

**JOB AND HOME CHARACTERISTICS, NEGATIVE WORK-  
HOME INTERACTION AND ILL-HEALTH OF EMPLOYED  
FEMALES IN SOUTH AFRICA**

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## COMMENTS

The reader is reminded of the following:

- The editorial style as well as the references referred to in this mini-dissertation follow the format prescribed by the Publication Manual (5<sup>th</sup> edition) of the American Psychological Association (APA). This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University (Potchefstroom) to use APA style in all scientific documents as from January 1999.
- The mini-dissertation is submitted in the form of three chapters, each having it's own list of references, and with the second chapter in the form of a research article.

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## **DECLARATION**

I, Zoe Roux, hereby declare that “Job and home characteristics, negative work-home interaction and ill health of employed females in South Africa” 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.

**ZOE ROUX**

**MAY 2007**

# TABLE OF CONTENTS

List of Tables	v
Abstract	vi
Opsomming	vii

## CHAPTER 1: INTRODUCTION

1.1	Problem statement	1
1.2	Research objectives	5
1.2.1	General objective	5
1.2.2	Specific objectives	5
1.3	Research method	5
1.3.1	Research design	6
1.3.2	Participants and procedure	6
1.3.3	Measuring battery	7
1.3.4	Statistical analysis	8
1.4	Overview of chapters	9
1.5	Chapter summary	9
	References	10

## CHAPTER 2: RESEARCH ARTICLE 14

## CHAPTER 3: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

3.1	Conclusions	48
3.2	Limitations of this research	52
3.3	Recommendations	53
3.3.1	Recommendations for the organisation	53
3.3.2	Recommendations for future research	54
	References	55

## LIST OF TABLES

<b>Table</b>	<b>Description</b>	<b>Page</b>
Table 1	Characteristics of participants ( $N = 500$ )	23
Table 2	Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring Instruments	27
Table 3	Correlation Coefficients between the Measuring Instruments ( $N = 500$ )	29
Table 4	Multiple Regression Analysis with Physical Ill-Health as Dependent Variable	31
Table 5	Multiple Regression Analysis with Anxiety as Dependent Variable	33
Table 6	Multiple Regression Analysis with Fatigue as Dependent Variable	35
Table 7	Multiple Regression Analysis with Depression as Dependent Variable	37

## ABSTRACT

**Title:** Job and home characteristics, negative work-home interaction and ill-health of employed females in South Africa

**Keywords:** Job characteristic, home characteristics, negative work-home interaction, negative home-work interaction, physical ill health, anxiety, fatigue, depression, employed females.

In the last few years, many more women than before have entered the labour force. Consequently, employed women are confronted with demanding aspects at work and at home and experience difficulty in combining obligations in both of these domains. The pressure of the demands in their work place and family lives combined with managing the responsibilities from their work and personal lives can have a negative impact on the health of employed females.

The objective of this research was to investigate the effects of work characteristics, home characteristics and negative work-home interaction on the ill-health of employed females in South Africa. An availability sample ( $N = 500$ ) was taken from six provinces of South Africa, including the Eastern Cape, the Free State, Gauteng, KwaZulu Natal, the North West and Western Cape. A job characteristics questionnaire, a home characteristics questionnaire, the 'Survey Work-Home Interaction – Nijmegen' (SWING), and an ill health questionnaire were administered. Exploratory factor analyses were used to determine the construct validity of the questionnaires, Cronbach alpha coefficients were used to determine the reliability, while multiple regression analyses were used to identify significant predictors of ill-health.

The results indicated that physical ill health could be predicted by a lack of role clarity and pressures at home. Predictors of anxiety were work overload, a lack of support from colleagues, uncertain roles in the workplace, home pressure as well as negative Work-home interaction (WHI) and negative Home-work interaction (HWI). Fatigue was predicted by work pressure, work overload, a lack of autonomy at work, a lack of instrumental support at work, a lack of role clarity, pressure at home and negative WHI. Predicting factors of depression were found to be job insecurity, a lack of autonomy and clearly defined roles at work, pressure at home, a lack of autonomy at home as well as negative HWI.

Recommendations have been made for organisations and for future research.

## OPSOMMING

**Titel:** Werk- en huis-eienskappe, negatiewe werk-persoonlike lewe interaksie en die swak gesondheid van werkende vrouens in Suid-Afrika.

**Slutelwoorde:** Werk-eienskappe, huis-eienskappe, negatiewe werk-persoonlike lewe interaksie, negatiewe persoonlike-werk lewe interaksie, fisieke swak gesondheid, angstigtheid, moegheid, depressie, werkende vrouens.

In die laaste paar jaar het meer al hoe meer vrouens die werksmag betree. Gevolglik word werknemende vrouens gekonfronteer met uitdagende aspekte van die werk en die huis en ervaar probleme om die verantwoordelikhede van beide rolle te kombineer. Die druk van die eise in hulle werk en persoonlike lewens, gekombineer met die verantwoordelikhede van hulle werk en persoonlike lewens kan 'n negatiewe uitwerking op die gesondheid van werknemende vrouens hê.

Die doelwit van hierdie navorsing was om die effek van werk-eienskappe, huis-eienskappe en negatiewe werk-huis interaksie op die gesondheid van werkende vrouens in Suid-Afrika te ondersoek. 'n Beskikbaarheidssteekproef ( $N = 500$ ) is geneem uit ses provinsies van Suid-Afrika, insluitende die Oos-Kaap, die Vrystaat, Gauteng, KwaZulu Natal, Noord-Wes en die Wes Kaap. 'n Werk-eienskappe vraelys, 'n huis-eienskappe vraelys, die '*Survey Work-Home Interaction – Nijmegen*' (SWING), en 'n gesondheidsvraelys is geadministreer. Ondersoekende faktor-analise is gebruik om die konstruktiviteit van die vraelyse te bepaal, Cronbach alpha-koëffisiënte is gebruik om die betroubaarheid te bepaal, terwyl meervoudige regressie-analises gebruik is om betekenisvolle voorspellers van swak gesondheid te identifiseer.

Die resultate het aangetoon dat fisieke swak gesondheid voorspel kan word deur 'n gebrek aan duidelike rolle en druk by die huis. Voorspellers van angst was werksoorlading, 'n gebrek aan ondersteuning van kollegas, onduidelike rolle in die werkplek, druk by die huis, sowel as negatiewe werk-huis interaksie (WHI) en negatiewe huis-werk interaksie (HWI). Moegheid is voorspel deur druk by die werk, werksoorlading, 'n gebrek aan outonomie by die werk, 'n gebrek aan instrumentele ondersteuning by die werk, asook 'n gebrek aan duidelike rolle druk by

die huis en negatiewe WHI. Voorspellende faktore van depressie is bevind as werksonsekerheid, 'n gebrek aan outonomieit en duidelike gedefinieerde rolle by die werk, druk by die huis, 'n gebrek aan outonomieit by die huis, sowel as negatiewe HWI.

Aanbevelings is gedoen vir organisasies vir toekomstige navorsing.

# **CHAPTER 1**

## **INTRODUCTION**

This mini-dissertation focuses on the influence that job characteristics, home characteristics and the negative interaction between work and home have on the health of working females in South Africa. This chapter contains the problem statement and a discussion of the research objectives, in which the general objectives and specific objectives are set out. The research method is explained and the division of chapters is given.

### **1.1 PROBLEM STATEMENT**

During the last number of years, there have occurred prominent transformations in the composition of the labour force, where a large number of new female workers have been added to the employment industry (Geurts, Kompier, Roxburgh, & Houtman, 2003). Ever since the democratic election in 1994, more women, representatives of all races and dual-earner couples represent the South African labour force (Schreuder & Theron, 2001). Since more women are now becoming educated and skilled, they tend to fill up a large percentage of new jobs in professional, technical, and service professions (Sekaran & Leong, 1992). Women are now given an opportunity to contribute to the working world and to help provide financially for their families. The traditional roles of men (being the sole earners), and women (staying at home and taking care of the children) are fading away to an approach where both husband and wife strive to be paid workers and thus forming a dual-earner family (Gerber, 2000; Schreuder & Theron, 2001).

Except for the fact that more women have been joining the work force (Paoli, 1997), work has become more mentally and emotionally demanding, rather than physically demanding. Irregular work hours developed as a result of globalisation, flexible work hours and advances in technology (Frone, Russel, & Cooper, 1992; Zedeck & Mosier, 1990). Females can also experience strain when employers view them to be less committed to their jobs than what men are (Greenhaus & Beutell, 1985). The-above mentioned can put pressure on women's relationship between their home and work and could influence their health. Females' working lives and work environments, conversely, have been explored to a lesser degree than that of

their male counterparts. Not only have the health effects of women's paid work been investigated inadequately, but also the effect of tasks at home has not been researched sufficiently. This can be due to the fact that many male researchers view the home as a resting place, instead of a workplace that it sometimes is; especially for most women. Research results of the implication of work for health and ill health are often based entirely on the experiences of men (Forssén & Carlstedt, 2001).

Health refers to a person's physical and psychological condition. A person with ill-health experiences physical or emotional dysfunctions, or both (Nagyova et al., 2000). This study will include physical ill-health, anxiety, fatigue and depression as indicators of health. Physical ill-health could include complaints such as gastrointestinal afflictions, constipation, heartburn, nausea, vomiting, headaches, migraines, back aches/neck aches and skin disorders (Edwards & Louw, 1998). Anxiety has been found by Linden and Muschalla (2007) to be a result of workplace attributes. Work, a set of prescribed tasks that an individual performs while occupying a position in an organisation, as well as working circumstances, colleagues and supervisors can cause work-related anxieties such as phobias, social anxiety, generalised anxiety, fears of insufficiency, or hypochondriac anxiety (Geurts & Demerouti, 2003). As a result, anxiety can affect job participation or lead to absenteeism or early retirement (Linden & Muschalla, 2007).

Constant overtaxing and conflict in the multiple roles over a period of time can result in health problems such as fatigue (Bakker, Demerouti, De Boer, & Schaufeli, 2003). Disappointingly, there has not yet been a consensus in the literature with regard to an acceptable definition of fatigue as well as a consistent test for fatigue (Shen et al., 2005). Bültmann et al. (2000) found that prolonged fatigue leads to declining interest, involvement and commitment in clients. Fatigue also reduces concentration and motivation, which may affect the employee's capability to function at work and at home and may lead to absenteeism and work. Another costly illness that frequently goes unnoticed is depression. Depression is a severe illness that affects the whole body adversely. It is a persistent and sustained feeling that the self is insignificant and everything seems futile and hopeless (McLean, 2002). Consequences of depression include absenteeism, job turnover, cognitive difficulties, coronary heart disease, a decline in productivity and an increase of alcohol consumption (Johnson & Indvik, 1997).

