional distress evoked by the problem. Endler and Parker (1990) suggest that a third basic strategy for coping with stress is avoidance. Avoidance can include either person-oriented or task-oriented strategies. Avoidance differs from problem- and emotion-focused coping in that avoiding a situation actually removes the person from the stressful situation, whereas problem- and emotion-focused coping might help the person manage the stressful situation while he or she remains in it (Kowalski & Crocker, 2001).

Relatively few studies empirically investigate the role of coping strategies associated with work-home interference (Geurts & Demerouti, 2003). Beutell and Greenhaus (1983) study the effectiveness of three types of coping strategies for dealing with work-home conflict among 115 married women (with at least one child) attending college. Their findings indicate that active attempts to change the structural and/or personal definition of a woman's roles are more effective in dealing with work-home conflict than more passive and reactive role behaviour. Kirchmeyer (1993) supports these findings, but shows that the type of coping strategy is important, rather than an active coping strategy only. Strategies that aim to change one's own attitude about what demands can realistically be met in both domains seem to be more effective in coping with high demands from both domains than strategies that aim to change the attitudes or behaviours of others. More recently, Rotondo, Carlson and Kincaid (2003) investigate the efficacy of different coping styles (direct action, help-seeking, positive thinking and avoidance/resignation) to deal with work-family conflict. They find that avoidance/resignation coping is associated with higher levels of work-family conflict, but do not find any relationship between problem-focused,

behavioural coping or positive thinking and work-family conflict.

Brink and De la Rey (2001) identify the coping strategies used by South African businesswomen to deal with work-family conflict. Their findings show that the women use both emotional and problem-focused coping strategies to deal with work-family conflict, including positive reappraisal, planned problem solving, exercising self-control and seeking social support. They also find that women who use cognitive appraisal (control) as a coping strategy are less likely to choose escape-avoidance as a coping strategy to deal with the situation. Recently, Stewart and Donald (2006) report that spouses whose partners are absent due to frequent business travel use both problem- and emotion-focused coping strategies to cope with their partners' absence, specifically work flexibility and social support.

2 Method

2.1 Research design

This study uses a survey design to achieve the research objective. The specific design is cross-sectional, which means that the sample is drawn from the population at the same time (Shaughnessy & Zechmeister, 1997).

2.2 Participants and procedure

Random samples ($n=300$) were taken from employees working in hospitals in the Johannesburg, Klerksdorp, Krugersdorp, Potchefstroom and Pretoria regions. After permission was obtained from the specific hospitals, focus groups were held with registered nurses in the selected hospitals to gather information about their work environment. The information from the focus groups was analysed and used to develop a questionnaire, which was distributed among selected nurses in the hospitals. A letter was included with the questionnaire, explaining the goal and importance of the study. The participants were assured that anonymity and confidentiality would be maintained, and given two to three

weeks to complete the questionnaires. The questionnaires were personally collected from the participating hospitals. The majority of participants were female (97.70 per cent), white (83 per cent), and 82.30 per cent had an educational level higher than grade 12. 82.30 per cent of the participants were registered nurses. 36.30 per cent were between the ages of 36 and 45 years. The majority of participants (94.0 per cent) worked full-time, and 41 per cent received monetary compensation for working over-time.

2.3 Measuring instruments

The empirical study used the following measuring instruments:

Job characteristics: Focus groups were held in several hospitals to determine the specific stressful job characteristics that nurses experience in their work. The main characteristics mentioned in the focus groups were then used to develop items for the questionnaire. Analysis of the responses yielded the following characteristics to be measured:

- emotional demands (e.g. "Do you have to communicate with patients about death?");
- time-related demands (e.g. "Do you have to work overtime?");
- nurse-specific demands (e.g. "Do you have to deal with difficult patients?");
- pressure (e.g. "Do you have to work very fast?");
- autonomy (e.g. "Can you take a short break if you feel this is necessary?");
- role clarity (e.g. "Do you receive incompatible requests from two or more people?");
- colleague support (e.g. "Do your colleagues help you to get the job done?");
- supervisor support (e.g. "Can you count on your supervisor when you come across difficulties in your work?"); and
- financial support (e.g. "Can you live comfortably on your pay?").

