

**Occupational stress, job satisfaction, work engagement and the mediating role
of social support among nurses at a public hospital in Durban**

By

Sibusiso C. Sibisi

207500423

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Supervisor: Dr T.S. Magojo

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Remarks

The reader is reminded of the following:

The references and the editorial style prescribed by the Publication Manual (4th ed.) of the American Psychological Association (APA) were followed in this Masters Thesis. This practise is line with the policy of the School of Psychology in the Industrial Psychology Programme at the University of KwaZulu Natal: Howard College.

Declaration

I, Sibusiso Cebo Sibisi, with student number: 207500423, declare that this Masters research thesis entitled, **“Occupational stress, job satisfaction, work engagement and the mediating role of social support among nurses at a public hospital in Durban”**, is my own work, and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Full name: Sibusiso Cebo Sibisi

Date:

Signed:

Acknowledgements

I would like to express my gratitude to the following people who have helped me to complete my Masters research thesis:

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Quote

Psalm 103 v11-12

“For as high as the heavens are above the earth, so great is his love toward those who fear him; as far as the east is from the west, so far does he remove our transgressions from us.”

Abstract

The objectives of the study were to: 1) determine how the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature, 2) describe the levels of occupational stress, job satisfaction, work engagement and social support, 3) determine the relationship between occupational stress, job satisfaction, work engagement and social support, 4) assess the predictive value of occupational stress on job satisfaction and work engagement, 5) determine the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement. The research questions following on from the objectives were as follows: 1) how are the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature? 2) what are the levels of occupational stress, job satisfaction, work engagement and social support among nurses? 3) what is the relationship between occupational stress, job satisfaction, work engagement and social support among nurses? 4) what is the predictive value of occupational stress on job satisfaction and work engagement among nurses? 5) what is the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement among nurses? In order to answer the research objectives, this study used a cross sectional design. The present research study used a quantitative approach. The convenience sampling method was used for the purposes of data collection. Data was gathered from the wards of a public hospital in Durban. A sample of 120 voluntary participants was obtained, comprising of 109 females and 11 males. Data was collected using survey questionnaires which included the following five parts: 1) Biographical Information Questionnaire, 2) the Nursing Stress Indicator, 3) the Minnesota Satisfaction Questionnaire, 4) the Utrecht Work Engagement Scale, 5) and the Social Support Questionnaire. All data were analysed using SPSS version 19.0 for Windows.

The results of the study showed that the nurses experienced high levels of occupational stress, low levels of job satisfaction and work engagement; and moderate levels of social support. There was a significant relationship between occupational stress, job satisfaction, work engagement and social support among the nurses. The results showed that occupational stress predicts the levels of job satisfaction and work engagement. The results also showed that social support mediates the effect of occupational stress on job satisfaction and work engagement.

Recommendations and the value added by the study was also stated. The limitations of this study were also noted.

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CHAPTER ONE: INTRODUCTION

1.1 The nursing profession in South African public hospitals

In South Africa, nurses carry the responsibility of providing health care services to all communities through the provision of primary health care up to tertiary levels of health care (Nursing Strategy for South Africa, 2008). The demand for nurses both nationally and internationally has increased (Wildeschut & Mqolozana, 2008). This means that today nurses in South Africa are presented with many opportunities to pursue their careers overseas or within South Africa. Nurses have more opportunities now than ever before in terms of career development, jobs, areas of speciality and assuming executive positions in the public sector. Since there is a growing demand for the skilled services of nurses, Vasuthevan (2008) states that nurses should be encouraged to continuously improve their clinical expertise and competence.

The nursing field is widely acknowledged nationally and internationally as an essential component of health care delivery systems (Nursing Strategy for South Africa, 2008). Although there are more than 196, 914 nurses that are eligible to practise nursing in South Africa, the challenge that faces the South African health care system is that there is still a shortage in the number of nurses required to meet the health care demands of the South African population (Nursing Strategy for South Africa, 2008). The average ratio of professional nurses to the South African population was 1:471 as at 2006 (Wildeschut & Mqolozana, 2008). According to the Department of Labour Master List of Scarce and Critical Skills, there is a shortage of 10, 250 registered nurses, as well as a shortage of 4, 120 primary health care nurses (Wildeschut & Mqolozana, 2008). Therefore, there is a total shortage of about 14, 1370 nurses in South Africa.