Employed females could be exposed to many working demands (e.g. high work pressure, role overload, emotional demands, and poor environmental conditions). Exposure to these types of characteristics could have serious implications for the health of female employees. A number of studies have found demands and a lack of resources in the job setting to be the most important predictors of health outcomes such as burnout and psychosomatic health complaints (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Houkes, Janssen, De Jonge & Bakker, 2003; Peeters, Montgomery, Bakker & Schaufeli, 2005). Job demands may lead to ill-health symptoms when employees are faced by demands that require effort when they have not recovered from the effects of previous demands (Lee, 2002). The result of increased job demands (such as the number of hours worked, including overtime) and a lack of job resources such as job autonomy, skill variety, feedback and social support may lead to adverse health outcomes such as burnout (Schaufeli & Enzmann, 1998). Researchers such as De Jonge, Janssen, and Van Breukelen (1996) have confirmed that emotional exhaustion and psychosomatic health complaints are related to negative and unbearable job demands and Grzywacz and Marks (2000) have established that job demands such as long working hours are associated with fatigue, worrying and irritability.

Another predicting factor of health outcomes, are home characteristics, which are not investigated as much as job characteristics. Home characteristics include characteristics such as family role conflict, family role ambiguity, social support, home resources, family structure, and quality of relationship with spouse, support from family members, time pressure, and rewarding aspects of the household. When an imbalance arises between the home resources and the home pressures, ill-health can manifest. Therefore, it seems important to investigate which home characteristics are associated with ill-health.

For many years work and home have been viewed as separate domains. However, as a result of several socio-demographic and economic trends in our society, the boundaries between work and home have become vague (O'Driscoll, Brough, & Kalliath, 2004). This has created the potential for conflict to come about between the home and the work domain. Although the *traditional roles of men and women are changing*, women still tend to carry the greater domestic burden, while they have the added role outside the home. Working men with families are likely to work an average of 60 hours per week on paid and unpaid work, while women spend an average of 90 hours per week on paid and unpaid work (McClean, 2002).

Often women will experience tension because of the multiple roles of having to take care of the household, while also pursuing a career (McClean, 2002).

The interaction between a person's work and non-work situation is known as work-home interaction (WHI) or home-work interaction (HWI) (Geurts & Dijkers, 2002). This interaction may be negative (work negatively influencing home, or home negatively influencing work) or positive (work positively influencing home or home positively influencing work). This study will only focus on negative interaction as negative WHI is often the result of job stressors that impair psychological health and can lead to a state of burnout (Peeters et al., 2005). Geurts, Rutte, and Peeters (1999) have found that negative WHI can be associated with psychosomatic health complaints and sleep deprivation as well as anxiety or depression (Kinnunen & Mauno, 1998). Along with this, there have been many research findings that indicate that WHI and HWI can be linked with consequences such as lowered levels of organisational commitment and job performance for the organisation (Allen, Herst, Bruck, & Sutton, 2000; Kossek & Ozeki, 1998). Poor interaction between work and personal life is associated with less job satisfaction and greater intention to quit, with lower levels of family satisfaction, and with higher levels of emotional exhaustion and psychosomatic symptoms (Allen et al., 2000). Negative WHI is often considered a potential source of stress that, in addition to other potential stressors, will have adverse effects on health and psychological well-being, resulting in, for example, poor physical health, depression, or anxiety (Burke, 1988; Frone et al., 1992, 1997; Kinnunen & Mauno, 1998). Therefore, negative WHI and negative HWI are also important factors to consider as possible causes of ill health in employed South African females.

From the above discussion, it is clear that job characteristics, home characteristics, negative WHI/HWI and ill-health have various implications for organisations and employees. Consequently, it seems necessary to examine the relationship between job and home characteristics, negative WHI/HWI, and ill health. The following research questions emerge from the above-mentioned problem statement:

- What is the relationship between job characteristics, home characteristics, negative WHI, negative HWI and ill-health according to the literature?

- Which job and home characteristics will predict ill-health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females?
- Will negative WHI and negative HWI predict ill-health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females?
- What recommendations can be made for future research and practice?

## **1.2 RESEARCH OBJECTIVES**

The research objectives can be divided into general and specific objectives.

### **1.2.1 General objective**

The general objective of this study is to determine the influence of job and home characteristics, negative WHI and negative HWI on the health of employed females in South Africa.

### **1.2.2 Specific objectives**

- To determine what the relationship is between job characteristics, home characteristics, negative WHI, negative HWI and ill-health according to the literature.
- To determine which job and home characteristics will predict ill-health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females.
- To determine if negative WHI and negative HWI predict ill-health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females.
- To make recommendations for future research and practice.

## **1.3 RESEARCH METHOD**

The research method consists of a literature review and an empirical study. The results obtained are presented in the form of a research article. A brief literature review is compiled for the purpose of the article. The focal point of this paragraph is aspects that are relevant to

the conducted empirical study and will consist of the research design, participants, the measuring battery as well as the statistical analysis.

### **1.3.1 Research design**

The data are collected by means of a cross-sectional survey design that is also used to attain the research objectives. When employing a cross-sectional design, one group of people is observed at one point of time, during a short period, such as a day or a few weeks (Du Plooy, 2001). A cross-sectional survey design is also used to measure interrelationships among variables within a population and will thus help to achieve the various specific objectives of this research (Struwig & Stead, 2001). A cross-sectional research design has the economic advantage of saving money and time. Participants are only needed for one period of data collection, and the researcher does not have to struggle with the complexity and cost of maintaining contact with participants over a long period of time. However, the incapability to directly assess intra-individual change and the inferences to group averages is a significant disadvantage regarding the cross-sectional designs (Baltes, Reese, & Nesselrode, 1988).

### **1.3.2 Participants and procedure**

An availability sample ( $N = 500$ ) is taken from working females in the Eastern Cape, the Free State, Gauteng, KwaZulu Natal, the North West and Western Cape provinces. The questionnaires are distributed amongst different female occupation groups, including nurses, female managers, administration personnel (e.g. cashiers, administration assistants, secretaries etc.), females who do “people work” of some kind (e.g. educators, academics, psychologists, teachers, consultants etc.) and a diverse group of typical female workers (e.g. hairdressers, beauticians, librarians, designers, administrative assistants and secretaries). A letter requesting participation is given to each individual prior to the administration of the measuring battery. Various questionnaires are compiled and a letter requesting participation is included in the test books. Ethical aspects and a motivation regarding the research are discussed with the participants before the questionnaires are handed out. The questionnaires are handed to individuals to be completed in their own time. Participants are given three weeks to complete the questionnaires, after which these are personally collected at an arranged date.

### 1.3.3 Measuring battery

The following measurement questionnaires are used in the empirical study:

**Job characteristics questionnaire.** Based on a review of the literature, items are formulated for several job characteristics, including *Pressure* (five items, e.g. “Do you have to work very fast?”); *Overload* (four items, e.g. “Do you have too much work to do?”); *Time Demands* (four items, e.g. “Do your colleagues help you to get the job done?”); *Role Ambiguity* (five items, e.g. “Do you receive incompatible requests from two or more people?”); *Job Insecurity* (three items, e.g. “Do you need to be more secure that you will keep your current job in the next year?”); *Autonomy* (eight items, e.g. “Do you have influence in the planning of your work activities?”); *Supervisor Support* (four items, e.g. “Can you count on your supervisor when you come across difficulties in your work?”); *Colleague Support* (three items, e.g. “If necessary, can you ask your colleagues for help?”); *Instrumental Support* (four items, e.g. “Is there enough staff to do the work?”); *Role Clarity* (four items, e.g. “Do you know exactly for what you are responsible and which areas are not your responsibilities?”); and *Salary* (four items, e.g. “Can you live comfortably on your pay?”). All items are scaled on a four-point scale, ranging from 1 (*never*) to 4 (*always*), with higher scores indicating higher levels on that particular dimension.

**Home characteristics questionnaire.** Three home characteristics are measured, including pressure (eight items, e.g. “Do you have to work very fast when you have to complete tasks at home?”), autonomy (six items, e.g. “Do you have influence in the planning of your home activities?”), and home support (e.g. “If necessary, can you ask people in your private life (e.g. spouse, children, friends) for help with work at home?”). All items are scaled on a four-point scale, ranging from 1 (*never*) to 4 (*always*), with higher scores indicating higher levels on that particular dimension.

**The ‘Survey Work-Home Interaction-Nijmegen’ (SWING)** (Geurts et al., 2005) is used to measure negative WHI and negative HWI. Negative WHI refers to a negative impact of the work situation on one’s functioning at home (e.g. “How often does it happen that your work schedule makes it difficult to fulfil domestic obligations”), while negative HWI refers to a negative impact of the home situation on one’s job performance (e.g. “How often does it

happen that you have difficulty concentrating on your work because you are preoccupied with domestic matters”). The SWING offers a 4-response format varying from 0 (*never*) to 3 (*always*). Geurts et al. (2005) have found acceptable Cronbach alpha coefficients for Negative WHI ( $\alpha = 0,85$ ) and Negative HWI ( $\alpha = 0,72$ ). The scales also seem to be reliable in South African samples. Pieterse and Mostert (2005) have reported sufficient Cronbach alpha coefficients (Negative WHI,  $\alpha = 0,87$ ; Negative HWI,  $\alpha = 0,79$ ), as well as Van Tonder and Mostert (submitted) (Negative WHI,  $\alpha = 0,86$ ; Negative HWI,  $\alpha = 0,81$ ) and Mostert and Oldfield (submitted) (Negative WHI,  $\alpha = 0,90$ ; Negative HWI,  $\alpha = 0,78$ ).

**Ill-health questionnaire.** Four indicators of ill health are used, namely physical ill health, anxiety, fatigue and depressive complaints. Items from the General Health Questionnaire (GHQ-28, Goldberg & Williams, 1988) was adapted to measure physical ill-health (three items, e.g. “Have you recently been having headaches?”), Anxiety (three items, e.g. “Have you recently been feeling nervous or scared for no good reason?”) and Depressive complaints (three items, e.g. “Have you recently been feeling that life is entirely hopeless?”). Items are rated on a four-point scale ranging from 1 (*not at all*) to 4 (*much more than usual*). Fatigue is measured by using three items (e.g. “I feel used up at the end of a working day”) from the MBI-HSS (Maslach & Jackson, 1986). Items are scored on a seven-point scale, ranging from 0 (*never*) to 6 (*every day*).

### 1.3.4 Statistical analysis

The statistical analysis is carried out with the SPSS-programme (SPSS Inc., 2005). Exploratory factor analyses are carried out to determine the construct validity of the measuring instruments. Cronbach alpha coefficients are used to assess the reliability of the scales. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) are used to analyse the data. Pearson product-moment correlation coefficients are used to specify the relationship between the variables. In terms of statistical significance, it is decided to set the value at a 95% confidence interval level ( $p \leq 0,05$ ). Effect sizes (Steyn, 1999) are used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) is set for the practical significance of correlation coefficients. When scores are not normally distributed, Spearman correlations are reported. Multiple regression analyses are carried out to determine the percentage variance in the dependent variable (e.g. ill health) that

is predicted by the independent variables (e.g. job- and home characteristics and negative WHI/HWI).

