Job characteristics, work-nonwork interference and the role of recovery strategies among employees in a tertiary institution

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Mini-dissertation submitted in fulfilment of the requirements for the degree
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COMMENTS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the Publication Manual *(5th edition)* of the American Psychological Association (APA) were followed in this mini-dissertation. This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University, Potchefstroom Campus, to use APA style in all scientific documents as from January 1999.
- 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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DECLARATION

I, Jani Oosthuizen, hereby declare that "Job characteristics, work-nonwork interference and the role of recovery strategies among employees in a tertiary institution" is my own work and that the views and opinions expressed in this work are those of the author and relevant literature references as shown in the references.

I further declare that the content of this research will not be handed in for any other qualification at any other tertiary institution.

JANI OOSTHUIZEN **MAY 2011**

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SUMMARY

Title:

Job characteristics, work-nonwork interference and the role of recovery strategies among employees in a tertiary institution.

Keywords:

Job demands, job resources, work-nonwork interference, recovery strategies, tertiary education institutions, parental role, spousal role, domestic role, religion/spiritual role.

The tertiary education environment has become known for its stressful working conditions. Factors such as high work demands (i.e. work overload, excessive time demands and work pressure) and insufficient resources (i.e. limited developmental possibilities, poor performance feedback, lack of support, etc.) all contribute to these stressful circumstances. As a result, these circumstances can cause employees to experience negative interferences between their work and nonwork roles. In addition, employees do not have adequate time to invest in their nonwork domains, hence nonwork roles are neglected (such as being a parent, being a spouse, spending time on domestic activities and spending time on religious/spiritual activities). To decrease these negative interferences, it is important for employees to recover from strains that were activated at work. The objectives of this study were to determine 1) which demands and resources significantly predicted work-nonwork interference among employees working in a tertiary education institution; and 2) which recovery strategies were significant in dealing with high levels of work-nonwork interference caused by high demands and a lack of resources.

A random sample of 366 married parents was taken from a tertiary education institution in the North-West Province. A list was obtained of all the married parents of the institution. All of these employees were given the choice to participate in the research. A measuring battery measuring job demands (i.e. work pressure, emotional demands and cognitive demands), job resources (i.e. autonomy, social support and developmental possibilities), work-nonwork interference (i.e. work-parent, work-spouse, work-domestic and work-religion/spirituality) and recovery strategies (psychological detachment, relaxation, mastery and control) respectively was

utilised in this study. Descriptive and inferential statistics, Cronbach alpha coefficients, Pearson product-moment correlations and stepwise multiple regression, using the enter method, were used to analyse the data. The results indicate that work pressure and emotional demands significantly predict interference between all four nonwork roles. Additionally, autonomy and developmental possibilities significantly predicted work-parent and work-religion/spirituality interference respectively. Furthermore, all of the recovery strategies decreased specific work-nonwork interference. Psychological detachment decreased the interference between the work-spouse relationship and the work-religion/spirituality relationship. Relaxation predicted the decrease of interference between the following relationships: work-parent, work-spouse, and work-domestic. Mastery and control only significantly predicted the decrease of interference between the work-parent relationship and between the work-domestic activities respectively.

Various recommendations were made for tertiary education institutions as well as for future research. Tertiary education institutions should manage high job demands by examining employees' workload and job descriptions. Managers could possibly diminish work pressure and emotional demands by means of courses/workshops pertaining to self-management, time and organisational skills, emotional intelligence and/or coping with emotions. Tertiary education institutions should also focus on supporting employees who experience work-nonwork interferences and manage it effectively. In addition, the awareness of recovery and various recovery strategies should be promoted. Recommendations for future research include expanding the research to other occupational groups, longitudinal research designs, obtaining various opinions and perspectives of individuals also involved in the work-nonwork dyad and the study of the positive interaction between the work and nonwork roles.

OPSOMMING

Titel:

Werkseienskappe, werk-niewerk-inmenging en die rol van herstelstrategieë by werknemers in 'n tersiêre instansie.

Sleutelwoorde:

Werkseise, werkshulpbronne, werk-niewerk-inmenging, herstelstrategieë, tersiêre onderwysinstansies, ouerlike rol, gade-rol, huislike rol, godsdienstige/spirituele rol.

Die tersiêre onderwysomgewing is bekend vir sy stresvolle werksomstandighede. Faktore soos hoë werkseise (d.w.s. werksoorlading, uitermatige tydseise en werksdruk) en ontoereikende hulpbronne (d.w.s. beperkte ontwikkelingsmoontlikhede, swak prestasieterugvoer, gebrekkige ondersteuning, ens.) dra alles by tot hierdie stresvolle omstandighede. Hierdie omstandighede kan daartoe lei dat werknemers negatiewe inmenging tussen hul werk- en niewerkrolle ervaar. Daarbenewens beskik werknemers nie oor voldoende tyd om in hul niewerkdomeine te investeer nie; gevolglik word niewerkrolle afgeskeep (soos die rol van ouer of gade, tydsbesteding aan huishoudelike aktiwiteite, en tydsbesteding aan godsdienstige/spirituele aktiwiteite). Herstel speel 'n belangrike rol om hierdie negatiewe werk-geaktiveerde inmenging teen te werk. Die doelwitte van hierdie studie was om te bepaal 1) watter eise en hulpbronne werk-niewerk-inmenging beduidend voorspel het by werknemers in 'n tersiêre onderwysinstansie; en 2) watter herstelstrategieë beduidend was met betrekking tot die hantering van hoë vlakke van werk-niewerk-inmenging veroorsaak deur hoë eise en 'n gebrek aan hulpbronne.

'n Ewekansige steekproef van 366 getroude ouers is geneem by 'n tersiêre onderwysinstansie (TOI) in die Noordwesprovinsie. 'n Lys is bekom van al die getroude ouers wat in daardie stadium verbonde was aan die instansie. Al hierdie werknemers is versoek om aan die navorsing deel te neem. In hierdie studie is gebruik gemaak van 'n meetbattery wat werkseise (d.w.s. werksdruk, emosionele eise en kognitiewe eise), werkshulpbronne (d.w.s. outonomie, sosiale ondersteuning en ontwikkelingsmoontlikhede), werk-niewerk-inmenging (d.w.s. werk-ouer, werk-gade, werk-huishouding en werk-godsdiens/spiritualiteit) en herstelstrategieë (psigologiese

losmaking, ontspanning, bemeestering en beheer) meet. Beskrywende en inferensiële statistiek, Cronbach-alfakoëffisiënte, Pearson-produkmomentkorrelasies en stapsgewyse meervoudige regressie met die enter metode is gebruik om die data te ontleed. Die resultate dui daarop dat werksdruk en emosionele eise inmenging tussen al vier niewerkrolle grootliks voorspel. Outonomie en ontwikkelingsmoontlikhede het werk-ouer- en werk-godsdiens/spiritualiteit-inmenging onderskeidelik grootliks voorspel. Al die herstelstrategieë het spesifieke werk-niewerk-inmenging beduidend verminder. Psigologiese losmaking het die inmenging tussen die werk-gade-verhouding en die werk-godsdiens/spiritualiteit-verhouding verminder. Ontspanning het die afname in inmenging tussen die volgende verhoudings voorspel: werk-ouer, werk-gade, en werk-huishouding. Bemeestering en beheer het slegs die verminderde inmenging tussen die werk-ouer-verhouding en tussen die werk-huishouding-aktiwiteite voorspel.

Verskeie aanbevelings is gemaak vir tersiêre onderwysinstansies sowel as vir toekomstige navorsing. Tersiêre onderwysinstansies behoort hoë werkseise te bestuur deur werknemers se hoë werkslading en posbeskrywings te bestudeer. Bestuurders kan werksdruk en emosionele eise moontlik verminder deur kursusse/werkswinkels oor selfbestuur, tydsbestuurs- en organisatoriese vaardighede, emosionele intelligensie en/of hantering van emosies. Tersiêre onderwysinstansies moet ook fokus op ondersteuning aan werknemers wat werk-niewerk-inmenging ervaar en dit doeltreffend bestuur. Voorts moet werknemers bewus gemaak word van herstel en verskeie herstelstrategië. Aanbevelings vir toekomstige navorsing sluit in dat die navorsing uitgebrei word na ander beroepsgroepe, longitudinale navorsingsontwerpe, die verkryging van verskeie menings en perspektiewe van individue wat ook betrokke is by die werk-niewerk-diade en bestudering van die positiewe interaksie tussen die werk- en niewerkrolle.

CHAPTER 1

INTRODUCTION

This mini-dissertation focuses on the job characteristics, work-nonwork interference (i.e. work-parent interference, work-spouse interference, work-domestic interference and work-religion/spirituality interference) and recovery strategies of employees working within a tertiary education institution. This chapter contains the problem statement and the discussion of the research objectives (including the general and specific objectives). Furthermore, the research method is explained and the division of the chapters is given.

1.1 PROBLEM STATEMENT

Since 1994, the South African society in general and tertiary education institutions (from here on referred to as TEIs) in particular have undergone some radical transformation and reconstruction (Wolhuter, Van der Walt, Higgs, & Higgs, 2007). TEIs in South Africa are facing many challenges, e.g. transformation with regard to different languages and cultures, continuous upgrading to ensure a high standard of education with the ever-increasing student numbers, and the retention of employees in the current recession (Pienaar & Bester, 2009). The following trends cause TEIs to face turbulent environments: (1) student entries have changed from the elite to the mass universal – classes taught by academics are quite large as a result of the large influx of students from previously disadvantaged groups that were brought on by the democratisation and equalisation of opportunities (Wolhuter et al., 2007); (2) an increasing number of occupations are setting exact requirements with regard to knowledge and skills (Adeogun, 2006); (3) government and the private sector alike are increasingly urging TEIs to assist them in solving societal problems on a broad spectrum; and (4) the globalisation of knowledge thrusts growth at an accelerating rate. These trends point out the pressure that is being placed on TEIs and alternatively the increasing pressure the employees have to deal with (Clark, 2000; Gillespie, Walsch, Winefield, Dua, & Stough, 2001; Mostert, Rothmann, Mostert, & Nell, 2008).

There is growing evidence that TEIs are no longer the low stress environment they were once made out to be (Gillespie et al., 2001). Employees in TEIs are constantly faced with new challenges, increasing job demands and decreasing job resources and consequently these institutions are now categorised as "stress factories" (Barkhuizen & Rothmann, 2008; Gillespie et al., 2001).

Employees in TEIs are confronted with various demands, such as a work overload, excessive time demands, role ambiguity, work pressure (Jackson, Rothmann, & Van de Vijver, 2006, Rothmann & Essenko, 2007), administration, working overtime, managing large numbers of learners and dealing with social issues (Montgomery, Mostert, & Jackson, 2005). According to Prieto, Soria, Martinez and Schaufeli (2008), the main job demands of teaching occupations are quantitative overload, cognitive and emotional demands and role stress (role ambiguity and role conflict).

Job resources are aspects that may be functional in meeting job demands and that may simultaneously stimulate growth and development (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The lack of job resources that tertiary education employees may face include autonomy (Jackson et al., 2006), social support, feedback, and promotion opportunities (Schaufeli & Bakker, 2004). Focusing specifically on educators, Demerouti et al. (2001) state that their resources may be allocated to the following categories: (i) task itself (task identity, task control and flexible working hours); (ii) organisation itself (provision of equipment that is necessary to pursue daily duties, career opportunities, etc.); and (iii) social climate (access to psychological or social work support group services and support from colleagues and supervisors). This lack of resources experienced by employees can cause them greater difficulty in managing the many demands they are confronted with in their jobs.

Heavy work demands pose a great challenge to employees as they try to juggle the demands of having a family and the demands of a job (Jacobs & Winslow, 2004). Managing work and nonwork responsibilities is not a new phenomenon that many employees face (Galinsky, Bond, & Friedman, 1993). The problem arises as employees in these institutions have very demanding jobs and very long working hours, which poses a dilemma for parents who want to spend time with their children and families (Jacobs & Winslow, 2004). Stressful working conditions, caused

by high demands and a lack of resources, create difficulties for employees to balance their work- and nonwork lives (Oosthuizen, 2005). When employees face too many demands at work that require a lot of time and energy, the employees have difficulty investing time and effort into the nonwork domain and thus one's functioning in the nonwork domain can be hampered (Geurts & Demerouti, 2003). As a result, a negative spillover from the work to the nonwork domains may take place.

This spillover between the domains can lead to interaction or interference, which is known in the literature as work-family conflict (Greenhaus & Beutell, 1985) or work-nonwork interference (Geurts & Demerouti, 2003) (from here on referred to as W-NWI). According to Nýlen, Melin and Laflamme (2007), married working parents are more intensely involved in work and family activities and have difficulty balancing the different roles. Koekemoer and Mostert (2010) argue that married working parents have various nonwork roles which they have to fulfil, such as being a parent, being a partner, taking on responsibilities at home (homemaker role) and being actively involved in religious/spiritual activities. For some employed parents, difficulties in meeting the demands from the various roles arise due to the time employees spend at work (Åkerstedt, Ingre, & Eriksen, 2003; Major, Klein, & Ehrhart, 2002) or due to traditional sex roles (Geurts, 2003). Although many studies have been done on work-family conflict (Allen, Herst, Bruck, & Sutton, 2000; Emslie, Hunt, & McIntyre, 2004; Greenhaus & Beutell, 1985; Hill, Miller, Weiner, & Colihan, 1998; Jacobs & Winslow, 2004; Peeters, Montgomery, Bakker, & Schaufeli, 2005); and on how the work domain is in conflict with the family domain, limited studies have focused on the conflict or interference between work and other nonwork domains (such as parental, spousal, domestic or religious/spiritual roles) (Baldwin, Ellis, & Baldwin, 1999; Barnett, 1994; Holohan & Gilbert, 1986; Simon, 1992).

Interference from the work to the nonwork is a potential stressor for employees and when interference from the work to the nonwork domain increases it is very likely that the need for recovery will increase (Jansen, Kant, Kristensen, & Nijhuis, 2003). Recovery refers to strategies that reduce tension and stress caused by everyday demands (Nýlen et al., 2007). In the event of work-nonwork interference occurring, it is likely that recovery activities are neglected and receive lower priority than the various demands at work and home. According to Sonnentag and Fritz (2007), four recovery strategies can be distinguished: psychological detachment (gaining

mental distance from one's job), relaxation (processes characterised by low sympathetic activation occurring at both physical and mental level), mastery (addressing new challenges) and control (discretion in the choice of one's activities). These recovery strategies help to stabilise physical and psychological strains that were built up during working hours (Meijman & Mulder, 1998). Employees experience these strains as a result of high job demands (Meijman & Mulder, 1998). The cause of this is that employees are exposed to high job demands resulting in activation of psychobiological systems and, consequently, negative load reactions accumulate and spill over to the nonwork domain, obstructing the functionality of employees in that domain (Jansen et al., 2003). Thus interference between the two domains comes into being. Recovery is therefore needed, but is neglected as employees do not have the energy and motivation to spend time and effort in the nonwork domain (Geurts & Demerouti, 2003).