All items were rated on a 4-point scale ranging from 1 (*never*) to 4 (*always*).

Coping: The Coping Strategy Indicator (CSI) (Amirkhan, 1990) was used to measure participants' coping strategies. The CSI is a multi-dimensional 33-item coping questionnaire that indicates the various ways in which people cope in different circumstances (Amirkhan, 1990). The CSI is scored on a 3-point rating scale, varying from 1 (*a lot*) to 3 (*not at all*) and measures three coping strategies, namely problem-solving coping (e.g. "weigh your options very carefully"), seeking social support (e.g. "let your feelings out to a friend") and avoidance coping (e.g. "try to distract yourself from the problem"). The CSI was developed through factor analysis over three successive stages of community-based surveys, in which a combined sample of 1 831 diverse individuals described their dealings with an equal heterogeneous assortment of stressors (Amirkhan, 1990). In this process the three coping strategies were found to be internally consistent, with alpha values of 0.89 (problem-solving coping), 0.93 (seeking social support) and 0.84 (avoidance coping) (Amirkhan, 1990).

Negative WHI and positive WHI: The Survey Work-Home Interaction-Nijmegen (SWING) (Wagena & Geurts, 2000; Geurts *et al.*, 2005) was used to measure negative WHI and positive WHI in this study. The SWING is a 27-item WHI measure developed by researchers in the Netherlands (Wagena & Geurts, 2000; Geurts, *et al.*, 2005). Many items are congruent to the scales used by Netemeyer, Boles and McMurrian (1996) and Kopelman, Greenhaus and Connolly (1983). Nine items were used to measure negative WHI (e.g. "You do not fully enjoy the company of your spouse/family/friends because you worry about your work") and five items to measure positive WHI (e.g. "You come home cheerfully after a successful day at work, positively affecting the atmosphere at home"). All items were scored on a 4-point frequency rating scale ranging from 0 (*never*) to 4 (*always*). The factors are internally consistent, with alpha values of 0.84 (negative WHI) and 0.75 (positive WHI) reported by Geurts *et al.* (2005). In a South African study analysing the psychometric properties of the SWING, Pieterse and Mostert (2005) obtained sufficient Cronbach alpha

coefficients for the two scales (negative WHI: 0.87 and positive WHI: 0.79).

2.4 Statistical analysis

The statistical analysis was carried out with the SPSS-programme (SPSS, 2003). Exploratory factor analyses and Cronbach alpha coefficients were used to assess the validity and reliability of the constructs measured in this study. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) and inferential statistics were used to analyse the data.

Exploratory factor analyses were carried out to determine the construct validity of the measuring instruments. The following procedure was followed: Firstly, a simple principal components analysis was conducted on the constructs, including a) job characteristics; b) coping; and c) work-home interference. The eigen values and scree plot were studied to determine the number of factors that should be extracted. Secondly, a principal components analysis with a direct oblimin rotation was conducted if factors were related ($r > 0.30$). Thirdly, a principal component analysis with a varimax rotation was used if the obtained factors were not related (Tabachnick & Fidell, 2001).

Pearson's product-moment correlation coefficients were used to specify the relationships between the variables. In cases where the distribution of scores was skew, Spearman correlation coefficients were computed. The level of statistical significance was set at $p < 0.05$. Steyn (2002) criticises the sole use of statistical significance testing and recommends that effect sizes be established to determine the importance of a statistically significant relationship. While the reporting of effect sizes is encouraged by the American Psychological Association (APA) in their Publication Manual, most of these measures are seldom found in published reports (Kirk, 1996; Steyn, 2002). Therefore, effect sizes (Cohen, 1988; Steyn, 2002) were used in addition to statistical significance to determine the practical significance of relationships. Effect sizes indicate whether obtained results are important, while statistical significance may often show results which are of little practical relevance (Steyn, 2002). A cut-off point of 0.30 (medium

effect) (Cohen, 1988) was set for the practical significance of correlation coefficients.