#### **1.4 OVERVIEW OF CHAPTERS**

The relationship between job characteristics, home characteristics, negative WHI, negative HWI and ill health as well as the effect of job characteristics and negative WHI/HWI on ill health are examined in Chapter 2. The discussion, limitations, and recommendations of this study are discussed in Chapter 3.

#### **1.5 CHAPTER SUMMARY**

This chapter provided a discussion of the problem statement and research objectives. Furthermore, the measuring instruments and the research method were explained, followed by a brief overview of the chapters that follow. The research article is presented in Chapter 2.

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## **CHAPTER 2**

### **RESEARCH ARTICLE**

## **Job and home characteristics, negative work-home interaction and ill health of employed females in South Africa**

### **ABSTRACT**

The objective of this research was to investigate the effects of work characteristics, home characteristics and negative work-home interaction on the ill-health of employed females in South Africa. An availability sample ( $n = 500$ ) was taken within six provinces of South Africa. A job characteristics questionnaire, a home characteristics questionnaire, the '*Survey Work-Home Interaction – Nijmegen*' (SWING), and an ill-health questionnaire were administered. The results indicated that physical ill health can be predicted by a lack of role clarity and pressures at home. Predictors of anxiety were work overload, a lack of support from colleagues, uncertain roles in the workplace, home pressure as well as negative work-home interaction (WHI) and negative home-work interaction (HWI). Fatigue was predicted by work pressure, work overload, a lack of autonomy at work, instrumental support, a lack of role clarity at work, pressure at home and negative WHI. Predicting factors of depression was found to be job insecurity, a lack of autonomy and clearly defined roles at work, pressure at home, a lack of autonomy at home as well as negative HWI.

### **OPSOMMING**

Die doel van hierdie studie was om die effek van werk-eienskappe, huis-eienskappe en negatiewe werk-persoonlike lewe interaksie op die gesondheid van werkende vrouens in Suid-Afrika te ondersoek. 'n Beskikbaarheidsteekproef ( $n = 500$ ) is uit ses provinsies van Suid-Afrika geneem. 'n Werk-eienskappe vraelys, 'n huis-eienskappe-vraelys, die '*Survey Work-Home Interaction – Nijmegen*' (SWING), 'n ongesondheidsvraelys en 'n biografiese vraelys is gebruik as meetinstrumente. Die resultate het aangetoon dat fisieke ongesondheid deur rolonsekerheid en druk by die huis voorspel kan word. Voorspellers van angs blyk werksoorlading, druk by die huis en beide negatiewe werk-huis interaksie (WHI) en negatiewe huis-werk interaksie (HWI) te wees. Moegheid hou positief verband met werksdruk, werksoorlading, 'n gebrek aan outonomieit by die werk, 'n gebrek aan instrumentele ondersteuning by die werk, 'n gebrek aan duidelike rolle, druk by die huis en negatiewe WHI. Voorspellende faktore van depressie was gevind as werksonsekerheid, 'n gebrek aan outonomieit en duidelik-gedefinieerde rolle by die werk, druk by die huis, 'n gebrek aan outonomieit by die huis en ook negatiewe HWI.

Work and women are intricately involved. Women fulfill many worker roles, both paid and unpaid. They simultaneously strive to contribute financially towards the household, while also having to take care of their family (Sekaran & Leong, 1992). South African statistics reveal that during the last decade, the South African workforce has experienced a vast increase in the employment of women and also that nearly 3,5 million single mothers are the heads of households (Census 96, 1996). Since the first democratic election in 1994, the South African workforce began to include more women due to new legislation such as the Employment Equity Act and the Skills Development Act. As such, the composition of organisations in South Africa has evolved into a diverse group, where the men are no longer the sole earner in households and women the primary caretaker of children (Gerber, 2000; Schreuder & Theron, 2001). Since women has become more educated and trained in various occupations, they tend to fill large proportions of new job opportunities (Sekaran & Leong, 1992). Accordingly, women are facing great challenges in both their roles as mothers and as employed individuals. These increased pressures and challenges that employed females have to deal with can be a source of stress that can influence their health and overall well-being.

Employed females are often exposed to demanding job characteristics such as high work pressure, role overload, time demands as well as emotional demands. Work has become more mentally and emotionally demanding (Paoli, 1997) and as a result of globalisation and advances in technology, work hours have become irregular (Frone, Russel, & Cooper, 1992; Zedeck & Mosier, 1990). All these high job demands may exhaust employees' mental and physical resources and may therefore lead to health problems (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Accordingly, there are also some home characteristics that may lead to ill health. Women that are constantly confronted with high effort activities (e.g. household activities, social commitments, job-related tasks) in the home setting may in the long run have negative reactions such as prolonged fatigue, sleep deprivation, and psychosomatic complaints (Geurts et al., 2005). Regrettably, after an inspection of the literature on work-home interaction, it is clear that we have more knowledge about which work characteristics are related to ill health than about home characteristics that influence ill-health.

Demanding aspects in the work and home environment are not the only negative causes of ill-health. The health of employed females could also be influenced by other aspects in their lives, namely the interaction between their work and home domains. According to Geurts and

Dijkers (2002), particularly demanding aspects in the work environment, such as work overload and long working hours, may also influence an individual's home domain, leisure time or any activity away from work. This negative influence is universally known as negative work-home interference (WHI). Especially employed parents have great difficulty balancing obligations in the work domain and the domain away from work. However, Demerouti (2004) showed that individuals (especially with children in their household) could also experience higher levels of negative home-work interference (HWI). Since various demographic, structural and political changes in the workforce are forcing more and more women into employment within South Africa, negative interaction between work and home has become of growing importance, particularly for females who hold the greater responsibility for household tasks (McClean, 2002). Poor work-home interaction is connected to lower levels of job satisfaction, lower levels of family satisfaction, emotional exhaustion as well as psychosomatic symptoms (Allen, Herst, Bruck, & Sutton, 2000). Many research findings also indicate that WHI and HWI can be correlated with consequences such as lowered levels of organisational commitment and job performance for the organisation (Allen et al., 2000; Kossek & Ozeki, 1998).

In view of the above discussion, the specific objectives of this study are 1) to determine the relationship between job characteristics, home characteristics, negative WHI, negative HWI and ill-health (including physical ill-health, anxiety, fatigue and depression); 2) to investigate which job and home characteristics will predict ill-health; and 3) to determine if negative WHI and negative HWI predict ill-health in a sample of working females.

### **Ill-health**

“Health” is a term that can be defined as a condition or state controlled by cultural, social, behavioural and emotional occurrences. Measures and characteristics of health comprises of physical and mental health, social participation, education, income, social in-/exclusion, housing, diet, substance use and other actions (Australian Institute of Health & Welfare (AIHW), 2003). Ill-health is experienced when a person is experiencing physical or emotional dysfunctions or both (Nagyova et al., 2000). Ill-health therefore consists of a variety of symptoms and experiences. However, the focus of this study will be on physical ill-health, anxiety, fatigue and depression as indicators of health.

Physical symptoms of ill health include gastrointestinal disorders, constipation, heartburn, nausea, vomiting, headaches, migraines, backaches/neck aches and skin disorders (Edwards & Louw, 1998). Work related anxieties are often a result of working circumstances, colleagues and supervisors (Linden & Muschalla, 2007). An anxious person can have difficulty to participate in his/her job due to anxiety related experiences such phobias, social anxiety, general anxiety, fears of insufficiency, or hypochondriac anxiety (Geurts & Demerouti, 2003). Fatigue is an omnipresent phenomenon. Shen et al. (2006) describe it as an independent symptom that has the power to create a vast amount of distress and debility. If it is experienced over an extensive period of time, individuals might suffer from a loss of attentiveness and concentration. Employees will also be more absent from work as their interest, involvement and commitment to their work and clients diminish (Bültmann et al., 2000).

Regrettably, fatigue is often underemphasised due to a paucity of instruments to measure it (Shapiro, 1998) and the literature still lacks an acceptable definition of fatigue (Shen et al., 2005). However, words such as weariness, weakness and depletion of energy have been proposed to define the construct of fatigue (Pigeon, Sateia, & Ferguson, 2003). An illness that is estimated to have a more crucial impact on work performance than that of chronic forms of illness like arthritis, hypertension, back problems and diabetes is depression (Gilmour & Patton, 2007). It is a destructive and disabling disease that affects many aspects of life other than the work domain. Feelings that the self is worthless and unimportant are experienced. All seems lost and doomed to fail (Mclean, 2002). Depression can also bring about problems such as absenteeism, job turnover, cognitive difficulties, coronary heart disease, a decline in productivity and an increase of alcohol consumption (Johnson & Indvik, 1997).

Considerable financial and turnover problems are at stake for companies that have ill workers (Greenhaus, Collins, Singh, & Parasuraman, 1997). Increased health care costs, violence, drug and alcohol abuse, lower productivity as well as turnover and lawsuit problems (Geurts & Demerouti, 2003), increased absenteeism (Ho, 1997) and also workplace injuries (Sauter et al., 2003) are outcomes related to ill-health. Illness can do more damage to the household economy of some countries than devastating shocks such as floods and crop failure (Kenjiro, 2005). Employed females are dealing with the increasingly demanding world of work and more pressure is being put on them to balance their intensely interrelated work and family domains. Working women may consequently experience psychosomatic ill-health as a result

of job demands (Demerouti et al., 2001; Houkes, Janssen, De Jonge, & Bakker, 2003). In addition, it has been found that regular or continuous trying and conflicting roles over a time period can lead to health problems such as fatigue as a consequence (Bakker, Demerouti, De Boer, & Schaufeli, 2003).

### **Job and home characteristics**

Various theoretical models can be applied to advance the insight of ill-health due to work-related factors. One such model is the Job Demands-Resources (JD-R) model (Bakker et al., 2003; Demerouti et al., 2001). The JD-R model proposes that every occupation or job has unique job characteristics that can be divided into job demands and job resources. Job demands are a component of a specific job that could potentially place strain or tension on the employee if it exceeds the employee's potential to adapt to circumstances. Examples are high work pressure, role overload, emotional demands, and poor environmental conditions. Fundamentally, job demands include all those physical, social or organisational aspects of a job that require persistent physical and/or psychological effort of the employee (Bakker & Geurts, 2004).

On the other hand, job resources generally refer to the physical, psychological, social or organisational aspects of the position that (1) decrease job demands and the related physiological and mental costs, (2) are functional in achieving work goals, and/or (3) encourage personal growth, education, and development (Bakker & Geurts, 2004). Resources can be situated in the task itself; for example, performance feedback, skill variety, task significance, task identity and autonomy (Hackman & Oldham, 1976) and can also be found in context of the task, for example organisational resources such as career opportunities, job security, salary and social resources such as supervisor support and colleague support.