Job characteristics, Job Demands-Resources Model

The starting point of the Job Demands-Resources model (JD-R) is the assumption that job characteristics can be categorised into two groups: job demands and job resources (Demerouti et al., 2001; Schaufeli & Bakker, 2004). Prieto et al. (2008, p. 354), define job demands as "physical, psychological, social or organisational aspects of work that require sustained physical and/or psychological effort (cognitive and emotional) and are associated with certain physiological and/or psychological costs". Peeters et al. (2005) divide demands into quantitative, emotional and cognitive demands. According to Peeters et al. (2005):

> Quantitative demands refer to work overload or work pressure or too much work to do in too little time. Emotional job demands refer to the affective component and the degree to which work puts one in emotionally stressful situations. Cognitive job demands refer to the degree to which work tasks call on a person to expend sustained mental effort in carrying out his or her duties (p. 45).

On the other hand, job resources, according to Demerouti et al. (2001, p. 501), refer to "those physical, psychological, social or organisational aspects of the job that are functional in achieving work goals, reduce job demands, and stimulate personal growth and development". Jobs that are associated with high job demands and low resources will potentially interfere with the home situation because employees might transfer the work strain outside the work domain

(Demerouti & Geurts, 2004). According to Peeters et al. (2005), the central idea is that job demands that require too much effort are associated with the building up of negative load effects that spill over to the home/family or nonwork domain.

Work-nonwork interference

Experiences at work affect a person while he or she is in the workplace, whether these are physical, emotional, cognitive or social in nature (Danna & Griffin, 1999). These experiences also 'spill over' into nonwork domains (Danna & Griffin, 1999). Employees spend about one third of their waking hours at work, and do not necessarily leave the work behind when they go home (Conrad, 1988). A person's work and personal lives are not separate entities, but rather intertwined domains that have reciprocal effects on one another (Zedeck & Mosier, 1990). Work-home interaction is a process where an employee'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) (Geurts et al., 2005). Furthermore, managing multiple roles is difficult, and because of strenuous demands and poor resources the potential exists for interference or conflict to occur between employees' work and nonwork lives (Geurts & Demerouti, 2003).

Work-Nonwork Interference is defined by Geurts and Demerouti (2003) as the degree to which work demands clash with adequate and pleasurable performance in nonwork roles. It refers to a person experiencing pressures of work and nonwork roles that are mutually incompatible, the result being that when a person participates in one role, it is difficult to also participate in another (Greenhaus & Beutell, 1985). A new work-nonwork interference instrument was recently developed by Koekemoer, Mostert and Rothmann (2010), which defines W-NWI as the process in which the involvement of an individual in one domain (or social role) interferes with the functioning or involvement in another domain (role), where the interference affects the way in which the worker's self-identity is influenced by external stimuli to such an extent that the result is an inadequate performance of behaviour to conform to one or more highly-salient identities/roles. The interference between the two domains (i.e. work domain and nonwork domain) can also be in the opposite direction. If employees have difficulty functioning with all the demands at home (e.g. household and care giving tasks) and have a lack of home resources (e.g. lack of support from one's spouse), it can hinder their functionality to deal with demands at

work (which can be labelled nonwork-work interference or family-work conflict) (Geurts & Demerouti, 2003; Geurts, Taris, Kompier, Dikkers, Van Hooff, & Kinnunen, 2005; Kinnunen & Mauno, 1998).

Greenhaus and Beutell (1985; p. 77) define work-family conflict as "a form of interrole conflict in which the role pressures from the work and family domains are mutually incompatible, such that participation in one role makes it difficult to participate in another". This definition implies that work can interfere with the nonwork domain and the nonwork domain can interfere with the work domain. Work-family interference refers to the degree to which work demands clash with adequate and pleasurable performance in nonwork roles (Geurts & Demerouti, 2003). Therefore, three major forms of work-family conflict have been identified, namely time-based, strain-based and behaviour-based conflict. Time-based conflict refers to the amount of time spent in one domain (e.g. work) which gets in the way of meeting requirements of the other domain (e.g. nonwork). Strain-based conflict exists when the performance in one role decreases due to stressors in the other role (e.g. tiredness at home due to lack of sleep caused by childcare at home). Thirdly, behaviour-based conflict is caused when a person has difficulty in switching behaviour between different roles (being a parent, being a spouse (Geurts et al., 2005), having domestic responsibilities (Koekemoer & Mostert, 2010), being involved in religious/spiritual activities (Wilensky, 1960). Individuals have multiple roles which they fulfil, and their role identities are confirmed through their commitment to certain roles (Thoits, 1991). The Role Identity Theory explains an individual's commitment and identification with particular roles.

Role Identity Theory and the Effort Recovery Theory

According to Baldwin et al. (1999), the Role Identity Theory helps to explain how people become committed to and identify with a certain role. Baldwin et al. (1999) also state that people develop identities from their performance in roles. The link between the self and a role have been termed "role identities" (McCall & Simmons, 1978). According to Charng, Piliavin and Callero (1988), role identities are a set of characteristics that become an important part of a person's self-concept when role identities are defined by a social position. Individuals have multiple role identities (McCall & Simmons, 1978; Thoits, 1991), and some of these identities may be related to a spousal role (Geurts et al., 2005) parental role (Geurts et al., 2005; Simon, 1992)),

homemaker role and religious/spiritual role (Wilensky, 1960). For some employed parents, difficulties in meeting the demands from the work and nonwork domain may arise, for instance due to the time they spend at work (Åkerstedt et al., 2003; Major et al., 2002) or due to traditional sex roles (Geurts, 2003). Due to this, negative load reactions build up and interaction may occur between the work domain and nonwork domains. When this happens, recovery is needed. According to Meijman and Mulder (1998), recovery refers to a process during which individual functional systems that have been called upon during a stressful experience return to their pre-stressor levels. The recovery process can be seen as the opposite of the strain process (Sonnentag & Fritz, 2007).

According to Demerouti, Geurts and Kompier (2004), recovery of workload effects during the nonworking period plays a vital role in the process of strain development, according to the E-R model. Furthermore, the relationship between job characteristic and work-nonwork interaction can be understood in the light of the Effort-Recovery (E-R) model (Meijman & Mulder, 1998). The central idea of the model is that two outcomes are produced when job demands, which require effort, are met, namely: the product itself (i.e. the tangible result of work activities) and the physiological and psychological reactions (i.e. 'costs' and 'benefits' for the individual) (Demerouti et al., 2004). After a break from work and effort investments, psychobiological systems will restabilise to a lower level and recovery occurs (Sonnentag & Fritz, 2007). Thus, workload will have no negative consequence as long as the possibilities for recovery during and after the working day are sufficient (Taris, Beckers, Verhoeven, Geurts, Kompier, & Van der Linden, 2006). However, if recovery opportunities are insufficient after being exposed to high workload, psychobiological systems are reactivated before they had time to stabilise. The employee will then have to make compensatory effort to get these systems to restabilise. The result of this can be the increasing intensity of load reactions, which in turn will result in higher demands on the recovery process (Demerouti et al., 2004).

When researchers focus on recovery, they are not only interested in the activities as such, but also in the attributes associated with the various activities (Sonnentag & Fritz, 2007). Therefore, Sonnentag and Fritz (2007) distinguish between four recovery strategies: psychological detachment (gain mental distance from one's job), relaxation (processes characterised by low

sympathetic activation occurring at both physical and mental level), mastery (take on new challenges), and control (discretion in the choice of one's activities).

An employee's well-being and work behaviour benefit from relief time in the evenings (Sonnentag, 2003) and from longer relief periods, such as holidays (Westman & Eden, 1997; Westman & Etzion, 2001). The quality of the relief experience is of utmost importance and not necessarily its duration (Etzion, Eden, & Lapidot, 1998). Psychological detachment has been shown to be one of the major factors contributing to an individual's well-being during the time of relief. Psychological detachment refers to 'switching off' mentally from work during the time of relief (Sonnentag & Bayer, 2005). It can be assumed that psychological detachment from work plays a core role in recovery processes and will thus have a positive effect on well-being (Sonnentag & Bayer, 2005). Furthermore, psychological detachment not only improves an employee's mood, but also causes him/her to be less weary at night (Sonnentag & Bayer, 2005). Consequently, employees have more time in the evenings to spend on other activities involving their child(ren), spouse, household and religious/spiritual matters. Furthermore, relaxation has had long-term improvements in well-being (Stein, 2001). Relaxation refers to a range of techniques such as yoga, meditation, visualisation, and reading a book (Fritz & Sonnentag, 2006; Stein, 2001). According to Frederickson (2000), the positive emotions resulting from relaxation will counteract the negative emotions resulting from high job demands. A relaxed employee will be able to invest more time into nonwork roles. Mastery is another strategy that employees may pursue to enhance well-being (Bandura, 1997). Mastery strategies, which refer to off-job activities that distract employees from work and provide challenging experiences in other domains, can also be expected to increase positive mood (Parkinson & Totterdell, 1999). When an employee is successful in the pursuit of the activity/activities, skills and competencies are accumulated (Bandura, 1997) which can help to decrease stress related to high job demands. Mastery strategies assist in the recovering of job demands, and reduce strain that spills over from the work to the nonwork domain (Geurts, Rutte, & Peeters, 1999). People have the need to control events in their lives (Kelley, 1971). A person thus has the power to decide what activity he or she wishes to pursue in his or her time of relief (Sonnentag & Fritz, 2007). Control is related to happiness (Larson, 1989), and people's well-being increases when they feel that they can exert control over domains in their own lives (Bandura, 1997). It can be assumed that when

an employee achieves enhanced well-being as a result of respite time the interference between the work domain and nonwork domains will diminish.

The following research questions emerged from the above-mentioned problem statement:

- What is the relationship between job demands, job resources, recovery strategies and W-NWI according to the literature?
- Which job demands and resources are significant predictors of W-NWI of employees working in a tertiary education institution?
- Which recovery strategies are significant in dealing with high levels of W-NWI?
- Which recommendations can be made for future research and practice?

In order to answer the above research questions, the following research objectives have been set.

1.2 RESEARCH OBJECTIVES

The research objectives are divided into general and specific objectives.

1.2.1 General objective

The general objective of this study was to determine which demands and resources are significant predictors of W-NWI of employees working in a TEI, and which recovery strategies are significant in dealing with high levels of W-NWI.

1.2.2 Specific objectives

The specific objectives of this research are:

- To determine the relationship between job demands, job resources, recovery strategies and W-NWI according to the literature.
- To determine which job demands and resources significantly predict W-NWI of employees working in a tertiary education institution.
- To determine which recovery strategies are significant in dealing with high levels of W-NWI.

- To make recommendations for future research and practice.

1.3 RESEARCH METHOD

The research method consists of a literature review and empirical study. The results obtained from the research are presented in the form of a research article.

1.3.1 Research design

A cross-sectional survey research design is used in order to collect the data at one point in time and to obtain the research objectives (Shaughnessy & Zechmeister, 1997). A cross-sectional survey design has certain advantages, such as saving time and money. Also, researchers need not be concerned with keeping contact with the participants, as data is collected at one point in time.

1.3.2 Participants and procedure

In this study, random samples (n = 366) are taken from married parents from a TEI in the North-West Province. Firstly, permission is obtained from the Ethical Committee of the North-West University to distribute questionnaires among married parents at the institution. Questionnaires are handed out on the Potchefstroom, Vaal and Mafikeng Campuses of the North-West University. The distribution of the questionnaires is done with the help of fieldworkers. An information letter is also included in the questionnaire explaining confidentiality and the purpose of the survey. Furthermore, deans of the different faculties are approached where permission is requested for their staff members to participate and also to request the dean to motivate the staff members to participate. Secretaries from the various schools are approached in order to help with the identification of married parents in the specific schools. Questionnaires are only distributed to the employees who are married and have children dependent on them. Due to the conceptual restrictions in the W-WNI scale of Koekemoer et al. (2010), only married parents are included in the sample (i.e. specific roles such as spousal and parental roles). Participants are given two to three weeks to complete the questionnaire. Participants can choose how they want to return the questionnaire (e.g. internal post, personal collection or personal delivery). These options are given in order to ensure anonymity and confidentiality. Employees are assured of confidentiality, as the questionnaires are anonymous, and when they are collected personally at their offices, questionnaires are thrown into a box.

1.3.3 Measuring instruments

The following questionnaires are used in the empirical study:

Job demands: Work pressure, emotional demands and cognitive demands are the three job demands that are measured. *Work pressure* is measured with the three-scale developed by Bakker, Demerouti and Schaufeli (2003a). The items refer to the quantitative aspect of the job. An example of an item is: "How often does it happen that you have to work extra hard in order to meet your deadlines?" *Emotional demands* are assessed with a five-item scale developed by Bakker, Demerouti and Schaufeli (2003b). An example of an item is: "How often does it happen that your work is emotionally draining?" *Cognitive demands* are measured with four items developed by Peeters et al. (2005). An example item is: "How often does it happen that your work requires you to concentrate continuously?" These items are rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always).* In previous studies, reliable Cronbach alpha coefficients were found for these scales: work pressure, $\alpha = 0,76$; emotional job demands, $\alpha = 0,74$; and cognitive job demands, $\alpha = 0,89$ (Bakker et al., 2003b; Peeters et al., 2005).

Job resources: Autonomy, social support and job developmental possibilities are the job resources that are measured. Items are rated on a four-point Likert scale ranging from 0 *(never)* to 3 *(always). Autonomy* is measured with the scale developed by Bakker, Demerouti and Verbreke (2004). An example of an item is: "How often does it happen that you have freedom in carrying out your work-related duties?" *Social support* is measured with the three-item scale that was developed by Bakker, Demerouti, Taris, Schaufeli and Schreurs (2003c). An example of an item: "How often does it happen that you ask your colleagues for help if necessary?" *Job development possibilities* are assessed by the three-item scale of home developmental possibilities Demerouti, Bakker, & Voydanoff (2010) that were conceptually mirrored from these existing scales. An example of an item is: "How often does it happen that you can you develop yourself sufficiently in your work?" Previous reliable Cronbach alpha coefficients reported ranged between 0,68 and 0,74 for autonomy and between 0,81 and 0,85 for social support (Bakker et al., 2004; Bakker, Demerouti & Euwema, 2005).

Work-nonwork interference: The work-nonwork interference scale of Koekemoer et al. (2010) is used to measure the interference between work and nonwork roles. Although the instruments measure interference in both directions, in this study the interference is only measured for one direction (i.e. from the work domain to the nonwork domains/roles). More specifically, interference between the following roles was measured: *work-parent interference* (three items, e.g. "How often does it happen that your work keeps you from your child(ren) more than you like?"); *work-spouse interference* (four items, e.g. "How often does it happen that your marriage/relationship with your spouse/partner suffers because of your work?"); *work-domestic interference* (three items, e.g. "How often does it happen that because of your work arrangements, you find it difficult to fulfil your domestic obligations?") and lastly, *work-religion/spirituality interference* (four items, e.g. "How often does it happen that your work interferes with your religion/spirituality?"). Items are rated on a four-point scale ranging from 0 (*never)* to 3 (*always).* Reliable Cronbach alpha coefficients larger than 0,70 (Nunnally & Bernstein, 1994) were obtained for the four scales: work-parent interference (α = 0,88); work-spouse interference (α = 0,88); work-domestic (α = 0,91); and work-religion/spirituality (α = 0,86).