Multiple regression analyses were carried out to determine the percentage variance in the dependent variable (e.g. negative and positive WHI) predicted by the independent variables (e.g. job characteristics and coping strategies).

3 Results

3.1 Construct validity of the measuring instruments

Job characteristics: A simple principal component analysis was conducted on the items of the job characteristics inventory. The scree plot and eigen values provided evidence for a nine-factor solution, which explained 50.28 per cent of the total variance. Because the factors were related, it was decided to use principal factor analysis with an oblimin rotation to extract the factors. The nine factors were labelled as follows:

- emotional demands (e.g. "Are you confronted in your work with things that affect you emotionally?");
- pressure (e.g. "Do you have to work very hard?");
- time-related demands (e.g. "Do you have to work overtime?");
- nurse-specific demands (e.g. "Do you experience insults from your patients or their families?");
- autonomy (e.g. "Can you take a short break if you feel it is necessary?");
- role clarity (e.g. "Do you receive assignments without adequate resources and materials to execute them?");
- colleague support (e.g. "Do your colleagues help you to get the job done?");
- supervisory support (e.g. "Does your supervisor help you to get the job done?"); and
- financial support (e.g. "Do you feel that your organisation pays good salaries?").

Coping: Exploratory factor analysis was carried out and the scree plot and eigen values showed

three factors, which explained 41.31 per cent of the total variance. A principal component analysis with a varimax rotation was used, because the obtained factors were not correlated. The factors were labelled as problem-solving coping (e.g. “Weigh your options very carefully”), seeking social support (e.g. “Let your feelings out to a friend”) and avoidance coping (e.g. “Try to distract yourself from the problem”).

Work-home interference: To determine whether two factors represent work-home interference, exploratory factor analysis was carried out. The scree plot and eigen values showed evidence for

a two-factor solution that explained 48.24 per cent of the total variance. A principal component analysis with a varimax rotation was used, because the obtained factors were not related ($r = -0.06$). The factors were labelled as negative WHI (e.g. “You do not fully enjoy the company of your spouse/family/friends because you worry about your work”) and positive WHI (e.g. “You come home cheerfully after a successful day at work, positively affecting the atmosphere at home”).

Table 1 shows the descriptive statistics and the Cronbach alpha coefficients of the measuring instruments.

Table 1
Descriptive statistics and alpha coefficients of the measuring instruments (n=300)

Item	Mean	SD	Skewness	Kurtosis	α
Job characteristics					
Emotional demands	21.67	4.89	0.22	-0.23	0.85
Time demands	11.63	3.44	0.33	-0.27	0.76
Nurse-specific demands	12.82	2.90	0.70	1.12*	0.79
Pressure	20.01	3.77	-0.05	-0.24	0.82
Autonomy	21.02	4.69	0.15	-0.50	0.82
Role clarity	15.02	3.96	0.53	-0.11	0.81
Colleague support	8.09	2.42	0.26	0.14	0.71
Supervisor support	8.11	3.38	1.04*	1.18*	0.88
Financial support	15.07	3.77	-0.57	-0.18	0.88
Coping strategies					
Problem-solving coping	16.12	3.99	0.69	0.24	0.86
Seeking social support	20.11	5.02	0.04	-0.45	0.90
Avoidance coping	23.93	4.10	-0.12	-0.24	0.75
WHI					
Negative WHI	11.79	5.05	0.34	-0.31	0.87
Positive WHI	6.58	2.91	0.09	-0.05	0.72

* High skewness and kurtosis

Inspection of Table 1 shows that acceptable Cronbach alpha coefficients were obtained for all the scales. The Cronbach alpha coefficients of all the measuring instruments are acceptable compared to the guideline of $\alpha > 0.70$ (Nunnally & Bernstein, 1994). All the scores were normally

distributed, except for nurse-specific demands and the supervisor support scale, which was a little skew. The product-moment correlation coefficients between the constructs are shown in Table 2.