Similarly, home characteristics, which have not been investigated as much as job characteristics, can also be divided into demands and resources. Characteristics such as family role conflict, family role ambiguity and time pressure can be viewed as home demands and characteristics such as social support, home resources, family structure, while the quality of relationship with spouse, support from family members, and rewarding aspects of the household are seen as resourceful characteristics of the home domain.

The determinants of ill-health may differ within various working environments, depending on the unique demands and resources that are present in the specific work situation. Demerouti et al. (2001) found that exposure to high quantity of working demands and insufficient resources in the work setting to be the most imperative predictors of health outcomes such as burnout and psychosomatic health complaints. Employed females that are exposed to these types of job characteristics could consequently experience ill-health. This also holds true when an imbalance arises between the home resources and the home demands, ill-health can manifest. This is due to an inability to recover fully from efforts required to accomplish job demands (Lee, 2002). Also, for more challenging tasks and situations, either more resources will be used or the level of activity will require a higher level of input. This can result in fatigue and other physiological and psychological reactions. When resources are continuously depleted and recovery does not take place, physical and mental impairment are often the outcomes (Maslach, Schaufeli, & Leiter, 2001).

Poor health outcomes are often the result of increased demands (such as the number of hours worked, including overtime) and a shortage of resources such as job autonomy, skill variety, feedback and social support (Schaufeli & Enzmann, 1998). Job demands such as long working hours are associated with fatigue, worrying and irritability (Grzywacz & Marks, 2002), as well emotional exhaustion and psychosomatic health complaints (De Jonge, Janssen & Van Breukelen, 1996). Not only is the individual's health affected by consequences of job demands, but also his or her family, and organisational productivity (Canaff & Wright, 2004).

### **Negative WHI and Negative HWI**

For most employed adults, the dominant life roles are represented by work and family. It is only natural that they would therefore increasingly being worried about balancing the demands and responsibilities of both work and home tasks. Negative WHI and HWI are experienced when pressures from the work and family roles are mutually incompatible, such that participation in one role makes it difficult to participate in the other (Greenhaus & Beutell, 1985). It is very important to note that work and family should not be seen as separate domains. In fact it is highly interconnected and the boundary between home and work is difficult to distinguish. This can be as a result of several socio-demographic and economic trends in our society (O'Driscoll, Brough, & Kalliath, 2004). Greenhaus and Beutell (1985) also distinguish between three different types of work-family conflicts,

namely (1) time-based conflict (i.e. when work and family roles compete for time); (2) strain-based conflict (i.e. when strain in the one role affects performance in another role), and (3) behaviour-based conflict (i.e. when role behaviour in the one domain may be in disagreement with expectations of actions in the other domain).

Work-home interference interacts in both directions - interference from work to home as well as interference from home to work (Bakker & Geurts, 2004). However, it was found in multiple studies that employed individuals experience that work interfere with their family life (work-to-home-conflict) more often than family life hindering work life (home-to-work-conflict) (Frone et al., 1992; Geurts, Kompier, Roxburg, & Houtman, 2003; Kinnunen & Mauno, 1998). This is especially true for employed females that take on the greater part of responsibilities and tasks at home (McLean, 2002). Unfortunately, there is not much research done on *negative* HWI and specifically the influence on ill health. However, Kossek and Ozeki (1998) illustrated that family interfering with work relates negatively with performance at work.

It is reported that *negative* WHI is linked to stress-related outcomes such as burnout, general psychological strain and somatic complaints, as well as physical ill-health such as headache, backache, upset stomach, fatigue and insomnia (Allen et al., 2000). Geurts, Rutte, and Peeters (1999) established that *negative* WHI can be connected to psychosomatic health problems and a lack of sleep. A positive relationship between *negative* WHI and anxiety was reported by Beatty (1996), as well as with general psychological strain (O'Driscoll, Ilgen, & Hildreth, 1992). *Negative* affective conditions such as depression, aggressiveness, irritation, and insomnia could also be positively linked to *negative* WHI (Burke, 1988). *Negative* WHI is regarded as a potential source of stress that will have undesirable effects on physical and psychological health, resulting in, for example, poor physical health, depression, or anxiety (e.g. Burke, 1988, 1993; Frone, Russell, & Cooper, 1991, 1992, 1997; Kinnunen & Mauno, 1998).

Many research findings indicate that WHI and HWI can be correlated with consequences such as lowered levels of organisational commitment and job performance for the organisation (Allen et al., 2000; Kossek & Ozeki, 1998). It therefore seems that *negative* WHI and *negative* HWI are important to consider as possible causes of ill-health in employed females in South Africa.

Based on the above literature review, the following hypotheses can be formulated:

H1: Job characteristics are related to physical ill-health, anxiety, fatigue and depression.

H2: Home characteristics are related to physical ill-health, anxiety, fatigue and depression.

H3: Negative WHI is a significant predictor of physical ill-health, anxiety, fatigue and depression.

H4: Negative HWI is a significant predictor of physical ill-health, anxiety, fatigue and depression.

## **METHOD**

### **Research design**

A cross-sectional survey design was used to collect the data and to attain the research objectives. In a cross-sectional design one group of people is observed at one point of time, or for a short period, such as a day or a few weeks (Du Plooy, 2001). The design is also used to assess interrelationships among variables within a population and will thus help to achieve the various objectives of this research (Struwig, & Stead, 2001).

### **Participants and procedure**

An availability sample ( $N = 500$ ) was taken from working females in the Eastern Cape, the Free State, Gauteng, KwaZulu Natal, the North West and Western Cape provinces. The questionnaires were distributed amongst different female occupational groups. Females who completed the questionnaires included nurses (registered and auxiliary nurses working in private clinics), female managers, administration personnel (e.g. cashiers, administrative assistants, and secretaries), females who do “people work” of some kind (educators, academics, psychologists, teachers, etcetera) and a diverse group of typically female workers (hairdressers, beauticians, librarians, designers, administrative assistants and secretaries). After permission was obtained from the participants, the measuring battery was compiled and questionnaires were distributed. Included in the questionnaire was a letter to explain the goal and importance of the study, as well as a list of contact persons should participants have wanted to make any enquiries. Ethical aspects were discussed with the participants to

reassure them of the anonymity and confidentiality with which the information would be handled. The questionnaires were handed out to individuals to be completed in their own time. Participants were given three weeks to complete the questionnaires, after which these were personally collected or sent to the university. Table 1 shows the characteristics of the participants.

Table 1  
*Characteristics of the Participants (N = 500)*

Item	Category	Frequency	Percentage
Occupation	Managers	120	24,00
	Nurses	138	27,60
	Administration	91	18,20
	People work	127	25,40
	Diverse	24	4,80
Career Phase	Early career phase	152	31,00
	Middle career phase	208	42,40
	Late career phase	131	26,70
	Missing values	9	1,80
Ethnicity	White	243	49,00
	Black	169	34,30
	Coloured	80	16,30
	Missing values	8	1,60
Language	Afrikaans	206	41,60
	English	135	27,30
	African	154	31,10
	Missing values	5	1,00
Household situation	Single without children	57	11,90
	Single with children	92	19,20
	Married without children	79	16,50
	Married with children	214	44,80
	Living with parents	36	7,50
	Missing values	22	4,40
Education	High school education	154	34,50
	Higher education	292	65,50
	Missing values	54	10,80

According to Table 1, the participants consisted of females of which 30,40% were in their early career phase, 42,40% were in their middle career phase and 26,70% in their late career phase. There were 243 (49,40%) White participants, 169 (34,30%) Black participants and 80 (16,30%) Coloured participants included in the study. In total, 41,60% of the participants were Afrikaans speaking, 27,30% were English speaking and 31,10% of the sample constituted of participants speaking various African languages. In terms of occupation, 120 (24,00%) of the participants were managers, 138 (27,60%) were nurses, 91 (18,20%) were employed in administration, 127 (25,40%) were in occupations working with people and 24 (4,80%) were employed in diverse occupation. Single women without children made up 11,90% of the sample, single women with children 19,20%, married females without children 16,50%, married females with children 44,80% and 7,50% of the females were living with their parents. The number of participants that were in possession of a high school educational qualification were 34,50%, while 65,50% of the participants possessed a higher education qualification.

### **Measuring instruments**

The following measurement questionnaires were used in the empirical study:

**Job characteristics questionnaire.** Based on the literature, items were formulated for several job characteristics, including *Pressure* (five items, e.g. "Do you have to work very fast?"); *Overload* (four items, e.g. "Do you have too much work to do?"); *Time Demands* (four items, e.g. "Do your colleagues help you to get the job done?"); *Role Ambiguity* (five items, e.g. "Do you receive incompatible requests from two or more people?"); *Job Insecurity* (three items, e.g. "Do you need to be more secure that you will keep your current job in the next year?"); *Autonomy* (eight items, e.g. "Do you have influence in the planning of your work activities?"); *Supervisor Support* (four items, e.g. "Can you count on your supervisor when you come across difficulties in your work?"); *Colleague Support* (three items, e.g. "If necessary, can you ask your colleagues for help?"); *Instrumental Support* (four items, e.g. "Is there enough staff to do the work?"); *Role Clarity* (four items, e.g. "Do you know exactly for what you are responsible and which areas are not your responsibilities?"); and *Salary* (four items, e.g. "Can you live comfortably on your pay?"). All items were scaled on a four-point scale, ranging from 1 (*never*) to 4 (*always*), with higher scores indicating higher levels on that particular dimension.

**Home characteristics questionnaire.** Three home characteristics were measured, including pressure (eight items, e.g. “Do you have to work very fast when you have to complete tasks at home?”), autonomy (six items, e.g. “Do you have influence in the planning of your home activities?”), and home support (e.g. “If necessary, can you ask people in your private life (e.g. spouse, children, friends) for help with work at home?”). All items were scaled on a four-point scale, ranging from 1 (*never*) to 4 (*always*), with higher scores indicating higher levels on that particular dimension.

**The ‘Survey Work-home Interaction-Nijmegen’ (SWING)** (Geurts et al., 2005) was used to measure negative WHI and negative HWI. Negative WHI refers to a negative impact of the work situation on one’s functioning at home (e.g. “How often does it happen that your work schedule makes it difficult to fulfil domestic obligations”), while negative HWI refers to a negative impact of the home situation on one’s job performance (e.g. “How often does it happen that you have difficulty concentrating on your work because you are preoccupied with domestic matters”). The SWING offers a 4-response format varying from 0 (*never*) to 3 (*always*). Geurts et al. (2005) found acceptable Cronbach alpha coefficients for Negative WHI ( $\alpha = 0.85$ ) and Negative HWI ( $\alpha = 0.72$ ). The scales also seem to be reliable in South African samples. Pieterse and Mostert (2005) reported sufficient Cronbach alpha coefficients (Negative WHI,  $\alpha = 0.87$ ; Negative HWI,  $\alpha = 0.79$ ), as well as Van Tonder and Mostert (submitted) (Negative WHI,  $\alpha = 0.86$ ; Negative HWI,  $\alpha = 0.81$ ) and Mostert and Oldfield (submitted) (Negative WHI,  $\alpha = 0.90$ ; Negative HWI,  $\alpha = 0.78$ ).

