

JOB CHARACTERISTICS, COPING AND WORK-HOME INTERACTION IN A NURSING ENVIRONMENT

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Hiermee getuig ek, me. Cecilia van der Walt, dat ek die taalversorging van die skripsie van mnr. Bernard Oosthuizen, getitel “JOB CHARACTERISTICS, COPING AND WORK-HOME INTERACTION IN A NURSING ENVIRONMENT” behartig het.

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- The mini-dissertation is submitted in the form of a research article. The editorial style specified by the South African Journal of Industrial Psychology (which largely agrees with the APA style) is used, but the APA guidelines were followed in constructing tables.

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TABLE OF CONTENTS

List of Tables	vii
Abstract	viii
Opsomming	x
 CHAPTER 1: INTRODUCTION	
1.1 Problem statement	1
1.2 Research objectives	9
1.2.1 General objectives	9
1.2.2 Specific objectives	9
1.3 Research method	10
1.3.1 Research design	10
1.3.2 Participants and procedure	10
1.3.3 Measuring instruments	11
1.3.4 Statistical analysis	12
1.4 Overview of chapters	13
1.5 Chapter summary	13
References	14
 CHAPTER 2: RESEARCH ARTICLE	20
 CHAPTER 3: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS	
3.1 Conclusions	51

TABLE OF CONTENTS CONTINUE

3.2	Limitations	56
3.3	Recommendations	57
3.3.1	Recommendations for the organisation	57
3.3.2	Recommendations for future research	59
	References	60

LIST OF TABLES

Table	Description	Page
	Research Article 1	
Table 1	Characteristics of the Participants	30
Table 2	Descriptive Statistics and Alpha Coefficients of the Measuring Instruments ($n = 300$)	34
Table 3	Correlation Coefficients between Job Characteristics, Coping Strategies, Negative WHI and Positive WHI ($n = 300$)	36
Table 4	Multiple Regression Analyses with Negative WHI as Dependent Variable	38
Table 5	Multiple Regression Analyses with Positive WHI as Dependent Variable	40

ABSTRACT

TITLE: Job Characteristics, coping and work-home interaction in a nursing environment.

KEY WORDS: Job characteristics, job demands, job resources, coping, negative work-home interaction, positive work-home interaction, nurses.

Nurses make up the largest group of health workers in South Africa and are likely to play an important role in the transformation of the health sector. Health caregivers, especially those dealing with people suffering from serious illnesses and those exposed to multiple deaths, are at risk of developing work-related psychological disorders. Furthermore, long working hours, pressure, role clarity and lack of support from colleagues are the four most common work stressors reported. People are constantly faced with the challenge of simultaneously managing multiple roles in their work as well as their home-sphere. It therefore becomes increasingly important to maintain a balance in these two life spheres. Unfortunately, a gap exists between the positive and negative side of work-home interaction as most research focuses on the negative side. It also seems that, despite the importance of work-home interaction of nurses, relatively few studies investigate the role of specific job characteristics and coping strategies that could play a role in negative and positive work-home interaction.

The objective of this study was to determine which job characteristics and coping strategies predict negative and positive work-home interaction in the nursing environment. A cross-sectional survey design was used. Stratified 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) was used to measure work-home interaction. Exploratory factor analyses and Cronbach alpha coefficients were used to determine the validity and reliability of the questionnaires. Product-moment correlation coefficients were used to determine the relationship between job characteristics, coping and work-home interaction. Multiple regression analyses were used to determine the percentage variance in the dependent variables (e.g. negative and

positive WHI) that is predicted by the independent variables (e.g. job characteristics and coping strategies).

The results showed that time demands, pressure, role clarity and colleague support are the main job characteristics that predict negative work-home interference. Problem-solving coping was associated with less negative work-home interference, while avoidance coping seems to predict higher levels of negative work-home interference. Time demands, autonomy and role clarity were the main predictors of positive work-home interference. Problem-solving coping was the only coping strategy associated with positive work-home interference.

Recommendations were made for further research.

OPSOMMING

TITEL: Werkeienskappe, coping en werk-huis-interaksie in 'n verpleegomgewing.

SLEUTELWOORDE: Werkeienskappe, werkeise, werkhulpbronne, coping, negatiewe werk-huis-interaksie, positiewe werk-huis-interaksie, verpleërs.

Verpleërs verteenwoordig die grootste groep gesondheidswerkers in Suid-Afrika en speel heel waarskynlik 'n belangrike rol in die transformasie van die gesondheidssektor. Gesondheidshulpwerkers, veral dié wat te doen kry met mense wat aan ernstige siektes ly en dié wat aan veelvoudige dood blootgestel is, loop die risiko om werk-verwante psigologiese versteurings te ontwikkel. Verder is lang werkure, druk, rolduidelikheid en gebrekkige kollegiale ondersteuning die vier algemeenste werkstressore wat aangemeld is. Mense kom voortdurend te staan voor die uitdaging van gelyktydig veelvoudige rolle in hul werk asook in hul huisomgewing te moet vervul. Dit word dus toenemend belangrik om 'n balans ten opsigte van hierdie twee lewensfere te handhaaf. Ongelukkig bestaan 'n gaping tussen die positiewe en negatiewe kante van werk-huis-interaksie, aangesien die meeste navorsing op die negatiewe sy fokus. Dit blyk ook dat relatief min studies die rol ondersoek van spesifiek werkeienskappe en coping-strategieë wat 'n rol kon speel in negatiewe en positiewe werk-huis-interaksie, ten spyte van die belangrikheid van die werk-huis-interaksie van verpleërs.

Die doel van hierdie studie was om te bepaal watter werkeienskappe en coping-strategieë negatiewe en positiewe werk-huis-interaksie in die verpleegomgewing voorspel. 'n Dwarsdeursnee-onderzoekontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($n = 300$) is van geregistreerde verpleërs in die streke Johannesburg, Klerksdorp, Krugersdorp, Potchefstroom en Pretoria geneem. 'n Selfsaamgestelde vraelys is gebruik om werkeienskappe te meet. Die "Coping Strategy Indicator" (CSI) is gebruik om coping-strategieë te meet, en die "Survey Work-home Interaction-NijmeGen" (SWING) is gebruik om werk-huis-interaksie te meet. Verkennende faktoranalise en Cronbach alfa-koëffisiënte is gebruik om die geldigheid en betroubaarheid van die vraelyste te bepaal. Produkmoment-korrelasiekoëffisiënte is gebruik om die verhouding tussen werkeienskappe, coping en werk-huis-interaksie te bepaal. Veelvoudige

regressie-analises is gebruik om die persentasievariansie in die afhanklike veranderlikes te bepaal (bv. negatiewe en positiewe WHI) wat deur die onafhanklike veranderlikes (bv. Werkeienskappe en coping-strategieë) voorspel is.

Die resulte toon dat tydeise, druk, rolduidelikheid en kollegiale ondersteuning die belangrikste werkeienskappe is wat negatiewe werk-huis-inmenging voorspel. Probleemoplossing-coping is met minder negatiewe werk-huis-inmenging geassosieer, terwyl vermyding van coping hoër vlakke van negatiewe werk-huis-inmenging blyk te voorspel. Tydeise, outonomie en rolduidelikheid was die hoofvoorspellers van positiewe werk-huis-inmenging. Probleemoplossing-coping was die enigste coping-strategie wat met positiewe werk-huis-inmenging geassosieer is.

Aanbevelings is gemaak vir verdere navorsing.

CHAPTER 1

INTRODUCTION

This mini-dissertation focuses on the relationship between job characteristics, coping strategies and work-home interaction in a sample of nurses.

In this chapter the problem statement and the research objectives (including the general and specific objectives) are discussed. Following this, the research method is explained and an overview is given of the chapters.

1.1 PROBLEM STATEMENT

Juggling work and family responsibilities is a common experience for many employees (Galinsky, Bond & Friedman, 1993; Lee & Duxbury, 1998). Even though researchers agree that engagement in both work and family roles can have positive effects for individuals (e.g. Geurts & Demerouti, 2003; Grzywacz & Marks, 2000; Rothbard, 2001), it is evident that workers who are unable to balance their responsibilities associated with both roles are confronted with potential conflict between the work and family roles, or so-called "work-home interference" (WHI) (Frone, Russell & Cooper, 1992; Greenhaus & Beutell, 1985; Greenhaus & Powell, 2003; Netemeyer, Boles & McMurrian, 1996). Research on work-home interference became increasingly important over the past years, mainly because of demographic and structural changes in the workforce and family structure, both internationally (Geurts & Demerouti, 2003; Geurts, Kompier, Roxburgh & Houtman, 2003) and in South Africa. During the past couple of years, and especially since the first democratic election in 1994, there has been an increase in working women, dual-career couples, as well as single parents and fathers who are actively involved in parenting (Schreuder & Theron, 2001).

These changes have not only affected work and family roles and their interrelation (e.g. Bond, Galinsky & Swanberg, 1998; Ferber, O'Farrell & Allen, 1991), but have also had a significant impact on individual behaviour in an organisational setting and ultimately on organisational functioning itself (Greenhaus, 1988; Parasuraman & Greenhaus, 1999). The

consequences of the work-nonwork interface go beyond stress-related and organisational outcomes and to a great extent also spread to one's private life. Geurts and Demerouti (2003) have categorised the consequences of the work-nonwork interface into five major categories, being psychological, physical, attitudinal, behavioural and organisational consequences that may influence the individual and the organisation.

Among psychological consequences, particularly work-related stress, burnout and to a lesser extent general psychological strain have been found to be positively associated with negative work-home interaction (Allen, Herst, Bruck & Sutton, 2000). Furthermore, negative influence from work seems to be positively related to physical consequences, such as somatic or physical symptoms (e.g. headache, backache, upset stomach and fatigue), as well as sleep deprivation (Allen et al., 2000; Geurts, Rutte & Peeters, 1999). In an investigation of attitudinal outcomes it was found that job satisfaction, life and marital satisfaction is most frequently related to work-home interaction and reported to have an influence on the work environment as well as on the home environment (Allen et al., 2000; Kossek & Ozeki, 1998). Possible behavioural consequences of the work-nonwork interface indicate that negative influences from work are related to an increased consumption of stimulants such as coffee, cigarettes and alcohol (e.g. Burke, 1988; Frone, Russell & Cooper, 1997). Among the organisational outcomes, turnover intentions have the strongest positive associations with negative interaction between work and non-work (Allen et al., 2000; Grandey & Gropanzano, 1999; Netemeyer et al., 1996). Other negative consequences include reduced job and life satisfaction, low organisational commitment and a decrease in the effectiveness and efficiency of employers as well as managers (Montgomery, Peeters, Schaufeli & Den Ouden, 2003).

Greenhaus and Beutell (1985) suggested that difficulties in combining work and family roles may either arise from time demands that make it physically impossible to be in two places at the same time, from the spill-over of strain from one domain to the other, and/or from the incompatibility of behaviours requested in each domain. Therefore, three major forms of work-family conflict have been differentiated, namely time-based, strain-based and behaviour-based conflict. Time-based work family conflicts arise if the amount of time spent in one domain (e.g. work) hampers meeting the requirements of the other domain (e.g. home). Strain-based conflict exists when the performance in one role decreases due to stressors in the other role, for example tiredness at work due to lack of sleep as a result of

child care responsibilities at home. The third form of conflict describes behavioural difficulties in switching between different roles. Previous research has demonstrated that especially time- and strain-based conflicts are associated with various negative work, family and health-related outcomes (Allen et al., 2000).

Although work-family studies have identified several processes through which negative WHI may affect psychological well-being, a major limitation is that research almost exclusively focuses on the *negative* influence between the work and home domain. However, the work-home interface would seem to be a much broader concept that also encompasses a *positive* side. Based on this central assumption that work can interfere with family life in a negative and positive way, Geurts and Demerouti (2003) define work-home interaction as an interactive process in which a workers' 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). Unfortunately, very few studies have addressed the prevalence and correlates of positive interaction between work and private life (Frone, 2003; Geurts & Demerouti, 2003).