Table 2
Correlation coefficients between job characteristics, coping strategies, coping strategies, negative WHI and positive WHI (n=300)

Item	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Emotional demands	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Time demands	0.25+	-	-	-	-	-	-	-	-	-	-	-	-
3. Nurse-specific demands	0.44+*	0.30+*											
4. Pressure	0.37+*	0.32+*	0.37+*	-	-	-	-	-	-	-	-	-	-
5. Autonomy	0.04	-0.09	-0.10	-0.03	-	-	-	-	-	-	-	-	-
6. Role clarity	-0.17+	0.21+	-0.29+	-0.25+	+0.21+	-	-	-	-	-	-	-	-
7. Colleague support	-0.12+	-0.18+	-0.31+*	-0.15+	+0.11+	0.31+*	-	-	-	-	-	-	-
8. Supervisor support	-0.04	-0.15+	-0.10	-0.11	+0.09	0.24+	0.54+**	-	-	-	-	-	-
9. Financial support	-0.10	-0.25+	-0.31+*	-0.29+	+0.14+	0.11	0.27+	0.22+	-	-	-	-	-
10. Problem-solving coping	-0.06	-0.07	-0.02	-0.00	0.22+	0.13+	0.05	0.00	0.02	-	-	-	-
11. Seeking social support	-0.01	-0.08	-0.09	-0.02	0.09	0.11	0.10	0.10	0.04	0.37+*	-	-	-
12. Avoidance coping	0.04	0.06	0.10	0.05	-0.10	-0.22+	-0.03	-0.02	-0.09	-0.11	-0.00	-	-
13. Negative WHI	0.24+	0.42+*	0.35+*	0.43+*	-0.09	-0.40+*	-0.32+*	-0.20+	-0.29+	-0.15+	-0.01	0.22+	-
14. Positive WHI	0.02	-0.13+	-0.08	0.03	0.29+	0.02	0.10	0.06	0.01	0.24+*	0.20+	-0.02	-0.06

+ Correlation is statistically significant $p < 0.05$

* Correlation is practically significant $r > 0.30$ (medium effect)

** Correlation is practically significant $r > 0.50$ (large effect)

Regarding the relationship between job characteristics and coping, Table 2 indicates that autonomy is positively and statistically significantly related to problem-solving coping while role clarity is positively and statistically significantly related to problem-solving coping and negatively and statistically significantly related to avoidance coping. Job characteristics, coping and negative WHI also appear to be related. More specifically, negative WHI has statistically significant relationships with emotional demands and avoidance coping (positive relationships) and supervisor support, financial support and problem-solving coping (negative relationships). Negative WHI is also practically significantly (medium effect) related

to time demands, nurse-specific demands and pressure (positive relationships) and role clarity and colleague support (negative relationships). Positive WHI is statistically significantly related to autonomy, problem-solving coping, seeking social support (positive relationships) and time demands (negative relationship).

Next, two standard multiple regression analyses, using the enter method, were performed. The first assessed the contribution that job characteristics (step 1) and coping strategies (step 2) have upon negative WHI; the second assessed the contribution that job characteristics (step 1) and coping strategies (step 2) have upon positive WHI. The results are shown in Table 3 and Table 4.