**Ill health questionnaire.** Four indicators of ill health were used, namely physical ill health, anxiety, fatigue and depressive complaints. Items were adapted from the General Health Questionnaire (GHQ-28, Goldberg & Williams, 1988) to measure physical ill health (three items, e.g. “Have you recently been having headaches?”), anxiety (three items, e.g. “Have you recently been feeling nervous or scared for no good reason) and depressive complaints (three items, e.g. “Have you recently been feeling that life is entirely hopeless?”). Items were rated on a four-point scale ranging from 1 (*not at all*) to 4 (*much more than usual*). Fatigue was measured using three items (e.g. “I feel used up at the end of a working day”) from the MBI-HSS (Maslach & Jackson, 1986). Items were scored on a seven-point scale, ranging from 0 (*never*) to 6 (*every day*).

## **Statistical analysis**

The statistical analysis was carried out with the SPSS-programme (SPSS Inc., 2005). Exploratory factor analyses were carried out to determine the construct validity of the measuring instruments. Cronbach alpha coefficients were used to assess the reliability of the scales. Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) were used to analyse the data. Pearson product-moment correlation coefficients were used to specify the relationship between the variables. In terms of statistical significance, it was decided to set the value at a 95% confidence interval level ( $p \leq 0,05$ ). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients. When scores were not normally distributed, Spearman correlations were reported. Multiple regression analyses were carried out to determine the percentage variance in the dependent variable (e.g. ill-health) that was predicted by the independent variables (e.g. job- and home characteristics and WHI/HWI).

## **RESULTS**

### **Construct validity of the measuring instruments**

Before analysing the data, the construct validity of the questionnaires was determined by utilising exploratory factor analysis. First, the number of factors underlying the questionnaires was determined. The scree plot and eigenvalues showed 11 factors (which explained 66,41% of the total variance) for job characteristics, three factors (explaining 50,98% of the total variance) for home characteristics, and four factors (which explained 73,37% of the total variance) for ill-health. Common factor analyses with a varimax rotation for job characteristics and an oblimin rotation for home characteristics and ill-health resulted in satisfying factor structures, reflecting the measured dimensions. Regarding the construct validity of negative WHI/HWI, Coetzer (2006) tested in the same sample of females competing structural models for work-home interaction and confirmed that negative WHI and negative HWI are two distinct constructs.

## Descriptive statistics, reliabilities and the relationship between dimensions

The descriptive statistics and Cronbach's alpha coefficients of the variables are displayed in Table 2.

Table 2  
*Descriptive Statistics and Cronbach Alpha Coefficients of the Measuring variables*

	Mean	SD	Skewness	Kurtosis	$\alpha$
Pressure	2,87	0,63	-0,09	-0,62	0,75
Overload	2,45	0,79	0,40	-0,67	0,82
Time Demands	2,05	0,75	0,68	-0,05	0,81
Job Insecurity	2,18	1,15	0,49	-1,28*	0,95
Autonomy	2,69	0,67	-0,13	-0,54	0,86
Supervisor Support	2,01	0,72	0,68	0,36	0,84
Colleague Support	2,00	0,65	0,67	0,68	0,79
Instrumental Support	2,48	0,73	0,15	-0,28	0,76
Role Ambiguity	1,82	0,55	0,68	0,51	0,72
Role Clarity	3,27	0,76	-1,02*	0,43	0,88
Salary	3,10	0,96	0,02	-0,54	0,91
Home Pressure	2,43	0,72	0,11	-0,70	0,88
Home Autonomy	3,31	0,59	-0,83	0,44	0,75
Home Support	2,72	0,71	0,05	-0,84	0,71
Negative WHI	1,21	0,63	0,27	-0,44	0,86
Negative HWI	0,58	0,55	1,28*	2,09*	0,76
Physical Ill Health	1,95	0,84	0,68	-0,44	0,83
Anxiety	1,89	0,76	0,60	-0,45	0,84
Fatigue	2,93	1,60	0,05	-0,93	0,79
Depression	1,52	0,70	1,39*	1,27*	0,79

\* High skewness and kurtosis

As indicated from the results in Table 2, all the scores of the measuring instruments were normally distributed, except for the scores of Job Insecurity and Role Clarity that were negatively skew and Negative HWI and Depression, which were positively skew. The Cronbach alpha coefficients of all the measuring instruments were considered acceptable compared to the guideline of  $\alpha > 0,70$  (Nunnally & Bernstein, 1994).

### **Product-moment correlations**

The results of the product-moment correlation coefficients between the variables are reported in Table 3.

Table 3

*Correlation Coefficients Between the variables*

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Pressure	-																		
2. Overload	0,55	-																	
3. Time Demands	0,41	0,36	-																
4. Job Insecurity	-0,05	-0,06	-0,05	-															
5. Autonomy	-0,05	0,00	-0,07	-0,06	-														
6. Supervisor Support	-0,10	-0,21	-0,21	-0,15	0,16	-													
7. Colleague Support	-0,11	-0,19	-0,21	-0,12	0,13	0,51	-												
8. Instrumental Support	-0,26	-0,26	-0,25	-0,09	0,19	0,36	0,34	-											
9. Role Ambiguity	0,26	0,41	0,22	0,18	-0,18	-0,34	-0,23	-0,31	-										
10. Role Clarity	-0,06	-0,25	-0,07	-0,06	0,25	0,31	0,20	0,26	-0,45	-									
11. Salary	0,12	0,02	0,06	0,12	-0,23	-0,18	-0,10	-0,45	0,14	-0,03	-								
12. Home Pressure	0,21	0,26	0,11	0,09	-0,10	-0,16	-0,16	-0,22	0,23	-0,06	0,28	-							
13. Home Autonomy	0,03	-0,03	-0,02	-0,11	0,27	0,09	0,18	0,10	-0,17	0,06	-0,09	-0,10	-						
14. Home Support	0,06	0,02	-0,03	-0,14	0,20	0,18	0,19	0,12	-0,00	0,10	-0,16	-0,27	0,17	-					
15. Negative WHI	0,46	0,47	0,49	0,10	-0,24	-0,32	-0,28	-0,36	-0,40	-0,18	0,18	0,38	-0,16	-0,09	-				
16. Negative HWI	0,16	0,27	0,19	0,11	-0,16	-0,25	-0,16	-0,15	0,31	-0,16	0,04	0,24	-0,16	-0,08	0,39	-			
17. Physical Ill-Health	0,11	0,18	0,05	0,12	-0,15	-0,17	-0,18	-0,21	0,27	-0,22	0,14	0,26	-0,11	-0,06	0,26	0,20	-		
18. Anxiety	0,19	0,30	0,19	0,06	-0,10	-0,20	-0,25	-0,23	0,23	-0,22	0,05	0,24	-0,13	-0,07	0,38	0,32	0,48	-	
19. Fatigue	0,38	0,40	0,23	0,01	-0,24	-0,27	-0,19	-0,38	0,33	-0,28	0,23	0,26	-0,12	-0,07	0,52	0,28	0,33	0,52	-
20. Depression	0,10	0,20	0,15	0,14	-0,24	-0,23	-0,21	-0,20	0,25	-0,23	0,15	0,24	-0,19	-0,10	0,29	0,36	0,48	0,56	0,36

All correlations  $\geq 0,09$  are statistically significant;  $r \geq 0,12$ ,  $p < 0,01$ ;  $0,09 \leq r \leq 0,11$ ,  $p < 0,05$

All correlations  $0,30 \leq r \leq 0,49$  are practically significant (medium effect)

All correlations  $\geq 0,50$  are practically significant (large effect)

As can be seen in Table 3, Physical Ill-Health is statistically significantly related ( $p \leq 0,05$ ) to all the independent variables, except to Time Demands and Home Support. Anxiety is statistically significantly related to Pressure, Time Demands, Job Insecurity, Autonomy, Supervisor Support, Colleague Support, Instrumental Support, Role Clarity, Home Pressure, Home Autonomy, and practically significantly related to Overload, Negative WHI, and Negative HWI. Fatigue is statistically significantly related to Time Demands, Autonomy, Supervisor Support, Colleague Support, Role Clarity, Salary, Home Pressure, Home Autonomy, and Negative HWI and practically significantly related to Pressure, Overload, Instrumental Support, Role Ambiguity, and Negative WHI. Depression is statistically significantly related to Pressure, Overload, Instrumental Support, Role Ambiguity, and Negative WHI and practically significantly related to Negative HWI.

#### **Multiple regression analysis**

To determine if job and home characteristics, Negative WHI and Negative HWI predict the four health outcomes, four standard multiple regression analyses, by means of the enter method, were carried out. The results are reported in Tables 4, 5, 6 and 7 respectively.