Although it seems important to study work-home interaction in various occupations, this is a largely unexplored area in the nursing literature (Hall & Callery, 2003), even though a number of reports and research studies have identified a need to improve the working conditions of nurses (Advisory Committee on Health Human Resources (ACHHR), 2002; Aiken, Clarke, Sloane, Sochalski, Busse & Clarke, 2001; Baumann, O'Brien-Pallas, Armstrong-Stassen, Blythe, Bourbonnais, Cameron, Irvine Doran, Kerr, McGillis Hall, Vezina, Butt & Ryan, 2001; Health Canada, 2001; Nursing Task Force, 1999; Page, 2003; Wunderlich, Sloan & Davis, 1996). Work-home interaction within the field of nursing, especially in South Africa, is important to be studied for a variety of reasons. A number of concerns for the South African nursing environment is very high levels of burnout (Levert, Lucas & Ortlepp, 2000) and huge numbers of nurses emigrating with the result of shortages under nursing staff and a growing number of patients to treat (Ehlers, Oosthuizen, Bezuidenhout, Monareng & Jooste, 2003). Furthermore, nurses expressed concerns about the lack of both human and material resources, the effect of this on the provision of quality nursing care and a lack of support from nurse managers (Ehlers et al., 2003). Another major concern for nurses is their safety, as they experience their work environment as a threatening place where they experience conflict internally amongst personnel and externally as a result

of community violence and gangster activities (which often extend into the hospital/health service environment).

These stressful working conditions, as well as many other work-related factors in the nursing work environment (e.g. lack of support from supervisors, large responsibility, long working hours and task overload) create difficulties for nurses to balance their work- and personal lives. Even though it seems important to determine which specific characteristics in the nursing work environment may influence work-home interaction, there seems to be a pause of research that investigates this issue. A literature search on WHI issues among nurses in South Africa revealed that no studies have been undertaken regarding possible antecedents in the workplace that could influence the WHI of nurses. It is therefore important to investigate possible job characteristics that are associated with work-home interaction. Furthermore, it also seems important to investigate which personal strategies (e.g. coping strategies) might be effective in dealing with work-home interference. However, relatively few studies within the field of Occupational Health Psychology empirically investigated the role of coping strategies associated with WHI (Geurts & Demerouti, 2003). Also, no studies could be found in South Africa which deal with effective coping strategies that nurses could use to improve their WHI. It is therefore an important initiative of this study to investigate which specific job characteristics and coping strategies are associated with negative and positive work-home interference of nurses.

Although several models exist that can be used to investigate job stress and the negative implications thereof (e.g. the "Demand-Control Model" of Karasek, 1979 and Karasek & Theorell, 1990; the "Michigan Model" of Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964), the Job Demands-Resources (JD-R) model (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001) seems to be the most appropriate one to use in this study, since this is a parsimonious model that is capable of integrating a wide range of potential job demands and resources (see Demerouti et al., 2001).

The first assumption of the JD-R model is that job characteristics can be organised in two broad categories, namely job demands and job resources. Job demands refer to those physical, psychosocial or organisational aspects of the job that require sustained physical and/or mental effort and are therefore associated with certain physiological and/or psychological costs. Examples are a high work pressure (e.g. high work pace and tight

deadlines), high physical or emotional demands and role conflicts. Job resources refer to those physical, psychosocial or organisational aspects of the job that may be functional in meeting task requirements (e.g. job demands) and may thus reduce the associated physiological and/or psychological costs - and at the same time stimulate personal growth and development. Resources may be located in the task itself (e.g. performance feedback, skill variety, autonomy; cf. Hackman & Oldham, 1976), as well as in the context of the task, for instance organisational resources (e.g. career opportunities, job security) and social resources (e.g. supervisor and co-worker support) (Demerouti et al., 2001).

In general, research findings indicate that several job characteristics are associated with negative work-home interference. Studies have shown that long working hours are associated with interference between work and family life, in terms of role conflicts or fatigue, worrying and irritability (Grzywacz & Marks, 2000; Staines & Pleck, 1984). It also seems that an increased number of hours worked, including overtime, tend to be associated with higher levels of work-home interaction (e.g. Burke, Weir & Duwors, 1980; Judge, Boudreau & Bretz, 1994; Pleck, Staines & Lang, 1980). Parasuraman, Purohit, Godshalk and Beutell (1996) found that male and female entrepreneurs who experience work role overload and high parental demands reported more negative WHI which, in turn, was related to general life stress. Job control also tends to be strongly linked to psychological health and well-being (Day & Jreige, 2002; Hurrell & McLaney, 1989), and some research suggests that it is linked to work-home interference. Fox, Dwyer and Ganster (1993) examined nurses' job control and found that psychological reactions (e.g. blood pressure) to jobs that have high demands and low control may carry over to home settings. Research also found a strong relationship between job resources and positive work-home interaction. It seems that job control and social support were associated with positive spill-over between work and family (Geurts & Demerouti, 2003; Grzywacz & Marks, 2000; Kinnunen & Mauno, 1998). Demerouti, Geurts and Kompier (2004) also found that job control and particularly job support were associated with positive work-home interference.

Coping is a central theme in stress research and numerous studies have focused on the individual's coping responses to various stressors, including stressors in the workplace. It therefore seems that the use of certain coping strategies to deal with job demands and a lack of job resources that could have an impact on the home domain could be important. Coping with the work-family lifestyle needs to be seen not as a women-only problem, but as one of

the realities of modern parenthood. However, relatively few studies empirically investigated the role of coping strategies associated with work-home interaction (Geurts & Demerouti, 2003).

Coping is defined as constantly changing cognitive and behavioural efforts to manage specific internal and/or external demands that are appraised as taxing or exceeding the resources of the person (Eckenrode, 1991; Folkman & Lazarus, 1984). According to Folkman, Lazarus, Gruen and DeLongis (1986), coping also refers to the negative and behavioural strategies that individuals apply to manage a stressful situation, as well as the negative emotional reactions elicited by that event. Coping is therefore an important resource for the regulation of well-being and maintenance of mental health under conditions of stress (Eckenrode, 1991). When a successful coping strategy is followed (e.g. active problem-solving), goals are achieved, professional efficacy is enhanced and a sense of existential significance is fostered (Schaufeli & Enzmann, 1998).

Theorists differ widely in the number of coping mechanisms they propose, from global dichotomies (Folkman & Lazarus, 1980) to lengthy lists of coping and defence mechanisms (e.g. Haan, 1977). However, Folkman and Lazarus (1980) and Lazarus and Folkman (1984) proposed that primary coping strategies can be organised into two higher-order categories, namely problem-focused strategies (which are directed at managing or altering the stressor), and emotion-focused strategies (which are directed at regulating emotional responses to the problem). Other taxonomies of coping also exist. For example, Billings and Moos (1981) identified three methods of coping: a) active-cognitive coping, which is understood as the management of assessing potentially stressful events; b) active-behavioural coping, which is understood as the observable efforts aimed at managing a stressful situation; and c) avoidance coping, which is understood as refusal to face a problematic or stressful situation.

One trend has been the development of coping scales with fewer but broader dimensions. Two examples of this are the Multidimensional Coping Inventory (MCI; Endler & Parker, 1990) and the Coping Strategy Indicator (CSI; Amirkhan, 1990). The MCI assesses task, emotion, and avoidance-oriented coping strategies, whereas Amirkhan (1990) identified three scales of coping that are measured with the CSI: a) problem-solving, which is understood as weigh your options very carefully; b) seeking social support, which is understood as let your feelings out to a friend; and c) avoidance, which is understood as try to distract yourself from

the problem. Rather than pigeonholing individuals as “problem-solvers” or “avoiders,” the CSI allows more complex patterns of preferences to be exhibited. The CSI was factor analytically derived 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).

Coping strategies have also been modelled in two different ways (Carver, Scheier & Weintraub, 1989; Parkes, 1994). According to the first way of modelling coping strategies, it is assumed that coping reactions can change from moment to moment across the stages of a stressful transaction (Folkman & Lazarus, 1985). This hypothesis is related to the concept of situational coping, which addresses the issue of what the person did (or is doing currently) in a specific coping episode or during a specific period of time. The second way of modelling coping strategies, which refers to dispositional coping (or trait coping), assumes that people develop habitual ways of dealing with stress and these habits or coping styles can affect their reaction in new situations (Carver et al., 1989). Folkman and Lazarus (1988) found that people used significantly less planful problem-solving and distancing in encounters that involved concern for a loved one’s well-being, and that more planful problem-solving and self-control were used in encounters that involved a goal at work.

Coping should not only be seen as actions taken by and for the self, but as that it includes those actions used to maximise the survival of others (such as children, family and friends) (Banyard & Graham-Bermann, 1993). In the nursing environment, nurses’ ability to function competently and adapt to the stressors of a given situation could depend upon the use of effective coping strategies. Research regarding the relationship between coping and work-home interaction is limited. Beutell and Greenhaus (1983) have studied the effectiveness of three types of coping strategies for dealing with work-home conflict among 115 married women (with at least one child) who were attending college. Their findings indicate that active attempts to change the structural and/or personal definition of one’s roles were more effective in dealing with work-home conflict than more passive and reactive role behaviour. Kirchmeyer (1993) supports these findings, but points out that it was more than just having an active coping strategy, rather that the *type* of coping strategy played an important role. Strategies that were aimed at changing one’s own attitude about what demands can be realistically met in both domains seemed to be more effective in coping with high demands from both domains than strategies aimed at changing the attitudes or behaviours of others.

A sound theoretical framework that can be used to interpret the underlying mechanisms in the relationship between job characteristics, coping and work-home interaction is the Effort-Recovery (E-R) model (Meijman & Mulder, 1998). The E-R model postulates that effort expenditure (e.g. task performance at work) is associated with specific load reactions that develop in the individual. These load reactions can include psychological, behavioural and subjective responses such as changes in hormone secretion, energy levels and mood. Normally, these load reactions are reversible if recovery occurs after the effort was invested and time was taken for the psychobiological systems to stabilise. This means that high demands from the one domain will not have adverse health consequences as long as sufficient recovery takes place during or after these periods.

The fundamental role of the recovery process clearly makes the Effort-Recovery (E-R) model (Meijman & Mulder, 1998) a promising perspective for studying negative work-home interaction. However, the same perspective may also increase our understanding of positive work-home interaction, since effort expenditure may also be accompanied by positive load reactions. The willingness to put effort into the task is crucial for the positive mobilisation of effort. According to the E-R model, work environments that offer enough resources (e.g. performance, feedback, autonomy and personal development) may foster the willingness to dedicate an individual's abilities to the task and yield positive outcomes. Bakker and Geurts (2004) noted that increased motivation and commitment may be the result of this positive mobilisation of energy. If one feels competent and satisfied in one's work, these positive feelings could increase one's self-worth, and this may lead to positive reactions in the home sphere (and vice versa).

The following research questions emerge from the problem statement:

- What is the relationship between job characteristics, coping and work-home interaction according to the literature?
- What is the relationship between job characteristics, coping and work-home interaction in a sample of nurses?
- Which job characteristics and coping strategies predict negative work-home interference?
- Which job characteristics and coping strategies predict positive work-home interference?

- What future recommendations can be made regarding the relationship between job characteristics, coping and work-home interaction?

1.2 RESEARCH OBJECTIVES

The research objectives can be divided into two main categories, namely general objectives and specific objectives.

1.2.1 General objectives

The general objectives of this research are to investigate the relationship between job characteristics (including job demands and job resources), coping and work-home interaction and to determine which job characteristics and coping strategies predict negative and positive work-home interaction in the nursing environment.

1.2.2 Specific objectives

The specific objectives in this research are the following:

- To determine what the relationship is between job characteristics, coping and work-home interaction according to the literature.
- To determine the relationship between job characteristics, coping and work-home interaction in a sample of nurses.
- To determine which job characteristics and coping strategies predict negative work-home interference.
- To determine which job characteristics and coping strategies predict positive work-home interference.
- To make future recommendations regarding the relationship between job characteristics, coping and work-home interaction.

1.3 RESEARCH METHOD

The research method consists of a literature review and an empirical study. The results obtained from the research are presented in the form of a research article. The reader should note that a brief literature review is compiled for purposes of the article. This paragraph focuses on aspects relevant to the empirical study that is conducted.

1.3.1 Research design

A cross-sectional research design is used in order to collect the data and obtain the research objectives. Cross-sectional research involves the measurement of all variable(s) for all cases within a narrow time span so that the measurements may be viewed as contemporaneous. Essentially, data are collected at only one point in time, comparing different participants (Baltes, Reese & Nesselroade, 1988). One advantage of cross-sectional research is that it is more economical time and cost-wise than other designs. For the participants, there is only one period for data collection, and the researcher is not faced with the difficulty and cost of maintaining contact with subjects over a long period of time. The inability to directly assess intra-individual change and the restriction of inferences to group averages are significant disadvantages of cross-sectional designs for the study of developmental issues (Baltes et al., 1988).

1.3.2 Participants and procedure

Random samples ($n = 300$) are taken from employees working in hospitals in the Johannesburg, Klerksdorp, Krugersdorp, Potchefstroom and Pretoria regions. A letter requesting participation was given to the hospitals prior to the administration of the measuring battery. The measuring battery was compiled and a letter requesting participation was included in the test books. Ethical aspects and motivation regarding the research were discussed with the participants before the questionnaires were handed out. The questionnaires were then administered in groups at the various hospitals on suitable dates.