Table 3
Multiple regression analyses with negative WHI as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	t	p	F	R	R ²	ΔR^2
		B	SE	Beta (β)						
1	(Constant)	-8.59	2.12		-4.05	0.00*	19.34	0.61	0.38	0.38
	Emotional demands	0.01	0.06	0.01	0.20	0.84				
	Time demands	0.34	0.08	0.23	4.55	0.00*				
	Nurse-specific demands	0.11	0.10	0.06	1.11	0.27				
	Pressure	0.31	0.07	0.23	4.29	0.00*				
	Autonomy	-0.02	0.05	-0.02	-0.31	0.76				
	Role clarity	-0.28	0.07	-0.22	-4.23	0.00*				
	Colleague support	-0.23	0.12	-0.11	-2.00	0.05*				
	Supervisor support	-0.04	0.08	-0.03	-0.54	0.59				
	Financial support	-0.12	0.07	-0.09	-1.65	0.10				
2	(Constant)	-5.87	2.90		-2.02	0.04*	16.55	0.64	0.41	0.03
	Emotional demands	-0.00	0.05	-0.00	-0.04	0.97				
	Time demands	0.34	0.07	0.23	4.62	0.00*				
	Nurse-specific demands	0.13	0.10	0.07	1.27	0.21				
	Pressure	0.31	0.07	0.23	4.42	0.00*				
	Autonomy	-0.05	0.05	-0.04	-0.90	0.37				
	Role clarity	-0.24	0.07	-0.19	-3.57	0.00*				

Colleague support	-0.24	0.11	-0.12	-2.13	0.03*				
Supervisor support	-0.07	0.08	-0.05	-0.91	0.36				
Financial support	-0.11	0.07	-0.08	-1.60	0.11				
Problem-solving coping	-0.17	0.06	-0.13	-2.60	0.01*				
Seeking social support	-0.09	0.05	-0.09	-1.85	0.07				
Avoidance coping	0.16	0.06	0.13	2.68	0.01*				

* Statistically significant $p \leq 0.05$

As can be seen in Table 3, entry of job characteristics at the first step of the regression analysis produced a statistically significant model ($F_{(9,290)} = 19.34; p = 0.00$), accounting for approximately 38 per cent of the variance. More specifically, it seems that time demands ($\beta = 0.23; t = 4.55; p = 0.00$), pressure ($\beta = 0.23; t = 4.29; p = 0.00$), role clarity ($\beta = -0.22; t = -4.23; p = 0.00$) and colleague support ($\beta = -0.11; t = -2.00; p \leq 0.05$) predict negative WHI. In the second step of the regression analysis, coping strategies were entered. The coping strategies added at this

step contributed statistically significantly to the model ($F_{(12,287)} = 16.55; p = 0.00, \Delta R^2 = 0.03$), which explained 41 per cent of the total variance. Taken together, it seems that significant predictors of negative WHI are time demands ($\beta = 0.23; t = 4.55; p = 0.00$), pressure ($\beta = 0.23; t = 4.29; p = 0.00$), role clarity ($\beta = -0.22; t = -4.23; p = 0.00$), colleague support ($\beta = -0.11; t = -2.00; p \leq 0.05$), problem-solving coping ($\beta = -0.13; t = -2.60; p \leq 0.01$) and avoidance coping ($\beta = 0.13; t = 2.68; p \leq 0.01$).

Next, positive WHI was regressed upon the job characteristics and coping strategies. The results are shown in Table 4.

Table 4
Multiple regression analyses with positive WHI as dependent variable

Model		Unstandardised coefficients		Standardised coefficients	t	p	F	R	R ²	ΔR^2
		B	SE	Beta						
1	(Constant)	2.35	1.45		1.62	0.11	4.54	0.35	0.12	0.12
	Emotional demands	-0.02	0.04	-0.04	-0.62	0.54				
	Time demands	-0.12	0.05	-0.14	-2.31	0.02*				
	Nurse-specific demands	-0.08	0.07	-0.08	-1.15	0.25				
	Pressure	-0.04	0.05	-0.05	-0.76	0.45				
	Autonomy	0.18	0.04	0.30	5.19	0.00*				
	Role clarity	0.10	0.05	0.14	2.25	0.03*				
	Colleague support	0.09	0.08	0.08	1.19	0.24				