Research conducted by Mokoka, Oosthuizen and Ehlers (2010) indicates that there is a high turnover rate among Professional and Enrolled nurses in public hospitals. Low salaries along with a lack of resources, lack of promotion opportunities, heavy workloads and unsafe working environments contribute to nurses' decisions to leave South Africa (Oosthuizen, 2005; Xaba & Phillips, 2001). Nurses working in public hospitals are dissatisfied with their jobs because of low salaries and the burden of caring for 82% of the South African population (Mokoka, *et al.*, 2010). Furthermore, a report published by the Nursing Strategy for South Africa (2008) revealed that the turnover rate among nurses has led to a decrease in the standard of health care services in South Africa. In addition, the South African Health Department has struggled to attract junior nurses at entrance level in public hospitals to make up for the high number of senior nurses leaving the nursing profession (Mokoka, *et al.*, 2010). This has meant that public hospitals' ability to provide health services has been weakened.

Furthermore, nurses on duty also face the added risk of infection from diseases such as HIV and AIDS and the build-up of chronic stress (McGrath, Reid & Boore, 2003). Thus, there are concerns that the combination of a low salary, a heavy workload, long working hours and exposure to infections may contribute to a nursing workforce that has low motivational levels (Mokoka, *et al.*, 2010).

Several studies have investigated the concepts of job satisfaction, occupational stress and work engagement in various organizations both abroad (Aiken, Clarke, Clarke, Sloane, Sochalski & Busses, 2001; Lu, While & Barribal, 2005) and in South Africa (van der Colff & Rothmann, 2009). However, these constructs have not yet been adequately studied in public hospitals in the

KwaZulu-Natal region. Therefore, this study seeks to make a contribution to the already growing body of knowledge of these constructs within public sector organizations, namely among nurses in public hospitals. This study adds to what is already known about these constructs by also studying a fourth variable; social support which also has not been well researched in South African public hospitals in recent years. Knowledge around these constructs is essential in a stressful profession like nursing because an interaction among these variables influences job performance (Robbins, Judge, Odendaal & Roodt, 2009). It is important to consider variables which may influence nurses' job performance because an interaction among these variables may determine the extent to which nurses can provide efficient health care to patients.

1.2 Motivation for the study

The context of South African public hospitals is characterised by a shortage and emigration of nurses (Mokaka *et al.*, 2010). This has led to a decline in the standard of health care delivery provided to patients (Mokaka *et al.*, 2010).

The hospital in which the research was conducted in this study is a district hospital in the eThekweni health district under the Department of Health of Kwa Zulu-Natal (KZN Department of Health, 2011). A district hospital is defined as a facility at which a range of outpatient and inpatient services are offered. It is open 24 hours a day, 7 days a week. According to the Department of Health (2011) the basic services provided by a district hospital include: general services, emergency services, operating theatre, chronic care, mental health, rehabilitation, pharmaceutical services, reproductive health; and includes between 30 to 300 beds. The hospital is a fully functional general hospital and operates on a referral system with patients being referred via their local clinics or regional hospitals (KZN Department of Health, 2011).

Research conducted by Cullinan (2006) shows that KZN public hospitals have been marred by the following problems in recent years: In 2005, 26 babies in the intensive care unit died of Klebsiella- a bacteria caused by poor hygiene. In the same year, an official investigation by the Department of KZN revealed that psychiatric patients in a KZN hospital were neglected and sexually abused by staff. A poor level of health care was demonstrated in 2004 where hospitals in the eThekweni metro reported high stillbirth rates of over 40 per 1000. Furthermore, Cullinan (2006) states that KZN public hospitals are also prone to a shortage of staff, poor working conditions, malfunctioning equipment and theft of medicine.

In an interview with the Hospital Superintendent of where this research study was conducted, the Hospital Superintendent mentioned that the hospital has a shortage of staff, high turnover rates- particularly in the age group of nurses under 40 years of age and high absenteeism which places the health of patients at risk. The Hospital Superintendent also stated that the impending negotiation for distribution of salary increases in 2011 in KZN among nurses had added tension to the workplace and reduced trust between management and nurses.

Taking cognisance of the problems which are faced by public hospitals in KZN and the district hospital to be investigated in this study, it is necessary to consider why nurses actively participate in delinquent behaviour in the workplace, particularly as health professionals assigned with the responsibility of improving the health of citizens. Therefore, I shall use variables which fit under the concept of positive psychology in order to understand the behaviour of nurses and the dynamics which are present in hospitals.