1.3.3 Measuring instruments

The following questionnaires are utilised in the empirical study:

Job characteristics. Focus groups were held in several hospitals to determine the specific job demands and job resources that nurse's experience in their work. The main demands and resources are then used to develop items of the questionnaire. Having analysed the responses, the demands were measured, which included Emotional Demands (e.g. "do you have to communicate with patients about death?"), Time Demands (e.g. "do you have to work overtime?"), Nurse-specific Demands (e.g. "do you experience insults from doctors?") and Pressure (e.g. "do you have to work very fast?"). The following resources are measured: 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. "do you get on well with your supervisor?") and Financial Support (e.g. "can you live comfortably with your pay?"). All items are rated on a 4-point scale ranging from 1 (*never*) to 4 (*always*).

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"). It seems that the factors are internally consistent, where alpha values of 0,89 (Problem-Solving Coping), 0,93 (Seeking Social Support) and 0,84 (Avoidance Coping) are reported respectively (Amirkhan, 1990). All these values are acceptable ($\alpha > 0,70$, Nunnally & Bernstein, 1994) and thus indicate the internal consistency of the factors of the CSI.

The '*Survey Work-Home Interaction-NijmeGen*' (SWING) (Geurts, Taris, Kompier, Dikkers, Van Hooff & Kinnunen, in press; Wagena & Geurts, 2000) 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 (Geurts et al., in press; Wagena & Geurts, 2000). Many items

in the WHI scale are congruent to the scales of Netemeyer et al. (1996) and Kopelman, Greenhaus and Connolly (1983). Nine items are 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 are scored on a 4-point frequency rating scale ranging from 0 (*never*) to 4 (*always*). It seems that the factors are internally consistent, where alpha values of 0,84 (Negative WHI) and 0,75 (Positive WHI) are reported by Geurts et al. (in press). 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).

1.3.4 Statistical analysis

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

Exploratory factor analyses are carried out to determine the construct validity of the measuring instruments. The following procedure is followed: Firstly, a simple principal components analysis is conducted on the constructs, including a) job characteristics; b) coping; c) negative WHI and d) positive WHI. The eigenvalues and scree plot are studied to determine the number of factors that should be extracted. Secondly, a principal components analysis with a direct oblimin rotation is conducted if factors are related ($r > 0,30$). Thirdly, a principal component analysis with a varimax rotation is used if the obtained factors are not related (Tabachnick & Fidell, 2001).

Pearson product-moment correlation coefficients are used to specify the relationship between the variables. In terms of statistical significance, it is decided to set the value at a 95% confidence interval level ($p \leq 0,05$). Effect sizes (Steyn, 1999) are used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect) (Cohen, 1988) is set for the practical significance of correlation coefficients. Multiple regression analyses are carried out to determine the percentage variance in the dependent variable (e.g. negative

and positive WHI) that is predicted by the independent variables (e.g. job characteristics and coping strategies).

1.4 OVERVIEW OF CHAPTERS

In Chapter 2 the relationship between job characteristics, coping and work-home interaction are discussed. Chapter 2 also deals with the empirical study. Chapter 3 deals with the discussion, limitations and recommendations of this study.

1.5 CHAPTER SUMMARY

In this chapter the researcher discussed the problem statement and research objectives. The measuring instruments and research method used in this research were explained, followed by a brief overview of the chapters that follow.

REFERENCES

- Advisory Committee on Health Human Resources. (2002). Our health, our future: Creating quality workplaces for Canadian nurses. *Final Report of the Canadian Nursing Advisory Committee*. Available from <http://www.hc-sc.gc.ca>.
- Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J.A., Busse, R. & Clarke, H. (2001). Nurses' reports on hospital care in five countries. *Health Affairs*, 20(3), 43–53.
- 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 Occupational Health Psychology*, 5, 278–308.
- Amirkhan, J.H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59, 1066–1075.
- Bakker, A.B., Demerouti, E., De Boer, E. & Schaufeli, W.B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior*, 62, 341–356.
- Bakker, A.B. & Geurts, S.A.E. (2004). Towards a dual-process model of work-home interference. *Work & Occupations*, 31, 345–366.
- Baltes, P.B., Reese, H.W. & Nesselroade, J.R. (1988). *Introduction to research methods, life-span developmental psychology*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Banyard, V.L. & Graham-Bermann, S.A. (1993). Can women cope? A gender analysis of theories of coping with stress. *Psychology of Women Quarterly*, 17, 303–318.
- Baumann, A., O'Brien-Pallas, L.O., Armstrong-Stassen, M., Blythe, J., Bourbonnais, R., Cameron, S., Irvine Doran, D.I., Kerr, M., McGillis Hall, L., Vezina, M., Butt, M. & Ryan, L. (2001). Commitment and care: The benefits of a healthy workplace for nurses, their patients and the system – A policy synthesis. *Canadian Health Services Foundation and The Change Foundation*.
- Beutell, N.J. & Greenhaus, J.H. (1983). Integration of home and non-home roles: women's conflict and coping behaviour. *Journal of Applied Psychology*, 68, 43–48.
- Billings, A.G. & Moos, R.H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 4, 139–157.
- Bond, J.T., Galinsky, E. & Swanberg, J.E. (1998). *The 1997 national study of the changing workforce*. New York: Families and Work Institute.

- Burke, R.J., Weir, T. & Duwors, R.E. (1980). Work demands on administrators and spouse well-being. *Human relations*, 33, 253–278.
- Burke, R.J. (1988). Some antecedents and consequences of work-family conflict. *Journal of Social Behavior and Personality*, 3, 287–302.
- Carver, C.S., Scheier, M.F. & Weintraub, J.K. (1989). Assessing coping strategies: A theoretical based approach. *Journal of Personality and Social Psychology*, 56, 267–283.
- Cohen, J. (1988). *Statistical power analysis of the behavioural sciences* (2nd ed.). Orlando, CA: Academic Press.
- Day, A.L. & Jreige, S. (2002). Examining Type A behaviour pattern to explain the relationship between stressors and psychological outcomes. *Journal of Occupational Health Psychology*, 7, 109–120.
- Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512.
- Demerouti, E., Geurts, S.A.E. & Kompier, M.A.J. (2004). Positive and negative work-home interaction: Prevalence and correlates. *Equal Opportunities International*, 23(1), 6–35.
- Eckenrode, J.E. (1991). Introduction and overview. In J. Eckenrode (Ed). *The Social Context of Coping* (pp. 1–12). New York: Plenum Press.
- Ehlers, V.J., Oosthuizen, M.J., Bezuidenhout, M.C., Monareng, L.V. & Jooste, K. (2003). Post-basic nursing students' perceptions of the emigration of nurses from the Republic of South Africa. *Health SA Gesondheid*, 8(4), 24–37.
- Endler, N.S. & Parker, J.D.A. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology*, 58, 844–854.
- Ferber, M.A., O'Farrell, B. & Allen, L.R. (Eds.). (1991). *Work and Family: Policies for a Changing Work Force*. Washington, DC: National Academy Press.
- Folkman, S. & Lazarus, R.S. (1980). An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior*, 21, 219–239.
- Folkman, S. & Lazarus, R.S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Folkman, S. & Lazarus, R.S. (1985). Stress and adaptational outcomes: The problem of confounded measures. *American Psychologist*, 40(7), 770–779.
- Folkman, S., Lazarus, R.S., Gruen, R.J. & DeLongis, A. (1986). Appraisal, coping, health status, and psychological symptoms. *Journal of Personality and Social Psychology*, 50, 571–579.
- Folkman, S. & Lazarus, R.S. (1988). The relationship between coping and emotion: Implications for theory and research. *Social Science & Medicine*, 26(3), 309–317.

- Fox, M., Dwyer, D. & Ganster, D. (1993). Effects of stressful job demands and control of physiological and attitudinal outcomes in a hospital setting. *Academy of Management Journal*, 36, 289–318.
- Frone, M.R., Russell, M. & Cooper, M.L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology*, 77, 65–78.
- Frone, M.R., Russell, M. & Cooper, M.L. (1997). Relation of work-family conflict to health outcomes: A four-year longitudinal study of employed parents. *Journal of Occupational and Organizational Psychology*, 70, 325–335.
- Frone, M.R. (2003). Work-family balance. In J.C. Quick & L.E. Tetrick (Eds.), *The handbook of occupational health psychology* (pp. 143–162). Washington, DC: American Psychological Association.
- Galinsky, E., Bond, J.T. & Friedman, D.E. (1993). *The changing workforce: Highlights of the national study*. New York: Families and Work Institute.
- Geurts, S.A.E., Rutte, C. & Peeters, M. (1999). Antecedents and consequences of work-home interference among medical residents. *Social Science & Medicine*, 48, 1135–1148.
- Geurts, S.A.E. & Demerouti, E. (2003). Work/nonwork interface: A review of theories and findings. In M. Schabracq, J. Winnubst & C.L. Cooper (Eds.), *Handbook of Work and Health Psychology* (pp. 279–312). Chichester State: John Wiley & Sons.
- Geurts, S.A.E., Kompier, M.A.J., Roxburgh, S. & Houtman, I.L.D. (2003). Does work-home interference mediate the relationship between workload and well-being? *Journal of Vocational Behavior*, 63, 532–559.
- Geurts, S.A.E., Taris, T.W., Kompier, M.A.J., Dijkers, J.S.E., Van Hooff, M.L.M., & Kinnunen, U.M. (in press). Work-home interaction from a work psychological perspective: Development and validation of the SWING. *Work & Stress*.
- Grandey, A.A. & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior*, 54, 350–370.
- Greenhaus, J.H. & Beutell, N.J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10, 76–88.
- Greenhaus, J.H. (1988). The intersection of work and family roles: Individual, interpersonal, and organizational issues. *Journal of Social Behavior & Personality*, 3(4), 23–44.
- Greenhaus, J.H. & Powell, G.N. (2003). When work and family collide: Deciding between competing role demands. *Organizational Behavior & Human Decision Processes*, 90(90), 291–303.

- Grzywacz, J.G. & Marks, N.F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spill-over between work and family. *Journal of Occupational Health Psychology*, 5, 111–126.
- Haan, N. (1977). *Coping and Defending*. New York: Academic Press.
- Hackman, J.R. & Oldham, G.R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16, 250–279.
- Hall, W.A. & Callery, P. (2003). Balancing personal and family trajectories: An international study of dual-earner couples with pre-school children. *International Journal of Nursing Studies*, 40(4), 401–412.
- Health Canada. (2001). *Healthy nurses, healthy workplaces*. Ottawa, Canada: The office of Nursing Policy: Health Policy & Communications Branch, Health Canada.
- Hurrell, J.J., Jr. & McLaney, M.A. (1989). Control, job demands, and job satisfaction. In S.L. Sauter, J.J. Hurrell Jr. & C.L. Cooper (Eds.), *Job control and worker health* (pp. 221–245). Toronto, Ont.: John Wiley.
- Judge, T.A., Boudreau, J.W. & Bretz, R.D., Jr. (1994). Job and life attitudes of male executives. *Journal of Applied Psychology*, 79(5), 767–782.
- Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoek, J.D., & Rosenthal, R.A. (1964). *Organizational stress: Studies in role conflict and ambiguity*. New York: John Wiley.
- Karasek, R. A. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285–308.
- Karasek, R.A. & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York: John Wiley.
- Kinnunen, U. & Mauno, S. (1998). Antecedents and outcomes of work-family conflict among employed women and men in Finland. *Human Relations*, 51, 157–177.
- Kirchmeyer, C. (1993). Nonwork-to-work spill-over: a more balanced view of the experiences and coping of professional women and men. *Sex roles*, 28, 531–552.
- Kopelman, R.E., Greenhaus, J.H. & Connolly, T.F. (1983). A model of work, family, and interrole conflict: A construct validation study. *Organizational Behavior and Human Performance*, 32, 198–213.
- Kossek, E.E. & Ozeki, C. (1999). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behaviour-human resources research. *Journal of Applied Psychology*, 83(2), 139–149.
- Lazarus, R.S. & Folkman, S. (1984). Coping and adaptation. In W.D. Gentry (Ed.), *Handbook of behavioral medicine* (pp. 282–325). New York: Guilford.