	Supervisor support	0.03	0.05	0.04	0.62	0.54				
	Financial support	0.07	0.05	0.09	1.37	0.17				
2	(Constant)	6.32	1.99		3.19	0.00*	4.86	0.41	0.17	0.05
	Emotional demands	-0.03	0.04	-0.05	-0.72	0.47				
	Time demands	-0.11	0.05	-0.13	-2.11	0.04*				
	Nurse-specific demands	-0.08	0.07	-0.08	-1.16	0.25				
	Pressure	-0.03	0.05	-0.04	-0.58	0.57				
	Autonomy	0.16	0.04	0.26	4.53	0.00*				
	Role clarity	0.11	0.05	0.15	2.45	0.02*				
	Colleague support	0.08	0.08	0.07	1.08	0.28				
	Supervisor support	0.03	0.05	0.03	0.56	0.58				
	Financial support	0.06	0.05	0.07	1.19	0.23				
	Problem-solving coping	0.11	0.04	0.16	2.58	0.01*				
	Seeking social support	0.06	0.03	0.11	1.82	0.07				
	Avoidance coping	-0.02	0.04	-0.03	-0.58	0.56				

*Statistically significant $p \leq 0.05$

Table 4 summarises the regression analyses with job characteristics and coping strategies as predictors of positive WHI. Entry of job characteristics at the first step of the regression analysis produced a statistically significant model ($F_{(9,290)} = 4.54; p = 0.00$), accounting for approximately 12 per cent of the variance. More specifically, it seems that time demands ($\beta = -0.14; t = -2.31; p \leq 0.05$), autonomy ($\beta = 0.30; t = 5.19; p = 0.00$) and role clarity ($\beta = 0.14; t = 2.25; p \leq 0.05$) predict positive WHI. When coping strategies were entered in the second step of the regression analysis, a statistically significant model was produced ($F_{(3,287)} = 4.86; p = 0.00, \Delta R^2 = 0.05$), which explained 17 per cent of the total variance. Taken together, it seems that significant predictors of positive

WHI are time demands ($\beta = -0.14; t = -2.31; p \leq 0.05$), autonomy ($\beta = 0.30; t = 5.19; p = 0.00$), role clarity ($\beta = 0.14; t = 2.25; p \leq 0.05$) and problem-solving coping ($\beta = 0.16; t = 2.58; p \leq 0.01$).

4

Discussion

The aim of this study was to determine which job characteristics and coping strategies predict negative and positive WHI in the nursing environment.

The results show that time demands, pressure, role clarity and colleague support are the main job characteristics that predict negative WHI. Problem-solving coping predicts less negative

WHI and avoidance coping predicts more negative WHI. Time demands, autonomy and role clarity are the main variables that predict positive WHI. Problem-solving coping is the only coping strategy that predicts positive WHI.

The results of the multiple regression analyses, where negative WHI was regressed upon job characteristics and coping strategies, show that time demands and pressure positively predict negative WHI, while role clarity and colleague support negatively predict negative WHI. Regarding coping strategies, problem-solving coping predicts lower levels of negative WHI, while avoidance coping seems to predict higher levels of negative WHI.

Based on these results, it seems that nurses who experience high time demands (e.g. working overtime, emergency hours, irregular hours) and too much pressure (e.g. working very hard without enough time to do their job, long periods of intense concentration on the task, having too much work to do, having work left to do when they leave the job) have difficulties in combining their work and home lives and experience negative interference of work at home.

However, two resources seem to prevent the negative spill-over from work to home. When the job is designed in such a way that nurses experience clarity about their job roles (e.g. they have no role conflict such as receiving incompatible requests from different people, having to do things that are accepted by some people and not by others, and no role ambiguity such as confusion about responsibilities and expectations of supervisors) and receive sufficient support from their colleagues, less negative spill-over from work to home will occur. On the other hand, a lack of these two resources can enhance or increase negative WHI. This supports previous findings (e.g. Burke *et al.*, 1980; Pleck *et al.*, 1980; Judge *et al.*, 1994). The relationship between time demands and social support seems to support the findings of Geurts *et al.* (1999) and Grzywacz and Marks (2000), who also associate overtime quite strongly with negative WHI. However, the results of this current study does not support the relationship between autonomy (job control) and less negative WHI, as found by Geurts *et al.* (1999) and Grzywacz and Marks (2000).