The concept of positive psychology argues that the most effective method to remedy negative states such as occupational stress is to focus on the cultivation of positive states (Compton, 2005). Therefore, this study shall consider the relationship between occupational stress and positive states such as job satisfaction, work engagement and social support. Since nursing is recognised as a stressful profession, this study shall also assess the predictive value of occupational stress on job satisfaction and work engagement. The study's focus on social support may also improve understanding of the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement. It is important to consider the constructs of job satisfaction and work engagement within organisations because these constructs have a positive relationship with productivity and good mental health in the workplace (Robbins *et al.*, 2009).

1.3 Objectives of the study

The research objectives are:

- 1) To determine how the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature
- 2) To describe the levels of occupational stress, job satisfaction, work engagement and social support among nurses.
- 3) To determine the relationship between occupational stress, job satisfaction, work engagement and social support among nurses.
- 4) To assess the predictive value of occupational stress on job satisfaction and work engagement among nurses.

- 5) To determine whether social support mediates the effects of occupational stress on job satisfaction and work engagement among nurses.

1.4 Research questions: Key questions to be asked

Following from the above objectives, the research questions are as follows:

- 1) How are the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature?
- 2) What are the levels of occupational stress, job satisfaction, work engagement and social support among nurses?
- 3) What is the relationship between occupational stress, job satisfaction, work engagement and social support among nurses?
- 4) What is the predictive value of occupational stress on job satisfaction and work engagement among nurses?
- 5) What is the mediating role of social support on the relationship between occupational stress on job satisfaction and work engagement among nurses?

1.5 Structure of the study

Chapter One: Introduction

This chapter introduces the motivation for the research study, the research questions and the research objectives.

Chapter Two: Literature review

This chapter reviews previous research conducted on occupational stress, job satisfaction, work engagement and social support. Lazarus' Transactional Model of Stress and the Conservation of Resources theory are also discussed as a theoretical framework.

Chapter Three: Research methodology

This chapter explains the method of research, research design, sampling, characteristics of the sample, data collection and ethical considerations.

Chapter Four: Results

This chapter presents the results of the research study and the analysis that was used. The results are presented in the form of tables.

Chapter Five: Discussion

This chapter discusses the most salient results emanating from the study. The discussion of the results is guided by the research questions and research objectives. The results of the study are also discussed in relation to previous research findings.

Chapter Six: Limitations and conclusions

This chapter discusses the limitations of the study and draws a conclusion concerning the study. Suggestions for future research are also highlighted in this chapter.

1.6 Summary of Chapter One

This chapter has introduced the topic. The objective of this study was to: 1) determine how the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature,

2) describe the levels of occupational stress, job satisfaction, work engagement and social support, 3) determine the relationship between occupational stress, job satisfaction, work engagement and social support, 4) assess the predictive value of occupational stress on job satisfaction and work engagement, and 5) determine the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement among nurses in a public hospital in Durban. The next chapter presents a review of the literature on occupational stress, job satisfaction, work engagement and social support and the theoretical framework for this study.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction: Positive psychology

The field of positive psychology is concerned with understanding positive states in people.

Positive states studied by positive psychology include well-being, satisfaction, happiness; as well as optimism, hope and faith (Compton, 2005). Compton defines positive psychology as “the scientific study of optimal human functioning” (2005, p.4). Positive psychology maintains a focus on factors that allow individuals to thrive and flourish. The field of positive psychology is also concerned with understanding negative states in people and acknowledges that negative states in people can be remedied by nurturing the growth of positive states (Lewis, 2011). Since literature suggests that the majority of nurses working in public hospitals experience occupational stress and are dissatisfied with their jobs (Lu *et al.*, 2005), it is important to identify positive states that may help to reduce the levels of occupational stress encountered in the workplace and enhance job satisfaction, work engagement and strengthen the social support of nurses. Therefore, this study explored the relationship between occupational stress, job satisfaction, work engagement and social support using the positive psychology perspective.

2.2 Occupational stress

2.2.1 Definition

Individuals experience stress when they are confronted with situations where their well-being is negatively affected by their failure to cope with the demands of their environment (Erkutlu & Chafra, 2006). Vokic and Bogdanic (2007) state that stressors (job-related) are objective events, while stress is the subjective experience of the event (stressor) (Vokic & Bogdanic, 2007).

Occupational stress is a context specific form of stress that is caused by an inability to cope with the pressures of performing a job because of a poor fit between an individual's abilities and the inherent requirements of their job (Holmlund- Rytönen & Strandvik, 2005). This study is based on this conceptualisation of occupational stress. Holmlund- Rytönen & Strandvik (2005) also define occupational stress as a mental and physical condition that reduces an individual's job productivity, personal health and quality of work. The main components of occupational stress processes are potential sources of stress (stressors), factors of individual differences (moderators/mediators), and consequences of stress (strain) (Lu, Cooper, Kao & Zao, 2003).