Recovery: The 'Recovery Experiences Questionnaire' developed by Sonnentag and Fritz (2007) is used to measure four recovery strategies. *Psychological detachment* is measured with three items. An example of an item is: "How often does it happen that I forget about work?" *Relaxation* is measured with four items. An example of an item is: "How often does it happen that I take time for leisure?" *Mastery* is also measured with four items. An example of an item is: "How often do I do things that challenge me?" *Control* is measured with four items. An example of an item is: "How often does it happen that I determine my own schedule"? Items are rated on a five-point scale ranging from 1 (*I do not agree at all*) to 5 (*I fully agree*). For the four recovery strategies, the following alpha coefficients were obtained from the cross-validation sample of Sonnentag and Fritz (2007): psychological detachment (α = 0,85); relaxation (α = 0,85); mastery (α = 0,85); and control (α = 0,85). Mostert and Els (in press) also confirmed the validity and reliability of the survey in the sample utilised for this study.

Biographical information: The biographical information that is collected in this study comprises gender, ethnicity, language, age, highest qualification obtained, level of position at work, faculty of work, household situation, number of children and their ages.

1.3.5 Statistical Analysis

The statistical analysis is carried out with the SPSS program (SPSS Inc., 2007). Descriptive statistics (e.g. means, standard deviation, skewness and kurtosis) and inferential statistics are used to analyse the data. Furthermore, frequency analyses are used to describe the sample. Cronbach alpha coefficient is used to assess the reliability of the constructs that is measured in the study. A Cronbach alpha coefficient gives important information regarding the proportions of variance of the items of a scale in terms of total variance (Nunnally & Bernstein, 1994). A coefficient of 0,70 indicates that the items are regarded as reliable (Nunnally & Bernstein, 1994).

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) is used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect) and 0,50 (large effect) is set for the practical significance of correlation coefficients (Cohen, 1988).

Multiple regression analyses are used to determine the relationship between the several independent variables and the dependent variable (Kerlinger & Lee, 2000). With multiple regression analyses, the percentage of variance in the dependent variable (i.e. the four W-NWI dimensions) that is predicted by the independent variables (e.g. job demands, job resources and the four recovery strategies) is explained using the enter method. It is decided to control for demographic characteristics (i.e. age and gender) in the first step of each regression, followed by job demands that are entered in the second step. Job resources are entered in the third step, and recovery strategies in the fourth step. This is in accordance with the specific objectives of the study.

1.3.6 Ethical considerations

The questionnaires used are anonymous. When the questionnaires are collected, it is thrown into a box to secure confidentiality. Lists are only used to hand out the questionnaires to the married participants with children, and anonymity is assured. Participants have the choice of posting the questionnaires internally if they do not want them to be collected personally. Participants are given various options for returning the questionnaires to ensure anonymity and confidentiality (e.g. internal post, personal collection, or personal delivery). Participation is voluntary.

1.5 OVERVIEW OF CHAPTERS

In Chapter 2, an empirical study was conducted according to the objectives as set out in Chapter 1. Chapter 3 provides the conclusion as well as limitations and recommendations of the study.

1.6 CHAPTER SUMMARY

This chapter provided a discussion of the problem statement and research objectives. Furthermore, the research method and the measuring instruments were explained, followed by a brief overview of the chapters that follow.

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CHAPTER 2

RESEARCH ARTICLE

Job characteristics, work-nonwork interference and the role of recovery strategies among employees in a tertiary institution

ABSTRACT

Orientation: Although work characteristics and recovery strategies are associated with work-family interference, the influence on specific types of work-nonwork interference (W-NWI) has not been investigated.

Research purpose: The aim of this study was to investigate the impact of work characteristics and recovery strategies on four types of W-NWI.

Motivation for the study: It is clear from the literature that job characteristics and W-NWI have adverse effects on employees' health and well-being. It is therefore important to identify work characteristics and recovery strategies associated with W-NWI.

Research design, approach and method: A cross-sectional survey design was used in this study. The target population was married employees with children working at a TEI in the North West Province ($N = 366$).

Main findings: Work pressure and emotional demands significantly predicted all the work-nonwork role interference dimensions. A lack of autonomy predicted work-parent interference and work-religion/spirituality interference, while a lack of development possibilities predicted work-religion/spirituality interference. Relaxation and mastery recovery strategies significantly predicted lower work-parent interference. A lack of psychological detachment and relaxation were significantly associated with lower work-spouse interference. Relaxation and control significantly predicted lower work-domestic interference, while psychological detachment significantly predicted lower work-religion/spirituality interference.

Practical/Managerial implications: The results give managers insight into the specific work characteristics and recovery strategies that play a role in W-NWI, upon which interventions can be based to address these issues.

Contribution/Value-add: This study provides information on the relationship between work characteristics, recovery strategies and the effect on different types of W-NWI.

Keywords: job demands, job resources, work-parent interference, work-spouse interference, work-domestic interference, work-religion/spirituality interference, recovery strategies, tertiary education institution

INTRODUCTION

The interference between work and different roles in the personal life is a widely studied topic in Occupational Health Psychology, mainly because of increased stressors, high job demands and/or a lack of job resources that employees experience in organisations today (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Geurts & Demerouti, 2003). On an individual level, using the appropriate recovery strategies to convalesce from high demands that lead to interference between work and nonwork is crucial (e.g. De Croon, Sluiter, Blonk, Broersen & Frings-Dresen, 2004; Geurts, Kompier, Roxburgh & Houtman, 2003; Nýlen, Melin, & Laflamme, 2007).

Studies show that the interference between the work and nonwork domain holds negative outcomes for organisations and those they employ (Bellavia & Frone, 2004; Boyar, Maertz, Mosley, & Carr, 2008). Work-nonwork interference (W-NWI) is associated with work-related outcomes such as absenteeism (Väänänen et al., 2004), decreased job satisfaction, lower levels of organisational commitment and labour turnover intentions (Allen, Herst, Bruck, & Sutton, 2000; Duxbury, 2004; Grandey & Cropanzano, 1999), as well as with individual outcomes such as decreased life satisfaction, marital dissatisfaction, burnout, psychosomatic complaints, depression and fatigue (Demerouti & Geurts, 2004; Demerouti, Geurts & Kompier, 2004; Koekemoer & Mostert, 2006; Mostert, 2008; Peeters, De Jonge, Janssen, & Van der Linde, 2004; Peeters, Montgomery, Bakker, & Schaufeli., 2005; Van Hooff et al., 2005). W-NWI is also a reality for employees working in tertiary education institutions (TEIs), where South African TEIs find themselves in a turbulent and stressful environment (Coetzee & Rothmann, 2005; Jackson, Rothmann, & Van de Vijver, 2006; Barkhuizen & Rothmann, 2008a, 2008b).

According to Demerouti and Geurts (2004), jobs that have high demands and low resources are considered the worst working environment for individuals. When employees are confronted with too many demands at work they often lack the energy and motivation to invest time and effort into the nonwork domain (Geurts & Demerouti, 2003). As a result one's functioning in different nonwork roles (e.g. parental, spousal, domestic and religious/spiritual) can be affected (Koekemoer & Mostert, 2010a). When interference from the work to the nonwork domain increases, it is very likely that the need for recovery will also increase (Jansen, Kant, Kristensen,

& Nijhuis, 2003). If an individual does not recover sufficiently from the strain developed through the working day, it can have implications for his or her health (Geurts et al., 2005; Geurts, Rutte, & Peeters, 1999) and can affect overall well-being (Sonnentag & Zijlstra, 2006). Insufficient recovery is also associated with high absenteeism (Meijman & Mulder, 1998; Sonnentag & Zijlstra, 2006), low job performance (Fritz & Sonnentag, 2005; Sonnentag & Geurts, 2009) and lower productivity (Moncrieff & Pomerleau, 2000).

Although the relationship between demands and a lack of resources with work-home interference has been researched in the South African context (e.g. Koekemoer & Mostert, 2006; Mostert, 2008, 2009; Mostert & Oosthuizen, 2006; Oldfield & Mostert, 2007; Tshabalala, 2007; Van Aarde & Mostert, 2008), the relationship with specific non-work roles has not yet been investigated (see Koekemoer & Mostert, 2010a, 2010b; Koekemoer, Mostert, & Rothmann, 2010). In addition, research on recovery strategies that are significantly related to work interfering with different nonwork roles, specifically in the higher education sector, is also lacking.

In light of the above discussion, the main objectives of this research were to determine 1) which demands and resources are significant predictors of W-NWI; and 2) which recovery strategies are significant predictors of W-NWI. W-NWI included work-parent interference, work-spouse interference, work-domestic interference and work-religion/spirituality interference. A sample of employees working in a TEI in the North West Province was used.

LITERATURE REVIEW

Work-nonwork role interference

According to the Role Identity Theory (Stryker, 1968), roles provide individuals with a sense of meaning and purpose. Roles are attached to statures, which are defined as a position in society (Noor, 2004). Individuals occupying a status have multiple roles associated with that status, which means that they have multiple role identities (Noor, 2004; Reitzes & Mutran, 1994; Thoits, 1995). Thoits (1995, p. 72) defines an identity as "a position occupied in the social structure, which is enacted in role relationships with others and viewed as descriptive of

oneself". Furthermore, Burke (1980) is of the opinion that the self is made up of a collection of identities that are linked to an individual's role relationships. These identities may be related to a work role (Wiley, 1991; Geurts et al., 2005), a parental role (Geurts et al., 2005; Simon, 1992), a spousal role (Geurts et al., 2005), a domestic role and a religious/spiritual role (Wilensky, 1960).

Because individuals have multiple roles, it is expected that some roles are more important to an individual than other roles. This is called role salience, and it refers to the subjective importance that individuals attach to the various roles that they view as describing themselves (Thoits, 1995). Role identities that are viewed by an individual as more important will therefore be more salient, and will result in greater commitment to that specific role (Thoits, 1995; Wiley, 1991). If there are various roles that are salient, it is likely that conflict will arise between certain roles – specifically between the work role and other salient roles in the nonwork domain. W-NWI therefore occurs when participation in one role (e.g. the work role) makes it difficult to participate in another role (e.g. the parental or spousal role) (Greenhaus & Beutell, 1985). Strain, or W-NWI, inevitably develops when individuals participate in multiple roles with high salience (Demerouti et al., 2004; Greenhaus & Beutell, 1985).

W-NWI can be defined as 'the extent to which one's functioning in one domain (e.g. work) is influenced (negatively or positively) by demands from the other domain (e.g. home, nonwork) and vice versa' (Greenhaus & Beutell, 1985). The definition suggests that either work can influence an individual's private life or an individual's private life can influence his/her work. A substantial amount of research has been done on the negative impact of work on the home or family domain in general (for overviews, see Byron, 2005; Eby et al., 2005; Mesmer-Magnus & Viswesvaran, 2005). However, research concerning the impact of the work role on *specific* nonwork roles is limited (Aryee, 1992; Day & Chamberlain, 2006; Small & Riley, 1990). Recently, a new work-nonwork interference instrument was developed for employees in a TEI (Koekemoer & Mostert, 2010b; Koekemoer et al., 2010), where W-NWI is defined as a process in which the involvement of an individual in one domain (or social role) interferes with the functioning or involvement in another domain (role), where the interference affects the way in which the worker's self-identity is influenced by external stimuli to such an extent that it results in an inadequate performance of behaviour to conform to one or more highly-salient

identities/roles (Koekemoer et al., 2010). The interference between work and four social roles (i.e. parental, spousal, domestic and religious/spiritual roles) was measured in this study. Depending on the roles that work interferes with, individuals might experience work-parent interference (WPI), work-spouse interference (WSI), work-religion/spirituality interference (WRI) or work-domestic interference (WDI).

Job characteristics and the relationship with work-home interference

According to the Job Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), job characteristics consist of two broad categories, namely job demands and job resources. Demerouti et al. (2001) define job demands as "physical, social or organisational aspects of a job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs". Job demands such as workload (Bellavia & Frone, 2004; Rothmann & Essenko, 2007), time pressure (Van den Tooren & De Jonge, 2010), long working hours (Grzywacz & Marks, 2000), role ambiguity, role stress and stressful events (Schaufeli & Bakker, 2004) are a few demands reported within a stressful working environment. When employees experience job demands, it is of the utmost importance that they have adequate resources at work to overcome these demands. Job resources are those aspects of a job that are required to decrease demands, achieve work goals and objectives, and to help an individual grow and develop (Demerouti et al., 2001). Job resources exist in the task itself (such as performance feedback, skill variety or autonomy) as well as in the context of the task (for instance organisational resources such as career opportunities or job security, and social resources such as supervisor or colleague support) (Demerouti et al., 2001; Schaufeli & Bakker, 2004).

The relationship between job demands, job resources and work-home interference (WHI) has been reported in several studies (Frone, Russel, & Coopers, 1997; Geurts & Demerouti, 2003; Janssen, Peeters, de Jonge, Houkes, & Tummers, 2004; Montgomery, Peeters, Schaufeli, & Den Ouden, 2003; Parasuraman, Purohit, Godshalk, & Beutell, 1996). These studies all found evidence that job demands and job resources are indeed related to negative WHI. In most research, negative WHI was attributed to high job demands and a lack of resources (Montgomery, Panagoplou, & Benos, 2006). Previous research also found that job demands and job resources are important predictors of health outcomes (Bakker & Geurts, 2004; Demerouti et

al., 2001; Peeters et al., 2005). According to Bakker and Geurts (2004), job demands and job resources are two working conditions that cause a process where health impairment leads to negative WHI. High job demands and a lack of resources have been found to be related with exhaustion, somatic complaints, anxiety and insomnia, and in turn are related with negative interference between the work and home domain (Bakker & Geurts, 2004; Geurts et al., 2003). Between job demands and job resources, it seems that job demands are associated more with negative WHI (Demerouti & Geurts, 2004). More specifically, work pressure, work overload and time demands predict negative WHI (Bakker & Geurts, 2004; Geurts et al., 2003; Janssen et al., 2004; Montgomery et al., 2003). Job resources are needed to help employees cope with job demands (Bakker & Geurts, 2004; Demerouti et al., 2001), but a lack of resources such as job control, social support (Kinnunen & Mauno, 1998), autonomy, supervisor support and role clarity also predict negative WHI (Bakker & Geurts, 2004; Janssen et al., 2004; Montgomery et al., 2003).