- Lee, C.M. & Duxbury, L. (1998). Employed parents' support from partners, employers, and friends. *The Journal of Social Psychology*, 138(3), 303–322.
- Levert, T., Lucas, M. & Ortlepp, K. (2000). Burnout in psychiatric nurses: Contributions of the work environment and a sense of coherence. *South African Journal of Psychology*, 30(2), 36–43.
- Meijman, T.F. & Mulder, G. (1998). Psychological aspects of workload. In P.J. Drenth, H. Thierry & C.J. de Wolff (Eds.), *Handbook of work and organizational psychology* (pp. 5–33). Hove, England UK: Psychology Press Ltd.
- Montgomery, A.J., Peeters, M.C.W., Schaufeli, W.B. & Den Ouden, M. (2003). Work-home interference among newspaper managers: It's relationship with burnout and engagement. *Anxiety, Stress and Coping*, 16(2), 195–211.
- Netemeyer, R.G., Boles, J.S. & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81, 400–410.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.
- Nursing Task Force. (1999). *Good nursing, good health: An investment for the 21st century*. Ontario Ministry of Health.
- Page, A. (2003). *Keeping patients safe: Transforming the work environment of nurses*. Washington, DC: National Academy Press.
- Parasuraman, S., Purohit, Y.S., Godshalk, V.M. & Beutell, N.J. (1996). Work and family variables, entrepreneurial career success, and psychological well-being. *Journal of Vocational Behavior*, 48, 275–300.
- Parasuraman, S. & Greenhaus, J.H. (1999). Research on work, family, and gender: Current status and future directions. In G.N. Powell (Eds.), *Handbook of gender and work* (pp. 391–412). Thousand Oaks, CA: Sage.
- Parkes, K.R. (1994). Personality and coping as moderators of work stress processes: Models, methods and measures. *Work & Stress*, 8(2), 110–129.
- Pieterse, M. & Mostert, K. (2005). Measuring the work-home interface: Validation of the Survey Work-Home Interaction – Nijmegen (SWING) Instrument. *Management Dynamics*, 14(2), 2–15.
- Pleck, J.H., Staines, G.L. & Lang, L. (1980). Conflicts between work and family life. *Monthly Labor Review*, 103, 29–32.

- Rothbard, N.P. (2001). Enriching or depleting? The dynamics of engagement in work and family roles. *Administrative Science Quarterly*, 46, 655–684.
- Schaufeli, W.B. & Enzmann, D. (1998). *The Burnout Companion to Study and Practice: A Critical Analysis*. London: Taylor & Francis.
- Schreuder, A.M.G. & Theron, A.L. (2001). *Careers: An Organizational Perspective* (2nd ed.). SPSS Inc. (2003). *SPSS 12.0 for Windows*. Chicago, IL: Author.
- Staines, G.L., & Pleck, J.H. (1984). Nonstandard work schedules and family life. *Journal of Applied Psychology*, 69, 515–523.
- Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes*. Wetenskaplike bydraes – Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Tabachnick, B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Wagena, E. & Geurts, S.A.E. (2000). ‘SWING’. Ontwikkeling en Validering van de ‘Survey Werk-Thuis Interferentie-Nijmegen’ (SWING). [Development and Validation of the “Survey Work-Home Interference-Nijmegen”]. *Gedrag en Gezondheid*, 28, 138–158.
- Wunderlich, G.S., Sloan, F.S. & Davis, C.K. (1996). *Nursing staff in hospitals and nursing homes: Is it adequate?* Washington, DC: National Academy Press.

CHAPTER 2

RESEARCH ARTICLE

JOB CHARACTERISTICS, COPING AND WORK-HOME INTERACTION IN A NURSING ENVIRONMENT

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ABSTRACT

The objective of this study was to determine which job characteristics and coping strategies predict negative and positive work-home interaction in the nursing environment. A cross-sectional survey design was used. Stratified 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) was used to measure work-home interaction. The results showed that time demands, pressure, role clarity and colleague support are the main job characteristics that predict negative work-home interference. Problem-solving coping was associated with less negative work-home interference, while avoidance coping seemed to predict higher levels of negative work-home interference. Time demands, autonomy and role clarity were the main predictors of positive work-home interference. Problem-solving coping was the only coping strategy associated with positive work-home interference.

OPSOMMING

Die doel van hierdie studie was om te bepaal watter werkseienskappe en coping-strategieë negatiewe en positiewe werk-huis-interaksie in die verpleegomgewing voorspel. 'n Dwarsdeursnee-ondersoekontwerp is gebruik. Gestratifiseerde ewekansige steekproewe ($n = 300$) is van geregistreerde verpleegsters in die streke Johannesburg, Klerksdorp, Krugersdorp, Potchefstroom en Pretoria geneem. 'n Selfsaamgestelde vraelys is gebruik om die werkeienskappe te meet. Die 'Coping Strategy Indicator' (CSI) is gebruik om coping-strategieë te meet, en die 'Survey Work-Home Interaction-Nijmegen' (SWING) is gebruik om werk-huis-interaksie te meet. Die resultate het getoon dat tydeise, druk, rolduidelikheid en kollegiale ondersteuning die belangrikste werkeienskappe is wat negatiewe werk-huis-inmenging voorspel. Probleemoplossing-coping is met minder negatiewe werk-huis-inmenging geassosieer, terwyl vermyding van coping hoër vlakke van negatiewe werk-huis-inmenging blyk te voorspel. Tydeise, outonomie en rolduidelikheid was die hoofvoorspellers van positiewe werk-huis-inmenging. Probleemoplossing-coping was die enigste coping-strategie wat met positiewe werk-huis-inmenging geassosieer is.

Nowadays, the two most important domains in the life of an employed individual are work and home. However, changes in family structures, increasing participation by women in the workforce and technological changes (e.g. mobile phones and portable computers) that enable job tasks to be performed in a variety of locations have blurred the boundaries between job and home life (Peeters, Montgomery, Bakker & Schaufeli, 2005). Furthermore, the increased attention that the work-non work interface has received over the past years can largely be attributed to the increased labour force participation of women and the heightened role demands on men and women who are part of dual-earner families. These changes also occur in South Africa. Since the election in 1994, more women, representatives of all races and dual-earner couples represent the South African labour force (Schreuder & Theron, 2001).

For a variety of reasons it is important to study work-home interaction in the nursing environment, especially in South Africa. Owing to rapid changes in the political, socio-economic and technological spheres of South African life, nursing has increasingly come under pressure to improve its quality (Gmeiner & Poggenpoel, 1996). As a result of this pressure and the increased health demands by the public, the need for caring, both in respect of the patient and the nursing personnel, has been directly affected. The nursing profession is also labelled as one of the four most stressful work environments in the health care sector in South Africa (Hall, 2004). Since 1996, there has been an increase in bad publicity in the media with regard to both health care provision in state hospitals and the conditions under which nurses are working. Nurses also tend to perceive their work environment as physically and interpersonally violent. In addition to the stressors which nurses experience, characteristics of the job also exist, including 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, Armstrong-Stassen, Blythe, Bourbonnaise, Cameron, Irvine Doran, Kerr, McGillis Hall, Vezina, Butt, & Ryan, 2001).

All these factors combine to create stressful work conditions for nurses that could interfere with their family life. Even though a number of recent reports and research studies have identified an urgent need to improve the working conditions of nurses (Advisory Committee on Healthy Human Resources (ACHHR), 2002; Aiken, Clarke, Sloane, Sochalski, Busse, Clarke, 2001; Baumann et al., 2001; Health Canada, 2001; Nursing Task Force, 1999; Page,

2003; Wunderlich, Sloan & Davis, 1996), it seems that work-home interaction is an area that has not been explored in the nursing literature (Hall & Callery, 2003).

A major limitation in the work-home interaction field is that research almost exclusively focuses on the negative influence between the work and home domain. However, various researchers acknowledge that the work-home interface is a much broader concept that also encompasses a positive side (Frone, 2003; Geurts & Demerouti, 2003; Grzywacz & Marks, 2000). For example, fulfilling multiple roles in the work and home domains may produce resources (e.g. energy mobilisation, skill acquisition and greater self-esteem) that could 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 interaction.

Although possible antecedents of work-home interaction have been classified into job-related factors, family-related factors, personality characteristics and attitudes (see Geurts & Demerouti, 2003 for a review), a large number of studies have indicated that job characteristics, consisting of job demands and job resources, have a major impact on work-home interaction (Bakker & Geurts, 2004; Geurts, Taris, Kompier, Dikkers, Van Hooff & Kinnunen, in press; Grandey & Cropanzano, 1999; Montgomery, Peeters, Schaufeli & Den Ouden, 2003). However, no studies in South Africa could be found that focus on specific job characteristics that influence work-home interaction of nurses. Furthermore, it also seems important to investigate which personal strategies (e.g. coping strategies) might be effective in dealing with work-home interference. However, relatively few studies within the field of Occupational Health Psychology empirically investigated the role of coping strategies associated with work-home interaction (Geurts & Demerouti, 2003). Also, no studies could be found in South Africa which deal with effective coping strategies that nurses could use to improve the balance between their work and private lives.

Based on this line of reasoning, it is therefore an important initiative of this study to investigate specific job characteristics as well as coping strategies associated with negative and positive work-home interference. The objective of this study was therefore to investigate which job characteristics and coping strategies predict negative and positive work-home interaction in the nursing environment.

Work-home interaction, job characteristics and coping

Various researchers see the nursing profession as stressful and emotionally demanding, therefore work-home interaction in the nursing environment plays a predominant role (Carson, Bartlett & Croucher, 1991; Coffey & Coleman, 2001; Dolan, 1987; Fagin, Brown, Bartlett, Leary & Carson, 1995; Hodson, 2001; Moores & Grant, 1977; Snellgrove, 1998; Sullivan, 1993). With staff shortages, nurses barely find time to attend to the physical needs of their patients, let alone provide quality health care (Hall, 2004). With these shortages, nurses experience even higher stress levels, because the workload increases, more patients have to be treated in the same number of hours, and the turnover of patients is faster than in the past (Ehlers, Oosthuizen, Bezuidenhout, Monareng & Jooste, 2003). In the nursing literature, there is also a paucity of research concerning couples in dual-earner families and the neglect of fathers and healthy families (Hall & Callery, 2003). This is important, because the family is viewed as the context in which individuals learn health behaviours and attitudes (Baggaley & Kean, 1999).

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, 1985:77). However, it seems that this definition focuses one-sidedly on the negative influence between the work and home domains. Recently, several researchers argued that a positive interaction between work and family lives also exists and that employees may benefit from combining these two domains (e.g. Hochchild, 1997; Kirchmeyer, 1993). It also seems that empirical findings support this contention. For example, full-time workers experience better health than their reduced-hours counterparts (Barnett, 1998; Moen, Dempster-McClain & Williams, 1992; Wethington & Kessler, 1989). Crosby (1982) and Bersoff and Crosby (1984) also found that married employed women with children were more satisfied with their jobs than single employed women or married employed women without children. Taking both negative and positive interaction into account, Geurts et al. (in press) formulated a definition based on the Effort-Recovery model (Meijman & Mulder, 1998) and 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).

Several models exist that can be used to investigate job stress and the negative implications thereof (e.g. the "Demand-Control Model" of Karasek, 1979 and Karasek & Theorell, 1990; the "Michigan Model" of Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964). However, the Job Demands-Resources (JD-R) model (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti, Bakker, Nachreiner & Schaufeli, 2001) is a parsimonious model that is capable of integrating a wide range of potential job demands and resources (see Demerouti et al., 2001) and seems to be the most appropriate model to use in this study.

Generally speaking, job demands and job resources are two sets of variables that can be distinguished in any kind of job. Job demands refer to those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort and that are therefore associated with certain physiological and/or psychological costs. On the other hand, job resources refer to those physical, psychological, social or organisational aspects of the job that (1) are functional in achieving work goals; (2) reduce job demands and the associated physiological and psychological costs; or (3) stimulate personal growth and development. Resources may be located in the task itself (e.g. performance feedback, skill variety, task significance, task identity, autonomy), as well as in the context of the task, for instance organisational resources (e.g. career opportunities, job security and salary) and social resources (e.g. supervisor and co-worker support and team climate) (Demerouti et al., 2001).

The JD-R model also proposes that employee health and psychological well-being is the result of two relatively independent processes (Bakker et al., 2003; Demerouti et al., 2001). In the first process, particularly the demanding aspects of work (e.g. work overload) lead to constant overtaxing and in the long term to health problems (e.g. chronic fatigue, burnout). In the second process, the availability of job resources may help employees to cope with the demanding aspects of their work and simultaneously stimulate them to learn from and grow in their job, which may lead to motivation, feelings of accomplishment and organisational commitment.

Various research findings indicate that job demands and a lack of resources are associated with work-home interaction. Increased number of hours worked, including overtime, tends to be associated with higher levels of negative work-home interference (e.g. Burke, Weir & Duwors, 1980; Judge, Boudreau & Bretz, 1994; Pleck, Staines & Lang, 1980). Geurts, Rutte

and Peeters (1999) also found 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 were associated with less conflict between both domains (Geurts & Demerouti, 2003; Grzywacz & Marks, 2000; Kinnunen & Mauno, 1998). Research by Grzywacz and Marks (2000) found a relationship between job control, job support and work-home interference, but showed that job control was stronger related to positive than to negative spill-over between work and family. In a similar vein, Demerouti, Geurts and Kompier (2004) found that job control and particularly job support were associated with positive work-home interference.