2.2.2 Dimensions of occupational stress

According to Ismail, Yao and Yunis (2009) occupational stress has two major dimensions: physiological stress and psychological stress. Physiological stress is viewed as a physiological reaction of the body to various stressful triggers at the workplace (Ismail *et al.*, 2009). This may include physiological reactions such as: a headache, abdominal pain, heart palpitation and sleep disturbance. Psychological stress is seen as an emotional reaction that is caused by stimuli in the workplace. This may include emotional reactions such as: anxiety, depression, burnout, irritability and frustration (Vokic & Bogdanic, 2007).

2.2.3 Types of occupational stress

There are two major types of occupational stress: eustress (good stress) and distress (bad stress) (Fevre, Matheny & Kolt, 2003). Eustress is a positive form of stress and is associated with positive emotions and positive outcomes. An individual experiences eustress when they experience low levels of stress (Leka, Griffiths & Cox, 2004). Distress is a negative form of stress and is associated with negative emotions and negative outcomes. This form of stress occurs when an individual frequently experiences high levels of stress (Fevre *et al.*, 2003). The

presence of eustress does not impair an individual's ability to meet job demands. Rather, individuals are able to maintain a positive work life under conditions of eustress (Leka *et al.*, 2004). On the other hand, individuals who experience distress are not able to fulfil job demands and this may result in the decrease of their quality of work life (Fevre *et al.*, 2003; Leka *et al.*, 2004).

2.2.4 Mechanisms of occupational stress

According to Spielberger, Vagg and Wasala (2003) occupational stress consists of three mechanisms. These mechanisms include: sources of stress that are encountered in the work environment, the perception and appraisal of a particular stressor by an employee and the emotional reactions that are a response to perceiving a stressor as threatening (Spielberger *et al.*, 2003). Spielberger's State-Trait (ST) model of occupational stress focuses on the perceived severity and frequency of occurrence of two major categories of stressors: job pressures and lack of support (Spielberger *et al.*, 2003).

2.2.5 Types of stressors in nursing

A study by Cavanagh (2001) identified three categories of stress in the nursing profession. These three categories of stress in nursing include: personal, interpersonal and work environment stressors. Personal stressors include an inability to simultaneously manage home, work and study responsibilities (Cavanagh, 2001). Cavanagh (2001) reported that interpersonal stressors are caused by poor relationships with doctors, supervisors and colleagues. Work environment stressors are caused by a high work load and long working hours (Ahsan, Abdullah, Fie and Salam, 2009), the death of patients, the strain of being exposed to making mistakes and managing demanding responsibilities (Cavanagh, 2001); and a shortage of nursing staff (van der Colff & Rothmann, 2009).

2.2.6 Factors that contribute to occupational stress

There are several factors that contribute to occupational stress. Stordeur, D'Hoore and Vandenberghe (2001) have ranked stressors in order of severity of impact. Their study showed that the main causes of stress among nurses were: a high workload, conflict with other nurses, experiencing a lack of clarity about tasks, and a head nurse who closely monitors the performance of staff in order to identify mistakes and to take corrective action (Stordeur *et al.*, 2001). In a study on stress among nurses in South Africa, Lambert and Lambert (2001) found that occupational stress was caused by low levels of communication with management, racism and low pay. Nursing stress was also linked to a lack of support from supervisors, long working hours and task overload.

van der Colff and Rothmann (2009) state that a lack of resources among nurses is also another factor that contributes to stress among nurses. In a study among South African nurses, James (2002) found that most nurses working in public hospitals often have a shortage of resources to work with. Furthermore, using the Nursing Stress Indicator amongst a sample of South African nurses, van der Colff and Rothmann (2009) found that the Nursing Stress Indicator extracted five factors of occupational stress. These factors were: job demands, patient care, staff issues, lack of support and working over-time (van der Colff & Rothmann 2009). In this study, occupational stress was analysed using the five factors that were extracted by van der Colff and Rothmann (2009).

2.2.7 Nursing as a stressful profession

Occupational stress may be experienced by people working in different types of jobs, however Ahsan *et al.*,(2009) have stated that nursing is one of the most stressful professions. Ahsan *et al.*,

(2009) are also of the view that it is important to research occupational stress in nurses because performance usually declines under stressful situations. This view is supported by Gyurak and Ayduk (2007) who stated that stress among nurses contributes to organizational inefficiency, high staff turnover, absenteeism, decreased quality and quantity of health care, increased costs of health care and decreased levels of job satisfaction.