Several studies concerning the relationship between job demands, job resources and WHI have also been conducted in South Africa (Mostert & Oosthuizen, 2006; Oldfield & Mostert, 2007; Van Aarde & Mostert, 2008). Significant relationships were found between job demands and negative WHI (Mostert & Oosthuizen, 2006; Oldfield & Mostert, 2007; Van Aarde & Mostert, 2008). In these studies, it was found that high time demands (e.g. working overtime) (Mostert & Oosthuizen, 2006) work overload (e.g. having excessive work to do, having too little time to complete tasks) (Van Aarde & Mostert, 2008), high work pressure (e.g. working very hard, or working very fast or intense concentration on a task for a long period of time) (Mostert & Oosthuizen, 2006; Oldfield & Mostert, 2007; Van Aarde & Mostert, 2008) and poor working conditions (e.g. working in dangerous and unsafe conditions, exposure to high security risks) (Oldfield & Mostert, 2007) contribute to elevated levels of negative WHI. Significant relationships were also found between the lack of job resources and negative WHI (Mostert & Oosthuizen, 2006; Van Aarde & Mostert, 2008). It was found that a lack of role clarity (e.g. experience role conflict such as receiving incompatible requests from different people), a lack of colleague support (e.g. cannot count on colleagues when faced with difficulties at work, cannot ask colleagues for help), a lack of supervisor support (e.g. do not have a good relationship with your supervisor, feel unappreciated by your supervisor, cannot count on your supervisor when

faced with work-related problems) and a lack of autonomy (e.g. no freedom in carrying out your own work activities, no freedom in deciding for yourself on the amount of time you wish to spend on a task) predicted negative WHI (Mostert & Oosthuizen, 2006; Van Aarde & Mostert, 2008).

Demands that employees in TEIs are confronted with include a high work overload, excessive time demands, role ambiguity, work pressure, administration, working overtime, managing a large amount of learners and dealing with social issues (Jackson et al., 2006; Montgomery, Mostert & Jackson, 2005; Rothmann & Essenko, 2007). TEIs also experience resource shortages, including poor performance feedback, job control, hampered autonomy and lack of support (Demerouti, Bakker & Voydanoff, 2009; Jackson et al., 2006; Schaufeli & Bakker, 2004). The lack of resources that employees face can cause them to have greater difficulty in managing the many demands they are confronted with in their jobs.

The relationships discussed above focus on the relationship between job demands/job resources and WHI. However, studies have not yet been conducted on the relationship between specific job demands/job resources and interference between different roles (e.g. work role, parental role, spousal role, domestic role and religious/spiritual role). Nonetheless, the following hypotheses can be formulated based on the above mentioned literature findings:

Hypothesis 1a: Job demands will be significantly related to high levels of all four types of W-NWI.
Hypothesis 1b: Available job resources will be significantly related to lower levels of all four types of W-NWI.

Effort-recovery and recovery strategies

According to Nýlen et al. (2007), recovery refers to strategies or techniques that reduce tension and stress caused by everyday demands. A useful model to explain the importance of recovery is the Effort Recovery (E-R) model of Meijman and Mulder (1998). According to this model, the effort spent in responding to stressors (e.g. job demands) results in short-term physical and psychological costs or depletion of a person's available resources. These costs accumulate and

can develop into serious physical and psychological strains when sufficient recovery does not occur. Normally these costs are reversible – when recovery occurs, spent resources can be recouped. Therefore, high workload will not have negative consequences as long as recovery is sufficient during and after work. The essence of recovery is that a person's psychobiological systems that were activated while working should be restabilised and return to a homeostatic state in which no demands are present.

Another assumption of the E-R model is that when an individual develops strain during the working day, it does not necessarily hold health implications for him or her, as long as recovery is sufficient during the nonworking hours (Meijman, 1989). When an individual no longer has to deal with job demands, load reactions are released and recovery can begin (Meijman & Mulder, 1998). However, when demands at work require too much effort, negative load effects build up that spill over to the nonwork domains and thus hamper one's functioning in the domain. Increasing job demands make it difficult for individuals to balance their work and nonwork lives, and the blurring between the two domains becomes more evident (Jansen et al., 2003). In a review of several studies, Geurts and Demerouti (2003) state that high job demands do interfere with an individual's private life. Therefore, when employees are confronted with too many demands at work they do not have the energy and motivation to invest time and effort into the nonwork domain (Geurts & Demerouti, 2003) and recovery is hampered. Evidence shows that high job demands (high effort expenditure) and lack of recovery are associated with high levels of W-NWI (e.g. De Croon et al., 2003; Eby et al., 2005; Geurts et al., 2003). The insufficient recovery from the incompatible pressures within both domains can have serious implications, such as an impact on an individual's well-being (Sonnentag & Zijlstra, 2006) and health problems, which can be severe or become chronic (Geurts et al., 1999; Geurts et al., 2005).

Recovery refers to the process where an individual's psychological and physiological stimulation returns to his or her pre-stressor level after a stressful experience (Meijman & Mulder, 1998). Accordingly, recovery is the opposite of the strain process – it is a process of unwinding (Geurts & Sonnentag, 2006; Sonnentag & Fritz, 2007). Sonnentag and Fritz (2007) recently developed

the [1]*Recovery Experience Questionnaire*. They labelled the mechanisms that assist in recovery "recovery experiences" and identified four recovery strategies that could be measured (Sonnentag & Fritz, 2007):

- *Psychological detachment:* Psychological detachment refers to gaining mental distance from one's job. It goes beyond the physical absence from the workplace – being physically away from one's job does not mean that recovery necessarily takes place (Sonnentag & Fritz, 2007). For this recovery strategy to be sufficient, it is important for an employee not to be involved in any work-related activities such as reading e-mails, taking work-related telephone calls, etc. (Sonnentag & Bayer, 2005; Sonnentag & Kruel, 2006). This means an individual has to be mentally disengaged from work completely. According to the questionnaire development study of Sonnentag and Fritz (2007), psychological detachment correlate positively with variables such as emotion-focused coping (attempts to manage cognitions or emotions directly, without changing the environment), emotional stability (having good emotional adjustment to various events) and life satisfaction (the judgment of a person's quality of life).

- *Relaxation:* Relaxation is commonly associated with leisure activities and is characterised by a state of low activation and increased positive affect (Sonnentag & Fritz, 2007). Relaxation can occur on a physical or mental level. On a physical level, relaxation can occur through reading a book, listening to music or taking a quiet walk (Fritz & Sonnentag, 2006). On a mental level, relaxation can for example be achieved through meditation (Sonnentag & Fritz, 2007). Relaxation therapies calm an individual and reduce increased sympathetic responses such as accelerated heart rate and high blood pressure in order to minimise harmful effects caused by stress (Stein, 2001). Relaxation is important for recovery, as prolonged activation caused by stressful work should be reduced in order to restore an individual's pre-stressor state (Brosschot, Pieper, & Thayer, 2005). Sonnentag and Fritz (2007) found positive correlations between relaxation and emotion-focused coping, emotional stability and life satisfaction.

[1] In this study the use of strategies refers to experiences as the authors refer to it in their study.

- *Mastery:* Mastery strategies refer to activities that act as a challenge for an individual or that provide new skills that can be learnt (Sonnentag & Fritz, 2007). The mastery strategy should be a challenge, but should not in any way overtax the person's capabilities. Examples of mastery strategies include learning a new language, playing an instrument or going on a mountain climbing expedition (Fritz & Sonnentag, 2006). Taking up mastery strategies requires self-regulation, thus exerting control over the chosen activity by practising or attending classes (Sonnentag & Fritz, 2007). Mastery strategies may seem to place additional demands on the individual. However, these experiences are expected to result in recovery, because they help to build up new internal resources (e.g. skills, competencies and self-efficacy) (Bandura, 1997). Sonnentag and Fritz (2007) found that mastery strategies correlated positively with job control (an individual's own discretion to determine timing and working method), problem-focused coping (includes problem-solving behaviours and aims at resolving the stressor), emotion-focused coping, openness to experience (an individual's creativity, flexibility and willingness to take risks), conscientiousness (an individual's self-discipline and achievement orientation), emotional stability and life satisfaction.

- *Control during leisure time:* According to Sonnentag and Fritz (2007), control is a person's ability to choose an action from two or more options. Furthermore, control refers to an individual having the choice of the activity he or she wants to pursue during leisure time and when and how he or she would like to pursue the activity. An individual's well-being can be increased when he or she feels in control of certain life domains (Bandura, 1997). The experience of control during leisure time may increase an individual's self-efficacy and feelings of competency, which can enhance well-being (Sonnentag & Fritz, 2007). Therefore, control may act as an external resource that enhances recovery from work during off-work time. In addition, control during leisure time gives an individual the chance to choose an activity to pursue and this may be especially supportive for the recovery process (Sonnentag & Fritz, 2007). Sonnentag and Fritz (2007) found positive correlations between control during leisure time and job control, problem-focused coping, emotion-focused coping, emotional stability and life satisfaction.

Studies on the relationship between recovery strategies and interference between work and specific nonwork roles have not yet been conducted. The reason is that recovery questionnaires are scarce. Recently, Sonnentag and Fritz (2007) developed a new questionnaire for the measurement of recovery. However, this questionnaire has not yet been used to measure the relationship between recovery strategies (psychological detachment, relaxation, mastery and control) and W-NWI. According to Eden (2001), adequate recovery from work pressure is needed to minimise or avoid negative health effects; however, limited studies in the work-home literature focus on recovery-related concepts (Moreno-Jiménez et al., 2009).

Sonnentag and Kruel (2006) conducted a study on the relationship between job stressors (i.e. workload) and psychological detachment. Their results showed a negative relationship between high work pressure and psychological detachment. Sonnentag and Fritz (2007) conducted a study on recovery strategies and potential predictors (e.g. work situation variables, coping and personality) as well as potential consequences (e.g. psychological well-being). They found that three of the four strategies were related to job stressors. A rather high negative correlation existed between time pressure and psychological detachment. Relaxation was related to quantitative workload but not to job stressors. Job stressors were not related to mastery strategies, and job control was not related to psychological detachment, relaxation or mastery. Furthermore, they found mostly non-significant and generally low correlations between coping measures and recovery strategies. In addition, generally low correlations were found between personality and recovery strategies. Recovery strategies were related to most of the psychological well-being indicators. Fox, Tange and Perez (2008) also conducted a study that examined the potential interaction between job stressors (i.e. work pressure) and recovery strategies to see if these strategies buffer the negative effects of stressful job demands and health. They found significant interactions between interpersonal conflict and mastery, which predicted physical symptoms. There was also an interactive effect between conflict and mastery in predicting gastrointestinal problems and headaches, as well as between workload and mastery in predicting gastrointestinal problems.

Moreno-Jiménez et al. (2009) conducted a study that linked work-family conflict and family-work conflict with the concept of recovery, and studied psychological detachment from work

(and verbal expression of emotions) as moderators between the relationship of these two types of conflict with psychological strain and life satisfaction as two indicators of well-being. They found that psychological detachment from work lessen some of the negative effects of work-family conflict on employees' well-being. In addition, psychological detachment from work moderates the relationship between work-family conflict and psychological strain, and the relationship between family-work conflict and life satisfaction. In addition, Siltaloppi, Kinnunen and Feldt (2009) conducted a study on the direct and moderator roles of the recovery strategies in the relationship between psychosocial work characteristics (i.e. time demands, job control and justice of the supervisor) and occupational well-being (i.e. need for recovery, job exhaustion and work engagement). The results showed that psychological detachment and mastery were protective mechanisms against an increased need for recovery in a situation where there was a lack of job control. Relaxation protected against increased job exhaustion under high time demands. Furthermore, psychological detachment and mastery in particular had direct associations with occupational well-being. The general findings of this study showed that recovery strategies play an important role in maintaining overall well-being at work. Based on these findings, the following hypotheses can be formulated with regards to the relationship between recovery strategies and W-NWI:

Hypothesis 2a: Psychological detachment will be significantly related to lower levels of all four types of W-NWI.
Hypothesis 2b: Relaxation will be significantly related to lower levels of all four types of W-NWI.
Hypothesis 2c: Mastery will be significantly related to lower levels of all four types of W-NWI.
Hypothesis 2d: Control will be significantly related to lower levels of all four types of W-NWI.

RESEARCH DESIGN

Research approach

A cross-sectional survey design was used. With a cross-sectional survey design researchers are able to assess interrelationships among variables within a population (Struwig & Stead, 2001). Cross-sectional designs entail the collection of data on more than one case at a single point in time, after which the data is examined to detect patterns of association (Bryman & Bell, 2003).

With cross-sectional designs there is no time ordering to the variables; it is thus only possible to examine relationships between variables, which make this design suitable for this study.

Research method

Research participants

A cross-sectional survey research design was conducted among married parents employed by Tertiary Education Institutions in the North West Province. A total of 650 questionnaires were distributed, of which 366 were returned (response rate = 56%). Characteristics of the sample are given below in table 1.

Table 1

Characteristics of participants (*N* = 366)

Item	Category	Frequency	Percentage (%)
Gender	Male	127	34,70
	Female	238	65,00
	Missing values	1	0,30
Race	White	294	80,35
	African	54	14,75
	Coloured	11	3,00
	Indian	3	0,80
	Other	1	0,30
	Missing values	3	0,80
Highest qualification	Less than grade 10	3	0,80
	Grade 10	10	2,70
	Grade 11	1	0,30
	Grade 12	73	19,95
	Technicon diploma	30	8,20
	Technical college diploma	22	6,00
	University degree	46	12,57

Table 1 continued

Item	Category	Frequency	Percentage (%)
	Postgraduate degree	175	47,81
	Other	1	0,30
	Missing values	5	1,37
Faculty/ Department	Faculty of Arts	25	6,83
	Faculty of Economic and Management Sciences	24	6,56
	Faculty of Education	38	10,38
	Faculty of Engineering	35	9,58
	Faculty of Health Sciences	49	13,39
	Faculty of Law	10	2,70
	Faculty of Natural Sciences	42	11,46
	Faculty of Theology	10	2,70
	Institutional Office	27	7,38
	Administrative Office	94	25,68
	Other	4	1,10
	Missing values	8	2,19
Position at work	Secretary	36	9,84
	Administrative Assistant	98	26,77
	Administrative officer	61	16,67
	Junior Lecturer	8	2,19
	Lecturer	36	9,84
	Senior Lecturer	42	11,46
	Associate Professor	24	6,56
	Professor	26	7,10
	Other	30	8,20
	Missing values	5	1,37

As seen in table 1, the majority of the participants were White (80,35%), while 14,75% were African, 3% were Coloured and 80% were Indian. Almost two-thirds of the participants were female (65%), while 34,70% were male. In total, 47,81% of the participants possessed a

postgraduate degree, 12,57% possessed a university degree, 8,20% possessed a technicon diploma and 6% possessed a technical college diploma. Participants who possessed grade 12 certificates were 19,95%, while 0,80% had a certificate for less than grade 10. In total, 2,70% had grade 10 certificates and 0,30% had grade 11 certificates. In total, 25,68% of the participants worked in the Administrative Office, 7,38% worked in the Institutional Office, while other participants were employed within the academic faculties, including Arts (6,83%), Economic and Management Sciences (6,56%), Education (10,38%), Engineering (9,58%), Health Sciences (13,39%), Law (2,70%), Natural Sciences (11,46%) and Theology (2,70%). In terms of the position the participants fulfilled at work, 26,77% were administrative assistants, 9,84% were secretaries and 16,67% were administrative officers. Of the academic staff, 9,84% were lecturers, 11,46% were senior lecturers, 6,56% were associate professors and 7,10% were professors.