Coping is a central theme in stress research and numerous studies have focused on the individual's coping responses to various stressors, including stressors in the workplace. It therefore seems that the use of certain coping strategies to deal with job demands and a lack of job resources that could have an impact on the home domain could be important. Lazarus and Folkman (1984) defined coping as constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person. Various reasons exist for making coping an important construct to study. As a result of an ongoing transaction with their environment, individuals are confronted with demands that impinge on their cognitive processes and which challenge their ability to cope or adapt (Pratt & Barling, 1988).

Coping strategies (whether situational or dispositional) are often classified as being either problem or emotion focused (Folkman & Lazarus, 1988; Suls, David & Harvey, 1996). Other taxonomies of coping also exist. For example, Billings and Moos (1981) identified three methods of coping: a) active-cognitive coping, which is understood as the management of assessing potentially stressful events; b) active-behavioural coping, which is understood as the observable efforts aimed at managing a stressful situation; and c) avoidance coping, which is understood as refusal to face a problematic or stressful situation.

One trend has been the development of coping scales with fewer but broader dimensions. Two examples of this are the Multidimensional Coping Inventory (MCI; Endler & Parker, 1990) and the Coping Strategy Indicator (CSI; Amirkhan, 1990). The MCI assesses task, emotion and avoidance-oriented coping strategies, whereas Amirkhan (1990) identified three scales of coping that are measured with the CSI: a) problem-solving, which is understood as

weigh your options very carefully; b) seeking social support, which is understood as let your feelings out to a friend; and c) avoidance, which is understood as try to distract yourself from the problem. Rather than pigeonholing individuals as “problem-solvers” or “avoiders,” the CSI allows more complex patterns of preferences to be exhibited. The CSI was factor analytically derived 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).

Relatively few studies empirically investigated the role of coping strategies associated with work-home interaction (Geurts & Demerouti, 2003). Beutell and Greenhaus (1983) have studied the effectiveness of three types of coping strategies for dealing with work-home conflict among 115 married women (with at least one child) who were attending college. Their findings indicate that active attempts to change the structural and/or personal definition of one's roles were more effective in dealing with work-home conflict than more passive and reactive role behaviour. Kirchmeyer (1993) supports these findings, but showed that it was more than just having an active coping strategy, but that the type of coping strategy played an important role. Strategies that were aimed at changing one's own attitude about what demands can realistically be met in both domains seemed to be more effective in coping with high demands from both domains than strategies aimed at changing the attitudes or behaviours of others.

According to various researchers (cf. Bakker & Geurts, 2004; Geurts et al., in press; Grandey & Cropanzano, 1999; Montgomery, Peeters, Schaufeli & Den Ouden, 2003), studies on work-home interaction have not based their definitions and hypotheses on strong conceptual frameworks. However, an increasing amount of studies started using a relevant theoretical perspective called the Effort-Recovery (E-R) model (Meijman & Mulder, 1998) as a conceptual framework when work-home interaction is investigated. The E-R model postulates that effort expenditure (e.g. task performance at work) is associated with specific load reactions that develop in the individual. These load reactions can include psychological, behavioural and subjective responses such as changes in hormone secretion, energy levels, and mood. Normally, these load reactions are reversible if recovery occurs after the effort was invested and time was taken for the psychobiological systems to stabilise. This means that high demands from the one domain will not have adverse health consequences as long as sufficient recovery takes place during or after these periods. Effort expenditure may also be

accompanied by positive load reactions. The willingness to put effort into the task is crucial for the positive mobilisation of effort. According to the E-R model, work environments that offer enough resources (e.g. performance, feedback, autonomy and personal development) may foster the willingness to dedicate an individual's abilities to the task and yield positive outcomes.

METHOD

Research design

A cross-sectional research design was used in order to collect the data and obtain the research objectives. Cross-sectional research involves the measurement of all variable(s) for all cases within a narrow time span so that the measurements may be viewed as contemporaneous. Essentially, data were collected at only one point in time, comparing different participants (Baltes, Reese & Nesselroade, 1988). One advantage of cross-sectional research is that it is more economical time and cost-wise than other designs. For the participants, there is only one period for data collection, and the researcher is not faced with the difficulty and cost of maintaining contact with subjects over a long period of time. The inability to directly assess intra-individual change and the restriction of inferences to group averages are significant disadvantages of cross-sectional designs for the study of developmental issues (Baltes et al., 1988).

Participants and procedure

Random samples ($n = 300$) were taken from employees working in hospitals in the Johannesburg, Klerksdorp, Krugersdorp, Potchefstroom and Pretoria regions. A letter requesting participation was given to the hospitals prior to the administration of the measuring battery. The measuring battery was compiled and a letter requesting participation was included in the test books. Ethical aspects and motivation regarding the research were discussed with the participants before the questionnaires were handed out. The questionnaires were then administered in groups at the various hospitals on suitable dates.

Table 1 gives an indication of the characteristics of the participants in the study.

Table 1

Characteristics of the Participants

Item	Category	Frequency	Percentage
Gender	Male	6	2,00
	Female	293	97,70
	Missing value	1	0,30
Age	22 - 34	82	27,30
	35 - 44	109	36,30
	45 - 54	76	25,30
	55 - 64	20	6,70
	Missing values	13	4,30
Race	White	249	83,00
	African	33	11,00
	Coloured	13	4,30
	Indian	1	0,30
	Other	1	0,30
	Missing values	3	1,00
Language	Afrikaans	236	78,70
	English	32	10,70
	Sepedi	6	2,00
	Sesotho	2	0,70
	Setswana	10	3,30
	isiNdebele	1	0,30
	isiXhosa	3	1,00
	isiZulu	5	1,70
	Other	2	0,70
	Missing values	3	1,00
Position	Registered nurse	247	82,30
	Unit manager	39	13,00
	Process manager	3	1,00
	Nursing services specialist	11	3,70

According to Table 1, the sample consisted mainly of registered nurses (82,30%), Afrikaans-speaking (78,70%) females (97,70 %), between ages 35 and 44 (36,30%). A total of 83% of the nurses were white.

Measuring instruments

The following measuring instruments were utilised in the empirical study:

Job characteristics. Focus groups were held in several hospitals to determine the specific job demands and job resources which nurses experience in their work. The main demands and resources were then used to develop items for the questionnaire. Having analysed the responses, the demands were measured, which included Emotional Demands (e.g. “do you have to communicate with patients about death?”), Time Demands (e.g. “do you have to work overtime?”), Nurse-specific Demands (e.g. “do you experience insult from doctors?”) and Pressure (e.g. “do you have to work very fast?”). The following resources were measured: 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. “do you get on well with your supervisor?”) and Financial Support (e.g. “can you live comfortably with your pay?”). All items were rated on a 4-point scale ranging from 1 (*never*) to 4 (*always*).

The *Coping Strategy Indicator* (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”). It seems that the factors are internally consistent, where alpha values of 0,89 (Problem-Solving Coping), 0,93 (Seeking Social Support) and 0,84 (Avoidance Coping) were reported respectively (Amirkhan, 1990). All these values were acceptable ($\alpha > 0,70$, Nunnally & Bernstein, 1994) and thus indicate the internal consistency of the factors of the CSI.

The ‘*Survey Work-Home Interaction-NijmeGen*’ (SWING) (Geurts et al., in press; Wagena & Geurts, 2000) 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 (Geurts et

al., in press; Wagena & Geurts, 2000). Many items in the WHI scale are congruent to the scales of 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 are scored on a 4-point frequency rating scale ranging from 0 (*never*) to 4 (*always*). It seems that the factors are internally consistent, where alpha values of 0,84 (Negative WHI) and 0,75 (Positive WHI) are reported by Geurts et al. (in press). 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).

Statistical analysis

The statistical analysis was carried out with the SPSS-programme (SPSS Inc., 2003). Exploratory factor analyses and Cronbach alpha coefficients were used to assess the validity and reliability of the constructs which were measured in this study. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) 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; c) negative WHI and d) positive WHI. The eigenvalues 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 product-moment correlation coefficients were used to specify the relationship between the variables. In terms of statistical significance, it was decided to set the value at a 95% confidence interval level ($p \leq 0,05$). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. 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) that is predicted by the independent variables (e.g. job characteristics and coping strategies).

RESULTS

Construct validity of the measuring instruments

Job Characteristics. Principal components extraction was used in an initial run to estimate the number of factors of the self-developed items. The scree plot and eigenvalues showed nine factors, which explained 50,28% of the total variance. Principal component analysis with a direct oblimin rotation resulted in nine factors which were labelled Emotional Demands (e.g. “do you have to communicate with patients about death?”), Time Demands (e.g. “do you have to work overtime?”), Nurse-specific Demands (e.g. “do you experience insults from doctors?”) and Pressure (e.g. “do you have to work very fast?”). The following resources were measured: 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. “do you get on well with your supervisor?”) and Financial Support (e.g. “can you live comfortably with your pay?”).

Coping. Exploratory factor analysis was carried out and the scree plot and eigenvalues showed three factors, which explained 41,31% 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 interaction. To determine whether two factors represent work-home interaction, exploratory factor analysis was carried out. The scree plot and eigenvalues showed evidence for a two-factor solution that explained 48,24% 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 2 shows the descriptive statistics and the Cronbach alpha coefficients of the measuring instruments.

Table 2

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	0,73
WORK-HOME INTERFERENCE					
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 2 shows that acceptable Cronbach alpha coefficients were obtained for all the scales. The Cronbach alpha coefficients of all the measuring instruments were considered to be acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). All the scores were normally distributed, except for Supervisor Support Scale, which was a little skew.

The product-moment correlation coefficients between the constructs are reported in Table 3.

Table 3

Correlation Coefficients between Job Characteristics, 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)

Table 3 indicates that Emotional Demands are positively and statistically significantly related to Negative WHI. Time Demands, Nurse-specific Demands and Pressure are positively, statistically and practically significantly (with a medium effect) related to Negative WHI. Regarding the relationship with resources, Role Clarity and Colleague Support are negatively, statistically and practically (with a medium effect) related to Negative WHI, while Supervisor Support and Financial Support are negatively and statistically significantly related to Negative WHI. Problem-Solving Coping and Avoidance Coping are negatively and statistically significantly related to Negative WHI. Regarding the relationships with Positive WHI, Autonomy is positively and statistically significantly related to Positive WHI, while Time Demands, Problem-Solving Coping and Seeking Social Support are negatively and statistically significantly related to Positive WHI.

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) had upon Negative WHI; the second assessed the contribution that job characteristics (step 1) and coping strategies (step 2) had upon Positive WHI. The results are reported in Table 4 and Table 5.

Table 4

Multiple Regression Analyses with Negative WHI as Dependent Variable

Model		Unstandardised		Standardised	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> ²	ΔR^2
		Coefficients		Coefficients						
		B	SE	Beta (β)						
1	(Constant)	-8,59	2,12		-4,05	0,00*	19,34	0,61	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 $p < 0,05$

As can be seen in Table 4, 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% 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 ($\beta = -0,11$; $t = -2,00$; $p < 0,05$) 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% 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 ($\beta = -0,11$; $t = -2,00$; $p < 0,05$), Problem-Solving Coping ($\beta = -0,13$; $t = -2,60$; $p < 0,01$) and Avoidance Coping ($\beta = 0,13$; $t = 2,68$; $p < 0,01$).

Next, Positive WHI was regressed upon the job characteristics and coping strategies. The results are reported in Table 5.

Table 5

Multiple Regression Analyses with Positive WHI as Dependent Variable

Model		Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> 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 $p < 0,05$

Table 5 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% of the variance. More specifically, it seems that Time Demands ($\beta = -0,14$; $t = -2,31$; $p < 0,02$), Autonomy ($\beta = 0,30$; $t = 5,19$; $p < 0,00$) and Role Clarity ($\beta = 0,14$; $t = 2,25$; $p < 0,03$) 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% of the total variance. Taken together, it seems that significant predictors of Positive WHI are Time Demands ($\beta = -0,14$; $t = -2,31$; $p < 0,02$), Autonomy ($\beta = 0,30$; $t = 5,19$; $p < 0,00$), Role Clarity ($\beta = 0,14$; $t = 2,25$; $p < 0,03$) and Problem-Solving Coping ($\beta = 0,16$; $t = 2,58$; $p < 0,01$).