It also seems that two coping strategies influence negative WHI. When nurses use a problem-focused coping strategy (e.g. brainstorming all possible solutions before deciding what to do, setting some goals to deal with the situation), this seems to buffer the negative effect of stressful job characteristics on the home domain. However, using an avoidance-coping strategy makes things worse. Using distracting activities, such as daydreaming, watching more television than usual, spending more time alone and avoiding being with other people as well as engaging more in other activities (e.g. sport) to avoid confronting the problem, are found to be an ineffective strategy to deal with demanding aspects of the job, and unhelpful in avoiding negative spill-over to the home. In contrast to the findings of Stewart and Donald (2006), seeking social support does not play a major role in dealing with negative work-home interference.

Based on the results of the multiple regression analyses, where positive WHI was regressed upon job characteristics and coping strategies, significant predictors of positive WHI seem to be time demands, autonomy, role clarity and problem-solving coping. Again, when nurses experience too many time demands such as overtime, working socially undesirable hours and having to spend more time at work than contracted for, this prevents positive spill-over to the home domain. However, experiencing role clarity (e.g. less role conflict and ambiguity) and having autonomy in the job (e.g. deciding how to carry out the job, how much time to spend on a certain task, freedom in the way that activities are carried out) in the job, increases positive spill-over from the work to the home domain. A problem-solving coping style will also help to deal with time demands and enhance the positive effect of autonomy and role clarity. These results support the findings of Beutell and Greenhaus (1983) and Kirchmeyer (1993) who find that active attempts to change the structural and/or personal definition of one's roles are more effective in dealing with work-home conflict than more passive and reactive role behaviour.

The present study also has some limitations that should be considered. A cross-sectional

design was used, which is limited because of common methods variance and causality, for example. Prospective longitudinal studies and quasi-experimental research designs are needed to further validate the hypothesised relationships between job characteristics, coping and work-home interference, and so correct the limitations caused by using a cross-sectional design. The study also focuses on a limited number of variables and does not take into account some variables that have been found to be related to WHI (psychological involvement, personality variables and demographic characteristics). Future research is needed to examine a model with different sets of variables. The sample is also very homogeneous, since 83 per cent of the respondents were white, Afrikaans-speaking women. Therefore, the results cannot easily be generalised to other occupational and demographic groups.

5 Recommendations

The nursing profession plays a vital role in the country's health sector, and should therefore be acutely aware of the causes of negative WHI in order to minimise its effects in the profession. Programmes should be established to teach newcomers and current nurses the symptoms of negative WHI. Interventions should also be introduced to teach nurses how to reverse the effects of negative WHI and how to avoid negative WHI symptoms.

Furthermore, in order to promote positive spill-over from work to home and prevent negative interference between these two domains, companies should provide work-family facilities that enable employees to better align both life spheres. However, they need to focus not only on formal policies (for instance by offering flexible working hours, compressed work schedules, childcare facilities, parental leave), but also on the informal work environment (Geurts & Demerouti, 2003). Therefore the attitude of supervisors and colleagues towards the use of these formal arrangements should also be "family-friendly".

The various job characteristics found to be associated with negative and positive WHI in

the nursing environment, such as time demands, pressure, autonomy, role clarity and colleague support, should receive attention, to help prevent negative WHI and enhance positive WHI. Job demands should also be reconsidered, and the resources available to the nurses improved in order to minimise negative WHI and maximise positive WHI experienced by nurses. Furthermore, nurses' coping strategies should also be focused on. Assessment of coping strategies might be effectively incorporated into personnel selection procedures and individual stress coping training might be beneficial. However, a more desirable strategy is to make the organisation inherently less stressful. Since job demands and job resources play a central role in WHI and explain the largest degree of variance in negative and positive WHI in this study, it is necessary to implement organisation-based preventive strategies to tackle high job demands and provide necessary job resources.

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