Measuring instruments

The following measuring instruments were used in the empirical study:

Job demands. Three job demands were measured, namely work pressure, emotional demands and cognitive demands. All items were scored on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). *Work pressure* was measured with a three-item scale developed by Bakker, Demerouti and Schaufeli (2003a). An example of an item is: "How often does it happen that you have to work extra hard in order to meet your deadlines?". *Emotional demands* were measured with the five-item scale developed by Bakker, Demerouti & Schaufeli (2003b). An example of an item is: "How often does it happen that your work is emotionally draining?". *Cognitive demands* were measured with the four-item scale developed by Peeters et al. (2005). An example of an item is: "How often does it happen that your work requires you to concentrate continuously?". Reliable Cronbach alpha coefficients larger than 0,70 (Nunnally & Bernstein, 1994) were found in these studies: work pressure, $\alpha = 0,76$; emotional job demands, $\alpha = 0,74$; and cognitive job demands, $\alpha = 0,89$ (Bakker et al., 2003b; Peeters et al., 2005).

Job resources. Three job resources were measured, including autonomy, social support and job developmental possibilities. *Autonomy* was measured with the scale developed by Bakker,

Demerouti and Verbeke (2004) and included three items (e.g. “How often does it happen that you have freedom in carrying out your work-related duties?”). *Social support* was measured with a scale developed by Bakker, Demerouti, Taris, Schaufeli, & Schreurs (2003c) with three items (e.g. “How often does it happen that you ask your colleagues help if necessary”). *Job developmental possibilities* were assessed by items that were conceptually mirrored from existing scales of home developmental possibilities developed by Demerouti et al. (2010). Three items were used to assess job developmental possibilities (e.g. “How often does it happen that you can develop yourself sufficiently in your work?”). All these items were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Cronbach alpha coefficients reported ranged between 0,68 and 0,74 for autonomy and between 0,81 and 0,85 for social support (Bakker et al., 2004; Bakker, Demerouti, & Euwema, 2005).

Work-nonwork interference. A newly developed instrument by Koekemoer et al. (2010) was used to measure interference between work and four nonwork roles. *Work-parent interference* was assessed with three items (e.g. “How often does it happen that your work keeps you from your child(ren) more than you like”). *Work-spouse interference* was assessed with four items (e.g. “How often does it happen that your marriage/relationship with your spouse/partner suffers because of your work?”). *Work-domestic interference* was assessed with three items (e.g. “How often does it happen that because of your work arrangements, you find it difficult to fulfil your domestic obligations). *Work-religion/spirituality interference* was assessed with four items (e.g. “How often does it happen that your work interferes with your religion/spirituality”). All items were rated on a four-point Likert scale ranging from 0 (*never*) to 3 (*always*). Functioning of the items was tested with Rasch analyses, and the construct validity, discriminant validity and convergent validity were confirmed (Koekemoer et al., 2010; Koekemoer & Mostert, 2010b). Reliable Cronbach alpha coefficients were also obtained for the four scales: work-parent interference (α = 0,88); work-spouse interference (α = 0,88); work-domestic (α = 0,91); and work-religion/spirituality (α = 0,86).

Recovery. The **‘**Recovery Experiences Questionnaire’ developed by Sonnentag and Fritz (2007) was used to measure the four recovery strategies: *psychological detachment* (three items, e.g. “I forget about work”), *relaxation* (three items, e.g. “I take time for leisure”), *mastery* (four items,

e.g. “I do things that challenge me”); and *control* (four items, e.g. “I determine my own schedule). Items are rated on a five-point scale ranging from 1 (*I do not agree at all*) to 5 (*I fully agree*). The following alpha coefficients were obtained from the cross-validation sample of Sonnentag and Fritz (2007) for the four recovery strategies: psychological detachment (α = 0,85); relaxation (α = 0,85); mastery (α = 0,85); and control (α = 0,85). Mostert and Els (in press) also confirmed the validity and reliability of the survey in a sample of employees in a TEI.

Research procedure

Permission was obtained from the ethics committees of the participating institutions to distribute the questionnaires among the employees who fit the criteria. Lists of married employees with children were obtained from various faculties and departments. Deans of the different faculties were approached for permission to conduct the study in their faculties and the participation of their personnel was requested. Questionnaires were distributed to participants with the help of field workers. When the questionnaires were handed out, a collection date was arranged with the participants. Participants could choose how they wanted to return the questionnaire (e.g. internal post, personal collection or personal delivery). These options were given in order to ensure anonymity and confidentiality. Participants were allowed two to three weeks to complete and return the questionnaires. Included in the questionnaires was an information letter explaining the purpose of the survey, the assurance of anonymity and confidentiality, and details on how information would be dealt with in order to ensure privacy.

Statistical analysis

The statistical analysis was conducted with the SPSS program (SPSS Inc., 2009). Descriptive statistics (e.g. means and standard deviations) and inferential statistics were used to analyse the data. Cronbach alpha coefficients were used to assess the reliability of the constructs. 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) and 0,50 (large effect) (Cohen, 1988) was set for the practical significance of correlation coefficients. Stepwise multiple regression analysis were carried out to determine the percentage variance in the dependent

variables (the four W-NWI dimensions) that were predicted by the independent variables (e.g. job demands, job resources and the four recovery strategies) and to determine which recovery strategies are significant predictors of W-NWI.

RESULTS

Descriptive statistics and product-moment correlations

The descriptive statistics and Cronbach alpha coefficients of the measuring instruments as well as the product-moment correlation coefficients between the constructs are reported in Table 1.

From the results in Table 2 it can be seen that the Cronbach alpha coefficients of all the measuring instruments were considered acceptable, accept for autonomy ($\alpha = 0,67$) compared to the guideline of $\alpha \geq 0,70$ (Nunnally & Bernstein, 1994). Furthermore, Table 2 provides the correlation coefficients of the study variables. Work-parent interference was practically and significantly related to work pressure with a medium effect. Work-spouse interference and work work-domestic interference were practically and significantly related, with a large effect to work pressure and work-parent interference. Work-parent interference and work-spouse interference were practically and significantly related, with a large effect to emotional demands, while work-domestic and work-religion/spirituality interference were also practically and significantly related to emotional demands with a medium effect. Furthermore, work-religion/spirituality interference was practically and significantly related, with a large effect to work-parent interference, work-spouse interference and work-domestic interference and also practically and significantly related with a medium effect to work pressure. Work-domestic interference was also practically and significantly related to work-spouse interference with a large effect. Work-parent interference and work-domestic interference were also practically and significantly related to mastery with a medium effect. Work-parent interference, work-spouse interference, work-domestic interference and work-religion/spirituality interference were all practically and significantly related to mastery with a medium effect. Work-spouse interference and work-religion/spirituality interference was practically and significantly related, with a medium effect, and work-domestic interference with a large effect, to relaxation and control with a medium effect. Work-parent interference was practically and significantly related, with a medium effect

to autonomy, support, mastery and control while it was practically and significantly related to relaxation with a large effect. Work-spouse interference and work-domestic interference was related to mastery with a medium effect. Work-spouse interference was practically and significantly related to support with a medium effect.

Table 2

Correlation coefficients between job demands, job resources, recovery strategies and W-NWI

	M	SD	α	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Work Pressure	1,46	0,72	0,83	1,00												
2 Emotional Demands	0,90	0,56	0,84	0,48^{+*}	1,00											
3 Cognitive Demands	2,01	0,63	0,71	0,56^{+**}	0,35^{+*}	1,00										
4 Autonomy	1,69	0,62	0,67	-0,15^{+}	-0,24^{+}	-0,01	1,00									
5 Social Support	1,90	0,67	0,75	-0,28^{+}	-0,43^{+*}	-0,16^{+}	0,47^{+*}	1,00								
6 Job Developmental Possibilities	1,74	0,69	0,81	-0,02	-0,14^{+}	0,07	0,56^{+**}	0,41^{+*}	1,00							
7 Psychological Detachment	2,86	1,05	0,84	-0,33^{+*}	-0,24^{+}	-0,22^{+}	0,19^{+}	0,29^{+}	0,05	1,00						
8 Relaxation	3,42	0,91	0,86	-0,39^{+*}	-0,31^{+*}	-0,23^{+}	0,28^{+}	0,30^{+*}	0,28^{+}	0,46^{+*}	1,00					
9 Mastery	3,35	0,91	0,88	-0,22^{+}	-0,27^{+}	-0,10	0,29^{+}	0,26^{+}	0,34^{+*}	0,23^{+}	0,66^{+**}	1,00				
10 Control	3,55	0,85	0,86	-0,32^{+*}	-0,30^{+*}	-0,17^{+}	0,34^{+*}	0,33^{+*}	0,26^{+}	0,38^{+*}	0,69^{+**}	0,62^{+**}	1,00			
11 Work-Parent Interference	0,91	0,77	0,88	0,48^{+*}	0,52^{+**}	0,29^{+}	-0,33^{+*}	-0,32^{+*}	-0,21^{+}	-0,31^{+*}	-0,51^{+**}	-0,45^{+*}	-0,46^{+*}	1,00		
12 Work-Spouse Interference	0,67	0,63	0,88	0,52^{+**}	0,58^{+**}	0,29^{+}	-0,24^{+}	-0,35^{+*}	-0,13^{+}	-0,37^{+*}	-0,46^{+}	-0,34^{+*}	-0,42^{+}	0,68^{+**}	1,00	
13 Work-Domestic Interference	0,92	0,78	0,92	0,55^{+**}	0,48^{+*}	0,28^{+}	-0,28^{+}	-0,29^{+}	-0,16^{+}	-0,36^{+*}	-0,51^{+**}	-0,43^{+*}	-0,50^{+**}	0,78^{+**}	0,75^{+**}	1,00
14Work-Religion/Spirituality Interference	0,40	0,54	0,86	0,38^{+*}	0,42^{+*}	0,21^{+}	-0,26^{+}	-0,25^{+}	-0,06	-0,33^{+*}	-0,35^{+*}	-0,29^{+}	-0,37^{+*}	0,54^{+**}	0,61^{+**}	0,55^{+**}

$^{+}$ Statistically significant ($p \leq 0,05$)

* Correlation is practically significant $r \geq 0,30$ (medium effect)

** Correlation is practically significant $r \geq 0,50$ (large effect)

Multiple regression analysis

To determine which recovery strategies predict the four types of W-NWI, four stepwise multiple regression analyses, using the enter method, were performed. It was decided to control for demographic characteristics in the first step of each regression. Job demands were entered in the second step, job resources in the third step, and recovery strategies in the fourth and final step of each regression. The results are reported in Table 3, 4, 5 and 6.

Table 3

Multiple regression analysis with work-parent interference as dependent variable

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
1	(Constant)	-1,34	9,05		-0,15	0,88	1,78	0,10	0,01	0,01
	Age	0,00	0,01	0,01	0,24	0,81				
	Gender	0,16	0,09	0,10	1,80	0,07				
2	(Constant)	-1,16	7,54		-0,15	0,18	36,02	0,58	0,34	0,33
	Age	0,00	0,00	0,01	0,14	0,89				
	Gender	0,15	0,07	0,09	2,06	0,04*				
	Work Pressure	0,34	0,06	0,31	5,58	0,00*				
	Emotional Demands	0,50	0,07	0,36	7,27	0,00*				
	Cognitive Demands	-0,02	0,07	-0,02	-0,28	0,78				
3	(Constant)	-0,59	7,36		-0,08	0,94	26,38	0,61	0,38	0,04
	Age	0,00	0,00	0,01	0,13	0,89				
	Gender	0,10	0,07	0,06	1,46	0,15				
	Work Pressure	0,31	0,06	0,29	5,24	0,00*				
	Emotional Demands	0,44	0,07	0,32	6,09	0,00*				
	Cognitive Demands	0,03	0,07	0,02	0,40	0,69				
	Autonomy	-0,21	0,07	-0,17	-3,08	0,00*				
	Support	0,02	0,06	0,01	0,25	0,80				

Table 3 continued

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
	Developmental Possibilities	-0,07	0,06	-0,07	-1,24	0,22				
4	(Constant)	6,06	7,00		0,87	0,87	24,64	0,68	0,46	0,09
	Age	-0,00	0,00	-0,03	-0,65	0,52				
	Gender	0,06	0,07	0,04	0,88	0,38				
	Work Pressure	0,21	0,06	0,19	3,58	0,00*				
	Emotional Demands	0,39	0,07	0,29	5,81	0,00*				
	Cognitive Demands	0,02	0,07	0,02	0,33	0,75				
	Autonomy	-0,15	0,06	-0,12	-2,39	0,02*				
	Support	0,05	0,06	0,04	0,86	0,39				
	Developmental Possibilities	-0,00	0,06	-0,00	-0,07	0,94				
	Psychological Detachment	-0,03	0,04	-0,04	-0,73	0,47				
	Relaxation	-0,13	0,05	-0,16	-2,43	0,02*				
	Mastery	-0,12	0,05	-0,14	-2,49	0,01*				
	Control	-0,07	0,05	-0,07	-1,23	0,22				

* Statistically significant $p \leq 0,05$

Table 3 summarises the regression analysis with age, gender, job demands, job resources and recovery strategies as predictors of work-parent interference. Age and gender in the first step of the regression analysis did not produce a statistical model ($F_{(2,36)}$= 1,78; p = 0,88), which accounted for 1% of the variance in work-parent interference. When job demands were entered in the second step of the regression analysis, a statistically significant model was produced ($F_{(5,35)}$ = 36,02; p = 0,88; ΔR^2 = 0,33), which accounted for approximately 34% of the variance in work-parent interference. More specifically, it seems that gender (β = 0,09; t = 2,06; $p \leq 0,05$),

work pressure (β = 0,31; t = 5,58, $p \leq 0,05$) and emotional demands (β = 0,36; t = 7,27; $p \leq 0,05$) predict work-parent interference. Entry of job resources in the third step of the regression analysis also produced a statistically significant model ($F_{(8,35)}$ = 26,38; p = 0,94; ΔR^2 = 0,04) accounting for approximately 38% of the variance in work-parent interference. In this model, it seems that work pressure (β = 0,29; t = 5,24; $p \leq 0,05$), emotional demands (β = 0,32; t = 6,09; $p \leq 0,05$) and work autonomy (β = -0,17; t = -3,08; $p \leq 0,05$) predict work-parent interference. Finally, entry of recovery strategies in the fourth step of the regression analysis also produced a statistically significant model ($F_{(12,35)}$ = 24,64; p = 0,87; ΔR^2 = 0,09) accounting for approximately 46% of the variance in work-parent interference. More specifically, it seems that work pressure (β = 0,19; t = 3,58; $p \leq 0,05$), emotional demands (β = 0,29; t = 5,81; $p \leq 0,05$), work autonomy (β = -0,12; t = -2,39; $p \leq 0,05$), relaxation (β = -0,16; t = -2,43; $p \leq 0,05$) and mastery (β = -0,14; t = -2,49; $p \leq 0,05$) predict work-parent interference.