DISCUSSION

Within the nursing profession, the well-being of nurses is very important because nurses are responsible for the care and well-being of others. Although the nursing profession provides a very important service to the public, it is known as one of the most demanding professions and is listed as one of the four most stressful work environments in the health care sector. Within the nursing environment, nurses are known to work long hours, with high work demands, such as overtime and job pressure. Nurses also experience low job control, low supportive work relationships and have to work shifts. Within the nursing environment, the shortage of registered nurses is also becoming a serious problem. This nursing shortage has been attributed to several factors including an aging workforce, an aging population, inadequate young professionals choosing a nursing career and stressful and unsafe working conditions. Even though it seems that all these factors combine to create stressful work conditions for nurses that could interfere with their family life, no studies could be found in South Africa that investigate job characteristics associated with work-home interaction or that deals with effective coping strategies that nurses could use to improve their WHI. The objective of this study was therefore to determine which specific job characteristics and coping strategies predict negative and positive work-home interaction in the nursing environment.

The first objective of this study was to determine which job characteristics and coping strategies predict negative WHI. The results obtained with the Pearson product-moment correlation coefficients showed that time demands, nurse-specific demands and pressure were practically significantly related to negative WHI. Emotional demands were only statistically significantly related to negative WHI. Practically significant relationships of resources

associated with negative WHI included role clarity and social support from colleagues. Support from one's supervisor and financial support was statistically significantly related to negative WHI. Two coping strategies were associated with negative WHI. It seems that problem-solving coping is associated with less negative work-home interference, while avoidance coping is associated with higher levels of negative work-home interference. Taken together, it seemed that all the job demands, job resources and coping strategies were related to negative WHI, except for autonomy and seeking social support coping.

The results of the multiple regression analyses of job characteristics and coping strategies showed that time demands and pressure were the main demands that predicted negative WHI. Two resources predict negative WHI, namely role clarity and colleague support. Regarding coping strategies, problem-solving coping was associated with less negative work-home interference, 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 work), have difficulties to combine their work and home lives and experience a negative interference from work to home. However, two resources seem to prevent this negative spill-over. 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 could enhance or increase negative work-home interference. These results seem to support previous findings (e.g. Burke et al., 1980; Judge et al., 1994; Pleck et al., 1980). The relationship between time demands and social support seem to support the findings of Geurts et al. (1999) and Grzywacz and Marks (2000), who also found that overtime is frequently associated with negative work-home interference. However, no support was found for the relationship between autonomy (job control) and less negative work-home interference, as found by Geurts et al. (1999) and Grzywacz and Marks (2000).

It also seems that two coping strategies influence negative work-home interference. When nurses used a problem-focused coping strategy (e.g. brainstorm all possible solutions before deciding what to do and set some goals to deal with the situation) it seems to buffer the negative effect of job demands and a lack of resources on the home domain. However, using an avoidance coping strategy made things worse. Using distracting activities such as daydreaming and 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, were found to be an ineffective strategy to deal with demanding aspects of the job and did not help avoid a negative spill-over to the home.

The second objective of this study was to determine which job characteristics and coping strategies predict positive WHI. The results obtained with the Pearson product-moment correlation coefficients showed that time demands and seeking social support were statistically significantly related to positive WHI. Based on the results obtained with the multiple regression analyses, it seems that significant predictors of positive WHI are time demands, autonomy, role clarity and problem solving coping.

Again, when nurses experience too much time demands such as overtime, working socially undesirable hours and having to spend more time at work than contracted for, this prevents a positive spill-over to the home domain. However, having role clarity (e.g. less role conflict and ambiguity) and autonomy (e.g. deciding how to carry out the job, how much time to spend on a certain task and freedom in the way that activities are carried out) in the job, increases a positive spill-over from the work to the home domain. It also seems that a problem-solving coping style will help to deal with time demands and enhance the positive effect of autonomy and role clarity. These results support the findings of Kirchmeyer (1993) and Beutell and Greenhaus (1983) who found that active attempts to change the structural and/or personal definition of one's roles were 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 and as a result, no causal inferences could be drawn. Therefore, the causal relationship between variables was interpreted rather than established and more complex forms of non-recursive linkages could not be examined. Prospective longitudinal studies and quasi-experimental research designs are needed to further validate the hypothesised

relationships between job characteristics, coping and work-home interaction and therefore deal with the limitation set by using a cross-sectional design. The study focused on a limited number of variables and did not take into account some of the variables that have been found to be related to work-home interaction (psychological involvement, personality variables and demographic characteristics). It therefore seems important for future research to examine a model with different sets of variables. The sample was also very homogeneous. A percentage of 83 of the respondents was white, Afrikaans-speaking women. Therefore, the results could not be generalised to other occupational and demographic groups.

RECOMMENDATIONS

The nursing profession plays a vital role in the country's health sector, and should therefore be extremely aware of the causes of negative work-home interaction in order to minimise negative work-home interaction in the profession. Programmes should be established to teach newcomers and current nurses what the symptoms of negative work-home interference are. Interventions should also be brought about whereby nurses can be taught how to reverse the effects of negative work-home interaction and how to avoid negative work-home interaction symptoms.

Furthermore, in order to promote work-life balance and to prevent negative interaction between work and home, 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, flexible starting and finishing times, childcare facilities and parental leave), but also on the informal work environment (Geurts & Demerouti, 2003). According to Cohen (1997), culture in which employees who experience work-home interaction will feel entitled to use the facilities that are available. 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 in order to prevent negative WHI and enhance positive WHI. Job demands should also be reconsidered, while the resources available to the nurses should

be improved in order to minimise the levels of negative WHI and maximise positive WHI experienced by nurses.

Furthermore, it is important to focus on nurses' coping strategies. The assessments 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, it is necessary to implement organisationally based preventive strategies to tackle high job demands and to provide necessary job resources.

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REFERENCES

- Advisory Committee on Health Human Resources. (2002). Our health, our future: Creating quality workplaces for Canadian nurses. *Final Report of the Canadian Nursing Advisory Committee*. Available from <http://www.hc-sc.gc.ca>.
- Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, J.A., Busse, R. & Clarke, H. (2001). Nurses' reports on hospital care in five countries. *Health Affairs*, 20(3), 43–53.
- Amirkhan, J.H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59, 1066–1075.
- Baggaley, S. & Kean, S. (1999). Health Visitors as Family Nurses: A discussion of research, policy and practice. *Journal of Family Nursing*, 5(4), 388.
- Bakker, A.B., Demerouti, E., De Boer, E. & Schaufeli, W.B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior*, 62, 341–356.
- Bakker, A.B. & Geurts, S.A.E. (2004). Towards a dual-process model of work-home interference. *Work & Occupations*, 31, 345–366.
- Baltes, P.B., Reese, H.W. & Nesselroade, J.R. (1988). *Introduction to research methods, life-span developmental psychology*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.
- Barnett, R. C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs*, 124, 125–182.
- Baumann, A., O'Brien-Pallas, L.O., Armstrong-Stassen, M., Blythe, J., Bourbonnaise, R., Cameron, S., Irvine Doran, D.I., Kerr, M., McGillis Hall, L., Vezina, M., Butt, M. & Ryan, L. (2001). *Commitment and Care: The benefits of a healthy workplace for nurses, their patients and the system - A policy synthesis*. Canadian Health Services Foundation and The Change foundation.
- Bersoff, D. & Crosby, F. (1984). Job satisfaction and family status. *Personality and Social Psychology Bulletin*, 10, 79–83.
- Beutell, N.J. & Greenhaus, J.H. (1983). Integration of home and non-home roles: women's conflict and coping behaviour. *Journal of Applied Psychology*, 68, 43–48.
- Billings, A.G. & Moos, R.H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine*, 4, 139–157.
- Burke, R.J., Weir, T. & Duwors, R.E. (1980). Work demands on administrators and spouse well-being. *Human relations*, 33, 253–278.
- Carson, J., Bartlett, H. & Croucher, P. (1991). Stress in community psychiatric nursing: a

- preliminary investigation. *Community Psychiatric Nursing Journal*, 11, 8–12.
- Coffey, M. & Coleman, M. (2001). The relationship between support and stress in forensic community mental health nursing. *Journal of Advanced Nursing*, 34, 397–407.
- Cohen, J. (1988). *Statistical power analysis of the behavioural sciences* (2nd ed.). Orlando, CA: Academic Press.
- Cohen, A. (1997). Personal and organizational responses to work-nonwork interface as related to organizational commitment. *Journal of Applied Psychology*, 27, 1085–1114.
- Crosby, F. (1982). *Relative deprivation and working women*. New York: Oxford University Press.
- Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512.
- Demerouti, E., Geurts, S.A.E. & Kompier, M.A.J. (2004). Positive and negative work-home interaction: Prevalence and correlates. *Equal Opportunities International*, 23(1), 6–35.
- Dolan, N. (1987). The relationship between burnout and job satisfaction in nurses. *Journal of Advanced Nursing*, 12, 3–12.
- Ehlers, V.J., Oosthuizen, M.J., Bezuidenhout, M.C., Monareng, L.V. & Jooste, K. (2003). Post-basic nursing students' perceptions of the emigration of nurses from the Republic of South Africa. *Health SA Gesondheid*, 8(4), 24–37.
- Endler, N.S. & Parker, J.D.A. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology*, 58, 844–854.
- Fagin, L., Brown, D., Bartlett, H., Leary, J. & Carson, J. (1995). The Claybury community psychiatric nurse stress study: Is it more stressful to work in hospital or the community? *Journal of Advanced Nursing*, 22, 347–358.
- Folkman, S. & Lazarus, R.S. (1988). The relationship between coping and emotion: Implications for theory and research. *Social Science & Medicine*, 26(3), 309–317.
- Frone, M.R. (2003). Work-family balance. In J.C. Quick & L.E. Tetrick (Eds.), *The handbook of occupational health psychology* (pp. 143–162). Washington, DC: American Psychological Association.
- Geurts, S.A.E., Rutte, C. & Peeters, M. (1999). Antecedents and consequences of work-home interference among medical residents. *Social Science & Medicine*, 48, 1135–1148.
- Geurts, S.A.E. & Demerouti, E. (2003). Work/non-work interface: A review of theories and findings. In M. Schabracq, J. Winnubst & C.L. Cooper (Eds.), *Handbook of Work and Health Psychology* (pp. 279–312). Chichester: John Wiley & Sons.

- Geurts, S.A.E., Taris, T.W., Kompier, M.A.J., Dijkers, J.S.E., Van Hooff, M.L.M. & Kinnunen, U.M. (in press). Work-home interaction from a work psychological perspective: Development and validation of the SWING. *Work & Stress*.
- Gmeiner, A. & Poggenpoel, M. (1996). Nursing service managers' views on problems they experience in their everyday lives: Part 1. *Curationis*, 19(1), 55–60.
- Grandey, A.A. & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior*, 54, 350–370.
- Greenhaus, J.H. & Beutell, N.J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10, 76–88.
- Grzywacz, J.G. & Marks, N.F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, 5(1), 111–126.
- Hall, W.A. & Callery, P. (2003). Balancing personal and family trajectories: An international study of dual-earner couples with pre-school children. *International Journal of Nursing Studies*, 40, 401–412.
- Hall, E.J. (2004). Nursing attrition and the work environment in South African health facilities. *Curationis*, 27(4), 29–36.
- Health Canada. (2001). *Healthy nurses, healthy workplaces*. Ottawa, Canada: The office of Nursing Policy: Health Policy & Communications Branch, Health Canada.
- Hochchild, A. (1997). *The time bind*. New York: Metropolitan.
- Hodson, C. (2001). *Psychology and work*. New York: Routledge.
- Judge, T.A., Boudreau, J.W. & Bretz, R.D., Jr. (1994). Job and life attitudes of male executives. *Journal of Applied Psychology*, 79(5), 767–782.
- Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoek, J.D. & Rosenthal, R.A. (1964). *Organizational stress: Studies in role conflict and ambiguity*. New York: John Wiley.
- Karasek, R. A. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285–308.
- Karasek, R.A. & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York: John Wiley.
- Kinnunen, U. & Mauno, S. (1998). Antecedents and outcomes of work-family conflict among employed women and men in Finland. *Human Relations*, 51, 157–177.
- Kirchmeyer, C. (1993). Nonwork-to-work spillover: a more balanced view of the experiences and coping of professional women and men. *Sex roles*, 28, 531–552.