Table 4

*Multiple Regression Analysis with Physical Ill-Health as Dependent Variable*

Model		Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$
		<i>B</i>	<i>SE</i>	<i>Beta</i>						
1	(Constant)	1,23	0,43		2,87	0,00	6,32	0,39	0,15	0,15
	Pressure	0,01	0,07	0,01	0,15	0,88				
	Overload	0,05	0,06	0,05	0,82	0,42				
	Time Demands	-0,06	0,05	-0,05	-1,03	0,31				
	Job Insecurity	0,05	0,03	0,06	1,41	0,16				
	Autonomy	-0,08	0,06	-0,07	-1,40	0,16				
	Supervisor Support	-0,00	-0,06	-0,03	-0,05	0,96				
	Colleague Support	-0,10	-0,07	-0,08	-1,52	0,13				
	Instrumental Support	-0,06	-0,06	-0,06	-1,05	0,29				
	Role Ambiguity	0,15	0,08	0,10	1,84	0,07				
	Role Clarity	-1,27	0,06	-0,12	-2,30	0,02*				
	Salary	0,01	0,04	0,02	0,33	0,74				
	Home Pressure	0,22	0,06	0,19	4,07	0,00*				
	Home Autonomy	-0,05	0,06	-0,04	-0,83	0,41				
	Home Support	0,07	0,05	0,06	1,20	0,23				
2	(Constant)	1,33	0,43		3,01	0,00	5,97	0,41	0,17	0,01
	Pressure	-0,01	0,07	-0,01	-1,62	0,87				
	Overload	0,02	0,06	0,02	0,33	0,74				
	Time Demands	-0,09	0,06	-0,08	-1,68	0,09				
	Job Insecurity	0,04	0,03	0,05	1,15	0,25				
	Autonomy	-0,05	0,06	-0,04	-0,90	0,37				
	Supervisor Support	-0,02	-0,06	-0,02	-0,39	0,70				
	Colleague Support	-0,10	-0,07	-0,08	-1,51	0,13				
	Instrumental Support	-0,05	-0,06	-0,05	-0,89	0,38				
	Role Ambiguity	0,12	0,08	0,08	1,48	0,14				
	Role Clarity	-0,13	0,06	-0,12	-2,42	0,02*				
	Salary	0,02	0,04	0,02	0,49	0,63				
	Home Pressure	0,19	0,06	0,16	3,27	0,00*				
	Home Autonomy	-0,04	0,06	-0,03	-0,56	0,57				
	Home Support	0,06	0,05	0,05	1,11	0,27				
Negative WHI	0,15	0,08	0,11	1,86	0,06					
Negative HWI	0,09	0,07	0,06	1,27	0,20					

Table 4 summarises the regression analyses with job characteristics, home characteristics, Negative WHI and Negative HWI as predictors of Physical Ill-Health. Entry of job and home characteristics at the first step of the regression analysis produced a statistically significant model ( $F_{(14,485)} = 6,32; p = 0,00$ ), accounting for approximately 15% of the variance. More specifically, it seems that Role Clarity ( $\beta = -0,12; t = -2,30; p \leq 0,05$ ) and Home Pressure ( $\beta = -0,19; t = 4,07; p \leq 0,05$ ) predict Physical Ill-Health. When Negative WHI and Negative HWI were entered in the second step of the regression analysis, a statistically significant model was produced ( $F_{(2,483)} = 3,11; p = 0,00; \Delta R^2 = 0,01$ ), which explained 17% of the total variance. However, neither Negative WHI ( $\beta = 0,11; t = 1,86; p = 0,06$ ) or Negative HWI ( $\beta = 0,06; t = 1,27; p = 0,20$ ) were statistically significantly predictors of Ill-Health.

Table 5

*Multiple Regression Analysis with Anxiety as Dependent Variable*

Model		Unstandardised Coefficients		Standardised Coefficients	<i>t</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$
		B	SE	Beta						
1	(Constant)	1,23	0,38		3,19	0,00	7,83	0,43	0,18	0,16
	Pressure	0,02	0,06	0,01	0,26	0,80				
	Overload	0,15	0,05	0,16	2,90	0,00*				
	Time Demands	0,06	0,05	0,06	1,31	0,19				
	Job Insecurity	0,02	0,03	0,03	0,71	0,48				
	Autonomy	-0,03	0,05	-0,03	-0,55	0,58				
	Supervisor Support	-0,01	-0,06	-0,01	-0,13	0,90				
	Colleague Support	-0,14	-0,06	-0,12	-2,35	0,02*				
	Instrumental Support	-0,09	-0,06	-0,09	-1,63	0,10				
	Role Ambiguity	-0,01	0,07	-0,00	-0,08	0,94				
	Role Clarity	-0,11	0,05	-0,11	-2,30	0,02*				
	Salary	-0,06	0,04	-0,07	-1,52	0,13				
	Home Pressure	0,18	0,05	0,17	3,57	0,00*				
	Home Autonomy	-0,09	0,06	-0,07	-1,57	0,12				
	Home Support	0,03	0,05	0,02	0,52	0,60				
2	(Constant)	1,35	0,38		3,59	0,00	9,07	0,48	0,23	0,05
	Pressure	-0,01	0,06	-0,01	-0,21	0,84				
	Overload	0,10	0,05	0,11	1,95	0,05*				
	Time Demands	0,00	0,05	0,00	0,01	0,99				
	Job Insecurity	0,01	0,03	0,01	0,21	0,84				
	Autonomy	0,02	0,05	0,02	0,38	0,71				
	Supervisor Support	-0,04	-0,05	-0,03	-0,65	0,52				
	Colleague Support	-0,14	-0,06	-0,12	-2,44	0,02*				
	Instrumental Support	-0,08	-0,05	-0,07	-1,42	0,16				
	Role Ambiguity	-0,06	0,07	-0,05	-0,86	0,39				
	Role Clarity	-0,12	0,05	-0,12	-2,56	0,01*				
	Salary	-0,04	0,04	-0,06	-1,17	0,24				
	Home Pressure	0,11	0,05	0,10	2,20	0,03*				
	Home Autonomy	-0,06	0,06	-0,04	-1,00	0,32				
	Home Support	0,02	0,05	0,02	0,37	0,71				
Negative WHI	0,21	0,07	0,17	2,98	0,00*					
Negative HWI	0,24	0,06	0,17	3,85	0,00*					

Table 5 summarises the regression analyses with job and home characteristics, Negative WHI and Negative HWI as predictors of Anxiety. Entry of job and home characteristics at the first step of the regression analysis produced a statistically significant model ( $F_{(14,485)} = 7,83; p = 0,00$ ), accounting for approximately 18% of the variance. More specifically, it seems that Overload ( $\beta = 0,16; t = 2,90; p \leq 0,05$ ), Colleague Support ( $\beta = -0,12; t = -2,35; p \leq 0,05$ ), a lack of Role Clarity ( $\beta = -0,11; t = -2,30; p \leq 0,05$ ) and Home Pressure ( $\beta = 0,17; t = 3,57; p \leq 0,05$ ) predict Anxiety. When Negative WHI and Negative HWI were entered in the second step of the regression analysis, a statistically significant model was produced ( $F_{(2,483)} = 14,65; p = 0,00; \Delta R^2 = 0,05$ ), which explained 23% of the total variance. It seems that both Negative WHI ( $\beta = 0,17; t = 2,98; p \leq 0,05$ ) and Negative HWI ( $\beta = 0,17; t = 3,85; p \leq 0,05$ ) are significant predictors of Anxiety.

Table 6

*Multiple Regression Analysis with Fatigue as Dependent Variable*

Model		Unstandardised Coefficients		Standardised Coefficients	T	p	F	R	R <sup>2</sup>	$\Delta R^2$
		B	SE	Beta						
1	(Constant)	0,60	0,73		0,83	0,41	17,13	0,58	0,33	0,31
	Pressure	0,48	0,12	0,19	3,97	0,00*				
	Overload	0,36	0,10	0,18	3,59	0,00*				
	Time Demands	-0,01	0,09	-0,01	-0,13	0,90				
	Job Insecurity	-0,05	0,05	-0,03	-0,83	0,41				
	Autonomy	-0,29	0,10	-0,12	-2,95	0,00*				
	Supervisor Support	-0,19	-0,10	-0,09	-1,82	0,07				
	Colleague Support	-0,05	0,11	-0,02	-0,44	0,66				
	Instrumental Support	-0,31	-0,10	-0,14	-3,02	0,00*				
	Role Ambiguity	0,10	0,14	0,03	0,69	0,49				
	Role Clarity	-0,24	0,09	-0,11	-2,54	0,01*				
	Salary	0,12	0,07	0,07	1,65	0,10				
	Home Pressure	0,20	0,09	0,09	2,17	0,03*				
	Home Autonomy	-0,14	0,12	-0,05	-1,34	0,18				
	Home Support	0,04	0,09	0,02	0,45	0,65				
2	(Constant)	1,15	0,70		1,64	0,10	19,31	0,63	0,39	0,06
	Pressure	0,35	0,12	0,14	2,97	0,00*				
	Overload	0,24	0,10	0,12	2,42	0,02*				
	Time Demands	-0,21	0,09	-0,10	-2,30	0,02*				
	Job Insecurity	-0,08	0,05	-0,06	-1,53	0,13				
	Autonomy	-0,16	0,10	-0,07	-1,67	0,10				
	Supervisor Support	-0,11	-0,10	-0,05	-1,09	0,28				
	Colleague Support	-0,06	-0,11	-0,03	-0,60	0,55				
	Instrumental Support	-0,25	-0,10	-0,12	-2,54	0,01*				
	Role Ambiguity	-0,02	0,13	-0,01	-0,11	0,91				
	Role Clarity	-0,27	0,09	-0,13	-2,98	0,00*				
	Salary	0,15	0,07	0,09	2,07	0,04*				
	Home Pressure	0,03	0,09	0,02	0,35	0,72				
	Home Autonomy	-0,08	0,10	-0,03	-0,75	0,45				
	Home Support	0,02	0,09	0,01	0,18	0,86				
Negative WHI	0,82	0,13	0,32	6,27	0,00*					
Negative HWI	0,17	0,12	0,06	1,48	0,14					

Table 6 summarises the regression analyses with job and home characteristics, Negative WHI and Negative HWI as predictors of Fatigue. Entry of job and home characteristics at the first step of the regression analysis produced a statistically significant model ( $F_{(14,485)} = 17,13; p = 0,00$ ), accounting for approximately 33% of the variance. More specifically, it seems that Pressure ( $\beta = 0,19; t = 3,97; p \leq 0,05$ ), Overload ( $\beta = 0,18; t = 3,59; p \leq 0,05$ ), a lack of Autonomy ( $\beta = -0,12; t = -2,95; p \leq 0,05$ ) and Instrumental Support ( $\beta = -0,14; t = -3,02; p \leq 0,05$ ), a lack of Role Clarity ( $\beta = -0,11; t = 2,54; p \leq 0,05$ ) and Home Pressure ( $\beta = 0,09; t = 2,17; p \leq 0,05$ ) predict Fatigue. When Negative WHI and Negative HWI were entered in the second step of the regression analysis, a statistically significant model was produced ( $F_{(2,483)} = 23,46; p = 0,00; \Delta R^2 = 0,06$ ), which explained 39% of the total variance. In this model, it seems that significant predictors of Fatigue are Pressure ( $\beta = 0,14; t = 2,97; p \leq 0,05$ ), Overload ( $\beta = 0,12; t = 2,42; p \leq 0,05$ ), Time Demands ( $\beta = -0,10; t = -2,30; p \leq 0,05$ ), a lack of Instrumental Support ( $\beta = -0,12; t = -2,54; p \leq 0,05$ ) and Role Clarity ( $\beta = -0,13; t = -2,98; p \leq 0,05$ ), poor Salary ( $\beta = 0,09; t = 2,07; p \leq 0,05$ ) and Negative WHI ( $\beta = 0,32; t = 6,27; p \leq 0,05$ ).