Table 4

Multiple regression analysis with work-spouse interference as dependent variable

Model		Unstandardised Coefficients		Standardised Coefficients	t	p	F	R	R^2	ΔR^2
		B	SE	BETA						
1	(Constant)	6,45	7,45		0,87	0,34	0,61	0,06	0,00	0,00
	Age	-0,00	0,00	-0,04	-0,77	0,44				
	Gender	-0,05	0,07	-0,03	-0,64	0,52				
2	(Constant)	7,86	5,78		1,36	0,17	51,67	0,65	0,42	0,42
	Age	-0,00	0,00	-0,06	-1,37	0,17				
	Gender	-0,06	0,05	-0,04	-1,03	0,31				
	Work Pressure	0,28	0,05	0,32	6,03	0,00*				
	Emotional Demands	0,52	0,05	0,46	9,84	0,00*				
	Cognitive Demands	-0,05	0,06	-0,04	-0,87	0,39				
3	(Constant)	7,79	5,76		1,35	0,18	33,37	0,66	0,43	0,01
	Age	-0,00	0,00	-0,06	-1,32	0,19				

Table 4 continued

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
	Gender	-0,07	0,06	-0,06	-1,32	0,19				
	Work Pressure	0,26	0,05	0,30	5,70	0,00*				
	Emotional Demands	0,47	0,06	0,42	8,49	0,00*				
	Cognitive Demands	-0,03	0,06	-0,03	-0,54	0,59				
	Autonomy	-0,07	0,05	-0,07	-1,30	0,20				
	Support	-0,04	0,05	-0,05	-0,89	0,38				
	Developmental Possibilities	-0,02	0,05	-0,02	-0,40	0,69				
4	(Constant)	10,96	5,56		1,97	0,05*	28,33	0,70	0,50	0,06
	Age	-0,01	0,00	-0,07	-1,80	0,07				
	Gender	-0,08	0,05	-0,06	-1,50	0,13				
	Work Pressure	0,19	0,05	0,21	4,04	0,00*				
	Emotional Demands	0,45	0,05	0,40	8,43	0,00*				
	Cognitive Demands	-0,04	0,05	-0,04	-0,79	0,43				
	Autonomy	-0,02	0,05	-0,02	-0,44	0,66				
	Support	-0,01	0,05	-0,01	-0,11	0,91				
	Developmental Possibilities	0,01	0,05	0,01	0,24	0,81				
	Psychological Detachment	-0,06	0,03	-0,09	-2,06	0,04*				
	Relaxation	-0,10	0,04	-0,15	-2,31	0,02*				
	Mastery	-0,03	0,04	-0,04	-0,71	0,48				
	Control	-0,07	0,04	-0,09	-1,55	0,12				

* Statistically significant $p \leq 0,05$

Table 4 summarises the regression analysis with age, gender, job demands, job resources and recovery strategies as predictors of work-spouse interference. Age and gender in the first step of

the regression analysis did not produce a statistical model ($F_{(2,35)}$ = 0,61; p = 0,34). When job demands were entered in the second step, a statistically significant model was produced ($F_{(5,35)}$ = 51,67; p = 0,17; ΔR^2 = 0,42), accounting for 42% of the variance in work-spouse interference. More specifically, it seems that work pressure (β = 0,32; t = 6,03; $p \leq$ 0,05) and emotional demands (β = 0,46; t = 9,84; $p \leq$ 0,05) predict work-spouse interference in this step. Entry of job resources in the third step of the regression analysis did not produce a statistical model ($F_{(8,35)}$ = 33,37; p = 0,00; ΔR^2 = 0,01) and accounted for only one additional percentage of the variance in work-spouse interference. In this model it seems that work pressure (β = 0,30; t = 5,70; $p \leq$ 0,05) and emotional demands (β = 0,42; t = 8,49; $p \leq$ 0,05) are still the significant predictors of work-spouse interference. Finally, entry of recovery strategies in the fourth step of the regression analysis produced a statistically significant model ($F_{(12,35)}$ = 28,33; p = 0,05; ΔR^2 = 0,06) accounting for 50% of the variance in work-spouse interference. More specifically, it seems that work pressure (β = 0,21; t = 4,04; $p \leq$ 0,05), emotional demands (β = 0,40, t = 8,43; $p \leq$ 0,05), psychological detachment (β = -0,09; t = -2,06; $p \leq$ 0,05) and relaxation (β = -0,15; t = -2,31; $p \leq$ 0,05) predict work-spouse interference.

Table 5

Multiple regression analysis with work-domestic interference as dependent variable

Model		Unstandardised Coefficients		Standardised Coefficients	t	p	F	R	R^2	ΔR^2
		B	SE	BETA						
1	(Constant)	5,30	9,18		0,58	0,56	2,64	0,12	0,02	0,02
	Age	-0,00	0,01	-0,03	-0,49	0,62				
	Gender	0,20	0,09	0,12	2,29	0,02*				
2	(Constant)	3,40	7,46		0,46	0,65	41,95	0,61	0,37	0,36
	Age	-0,00	0,00	-0,02	-0,46	0,64				
	Gender	0,20	0,70	0,13	2,91	0,00*				
	Work Pressure	0,51	0,06	0,47	8,53	0,00*				
	Emotional Demands	0,38	0,07	0,28	5,67	0,00*				

Table 5 continued

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
	Cognitive Demands	-0,13	0,07	-0,09	-1,74	0,08				
3	(Constant)	3,84	7,40		0,52	0,61	27,98	0,62	0,39	0,02
	Age	-0,00	0,00	-0,02	-0,48	0,63				
	Gender	0,18	0,07	0,11	2,52	0,01*				
	Work Pressure	0,49	0,06	0,45	8,21	0,00*				
	Emotional Demands	0,34	0,07	0,24	4,73	0,00*				
	Cognitive Demands	-0,09	0,07	-0,07	-1,29	0,20				
	Autonomy	-0,16	0,07	-0,13	-2,33	0,02*				
	Support	0,01	0,06	0,01	0,10	0,92				
	Developmental Possibilities	-0,03	0,06	-0,02	-0,47	0,64				
4	(Constant)	10,19	6,93		1,47	0,14	27,61	0,70	0,49	0,10
	Age	-0,00	0,00	-0,05	-1,25	0,21				
	Gender	0,14	0,07	0,09	2,15	0,03*				
	Work Pressure	0,37	0,06	0,34	6,50	0,00*				
	Emotional Demands	0,29	0,07	0,21	4,43	0,00*				
	Cognitive Demands	-0,10	0,07	-0,07	-1,55	0,12				
	Autonomy	-0,09	0,06	-0,07	-1,34	0,18				
	Support	0,06	0,06	0,05	1,03	0,31				
	Developmental Possibilities	0,03	0,06	0,03	0,50	0,62				
	Psychological Detachment	-0,06	0,03	-0,08	-1,83	0,07				
	Relaxation	-0,11	0,05	-0,13	-2,06	0,04*				
	Mastery	-0,09	0,05	-0,11	-1,87	0,06				
	Control	-0,13	0,05	-0,14	-2,50	0,01*				

* Statistically significant $p \leq 0,05$

Table 5 summarises the regression analysis with age, gender, job demands, job resources and recovery strategies as predictors of work-domestic interference. Again, entry of age and gender in the first step of the regression analysis did not produce a statistical model ($F_{(2,36)} = 2,64$; $p = 0,56$) and accounted for only 2% of the variance in work-domestic interference. When job demands were entered in the second step of the regression analysis, a statistically significant model was produced ($F_{(5,35)} = 41,95$; $p = 0,65$; $\Delta R^2 = 0,36$), accounting for 37% of the variance in work-domestic interference. More specifically, it seems that gender ($\beta = 0,13$; $t = 2,91$; $p \leq 0,05$), work pressure ($\beta = 0,47$; $t = 8,53$; $p \leq 0,05$) and emotional demands ($\beta = 0,28$; $t = 5,67$; $p \leq 0,05$) predict work-domestic interference. Entry of job resources in the third step of the regression analysis also produced a statistically significant model ($F_{(8,35)} = 27,98$; $p = 0,61$; $\Delta R^2 = 0,00$) accounting for 39% of the variance in work-domestic interference. In this model, it seems that gender ($\beta = 0,11$; $t = 2,52$; $p \leq 0,05$) work pressure ($\beta = 0,45$; $t = 8,21$; $p \leq 0,05$), emotional demands ($\beta = 0,24$; $t = 4,73$; $p \leq 0,05$) and work autonomy ($\beta = -0,13$; $t = -2,33$; $p \leq 0,05$) predict work-domestic interference. Finally, entry of recovery strategies in the fourth step of the regression analysis produced a statistically significant model ($F_{(12,35)} = 27,61$; $p = 0,14$; $\Delta R^2 = 0,10$) accounting for 49% of the variance in work-domestic interference. More specifically, it seems that gender ($\beta = 0,09$; $t = 2,15$; $p \leq 0,05$), work pressure ($\beta = 0,34$; $t = 6,50$; $p \leq 0,05$), emotional demands ($\beta = 0,21$; $t = 4,43$; $p \leq 0,05$), relaxation ($\beta = -0,13$; $t = -2,06$; $p \leq 0,05$) and control ($\beta = -0,14$; $t = -2,50$; $p \leq 0,05$) predict work-domestic interference.

Table 6

Multiple regression analysis with work-religion/spirituality interference as dependent variable

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
1	(Constant)	4,24	6,37		0,67	0,51	0,54	0,06	0,00	0,00
	Age	-0,00	0,00	-0,03	-0,60	0,55				
	Gender	-0,04	0,06	-0,04	-0,74	0,46				

Table 6 continued

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*P*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
2	(Constant)	5,07	5,69		0,89	0,37	21,30	0,48	0,23	0,23
	Age	-0,00	0,00	-0,04	-0,90	0,37				
	Gender	-0,05	0,05	-0,04	-0,94	0,35				
	Work Pressure	0,18	0,05	0,25	4,04	0,00*				
	Emotional Demands	0,32	0,05	0,33	6,20	0,00*				
	Cognitive Demands	-0,04	0,06	-0,04	-0,70	0,48				
3	(Constant)	5,72	5,61		1,02	0,31	15,65	0,51	0,26	0,03
	Age	-0,00	0,00	-0,05	-1,00	0,32				
	Gender	-0,06	0,05	-0,05	-1,03	0,30				
	Work Pressure	0,16	0,05	0,22	3,63	0,00*				
	Emotional Demands	0,29	0,05	0,30	5,32	0,00*				
	Cognitive Demands	-0,02	0,05	-0,02	-0,41	0,68				
	Autonomy	-0,19	0,05	-0,22	-3,74	0,00*				
	Support	0,00	0,05	0,00	-0,02	0,99				
	Developmental Possibilities	0,08	0,05	0,10	1,77	0,08				
4	(Constant)	8,33	5,52		1,51	0,13	13,45	0,56	0,32	0,06
	Age	-0,00	0,00	-0,06	-1,37	0,17				
	Gender	-0,07	0,05	-0,06	-1,31	0,19				
	Work pressure	0,11	0,05	0,14	2,37	0,02*				
	Emotional Demands	0,27	0,05	0,28	5,02	0,00*				
	Cognitive Demands	-0,03	0,05	-0,03	-0,51	0,61				
	Autonomy	-0,15	0,05	-0,17	-2,99	0,00*				
	Support	0,03	0,05	0,04	0,73	0,47				
	Developmental Possibilities	0,10	0,05	0,13	2,17	0,03*				

Table 6 continued

Model		Unstandardised Coefficients		Standardised Coefficients	*t*	*p*	*F*	*R*	R^2	ΔR^2
		B	SE	BETA						
	Psychological Detachment	-0,06	0,03	-0,11	-2,15	0,03*				
	Relaxation	-0,01	0,04	-0,02	-0,28	0,78				
	Mastery	-0,06	0,04	-0,09	-1,44	0,15				
	Control	-0,08	0,04	-0,13	-1,89	0,06				

* Statistically significant $p \leq 0,05$

Table 6 summarises the regression analysis with year of birth, gender, job demands, job resources and recovery strategies as predictors of work-religion/spirituality interference. Ageand gender in the first step of the regression analysis did not produce a statistical model ($F_{(2,36)}$ = 0,54; p = 0,51). When job demands were entered in the second step of the regression, a statistically significant model was produced ($F_{(5,35)}$ = 21,30; p = 0,37; ΔR^2 = 0,23), accounting for 23% of the variance in work-religion/spirituality interference. More specifically, it seems that work pressure (β = 0,25; t = 4,04; $p \leq 0,05$) and emotional demands (β =0,33; t = 6,20; $p \leq 0,05$) predict work-religion/spirituality interference. Entry of job resources in the third step of the regression analysis produced a statistically significant model ($F_{(8,35)}$ = 15,65; p = 0,31; ΔR^2 = 0,03) accounting for 26% of the variance in work-religion/spirituality interference. In this model, it seems that work pressure (β = 0,22; t = 3,63; $p \leq 0,05$) emotional demands (β = 0,30; t = 5,32; $p \leq 0,05$) and work autonomy (β = -0,22; t = -3,74; $p \leq 0,05$) predict work-religion/spirituality interference. Finally, entry of recovery strategies in the fourth step of the regression analysis also produced a statistically significant model ($F_{(12,35)}$ = 13,46; p = 0,13; ΔR^2 = 0,06) accounting for 32% of the variance in work-religion/spirituality interference. More specifically, it seems that work pressure (β = 0,14; t = 2,37; $p \leq 0,05$), emotional demands (β = 0,28; t = 5,02; $p \leq 0,05$), work autonomy (β = -0,17; t = -2,99; $p \leq 0,05$), developmental possibilities (β = 0,13; t = 2,17; p

≤ 0,05) and psychological detachment (β = -0,11; t = -2,15; $p \leq 0,05$) predict work-religion/spirituality interference.

Based on these results, partial support was found for Hypothesis 1 and 2.

DISCUSSION

The objective of this study was to determine which demands and resources are significant predictors of W-NWI of employees working in a TEI and which recovery strategies are significant in dealing with high levels of W-NWI caused by high demands and a lack of resources.