2.2.8 Occupational stress and work engagement

Regarding the relationship between occupational stress and work engagement, research has shown that even when exposed to high job demands and working long hours, some individuals do not show symptoms of disengagement (Simpson, 2009). Instead, some people seem to find pleasure in dealing with work related stressors (Schaufeli & Bakker, 2004). Researchers Schaufeli and Bakker (2004) have also found a positive relationship between eustress and work engagement. Eustress occurs when a person has a positive evaluation of a stressor in that the event is construed as positive (Simmons, 2002). When negative complications arise during a task, these complications are viewed positively which fosters work engagement and improves job performance (Simmons, 2002).

2.2.9 Occupational stress and job satisfaction

According to Ahsan *et al.*, (2009) job satisfaction was found to have a negative relationship with occupational stress. Studies conducted by Ahsan *et al.*, (2009), Sveinsdottir, Biering and Ramel (2005) show that high levels of occupational distress are associated with low levels of job satisfaction. Workplace stressors such as a high workload and poor working conditions are negatively related to job satisfaction (Gyurak & Ayduk (2007). Furthermore, research conducted by Sveinsdottir *et al.*, (2005) found that a lack of job satisfaction can also be a source of stress.

2.2.10 Occupational stress and social support

According to Cohen (2004), the Stress buffer model includes an interaction between stress and social support. In the Stress buffer model social support gives assistance to individuals in stressful situations. The provision of social support acts as a buffer against experiencing stress. Hence the presence of social support reduces the likelihood of experiencing stress. Therefore, social support mediates against the experiences of stress. The Stress buffer model states that the provision of social support improves health by providing psychological and material resources that are needed to cope with stress (Cohen, 2004).

The reason that social support operates as a stress buffer is the belief that others will provide appropriate aid (Cohen, 2004). The belief that others will provide resources may subsequently strengthen an individual's ability to cope with environmental demands (Kawachi & Berkman, 2001). Cohen argues that social support reduces the effects of stressful events only if the form of assistance that is provided matches the demands of the stressful event (Cohen, 2004). Perceived availability of social support also acts as a buffer against depression and anxiety (Kawachi & Berkman, 2001).

2.3 Job satisfaction

2.3.1. Definition

Job satisfaction is a positive emotional state resulting from the appraisal of one's job experiences (Spector, 2008). Spector (2008) views job satisfaction as a general attitude that an employee has towards various aspects of their job. Spector also proposed that job satisfaction is linked to an employee's individual needs (2008). According to Spector, a person's individual needs may include challenging work, equitable rewards, a supportive work environment and positive

relationships with colleagues (2008). An individual with a high level of job satisfaction generally holds positive attitudes towards their job while an individual with a low level of job satisfaction holds negative attitudes towards their job (Robbins *et al.*, 2009).

2.3.2 Job satisfaction theories

The concept of job satisfaction can be understood by finding out what motivates people at work. Smucker and Kent (2004) categorized motivation into content theories and process theories in order to understand how people acquire job satisfaction. Content theories are based on various factors which influence job satisfaction. Content theories include: Maslow's Hierarchy of Needs theory, Herzberg's Two Factor theory, Aderfer's Existence Relatedness Growth theory, and McClelland's Learned Needs theory (Smucker & Kent, 2004). Process theories take into account the process by which variables such as expectations, needs and values interact with the job to produce job satisfaction (Smucker & Kent, 2004). Process theories include: Vroom's Expectancy theory, Equity theory and the Goal Setting theory.