Table 7

*Multiple Regression Analysis with Depression as Dependent Variable*

Model		Unstandardised Coefficients		Standardised Coefficients	<i>T</i>	<i>p</i>	<i>F</i>	<i>R</i>	<i>R</i> <sup>2</sup>	$\Delta R^2$
		<i>B</i>	<i>SE</i>	<i>Beta</i>						
1	(Constant)	1,45	0,35		4,13	0,00	7,98	0,43	0,19	0,16
	Pressure	-0,05	0,06	-0,04	-0,80	0,43				
	Overload	0,08	0,05	0,09	1,69	0,09				
	Time Demands	0,06	0,04	0,07	1,42	0,16				
	Job Insecurity	0,05	0,03	0,09	2,02	0,04*				
	Autonomy	-0,15	0,05	-0,14	-3,12	0,00*				
	Supervisor Support	-0,07	-0,05	-0,07	-1,30	0,19				
	Colleague Support	-0,05	-0,05	-0,05	-0,99	0,32				
	Instrumental Support	-0,00	-0,05	-0,00	-0,08	0,94				
	Role Ambiguity	0,04	0,07	0,03	0,53	0,60				
	Role Clarity	-0,11	0,05	-0,11	-2,32	0,02*				
	Salary	0,03	0,04	0,04	0,75	0,46				
	Home Pressure	0,15	0,05	0,16	3,34	0,00*				
	Home Autonomy	-0,12	0,05	-0,10	-2,22	0,03*				
	Home Support	0,04	0,04	0,04	0,96	0,34				
2	(Constant)	1,47	0,35		4,26	0,00	9,33	0,49	0,24	0,05
	Pressure	-0,05	0,06	-0,05	-0,86	0,39				
	Overload	0,05	0,05	0,05	0,93	0,35				
	Time Demands	0,03	0,05	0,03	0,72	0,47				
	Job Insecurity	0,04	0,03	0,07	1,66	0,10				
	Autonomy	-0,12	0,05	-0,11	-2,50	0,01*				
	Supervisor Support	-0,03	-0,05	-0,03	-0,59	0,56				
	Colleague Support	-0,06	-0,05	-0,06	-1,15	0,25				
	Instrumental Support	-0,00	-0,05	-0,00	-0,07	0,95				
	Role Ambiguity	-0,01	0,07	-0,01	-0,20	0,84				
	Role Clarity	-0,11	0,04	-0,12	-2,51	0,01*				
	Salary	0,04	0,04	0,06	1,16	0,25				
	Home Pressure	0,11	0,05	0,11	2,34	0,02*				
	Home Autonomy	-0,09	0,05	-0,07	-1,72	0,09				
	Home Support	0,04	0,04	0,04	0,90	0,37				
	Negative WHI	0,05	0,06	0,05	0,82	0,41				
	Negative HWI	0,30	0,06	0,24	5,23	0,00*				

Table 7 summarises the regression analyses with job and home characteristics, Negative WHI and Negative HWI as predictors of Depression. Entry of job and home characteristics at the first step of the regression analysis produced a statistically significant model ( $F_{(14,485)} = 7,98; p = 0,00$ ), accounting for approximately 19% of the variance. More specifically, it seems that Job Insecurity ( $\beta = 0,09; t = 2,02; p \leq 0,05$ ), a lack of Autonomy ( $\beta = -0,14; t = -3,12; p \leq 0,05$ ), and Role Clarity ( $\beta = -0,11; t = -2,32; p \leq 0,05$ ), Home Pressure ( $\beta = 0,16; t = 3,34; p \leq 0,05$ ) and a lack of Home Autonomy ( $\beta = -0,10; t = 2,22; p \leq 0,05$ ) predict Depression. When Negative WHI and Negative HWI were entered in the second step of the regression analysis, a statistically significant model was produced ( $F_{(2,483)} = 15,46; p = 0,00; \Delta R^2 = 0,05$ ), which explained 24% of the total variance. In this model, it seems that significant predictors of Depression are a lack of Autonomy ( $\beta = -0,11; t = -2,50; p \leq 0,05$ ) and Role Clarity ( $\beta = -0,12; t = -2,51; p \leq 0,05$ ), Home Pressure ( $\beta = 0,11; t = 2,34; p \leq 0,05$ ) and Negative HWI ( $\beta = 0,24; t = 5,23; p \leq 0,05$ ).

## DISCUSSION

The objectives of this study were to describe the relationship between job characteristics, negative WHI/HWI and ill health of working females in South Africa and to determine if job- and home characteristics and negative WHI/HWI predict ill-health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females in South Africa.

From the results it seems that job characteristics as well as home characteristics can be positively linked to physical ill-health. More specifically, physical ill-health has been found to be related to role clarity and pressures at home. Previous research by Oldfield and Mostert (submitted) has confirmed that high job demands and a lack of job resources are linked with somatic complaints. Increased levels of pressure in the home domain can increase levels of stress. This in turn may result in health problems. Insufficient guidelines regarding a person's role (such as confusion about responsibilities and expectations of supervisors) can cause pressure for employed females that can adversely lead to ill-health. It also seems that there could be a relationship between negative WHI and physical ill-health, although the relationship does not reach statistical significance ( $p = 0,06$ ). Väänänen et al. (2004) have established in their study of women and health that family-work spillover among females significantly increases the risk of poor health. This is specifically due to long working hours, a combination of paid and domestic work and more sole responsibilities at home. This double

workload and family-work spillover are then associated with health problems. More specifically, Väänänen et al. (2004) have indicated that it is not only the work hours or responsibilities in the home domain that lead to ill-health; it is in reality the psycho-emotional perception of being in an intolerable position in which work responsibilities interfere with home responsibilities that leads to ill health.

Towards defining possible causes for anxiety, an overview of Andrea et al. (2004) has provided support that conflict with supervisors can lead to anxiety. They have also found that the threat of having too much work, all psychosocial work characteristics, except for having a supervisor role and job insecurity, are outstandingly correlated with feelings of anxiety. Nevertheless, in this study it has been estimated that anxiety can be a consequence of overload at work, insufficient support from colleagues, and a lack of clear role expectations at work. Oldfield and Mostert (in press) support this by stating that high demands at work (e.g. working hard and under time pressure, having an disproportionate work load, impractical work targets) are positively related to employees experiencing anxiety. Furthermore it has also been established that home pressures such as having too many domestic tasks to do can result in anxiety. This feeling can, just as with job demands, be due to a fear of being overloaded. Disappointingly, to our knowledge, sufficient research has not been done on the relationship between anxiety with negative WHI and negative HWI. Nonetheless, this research indicates that anxiety positively correlates with negative WHI and negative HWI. As with job demands and home demands it can be due to feelings of fear that one might not be capable of handling all the conflicting demands.

Regarding the relationship between job characteristics and fatigue, the main predictors are pressure, overload, time-related demands, a lack of instrumental support and role clarity as well as a poor salary. Home pressure also seems to be a predictor of fatigue. Furthermore, it seems that negative interference from work to home also significantly predicts fatigue. This is consistent with a study done by Sonnentag and Zijlstra (2006), who has investigated the effects of job demands and job control on fatigue and well-being. They have found that individuals who are confronted with high constraints and low control at work spend much time at home on activities related to the workplace and little time on leisure activities, experience a higher need of recovery at the end of the day and this can thus result in fatigue. This finding is also in line with the Effort-Recovery (E-R) model (Meijman & Mulder, 1998). It explains that when an individual does not recover from negative load effects in the work

situation it will spill over to the home situation. Comparably a similar process can be anticipated in the home situation. If high home demands build up to a negative load effect and little or no recovery takes place, it will spill over and affect the work situation (Demerouti, Geurts, & Kompier, 2004). These negative load effects contain psychological, behavioural and subjective responses. Therefore, without adequate recovery from high demands at work or at home, fatigue might be experienced. Nonetheless, there is still not ample in-depth knowledge about the interaction between work and private life and the relationships of work-home interaction with employee's health and well-being (Demerouti et al., 2004). Demerouti (2004) also describes that in a comparable process, high home demands, little autonomy at home, as well as little support at home can result in negative effects in the home environment that will spill over to the work environment and impact on the functioning of the work domain.

Depression may be due to factors such as job insecurity, a lack of autonomy and clearly defined roles at work. Home characteristics that contribute to depression are pressures at home as well as a lack of autonomy in the home domain. In a study done on medical residents (Geurts et al., 1999), more health complaints were reported from residents that had unbendable arrangements for child care. Wallace (2004) has also confirmed the relationship between job demands and depression. To be more elaborate, he states that job demands (work overload and work hours) and control over one's job (flexi time and work hours) could positively be associated with depression. Furthermore, support from spouses as well as organisational support may reduce depression. Andrea et al. (2004) have found that conflict with supervisors is also a reason why females may experience depression. This research also indicates that depression is often a result of Negative HWI. A reason for this might be that depression is often the result of insufficient control over decisions (Andrea et al., 2004). Since working women are exposed to high stress levels resulting from demands at work but also at home, they are susceptible to depression. This can be explained by the fact that increased levels of stress result in increased levels of depression as well as other psychological disorders.

## **LIMITATIONS AND RECOMMENDATIONS**

Firstly, a major limitation is the fact that only self-reported questionnaires were used to acquire research results in this study. This may lead to a predicament usually referred to as

"method-variance" or "nuisance". In its defence it can be said that there is a limited scope of existing methodologies to deal with the dilemma of self-report questionnaires. An added limitation is the utilisation of a cross-sectional design. It has the restriction that the effect of job characteristics, home characteristics, negative WHI and negative HWI on the health outcomes of women is limited to a specific period of time. This means that there is no solid cause-and-effect relationship to base conclusions on.

Another limitation is that of the exclusive focus on only females as study population. Since women still tend to carry the greater responsibility for domestic tasks (McClean, 2002) and are thus more likely to experience interference in the work and/or home domain, it seems sensible to make use of a large sample of employed females. On the other hand, it should be an objective of researchers to investigate this phenomenon among employed males in South Africa.

Despite the limitations surrounding this research, there is a number of findings that could help organisations to improve the health of female employees in the future. Organisations should make it a focal point to assist employed females to recognise and understand the effect of job and home characteristics on their health, as well to align their work and home domains. Not only should policies in the work environment (e.g., flexi time, compact work timetables, child care facilities, parental leave) be set in place but the informal work environment should also be attended to since home characteristics are also linked to ill-health (Geurts & Demerouti, 2003). It is vital that organisations should deal with problems that can lead to ill-health as it is true that employee morale, turnover rate, and commitment to the organisation depend on it.

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## **CHAPTER 3**

### **CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS**

This chapter consists of conclusions concerning the literature review and the empirical study according to the specific objectives. The limitations of this study are discussed, followed by recommendations for the research problem in the organisation. To conclude, suggestions and recommendations are made for future research.

#### **3.1 CONCLUSIONS**

The objectives of this research are to describe the relationship between job characteristics, negative work-home interference (WHI), and negative home-work interference (HWI), ill-health of working females in South Africa and to determine if job and home characteristics and negative WHI/HWI predict ill-health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females in South Africa.