The results indicate that work pressure and emotional demands were the two job demands that significantly predicted all the work-nonwork role interference dimensions. Of the included job resources, autonomy predicted work-parent interference and work-religion/spirituality interference, while development possibilities predicted work-religion/spirituality interference. Based on these results, it seems that employees from the TEI who experience high work pressure (i.e. working very hard with not enough time to complete tasks or concentrating intensely on tasks for long periods) and high levels of emotional demands (i.e. being in emotional stressful situations at work) have difficulties in combining their work and nonwork roles and thus experience negative interference from the work domain to the nonwork domain. Therefore, when demands are high, employees' relationships with their child(ren), spouse, home life and religion suffer. However, employees who have autonomy in their jobs (i.e. freedom in carrying out own work activities, freedom in deciding the time spent on a task) experience significantly less work-parent interference and work-religion/spirituality interference. Interestingly, employees who have high developmental possibilities (i.e. the opportunity to develop strong points and to learn new things) experience less work-religion/spirituality interference. Autonomy and development possibilities are therefore important resources that could assist employees in spending more quality time with their children and on religious/spiritual activities. The results are consistent with previous research, which found that job demands and a lack of job resources are important

predictors of negative WHI (Dikkers et al., 2007; Geurts & Demerouti, 2003; Mostert, 2009; Mostert & Oosthuizen, 2006; Peeters et al., 2005; Van Aarde & Mostert, 2008).

With regard to the relationship between recovery strategies and the four work-nonwork interference dimensions, the results showed different patterns of relationships. Specifically, it seems that the relaxation and mastery recovery strategies significantly predicted lower work-parent interference. Relaxation is a state of low activation and it increases positive emotions (Stone, Kennedy-Moore, & Neale, 1995). Thus, when an individual relaxes, positive emotions will help decrease negative emotions resulting from job demands (Frederickson, 2000; Sonnentag & Fritz, 2007). It can therefore be assumed that a relaxed parent will be less stressed and frustrated, and will be able to spend more quality time with his or her child(ren) and have more patience with his or her child(ren). The employees' work will thus interfere less with the relationship between them and their child(ren) if the person relaxes adequately by using different methods, such as reading a book or taking a walk (Fritz & Sonnentag, 2006).

Furthermore, mastery strategies during off-job time will also increase positive mood (Parkinson & Totterdell, 1999). When an individual is engaged in mastery activities, he or she builds new internal resources such as skills, competencies and effectiveness (Bandura, 1997), which could help the individual to recover more effectively from job stress caused by high demands. Parents who build more skills, competencies and self-efficacy feel that they are more reliable parents because of the internal resources they have developed and promoted. In terms of different work-family conflicts that exist (Geurts & Demerouti, 2003), relaxation and mastery strategies will also reduce strain-based conflict. When an individual faces high job demands that create tension, anxiety, fatigue, irritability, etc. it makes it difficult for the individual to fulfil family demands (Geurts et al., 1999), and more specifically the demands that the parental role requires. Therefore, when an individual recovers adequately through relaxation and mastery strategies, the tension that spills over to the family will be decreased.

Psychological detachment and relaxation were the recovery strategies significantly associated with lower work-spouse interference. Employees who detach psychologically from work avoid stress related to work by focusing on other types of activities and thoughts different from work

issues (Parkinson & Totterdell, 1999; Sonnentag & Fritz, 2007). Psychological detachment from work could therefore result in a better mood and less fatigue at night time (Sonnentag & Bayer, 2005). Thus, when an individual detaches psychologically from work during leisure time, he or she can engage in activities with his or her spouse. Because fatigue levels are decreased, more time can be spent together in the evenings (Moreno-Jiménez et al. 2009; Sonnentag & Bayer, 2005). It could further imply that an individual can also concentrate on a conversation with a spouse instead of having thoughts about work, and can therefore reconnect with his or her spouse (Sonnentag & Fritz, 2007). If an employee has to frequently attend to business issues during family time or constantly thinks about work when he/she is supposed to spend time with family (specifically the spouse), it can negatively influence the nonwork domain, specifically the employee's spouse, who's reaction will more than likely be negative (Moreno-Jiménez et al., 2009). Being psychologically detached from work will thus result in an employee experiencing less interference between the work and spousal domain, because of the mental availability to the spouse. In addition, relaxation increases positive affect and decreases the effects of negative emotions (Frederickson, 2000; Sonnentag & Fritz, 2007). Thus, if an individual is relaxed, he or she can spend more quality time with his or her spouse on a relaxed and positive level. Strain-based conflict will therefore be decreased if an employee psychologically detaches from work and relaxes, resulting in being a more attentive spouse (Geurts et al., 1999).

Relaxation and control significantly predicted lower work-domestic interference. Many people relax through participating in activities that put few social demands on them, that require little or no intellectual and physical effort and that are not a challenge for them (Tinsley & Eldredge, 1995). Many people experience relaxation through performing domestic chores. Furthermore, having control in off-job time means that an individual has a choice which domestic actions he or she would like to carry out, as well as how and when to pursue the preferred action (Sonnentag & Fritz, 2007). Thus, while performing the preferred domestic actions, individuals get the opportunity to re-evaluate potential stressful situations, which can lead to higher psychological well-being and lower stress levels (Lazarus, 1966). Having control is associated with positive affect and happiness (Burger, 1989; Larson, 1989) and an individual's well-being is increased when he or she feels in control of significant life domains (Bandura, 1997). A study done by Griffin, Fuhrer, Stansfeld and Marmot (2002) showed that women who experienced low control

at home had higher levels of depression over a period of time than women with high control at home. In addition, men who experienced low control at home showed higher levels of depression and anxiety then men with high control at home. When an individual experiences control, it satisfies the urge of wanting to be in control because of promoted self-efficacy and feelings of competence; this in turn increases well-being (Sonnentag & Fritz, 2007). It can therefore be assumed that strain-based conflict will be decreased through relaxation and control recovery strategies, because if an employee recovers adequately, fatigue will be reduced, giving an individual more energy for domestic activities. From the results in this study, it also seems that individuals who exerts control in off-job time experience less interference between the work and domestic domain.

Psychological detachment also significantly predicted lower work-religion/spirituality interference. As previously said, psychological detachment implies that an individual disengages mentally from work (Sonnentag & Fritz, 2007). By doing so, an individual will be able to spend more time on religious/spiritual activities without having work-related thoughts and tasks interfering with activities that are meant to be sacred. It is therefore important for individuals who want to engage in religious/spiritual activities after hours to mentally forget about work, distance themselves from work and not think about work at all. This will most probably enhance the quality of their religious/spiritual experiences.

Recovery refers to strategies that reduce tension and stress caused by everyday demands (Nýlen et al., 2007). According to the E-R model, load reactions build up in an employee who experiences high job demands (i.e. high work pressure and emotional demands) and a lack of resources (i.e. autonomy), and thus interference between the work domain and nonwork domain will develop (Meijman & Mulder, 1998). Based on this principle of the E-R model, the results of this study suggest that employees who face high job demands and a lack of resources to effectively deal with the demands do indeed build up negative load reactions that will spill over to the nonwork domain. Therefore, employees need to recover from the tension and stress caused by demands and a lack of resources, otherwise they will experience W-NWI, which could eventually have an effect on their health (Geurts et al., 2005; Geurts et al., 1999) and overall well-being (Sonnentag & Zijlstra, 2006). However, recovery from high demands is needed to

decrease the load reactions that develop in the work domain and are carried over to the nonwork domain (De Croon et al., 2004; Eby et al., 2005, Geurts et al., 2003). Certain recovery strategies have been shown in this study to alleviate interference between certain work and nonwork domains.

Limitations of this study should be highlighted. The first limitation of this study was the use of a cross-sectional design, which implies that causal relationships could not be determined among the variables. A longitudinal design or diary approach could have demonstrated stronger causal relations and conclusions. The second limitation was that only self-reported questionnaires were used to obtain research. This may lead to "common-method variance". The last limitation of this study was that the sample focused mostly on white employees in the TEI, which can have an effect, as the sample did not represent various races.

Not withstanding the limitations, various recommendations can be made for the individual as well as the organisation and Human Resources (HR) manager. It is important for both the employee and the HR manager to understand the extent of the high demands and lack of resources that cause W-NWI and the impact that recovery strategies have on employees to help them cope, as both parties are affected by its implications. In terms of alleviating work pressure and promote W-NWI, primary interventions should be put in place. In order to do this, the HR manager can re-examine employees' job descriptions to ensure realistic staff-workload ratios. Possible solutions which will result in the decrease of work pressure should also be investigated by the HR manager. Furthermore, managers across the organisation have to ensure that employees have the necessary skills to do the work, otherwise a Skills Development Program could be drawn up and training according to the limited skills in the organisation, can be provided. To promote autonomy among employees, managers are also advised to allow employees more freedom in carrying out their work and to more innovative and creative. Regarding the increase and/or assurance for developmental possibilities in the organisations, interventions such as performance management should be conducted on a regular basis to monitor sufficient work and performance.

On an individual level, the recovery strategies (psychological detachment, relaxation, mastery and control) that are significantly related to W-NWI could be explained and promoted. With

regards to psychological detachment, HR managers could educate employees on the entailment of psychological detachment through information sessions to prevent W-NWI. In addition, practical information sessions can be arranged by the HR Manager to educate employees on aspects that have been shown to contribute to psychologically detaching from work, relaxation, control and mastery. Training can be arranged for employees where new and innovative ways of doing their work are introduced and promoted. Organisations can also consider re-evaluating policies on working hours, to introduce more flexible working hours for employees.

Secondary interventions can also be put in place as preventative measures to decrease work pressure and emotional demands. With regards to work pressure, time and stress management courses/workshops could be organised in order to improve employees' time and organisational skills as well as to help them manage the stress they experience. To decrease emotional demands training can be provided on emotional awareness, (i.e. emotional intelligence, coping with emotions) to help employees cope with the effects of the emotional burden they experience. In order to promote work-life balance and prevent negative interference between the work and nonwork domains, different strategies can be implemented (e.g. access to childcare, reasonable/flexible working hours etc.) in the organisation to enable employees to better align both life domains (Geurts & Demerouti, 2003). Management actions can be developed, such as revising policies which state that the organisation is committed to providing a flexible workplace; conducting a survey to establish the needs of the employees in order to balance their work and nonwork lives; training and development for managers to manage a more flexible workforce and so forth (Government of Western Australia, Department of Health, 2007).

Tertiary interventions can be considered when employees experience intensive job demands and inadequate recovery. Thus, employees' overall wellbeing is hindered as well as their ability to function effectively, not only at work but during off-work time as well. Counselling or leave to recover can be prescribed for these employees. Furthermore, facilitation of debriefing sessions can be valuable where employees get the opportunity to ventilate their emotions regarding work aspects.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter consists of conclusions pertaining to this study, according to the specific objectives. The limitations of this research are discussed, followed by recommendations for the organisations. Furthermore, recommendations and suggestions are made for future research.

3.1 CONCLUSIONS

Employees working for TEIs, which are characterised as stressful working environments (Barkhuizen & Rothmann, 2008a, 2008b; Coetzee & Rothmann, 2005; Jackson, Rothmann, & Van de Vijver, 2006) experience high job demands without sufficient job resources to help them cope with the demands made on them (Demerouti & Geurts, 2004). Consequently, employees are often unmotivated and too drained to invest attention in the nonwork domain (Geurts & Demerouti, 2003). Sometimes certain roles are affected in such a way that they can no longer be fulfilled (i.e. being a parent, being a spouse, having domestic responsibilities or being involved in religious/spiritual activities) (Koekemoer & Mostert, 2010). Negative interference between the work and nonwork domains occurs and the need for recovery arises (Jansen, Kant, Kristensen, & Nijhuis, 2003). It is of paramount importance for employees to recuperate from the psychobiological strains which were activated during work, to restabilise these strains to a homeostatic state where no demands are present (Meijman & Mulder, 1998).

The first objective of this study was to determine which job demands and job resources significantly predicted W-NWI. According to the Job Demands-Resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), employees are not only confronted with job demands, but also exposed to job resources. High job demands coupled with a lack of resources can cause interference between employees' work domain and nonwork domain (Montgomery, Panagopolou, & Benos, 2006). Their relationships with their child(ren) and/or spouse may suffer, and also their domestic life and their religion/spiritual life. The results in this study indicate that

high job demands, in particular work pressure and emotional demands, significantly predicted interference between all four work-nonwork roles (i.e. parent, spouse, domestic, and religion/spirituality). One explanation for these results is that when employees experience stress, pressure and emotional instability, it carriers over to their nonwork domain. They take these feelings home with them and are influenced by them in such a way that they start to neglect their child(ren), spouse, domestic chores or religious/spiritual activities. Of the job resources, autonomy significantly predicted only work-parent interference and work-religion/spirituality interference. Furthermore, work-religion/spirituality interference was also predicted by developmental possibilities. In terms of job resources, it would seem that when employees experience autonomy and personal development at work, they feel more competent to participate in these roles (i.e. being a parent and investing time in religious/spiritual activities). It can be assumed that when employees experience a lack of autonomy, i.e. no freedom and control over their work, it can lead to interference between work and being a parent. Since employees cannot always be available for their children (e.g. driving them to extra-mural activities, helping them with assignments and home work, caring for them when they are sick or spending quality time with them), because they are busy at work and are unable to control their work schedule or work hours, it is understandable that interference occurs between the work and parent relationship. This is also true for the interference between work and religious/spiritual life.

The second objective of this study was related to recovery strategies which significantly predicted W-NWI. In accordance with the Effort-Recovery (E-R) model (Meijman & Mulder, 1998), recovery is needed for employees to effectively cope with the negative load reactions accumulated due to high job demands and lack of resources that could cause the spillover between the work domain and various nonwork domains. Four recovery strategies have been studied in this research (i.e. psychological detachment, relaxation, mastery, and control). The results showed that the interference between the work and parent relationship were decreased by relaxation and mastery strategies. Relaxation puts an individual in a state of low activation and also enhances positive feelings (Stone, Kennedy-Moore, & Neale, 1995). It could be assumed that when employees are relaxed they have more time to spend on their children (e.g. attend sports events or spend quality time with them at home). Relaxation also decreased the interference between the work-spouse relationship as well as the work-domestic relationship. Relaxed individuals will be able to exert

more attention on their spouses, allowing them to converse afbout topics other than work and also to do activities together (e.g. have a quite dinner/go to the cinema). With regard to the work-domestic relationship, employees who are relaxed will be able to get more domestic activities done, because they will be more motivated and have more positive emotions and energy to complete such responsibilities and duties (Stone et al., 1995). Some employees may find it relaxing to participate in domestic activities because few social demands are made on them, as well as no challenges (Tinsley & Eldredge, 1995).

Mastery strategies also increase positive emotions (Parkinson & Totterdell, 1999) and build internal resources such as skills and competencies (Bandura, 1997). The results showed that mastery strategies decrease the interference between the work-parent relationship. Mastery strategies can develop an employee in such a way that self-efficacy and feelings of a reliable parent increases (Geurts & Demerouti, 2003). Mastery strategies also decrease feelings such as tension, anxiety and fatigue. These feelings can hinder an employee to fulfil parental demands (Geurts, Rutte, & Peeters, 1999), thus the negative interference between the work and the parental relationship decreases when mastery strategies are implemented in the recovery process because negative feelings can be eliminated.