- Kopelman, R.E., Greenhaus, J.H. & Connolly, T.F. (1983). A model of work, family, and interrole conflict: A construct validation study. *Organizational Behavior and Human Performance*, 32, 198–213.
- Lazarus, R.S. & Folkman, S. (1984). Coping and adaptation. In W.D. Gentry (Ed.), *Handbook of behavioral medicine* (pp. 282–325). New York: Guilford.
- Meijman, T.F. & Mulder, G. (1998). Psychological aspects of workload. In P.J. Drenth, H. Thierry & C.J. de Wolff (Eds.), *Handbook of work and organizational psychology* (pp. 5–33). Hove, England UK: Psychology Press.
- Moen, P., Dempster-McClain, D. & Williams, R.M. (1992). Successful aging: A life-course perspective on women's multiple roles and health. *American Journal of Sociology*, 97, 1612–1638.
- Montgomery, A.J., Peeters, M.C.W., Schaufeli, W.B. & Den Ouden, M. (2003). Work-home interference among newspaper managers: It's relationship with burnout and engagement. *Anxiety, Stress, and Coping*, 16(2), 195–211.
- Moore, B. & Grant, G. W. B. (1977). Feelings of alienation among nursing staff in hospitals for the mentally handicapped. *International Journal of Nursing Studies*, 14, 5–12.
- Netemeyer, R.G., Boles, J.S. & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81, 400–410.
- Nunnally, J.C. & Bernstein, I.H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.
- Nursing Task Force. (1999). *Good nursing, good health: An investment for the 21st century*. Ontario Ministry of Health.
- Page, A. (2003). *Keeping patients safe: Transforming the work environment of nurses*. Washington, DC: National Academy Press.
- Peeters, M.C.W., Montgomery, A.J., Bakker, A.B. & Schaufeli, W.B. (2005). Balancing work and home: How job and home demands are related to burnout. *International Journal of Stress Management*, 12(1), 43–61.
- Pieterse, M. & Mostert, K. (2005). Measuring the work-home interface: Validation of the Survey Work-Home Interaction - Nijmegen (SWING) Instrument. *Management Dynamics*, 14(2), 2–15.
- Pleck, J.H., Staines, G.L. & Lang, L. (1980). Conflicts between work and family life. *Monthly Labor Review*, 103, 29–32.
- Pratt, L.I. & Barling, J. (1988). Differing between daily events, acute and chronic stressors: A

- framework and its implications. In J.J. Hurrell, L.R. Murphy, S.L. Sauter & C.L. Cooper (Eds.), *Occupational stress: Issues and developments in research* London: Taylor & Francis.
- Schreuder, A.M.G. & Theron, A.L. (2001). *Careers: An Organizational Perspective* (2nd ed.).
- Snellgrove, S.R. (1998). Occupational stress and job satisfaction: A comparative study of health visitors, district nurses and community psychiatric nurses. *Journal of Nursing Management*, 6, 97–104.
- SPSS Inc. (2003). *SPSS 12.0 for Windows*. Chicago, IL: Author.
- Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes*. Wetenskaplike bydraes - Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Sullivan, P.J. (1993). Occupational stress in psychiatric nursing. *Journal of Advanced Nursing*, 18, 591–601.
- Suls, J., David, J.P. & Harvey, J.H. (1996). Personality and coping: Three generations of research. *Journal of Personality*, 64(4), 711–735.
- Tabachnick, B.G. & Fidell, L.S. (2001). *Using multivariate statistics* (4th ed.). Boston, MA: Allyn & Bacon.
- Wagena, E. & Geurts, S.A.E. (2000). ‘SWING’. Ontwikkeling en Validering van de ‘Survey Werk-Thuis Interferentie-Nijmegen’ (SWING). [Development and Validation of the “Survey Work-Home Interference-Nijmegen”]. *Gedrag en Gezondheid*, 28, 138–158.
- Wethington, E. & Kessler, R.C. (1989). Employment, parental responsibility, and psychological distress. *Journal of Family Issues*, 10, 527–546.
- Wunderlich, G.S., Sloan, F.S. & Davis, C.K. (1996). *Nursing staff in hospitals and nursing homes: Is it adequate?* Washington, DC: National Academy Press.

CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter comprises conclusions regarding the literature review and the empirical study according to the specific objectives. The limitations of the research are discussed, followed by recommendations for the research problem in the organisation. Lastly, suggestions are made for future research.

3.1 CONCLUSIONS

The first objective of this study was to determine the relationship between job characteristics, coping and work-home interaction according to the literature. The work-home interaction is defined as an interactive process in which a workers' 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) (Geurts & Demerouti, 2003). Therefore, work-home interaction (WHI) and work-home interference (HWI) are experienced when pressures from the work and family roles are mutually incompatible — such that participation in one role makes it difficult to participate in the other (Greenhaus & Beutell, 1985). In addition to this definition, three major forms of work-family conflict have been differentiated, namely time-based, strain-based and behaviour-based conflict. Greenhaus and Beutell (1985) suggested that difficulties in combining work and family roles may either arise from time demands that make it physically impossible to be in two places at the same time (time-based conflict), from the spill-over of strain from one domain to the other (strain-based conflict), and/or from the incompatibility of behaviours requested in each domain (behaviour-based conflict). Previous research has demonstrated that especially time- and strain-based conflicts are associated with various negative work, family, and health-related outcomes (Allen, Herst, Bruck & Sutton, 2000).

Job demands refer to those physical, psychosocial or organisational aspects of the job that require sustained physical and/or mental effort and are therefore associated with certain physiological and/or psychological costs (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). Job resources refer to those physical, psychosocial or organisational aspects of the job that may be functional in meeting task requirements (i.e. job demands) - and may thus reduce the

associated physiological and/or psychological costs - and at the same time stimulate personal growth and development.

The JD-R model proposes that employee health and psychological well-being is the result of two relatively independent processes (Bakker, Demerouti, De Boer & Schaufeli, 2003; Demerouti et al., 2001). In the first process, particularly the demanding aspects of work (e.g. work overload) lead to constant overtaxing and in the long term to health problems (e.g. chronic fatigue and burnout). In the second process, the availability of job resources may help employees to cope with the demanding aspects of their work and simultaneously stimulate them to learn from and grow in their job, which may lead to motivation, feelings of accomplishment, and organisational commitment. Theoretically, the JD-R model can be considered an elaboration of the more classic Demand-Control (D-C) model (Karasek, 1979), in which autonomy can be considered a resource that enables workers to cope with a high workload.

In general, research findings indicate that several job characteristics are associated with negative work-home interference. Studies have shown that long working hours are associated with interference between work and family life in terms of role conflicts or fatigue, worrying and irritability (Grzywacz & Marks, 2000; Staines & Pleck, 1984). It also seems that an increased number of hours worked, including overtime, tend to be associated with higher levels of work-home interaction (e.g. Burke, Weir & Duwors, 1980; Judge, Boudreau & Bretz, 1994; Pleck, Staines & Lang, 1980). Parasuraman, Purohit, Godshalk and Beutell (1996) found that male and female entrepreneurs who experience work role overload and high parental demands reported more negative WHI which, in turn, was related to general life stress. Job control also tends to be strongly linked to psychological health and well-being (Day & Jreige, 2002; Hurrell & McLaney, 1989), and some research suggests that it is linked to work-home interference. Fox, Dwyer and Ganster (1993) examined nurses' job control and found that psychological reactions (e.g. blood pressure) to jobs that have high demands and low control may carry over to home settings. Research also found a strong relationship between job resources and positive work-home interaction. It seems that job control and work social support were associated with positive spill-over between work and family (Geurts & Demerouti, 2003; Grzywacz & Marks, 2000; Kinnunen & Mauno, 1998). Demerouti, Geurts and Kompier (2004) also found that job control and particularly job support were associated with positive work-home interference.

Coping is defined as constantly changing cognitive and behavioural efforts to manage specific internal and/or external demands that are appraised as taxing or exceeding the resources of the person (Eckenrode, 1991; Folkman & Lazarus, 1984). One trend has been the development of coping scales with fewer but broader dimensions. Two examples of this are the Multidimensional Coping Inventory (MCI; Endler & Parker, 1990) and the Coping Strategy Indicator (CSI; Amirkhan, 1990). The MCI assesses task, emotion, and avoidance oriented coping strategies, whereas Amirkhan (1990) identified three scales of coping that are measured with the CSI: a) problem-solving, which is understood as weigh your options very carefully; b) seeking social support, which is understood as let your feelings out to a friend; and c) avoidance, which is understood as try to distract yourself from the problem. Rather than pigeonholing individuals as “problem-solvers” or “avoiders”, the CSI allows more complex patterns of preferences to be exhibited. The CSI was factor analytically derived 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).

Relatively few studies empirically investigated the role of coping strategies associated with work-home interaction (Geurts & Demerouti, 2003). Beutell and Greenhaus (1983) have studied the effectiveness of three types of coping strategies for dealing with work-home conflict among 115 married women (with at least one child) who were attending college. Their findings indicate that active attempts to change the structural and/or personal definition of one's roles were more effective in dealing with work-home conflict than more passive and reactive role behaviour. Kirchmeyer (1993) supports these findings. However, he contends that it was more than just having an active coping strategy — the type of coping strategy played an important role. Strategies that were aimed at changing one's own attitude about what demands can realistically be met in both domains seemed to be more effective in coping with high demands from both domains than strategies aimed at changing the attitudes or behaviours of others.

The second objective of this study was to determine the relationship between job characteristics, coping and work-home interaction in a sample of nurses. The results obtained with the Pearson product-moment correlation coefficients showed that time demands, nurse-specific demands and pressure were practically significantly related to negative WHI.

Emotional demands were only statistically significantly related to negative WHI. Practically significantly relationships of resources associated with negative WHI included role clarity and social support from colleagues. Support from one's supervisor and financial support were statistically significantly related to negative WHI. Two coping strategies were associated with negative WHI. It seems that problem solving coping is associated with less negative work-home interference, while avoidance coping is associated with higher levels of negative work-home interference. Taken together, it seemed that all the job demands, job resources and coping strategies had a relationship with negative WHI, except autonomy and seeking social support coping. The results obtained with the Pearson product-moment correlation coefficients showed that time demands and seeking social support was statistically significantly related to positive WHI.

The third objective of this study was to determine which job characteristics and coping strategies predict negative work-home interference. The results of the multiple regression analyses of job characteristics and coping strategies showed that time demands and pressure were the main demands that predicted negative WHI. Two resources predict negative WHI, namely role clarity and colleague support. Regarding coping strategies, problem solving coping was associated with less negative work-home interference, while avoidance coping seems to predict higher levels of negative WHI.

Based on these results, it seems that nurses who experience high time demands (working overtime, emergency hours and 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 and having work left to do when they leave work) have difficulties combining their work and home lives and experience a negative interference from work to home. However, two resources seem to prevent this negative spill-over. 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, 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 could enhance or increase negative work-home interference. These results seem to support previous findings (e.g. Burke et al., 1980; Judge et al., 1994; Pleck et al., 1980). The relationship between time demands and social support seem

to support the findings of Geurts, Rutte and Peeters (1999) and Grzywacz and Marks (2000), who also found that overtime is frequently associated with negative work-home interference. However, no support was found for the relationship between autonomy (job control) and less negative work-home interference, as found by Geurts et al. (1999) and Grzywacz and Marks (2000).

It also seems that two coping strategies influence negative work-home interference. When nurses applied a problem-focused coping strategy (e.g. brainstorm all possible solutions before deciding what to do and set some goals to deal with the situation) it seemed to buffer the negative effect of job demands as well as a lack of resources on the home domain. However, using an avoidance coping strategy made things worse. Using distracting activities such as daydreaming and 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, were found to be an ineffective strategy to deal with demanding aspects of the job and did not help avoid a negative spill-over to the home.

The fourth objective of this study was to determine which job characteristics and coping strategies predict positive work-home interference. Based on the results obtained with the multiple regression analyses, it seems that significant predictors of positive WHI are 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 a positive spill-over to the home domain. However, having role clarity (e.g. less role conflict and ambiguity) and autonomy (e.g. deciding how to carry out the job, how much time to spend on a certain task and freedom in the way that activities are carried out) in the job increases a positive spill-over from the work to the home domain. It also seems that a problem-solving coping style will help to deal with time demands and enhance the positive effect of autonomy and role clarity. These results support the findings of Kirchmeyer (1993) and Beutell and Greenhaus (1983) who found that active attempts to change the structural and/or personal definition of one's roles were more effective in dealing with work-home conflict than more passive and reactive role behaviour.

3.2 LIMITATIONS

A first limitation was that a cross-sectional design was used. Cross-sectional studies do not allow us to draw causal inferences concerning the correlates of the work-nonwork interface. As a result, no causal inferences could be drawn. Therefore the causal relationship between variables were interpreted rather than established, and more complex forms of non-recursive linkages could not be examined. However, several longitudinal studies have shown that job characteristics such as job demands had mainly causal relationships with health outcomes, in that the outcomes tended to occur after job perceptions, rather than vice versa (see Buunk, De Jonge, Ybema & De Wolff, 1998). To validate the hypothesised causal relationships, and thus deal with the limitation set by using a cross-sectional design, prospective longitudinal studies and the quasi-experimental research design are required.