The first objective was to determine what the relationship is between job characteristics, home characteristics, negative WHI, negative HWI and ill-health according to the literature. To reach this objective, an extensive literature search of the concept of health was undertaken. Various articles and other media were consulted. Job characteristics consist of job demands and job resources. Various studies found demands in the job situation to be the most important predictor of health outcomes such as burnout and psychosomatic health complaints (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Houkes, Janssen, De Jonge, & Bakker, 2003). Home characteristics include characteristics such as family role conflict, family role ambiguity, social support, home resources, family structure, quality of relationship with spouse, support from family members, time pressure, and rewarding aspects of the household. From the health literature it could be established that individuals who are continuously faced with high effort activities (e.g., household activities, social commitments, job-related tasks) in the home domain may suffer from negative outcomes similar to fatigue, insomnia, and emotional or mental complaints (Geurts et al., 2005).

Work-home interaction has been described as “an interactive process in which a worker’s performance in one area (e.g. home) is influenced by (negative or positive) load reactions that have built up in the other area (e.g. work)” (Geurts et al., 2005, p. 322). Negative WHI is often considered as a likely source of stress that, in addition to other potential stressors, will have unfavourable effects on health and psychological well-being of individuals, resulting in, for example, poor physical health, depression, or anxiety (Burke, 1988; Frone, Russel, & Cooper, 1992, 1997; Kinnunen & Mauno, 1998). Allen, Herst, Bruck, and Sutton (2000) have found that some of the consequences regarding work-to-family conflict are variables such as burnout, general psychological strain and somatic complaints, as well as physical consequences such as headache, backache, upset stomach, fatigue and a lack of sleep (insomnia). To emphasise this, it can also be mentioned that Burke (1988) has established positive associations between work-family conflict and negative affective states, including depression. According to this study, it also seems that a relationship between negative HWI and ill-health outcomes exists. Depression is likely to develop when women are exposed to high stress levels resulting from demanding aspects at home and at work as well as the conflicting responsibilities from both domains (Andrea et al., 2004).

The second objective set for this research was to verify if job and home characteristics will predict ill health (including physical ill-health, anxiety, fatigue and depression) in a sample of working females. From the results it appears that job characteristics as well as home characteristics can be positively linked to physical ill-health. More specifically, physical ill-health has been found to be related to role clarity and pressures at home. Previous research by Oldfield and Mostert (submitted) confirmed that high job demands and a lack of job resources are linked with somatic complaints. Increased levels of pressure in the home domain can increase levels of stress. This in turn may result in health problems. Insufficient guidelines regarding a person’s role (such as confusion about responsibilities and expectations of supervisors) can cause pressure for employed females that can lead to ill-health. Towards defining possible causes for anxiety, an overview of Andrea et al. (2004) have provided support that conflict with supervisors can lead to anxiety. They have also found that the threat of having too much work, all psychosocial work characteristics, except for having a supervisor role and job insecurity, were outstandingly correlated with feelings of anxiety. Nevertheless, in this study it has been estimated that anxiety can be a consequence of overload at work, insufficient support from colleagues, and a lack of clear role expectations at work. Oldfield and Mostert (submitted) support this by stating that high demands at work

(e.g. working hard and under time pressure, having a disproportionate work load, impractical work targets) are positively related to employees' experiencing anxiety.

It was also established that home pressures, such as having too many domestic tasks to do, can result in anxiety. This feeling can, just as with job demands, be due to a fear of being overloaded. Regarding the relationship between job characteristics and fatigue, the main predictors were pressure, overload, time-related demands, a lack of instrumental support and role clarity as well as a poor salary. Home pressure also seems to be a predictor of fatigue. Depression can be due to factors such as job insecurity, a lack of autonomy and clearly defined roles at work. Home characteristics that contribute to depression are pressures at home as well as a lack of autonomy in the home domain. In a study done on medical residents (Geurts, Rutte, & Peeters, 1999) more health complaints were reported from residents that had inflexible arrangements for child care. Wallace (1997) has also confirmed the relationship between job demands and depression. He stated that job demands (work overload and work hours) and lack of control over one's job (flexi time and work hours) could positively be associated with depression. Furthermore, support from spouses as well as organisational support can reduce depression. Andrea et al. (2004) found that conflict with supervisors is another reason why females may experience depression.

In addressing the third objective of this research, it was necessary to determine if negative WHI and negative HWI predict ill health (including physical ill health, anxiety, fatigue and depression) in a sample of working females. It appears that there could be a relationship between negative WHI and physical ill health, although the relationship did not reach statistical significance ( $p = 0,06$ ). Väänänen et al. (2004) have established, in their study of women and health, that family-work spillover among females significantly increases the risk of poor health. This was specifically due to long working hours, a combination of paid and domestic work and more sole responsibilities at home. This double workload and family-work spillover were then associated with health problems. More specifically, Väänänen et al. (2004) have indicated that it is not the work hours or responsibilities in the home domain that leads to ill health. It is in reality the psycho-emotional perception of being in an intolerable position in which work responsibilities interfere with home responsibilities that leads to ill health. Disappointingly, to our knowledge, sufficient research has not been done on the relationship between anxiety and negative WHI and negative HWI. Nonetheless, this research indicates that anxiety positively correlates with negative WHI and negative HWI. As with job

demands and home demands it can be due to feelings of fear that one might not be capable of handling all the conflicting demands.

It also seems that negative interference from work to home significantly predicted fatigue. This is consistent with a study done by Sonnentag and Zijlstra (2006), who have investigated the effects of job demands and job control on fatigue and well-being. They found that individuals who are confronted with high constraints and low control at work spend much time at home on activities related to the workplace and little time on leisure activities, experienced a higher need of recovery at the end of the day and can thus experience fatigue. This finding is in agreement with the Effort-Recovery (E-R) model (Meijman & Mulder, 1998). It explains that when an individual does not recover from negative load effects in the work situation it will spill over to the home situation. Conversely, a similar process can be anticipated in the home situation. If high home demands build up to a negative load effect and little or no recovery takes place it will spill over and effect the work situation (Demerouti, Geurts, & Kompier, 2004). These negative load effects contain psychological, behavioural and subjective responses. Therefore, without adequate recovery from high demands at work or at home, fatigue might be experienced. There is, however, still not enough in-depth knowledge about the interaction between work and private life, and the relationship of work-home interaction with employee's health and well-being (Demerouti et al., 2004). Demerouti et al. (2004) also describe that in a comparable process, high home demands, little autonomy at home, as well as little support at home can result in negative effects in the home environment that will spill over to the work environment and impact on the functioning of the work domain.

This research also indicated that depression is often a result of negative HWI. A reason for this might be that depression is often the result of insufficient control over decisions (Andrea et al., 2004). Since working women are exposed to high stress levels resulting from demands, not only at work but also at home, they are susceptible to depression. This can be explained by the fact that increased levels of stress results in increased levels of depression as well as other psychological disorders.

## **3.2 LIMITATIONS**

It should be noted that there are a range of limitations of this study. Firstly, only self-reported questionnaires were used to acquire research results. In its defence it can be said that there are a limited number of existing methodologies to deal with the predicament of self-report questionnaires. This problem should be investigated by using extensive research to present more objective measurement instruments.

An added limitation is the utilisation of a cross-sectional design. It has the restriction that the effect of job characteristics, home characteristics, negative WHI and negative HWI on the health outcomes of women are limited to a specific period of time. It is essential that forthcoming longitudinal studies and quasi-experimental research designs are needed to promote studies regarding ill-health in employed females. However, since the aim of this study was only to look into the possible effects of job characteristics, home characteristics, negative WHI and negative HWI on the health outcomes, cross-sectional data seemed sufficient.

The third limitation of this study is that a homogeneous sample, consisting of females only, was used as a study population. Since women still tend to carry the greater responsibility for domestic tasks (McClean, 2002) and are thus more likely of experiencing interference in the work and/or home domain, it seemed sensible and appropriate to make use of a large sample of employed females. On the other hand, it should be an objective of researchers to investigate this phenomenon among employed males in South Africa.

Despite these limitations, the current study has important implications for organisations and for future research.

## **3.3 RECOMMENDATIONS**

In this section, the recommendations to resolve the research problems as illustrated in Chapter 1 are examined and discussed. This is followed by recommendations for future research and practice.

### **3.3.1 Recommendations for future research**

The most important recommendation for future research is the use of longitudinal designs, as the validation of the hypothesised causalities and relationships will be made possible. With longitudinal data, hypothesised causalities of the relationships can be validated and it would be possible to observe if these relationships remain accurate over a longer time period. Montgomery, Peeters, Schaufeli, and Den Ouden (2003), as well as Demerouti et al., (2004) have expressed the need for longitudinal studies within this field of study.

Another factor to explore in future studies is the effect of positive WHI and positive HWI on health outcomes. It has been recognised that WHI can be positive (Grzywacz & Marks, 2000) and that the positive interface of this concept should be explored. Along with this it can also be true that job resources and home resources can have a positive effect on the work and home situation of employees. Since job resources refer to those physical, psychosocial or organisational aspects of the job that may be functional in meeting task requirements (job demands), and may therefore reduce the associated physiological and/or psychological costs, while at the same time stimulating personal growth and development (Demerouti et al., 2001), it could be meaningful to explore the positive pole of job characteristics and the possible relationship it may have with positive health outcomes. Hence, the same may be true for resourceful characteristics at home.

The final recommendation of this investigation is the use of a heterogeneous population. Future research should be directed to include men's experience of interference in the work and/or home domain.

### **3.3.2 Recommendations for future practice**

Based on this study, the relationship between job characteristics, home characteristics, negative WHI, and negative HWI with health outcomes is better understood. There are however, still specific recommendations that can be made to organisations that will help them to improve the health outcomes of their female employees in the future.

As health outcomes (such as physical ill-health, fatigue anxiety, and depression) can have serious financial implications for organisations and affect the personal lives of employed

females, it is important for both the organisation and the individual to recognise and understand the effect of job and home characteristics on their health, as well as the cost of conflict and imbalance between the different roles in the work and home domain. Organisations and working females can utilise this understanding to apply interventions to help minimise and cope with the effects of demands at work and home as well as the conflicting roles of both domains. This entails that employed females must be able to identify demands and conflicting interest within their work and home environment, and should also be aware of the possible ill health outcomes of these demands and negative interference.

This is vital to the employer as employees with high role overload and high levels of negative WHI seems to be less committed to their work and they also experience less job satisfaction (Duxbury & Higgins, 2001). These employees were more stressed due to work factors, had higher levels of absenteeism and some were even considering to leave their jobs. Organisations should employ organisation-based strategies to deal with high job demands as well as with WHI. Employers could offer flexitime options to help decrease work to family and family to work interference. Employees also have a responsibility regarding these issues. They should take advantage of supportive practices and policies within organisations and where it is non-existing they should discuss supportive possibilities with their employer. Work can be arranged in such a way that employees can be with their family and still be a happy and productive in their work (Bailyn & Harrington, 2004).

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