Furthermore, the study indicated that psychological detachment leads to less work-spouse and work-religion/spirituality interference. According to Parkinson and Totterdell (1999) as well as Sonnentag and Fritz (2007), employees who detach psychologically from work avoid work-related stress by participating in activities other than work issues. Positive emotions and less fatigue are the results of being psychologically detached from work (Sonnentag & Bayer, 2005). Employees who detach from work in their leisure time will have the advantage of spending quality time with their spouses, and because fatigue levels are lowered more activities can be enjoyed together in the evenings (Moreno-Jiménez et al., 2009; Sonnentag & Bayer, 2005). Previous researchers have argued that psychological detachment will result in decreased levels of interference in the employee's work and spousal relationship because of the attentiveness and mental availability of the employee (Geurts et al., 1999; Moreno-Jiménez et al., 2009). In this study, the interference between the relationship of work and religious/spiritual activities was found to decrease as a result of psychological detachment. As mentioned, psychological detachment pertains to being mentally

disengaged from work issues (Sonnentag & Fritz, 2007). This suggests that employees can participate in religious/spiritual activities without having thoughts of work that can interfere. It is thus of the utmost importance for employees to switch their minds off from work when they leave their workplace and put all their effort in their religious/spiritual activities. When employees are psychologically detached from work, the interference between these domains will decrease, as work-related thoughts will not interfere with or hinder time and attention that were meant for these sacred activities.

Lastly, results in this study indicated that having control lessened the interference between work and domestic activities. Employees who have control in their leisure time have the choice of which domestic chores they want to carry out as well as how and when they would like to carry out the preferred actions (Sonnentag & Fritz, 2007). According to Burger (1989) and Larson (1989), control is associated with positive affect and happiness. Bandura (1997) concurs that an individual's well-being is enhanced when he or she feels in control in certain life domains. Strain-based conflict can therefore be decreased through having control, because if an employee recovers sufficiently, fatigue will be reduced, giving an employee more energy to exert on domestic activities. According to the results of this study, it can be assumed that employees who experience control in their off-job time will have less interference between the work domain and the domestic domain.

3.2 LIMITATIONS OF THIS RESEARCH

It is important to note some limitations of the study. The first limitation was the use of a cross-sectional research design. As a result of this design, no causal interferences could be drawn among the variables. Therefore, the causal relationships among variables could only be interpreted and not established, and more complex forms of non-recursive linkages could not be examined. In order to validate hypothesised causal relationships, the use of longitudinal designs (Montgomery, Peeters, Schaufeli, & Den Ouden, 2003) or diary approaches (Sonnentag, 2001) is required.

This study made use of self-reported questionnaires, which could also be viewed as a limitation. The problem resulting from self-reported questionnaires is referred to as "common method

variance" or "nuisance", as the use of only one method of data-collection can increase the likelihood of associations being false and insignificant (Oosthuizen, 2005). Although one would expect common method variance to be problematic, several studies have shown that this is not the case, particularly if interactions are found between variables (Dollard & Winefield, 1998; Semmer, Zapf, & Grief, 1996; Spector, 1992). Employees are considered to be the most important source to accurately report on their work environment (Frese & Zapf, 1999).

Another limitation regarding the questionnaire concerned its length, which in some cases leads to participant fatigue. Participants also complained about the repetition of items and their perception that the same construct was measured with large amount of items. These aspects may have resulted in some participants responding randomly to the items. According to Netemeyer, Boles and McMurrian (1996), long measures can become unmanageable and a burden to respondents and do not always enhance psychometric properties. Scales with fewer items are preferred to those with many items, given that the alpha coefficients and construct validity estimates are comparable (Podsakoff & MacKenzie, 1994).

A fourth limitation of this study was the homogeneity of the sample. The sample only included individuals from the North West Province in South Africa and of a specific occupation (i.e. tertiary education). The results should therefore be interpreted with caution with regard to generalisation to other provinces, contexts or occupations. Furthermore, the sample displayed no diversity, since only one tertiary education institution was used. The tertiary education institution used in this study was mostly representative of one specific culture and thus one major language group, which could have influenced participants' responses (e.g. being biased because the questionnaire was only available in English). Different results might be obtained at tertiary education institutions that are more representative of the various South African cultural and language groups.

The last limitation of this study was the conceptual restriction of the instrument. The instrument of Koekemoer, Mostert and Rothmann (2010) was developed and restricted to specific nonwork roles that employees fulfil. This instrument measured the interference between work and four specific nonwork roles, i.e. parent, spouse, domestic and religion/spirituality (Koekemoer et al., 2010). However, these roles are not the only nonwork roles that individuals could fulfil. They can also

participate in other nonwork roles such as leisure roles, social roles and community roles (Lingard & Francis, 2005). Different results could therefore be obtained if the sample is not restricted to married parents.

3.3 RECOMMENDATIONS

Regardless of the limitations of this study, the present findings have important implications for practice and future research.

3.3.1 Recommendations for the organisation

Firstly, it is of utmost importance for organisations to understand the significance of W-NWI and on which scale it influences the individual and in turn the organisation. The working environment of tertiary education institutions is very stressful and demanding (Barkhuizen & Rothmann, 2008a; Barkhuizen & Rothmann, 2008b; Coetzee & Rothmann, 2005; Gillespie, Walsh, Winefield, Dua & Stough, 2001; Jackson et al., 2006; Tytherleigh, Webb, Cooper, & Ricketts, 2005), and employees often struggle to find a balance between their work role and their various nonwork roles (Jansen et al., 2003). From the results of this study, work pressure and emotional demands were the two job demands that significantly predicted all the work-nonwork role interference dimensions (work-parent interference, work-spouse interference, work-domestic interference and work-religion/spirituality interference). Employees who experience these job demands find it difficult to combine their work and nonwork roles and experience negative interference between their work and nonwork roles. To alleviate work pressure, organisations can examine the workload of their employees and look at their job descriptions to determine whether the actual work corresponds with the job descriptions. Possible solutions and reasons for the perceived high work pressure could be investigated. Furthermore, organisations can coordinate courses/workshops on time and stress management to develop employees' self-management techniques. These courses/workshops could focus on improving employees' time and organisational skills so that they will be able to manage their workload and work more effectively. By developing techniques or paying attention to the perceived high work pressure of employees, W-NWI can also be decreased. In terms of the high emotional demands, managers could explore the possible reasons for these, and training with

regard to emotional aspects such as emotional intelligence and/or coping with emotions can be implemented. The development of employees' abilities, competencies and skills can help them cope with their job demands and pressures, ultimately improving not only their work performance but also their W-NWI. Furthermore, organisations could provide more support on how to cope with nonwork-related demands (childcare facilities, working from home, etc.). Work-family facilities, for instance professional and affordable childcare facilities on the premises and flexible working hours could also be provided by organisations, which will help employees balance their work life and nonwork life (De Klerk, 2007). Management should keep up to date with regard to the changes that could be made in the working environment (i.e. flexible working hours, childcare facilities), and methods of managing these changes should be communicated to them. Also, managerial actions such as the revision of policies concerning flexible working times and childcare facilities should be developed to state the organisation's/managers' commitment to these new conditions and changes. Other managerial actions, such as conducting surveys to measure the needs of the employees in order to promote a balanced work-nonwork life, and training and development of managers to manage a more flexible workforce, should also be implemented (Government of Western Australia, Department of Health, 2007).

With regard to the job resources, autonomy and developmental possibilities were the only two resources that predicted to decrease the negative interference between the work and nonwork domains. Autonomy in the job gives employees the freedom to carry out their own work activities and to decide how much time they want to spend on a particular task. In this study, employees who have autonomy in their work experienced less interference between the work-parent and work-religion/spirituality relationship. Regarding this result, managers are advised to give employees more freedom in doing their work and deciding how much time they want to spend on a certain activity. Managers could also give employees the freedom to be more creative and innovative in their work and allow them to make suggestions on certain work aspects/tasks. When employees have the freedom to organise their work as they wish, for instance completing important tasks for a particular day to take an afternoon off once a week, they will have more time to spend with their children in the afternoons, or to attend religious/spiritual activities (e.g. Bible study or prayer hours). The resource, job developmental possibilities refer to the opportunities that employees have to develop themselves personally and learn new things in their job. In order to increase or ensure

job developmental possibilities, performance management should take place on a regular basis throughout the year to monitor the performance and effective and sufficient work of employees, putting them in line for incentives such as bonuses. Management should also communicate the development opportunities in the organisation (e.g. a promotion or support of further studies). This can motivate people to do good work and make them feel more competent.

Lastly, when employees suffer from high demands (but without sufficient job resources to meet those demands) and inadequate recovery, this can hinder their overall well-being and their ability to function effectively – in their work as well as in their nonwork time. When employees experience these circumstances at work (which can cause burnout or health deterioration), it could be necessary to consider more intense interventions to assist the recovery process. Firstly, it can be recommended as a preventative measure to implement debriefing sessions, facilitated by HR Managers. In these debriefing sessions, employees are given an opportunity to ventilate negative emotions. In this manner, employees can express and deal with the negative emotions they are faced with in a safe environment, preventing the spillover of negative effects from the work to the nonwork domain. If this measure is not implemented and employees suffer because of working conditions already mentioned, counselling and recovery leave can be considered. HR Managers can arrange counselling and recovery leave for employees who are at risk of burnout or health implications, etc.

In terms of the recovery of employees, organisations as well as the individual should understand how important it is to recover from work. Organisations should make employees aware of recovery, the process of recovery and the different strategies which exist to promote and implement recovery. The results of this study show that W-NWI is decreased by certain recovery strategies. Relaxation and mastery strategies have been shown to lower the levels of interference between the work-parent, work-spouse and work-domestic relationships. Relaxation and mastery strategies increase positive emotions (Stone et al., 1995) and enhance the employees' affect not only at home but also at work. Because relaxation and mastery strategies have positive effects for both the employee and the organisation, organisations should focus on promoting these strategies. In terms of relaxation, organisations can arrange relaxation session at work where employees can do yoga or breathing exercises, etc. to help them relax. These sessions can be arranged to take place when they

suit the employees (e.g. before or after work, or during their lunch hour). Organisations can also arrange days where groups of employees go on relaxing walks in the botanical gardens, etc. With the focus on developing mastery strategies, organisations can first establish the interests of employees in terms of which activities they wish to promote/master – e.g. learning a new language, playing an instrument). Then organisations can continue to arrange activity days where these different mastery activities are acquired (e.g. learning a new language/pottery/scrapbooking), or, alternatively, employees could attend expeditions where they are taught how to abseil or river raft, etc.

The results from this study showed that employees who were psychologically detached from work in off-job time had lower work-spouse interference as well as lower work-religion/spirituality interference. Thus, when an employee's mind is clear from work-related thoughts, he/she can pay more attention to his/her spouse and spend more time in conversation or leisure time with his/her family. Furthermore, employees can spend more time on religious/spiritual activities with a clear mind; thus, the employee can be more engaged in his/her thoughts about his/her beliefs, etc. According to Sonnentag and Bayer (2005), they experience better mood and less fatigue, helping them to be more effective and productive in their job. Because the effects of psychological detachment have positive outcomes for the individual, organisations should focus on informing their employees about psychological detachment. Information sessions can be held at work to enlighten employees on what psychological detachment entails and how they can detach from work when they are not at work. In addition to the information sessions, practical follow-up sessions can be arranged where employees are educated on certain aspects that have been shown to contribute to detaching psychologically from work (Sonnentag & Fritz, 2007). Aspects to focus on are (1) emotion-focused coping, where employees are trained to manage their cognitions or emotions directly, without changing their environment); and (2) emotional stability, where employees are consulted on how to adjust emotionally to various events. Lastly, attention should be given to life satisfaction, where employees are counselled and consulted on their judgment of their own quality of life. In these sessions, employees can learn different methods/techniques to psychologically detach from work-related thoughts. Moreover, this study has shown that having control predicted lower work-domestic interference. Having control also increases positive emotions, happiness (Burger, 1989; Larson, 1989) and well-being (Bandura, 1997). Employees who decide for

themselves how to spend their off-work time experience less interference between their work and domestic domains. Employees can thus decide when they want to do their domestic chores because they do not have any work-related tasks to do at home. Furthermore, organisations should also allow employees some control over their work. When employees have control over certain aspects of their work, for instance deciding when to do certain tasks during the day, or to do all their work tasks and leave work earlier, they feel that they have more time to spend on domestic chores. Thus, the interference between the work domain and the domestic domain is decreased. Organisations can organise training for their employees where new and innovative ways of doing their work is introduced so that they can control their work and have more time for tasks at home.

3.3.2 Recommendations for future research

The following recommendations can be made for future research. Firstly, it is recommended that the study be expanded to other occupations, i.e. other than the employees of a TEI. Every occupation has its own challenges, advantages and disadvantages which influence not only the interference between the work and nonwork, but also the level of recovery that is required. In terms of recovery stategies, future research may show that different strategies are needed in different occupation groups in order to recover.

In addition to the occupation, various perspectives of individuals who are involved in the work-family dyad can also be taken into consideration. The current study focused only on one person's opinions and perspectives. It can give added insight when the spouse's or child(ren)'s perspectives are known, since organisations tend to only view the work and the individual as the unit of analysis (De Klerk, 2007). Organisations can further examine the crossover effect of spouses and families in work-nonwork interference as a unit of analysis as this can increase our understanding of the complexities of multiple roles in different domains.

Furthermore, the use of longitudinal research designs or diary studies is recommended for future research. Longitudinal designs are used to study change on the same units over a period of time, or repeatedly (e.g. individuals, groups, organisations) (Ployhart & Vandenberg, 2010) and diary studies assess data over a period of time (e.g. seven days). Thus, longitudinal designs may be used

to validate the hypothesised causalities of the relationships further and to determine if the relationships hold true over time.

Also, the current study focused exclusively on the negative interference between the work and nonwork domains. A recommendation that can be made for future research is to study the positive interaction that can exist between the work and nonwork domains. The possible positive impact of interaction between the work and non-work domains have recently been receiving more attention in research (De Klerk & Mostert, 2010; Demerouti, Geurts, & Kompier, 2004; Frone, 2003; Geurts & Demerouti, 2003; Grzywacz & Marks 2000; Mostert, Cronje, & Pienaar, 2006; Mostert & Oosthuizen, 2006), and it should be noted that positive interaction between the work and the home domain can also exist. Individuals who experience positive work-nonwork interference are more engaged with their work and experience less burnout (Montgomery et al., 2003; Mostert, 2006; Mostert et al., 2006), resulting in higher productivity (Moncrieff & Pomerleau, 2000) and less absenteeism (Väänänen et al., 2004). Thus, positive interaction between the work and the nonwork domain has advantages for the individual as well as for the organisation. It is thus important to also consider the possible positive interaction between the work and nonwork domains. As indicated in the study, negative W-NWI holds destructive aspects for organisations as well as employees, whereas positive interactions might produce positive aspects for the individual and/or organisation.

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