A second limitation was that the results were obtained solely by self-report questionnaires. This may lead to the problem of common method variance. The use of only one method of data-collection increases the danger that the associations are spurious and trivial. However, little evidence of common method variance among self-report measures of the kinds of constructs studied here was found (Spector, 1987). Another aspect to consider is that few alternative methodologies are suggested to deal with the use of self-report measures. Even though this is the case, objective measures of job characteristics and/or outcomes, still need to be studied.

A third limitation was that only selected job demands and job resources were included in this study, even though the JD-R model is capable of integrating several demands and resources. A broader range of working conditions (e.g. mental and physical demands, supervisory support and skill variety) could be included in future studies. Furthermore, this study focused on a limited number of variables and did not take into account some of the variables that have been found to be related to work-home interaction (e.g. psychological involvement, personality variables and demographic characteristics). It therefore seems important for future research to examine a model with different sets of variables.

Another limitation was that this research was conducted in a homogeneous sample consisting of individuals in the nursing environment. A percentage of 83 of the respondents was white,

Afrikaans-speaking women. It should also be noted that certain characteristics probably exist within the nursing environment that could have influenced the participants' responses. As a consequence, the results could not be generalised to other professions.

3.3 RECOMMENDATIONS

The following recommendations were made for the organisation as well as for future research.

3.3.1 Recommendations for the organisation

The nursing profession plays a vital role in the country's health sector, and should therefore be extremely aware of the causes of negative work-home interaction in order to minimise negative work-home interaction within the profession. Striving for balance between work and home roles poses a huge challenge to organisations. Research on work and home interaction revealed that work-life initiatives have a positive effect on the company as well as on the welfare of individuals and their families (Barnett, 1998; Bond, Galinsky & Swanberg, 1998; Ferber, O'Ferrell & Allen, 1991; Greenhaus, 1988; Parasuraman & Greenhaus, 1999;). Companies should therefore provide work-family facilities that enable employees to better align both life spheres in order to promote work-life balance and to prevent negative interaction between work and home. However, they need to focus not only on formal policies (for instance, by offering flexible working hours, compressed work schedules, flexible starting and finishing times, childcare facilities and parental leave), but also on the informal work environment (Geurts & Demerouti, 2003). According to Cohen (1997), the culture of the organisation in which employees work should be of such a nature that employees will feel entitled to use the facilities that are available. "Family-friendly" attitudes of supervisors and colleagues towards the use of these formal arrangements should always be present.

Studies with regard to job characteristics revealed that aspects such as work overload, work hours, work role conflict and work role ambiguity are found to be associated with negative work to home interferences (Dijkers, Geurts, Kompier & Houtman, in press; Frone, Russell & Cooper, 1992; Frone, Yardley, Markel, 1997; Grandey & Cropanzano, 1999; Grzywacz & Marks, 2000). These antecedents lead to consequences which may be harmful to the organisation as well as the individual and their families. Organisational consequences include

the decrease in the effectiveness and efficiency of employees as well as managers (Montgomery, Peeters, Schaufeli & Den Ouden, 2003). The various job characteristics found to be associated with negative work-home interaction within the nursing environment, such as time demands, role clarity, pressure and colleague support are therefore important for the organisation to focus on. Job demands should be reconsidered, while the resources available to the nurses should be improved in order to minimise the levels of negative work-home interaction experienced by nurses. The nursing environment should consider looking at demands that influence the time nurses can spend with their families as well as pressure that could have an effect on the level of negative work-home interaction. On the other hand, motivational characteristics such as higher levels of job control, work social support and role clarity are related to lower levels of negative interaction and seem to enhance positive work-home interaction between the work and home domains (Grzywacz & Marks, 2000). It should therefore benefit the organisation to focus on these resources in order to enhance a positive spill-over effect to the home domain.

Furthermore, it is important to focus on nurses' coping strategies. The assessments of coping strategies might be effectively incorporated with personnel selection procedures, and individual stress coping training might be beneficial. Employees in the nursing environment could have training sessions in coping strategies if they must handle a stressful situation which they have to cope with. It could also be emphasised that problem solving coping plays an important role in work-home interaction, but that avoidance coping seems to compound problems. However, since coping strategies only contributed a small percentage to work-home interaction, a more desirable strategy will be to make the organisation inherently less stressful. Since it seems that job demands and job resources play a central role in work-home interaction, it is necessary to implement organisationally based preventive strategies to tackle high job demands and to provide necessary job resources.

The battle for balance will continue, therefore it is imperative for organisations as well as individuals to understand work-home interference and the consequences of imbalance. This better understanding and knowledge may help organisations and individuals in perceiving problematic areas and developing programmes regarding wellness and wellness programmes. If organisations have the ability to develop awareness of these interferences, it can contribute to the day-to-day management of staff and prevent crisis management. All individuals working within the nursing environment should become aware of the causes and symptoms

of negative work-home interaction, and make them aware that utilising positive aspects in the work environment could have a positive impact on their home lives.

3.3.2 Recommendations for future research

Future research needs to focus on the relative prevalence of WHI in the nursing environment. Research should also focus on processes to help the individual develop a balanced life style and awareness of unhealthy practices and corrective measurements. Research regarding the relationship of personality traits and work-home interaction should be done using dispositional traits, such as the big five personality dimensions, hardiness, locus of control, self-esteem, type A behaviour, dispositional optimism and sense of coherence. It is also recommended that larger samples with more powerful sampling methods be utilised to enable generalisation of the findings to other similar groups.

Future research should be aware that the specific job demands and resources to be addressed may differ across organisations. This implies that interventions aimed at improving the working environment will be most successful if they are tailored to the most important job characteristics. It suggests that these interventions would eventually lead to a reduction in negative WHI and an increase in positive WHI. It also seems important to consider how work positively affects non-work and how non-work (e.g. family) can facilitate one's functioning at work.

As the effect of daily experiences on the dynamic interplay between work and home has been rarely examined within the field of occupational health psychology (e.g. Sonnentag, 2001, for notable exceptions), a suggestion for future research is to conduct a short-term (day-to-day) study, addressing for example the time spent on and one's evaluation of non-work activities (e.g. low vs. high effortful activities and pleasant vs. unpleasant activities), and momentary states of health and well-being (e.g. fatigue and mood). Such a fine-grained approach would yield much insight as to why negative and/or positive load reactions might develop in each domain. Long-term longitudinal research may reveal to what extent work-home interaction is influenced by stable work and home characteristics (e.g. high-demand jobs) and how it affects health and well-being in the long run, having practical implications for the prevention of interference and the promotion of positive interaction between both life spheres.

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 Occupational Health Psychology*, 5, 278–308.
- Amirkhan, J.H. (1990). A factor analytically derived measure of coping: The Coping Strategy Indicator. *Journal of Personality and Social Psychology*, 59, 1066–1075.
- Bakker, A.B., Demerouti, E., De Boer, E. & Schaufeli, W.B. (2003). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior*, 62, 341–356.
- Barnett, R.C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs*, 124, 125–182.
- Beutell, N.J. & Greenhaus, J.H. (1983). Integration of home and non-home roles: Women's conflict and coping behaviour. *Journal of Applied Psychology*, 68, 43–48.
- Bond, J.T., Galinsky, E. & Swanberg, J.E. (1998). *The 1997 National Study of the Changing Workforce*. New York: Families and Work Institute.
- Burke, R.J., Weir, T. & Duwors, R.E. (1980). Work demands on administrators and spouse well-being. *Human relations*, 33, 253–278.
- Buunk, B.P., De Jonge, J., Ybema, J.F. & De Wolff, C.J. (1998). Psychosocial aspects of occupational stress. In P.J.D. Drenth, H. Thierry & C.J. de Wolff (Eds.), *Handbook of Work and Organizational Psychology: Volume 2. Work Psychology*, (pp. 145–182) Hove, UK: Psychology Press.
- Cohen, A. (1997). Personal and organizational responses to work-nonwork interface as related to organizational commitment. *Journal of Applied Psychology*, 27, 1085–1114.
- Day, A.L. & Jreige, S. (2002). Examining Type A behaviour pattern to explain the relationship between stressors and psychological outcomes. *Journal of Occupational Health Psychology*, 7, 109–120.
- Demerouti, E., Bakker, A.B., Nachreiner, F. & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86, 499–512.
- Demerouti, E., Geurts, S.A.E. & Kompier, M.A.J. (2004). Positive and negative work-home interaction: Prevalence and correlates. *Equal Opportunities International*, 23(1), 6–35.
- Dijkers, J.S.E., Geurts, S.A.E., Kompier, M.A.J. & Houtman, I.L.D. (in press). Working full time or part time and work-home interference among men and women under specific job

- and family conditions. *Journal of Organizational behavior*.
- Eckenrode, J.E. (1991). Introduction and overview. In J. Eckenrode (Ed). *The Social Context of Coping* (pp. 1–12). New York: Plenum Press.
- Endler, N.S. & Parker, J.D.A. (1990). Multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology*, 58, 844–854.
- Ferber, M.A., O'Farrell, B. & Allen, L.R. (Eds.). (1991). *Work and Family: Policies for a Changing Work Force*. Washington, DC: National Academy Press.
- Folkman, S. & Lazarus, R.S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Fox, M., Dwyer, D. & Ganster, D. (1993). Effects of stressful job demands and control of physiological and attitudinal outcomes in a hospital setting. *Academy of Management Journal*, 36, 289–318.
- Frone, M.R., Russell, M. & Cooper, M.L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology*, 77, 65–78.
- Frone, M.R., Yardley, J.K. & Markel, K.S. (1997). Developing and testing an integrative model of the work-family interface. *Journal of Vocational Behavior*, 50, 145–167.
- Geurts, S.A.E., Rutte, C. & Peeters, M. (1999). Antecedents and consequences of work-home interference among medical residents. *Social Science & Medicine*, 48, 1135–1148.
- Geurts, S.A.E. & Demerouti, E. (2003). Work/nonwork interface: A review of theories and findings. In M. Schabracq, J. Winnubst & C.L. Cooper (Eds.), *Handbook of Work and Health Psychology* (pp. 279–312). Chichester: John Wiley & Sons.
- Grandey, A.A. & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior*, 54, 350–370.
- Greenhaus, J.H. & Beutell, N.J. (1985). Sources of conflict between work and family roles. *Academy of Management Review*, 10, 76–88.
- Greenhaus, J.H. (1988). The intersection of work and family roles: Individual, interpersonal, and organisational issues. *Journal of Social Behaviour and Personality*, 3, 23–44.
- Grzywacz, J.G. & Marks, N.F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology*, 5(1), 111–126.
- Hurrell, J.J., Jr. & McLaney, M.A. (1989). Control, job demands, and job satisfaction. In S.L. Sauter, J.J. Hurrell Jr. & C.L. Cooper (Eds.), *Job control and worker health* (pp. 221–245). Toronto, Ont.: John Wiley.

- Judge, T.A., Boudreau, J.W. & Bretz, R.D., Jr. (1994). Job and life attitudes of male executives. *Journal of Applied Psychology*, 79(5), 767–782.
- Karasek, R. A. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24, 285–308.
- Kinnunen, U. & Mauno, S. (1998). Antecedents and outcomes of work-family conflict among employed women and men in Finland. *Human Relations*, 51, 157–177.
- Kirchmeyer, C. (1993). Nonwork-to-work spillover: a more balanced view of the experiences and coping of professional women and men. *Sex roles*, 28, 531–552.
- Montgomery, A.J., Peeters, M.C.W., Schaufeli, W.B. & Den Ouden, M. (2003). Work-home interference among newspaper managers: It's relationship with burnout and engagement. *Anxiety, Stress, and Coping*, 16(2), 195–211.
- Parasuraman, S., Purohit, Y.S., Godshalk, V.M. & Beutell, N. J. (1996). Work and family variables, entrepreneurial career success, and psychological well-being. *Journal of Vocational Behavior*, 48, 275–300.
- Parasuraman, S. & Greenhaus, J.H. (1999). *Integrating work and family: Challenges for a changing world*. Westport, CT: Praeger.
- Pleck, J.H., Staines, G.L. & Lang, L. (1980). Conflicts between work and family life. *Monthly Labor Review*, 103, 29–32.
- Sonnentag, S. (2001). Work, recovery, activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology*, 6(3), 196–210.
- Spector, P.E. (1987). Method variance as an artefact in self-reported affect and perceptions at work: Myth or significant problem? *Journal of Applied Psychology*, 72, 438–443.
- Staines, G.L. & Pleck, J.H. (1984). Nonstandard work schedules and family life. *Journal of Applied Psychology*, 69, 515–523.