2.3.3 Job satisfaction in the workplace

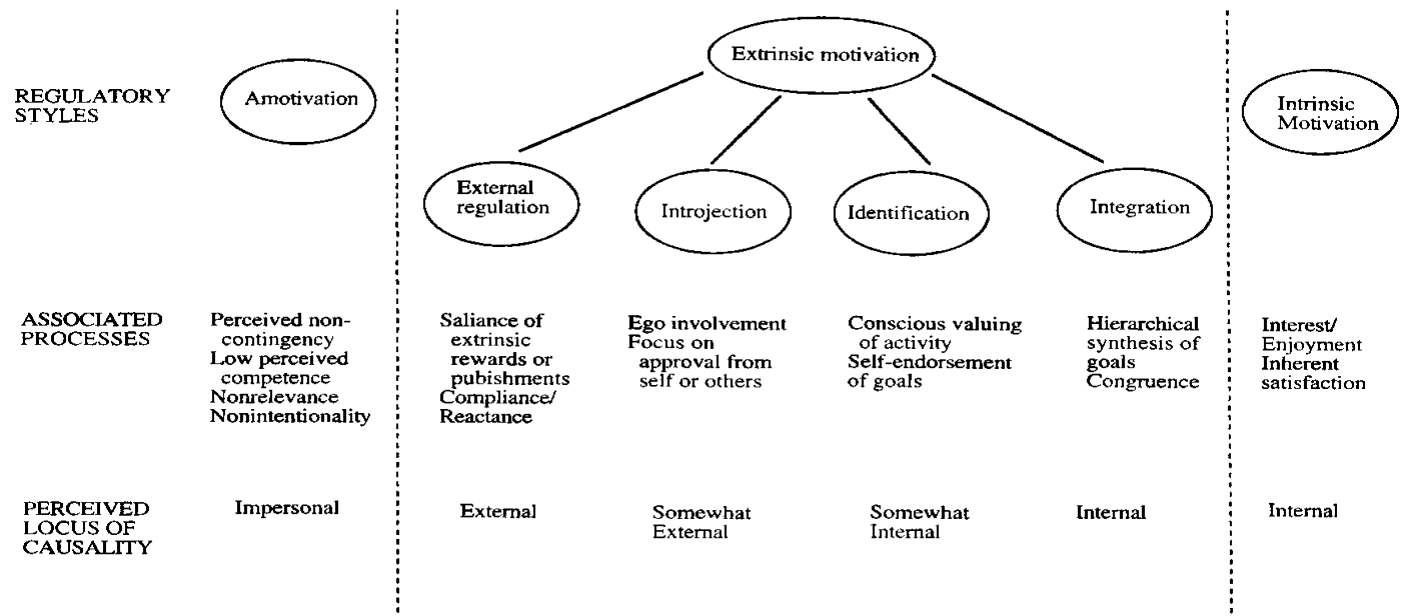
The benefit of having a satisfied workforce is that it leads to higher levels of organisational productivity and lower organisational turnover rates (Robbins *et al.*, 2009). On the other hand, if employees are dissatisfied this may cause undesirable job outcomes such as stealing and high rates of absenteeism (Robbins *et al.*, 2009). Consequently, dissatisfied employees may withdraw from the job psychologically. Psychological withdrawal from the job is demonstrated by behaviour such as not being punctual, not attending meetings, a decrease in productivity, a high organisational turnover rate or early retirement (Spector, 2008).

2.3.4 Intrinsic and extrinsic motivation

Hirschfeld (2000) has conceptualised job satisfaction as consisting of intrinsic and extrinsic motivation. This study is based on this conceptualisation of job satisfaction. According to Deci and Ryan (2008) intrinsic satisfaction is derived from performing work and experiencing feelings of accomplishment and identifying with the task performed. Intrinsically motivated people may do a task because of the inherent satisfaction that the task provides rather than for an external reward. An intrinsically motivated person may accomplish a task because of enjoyment or the challenge of the task (Ryan & Deci, 2000).

Extrinsic satisfaction is derived from the compliments and rewards that an individual receives from peers, supervisors and the organisation (Ryan & Deci, 2000). An individual may experience extrinsic satisfaction by receiving recognition, compensation and promotion at work (Ryan & Deci, 2000). According to Ryan and Deci's Self Determination theory, motivation includes autonomous motivation, controlled motivation and a-motivation (2000). Autonomous motivation includes intrinsic motivational factors. Controlled motivation includes extrinsic motivational factors. Amotivation occurs when people do not experience motivation (Deci & Ryan, 2008).

Figure 1: Taxonomy of human motivation (Ryan & Deci, 2000).



Ryan and Deci’s Taxonomy of human motivation differentiates between intrinsic motivation, extrinsic motivation and amotivation (see Figure 1). The differentiation between intrinsic motivation and extrinsic motivation is necessary because people may be motivated by different types of factors. This study conceptualizes job satisfaction as being composed of the two factors of intrinsic motivation and extrinsic motivation (Nel & Haycock, 2005). Research shows that intrinsic motivation is a more effective motivator of human behaviour than extrinsic motivation (Robbins *et al.*, 2009). One of the unique characteristics of the Taxonomy of human motivation is that it makes the point that people may sometimes not experience any form of motivation.

2.3.5 Job satisfaction and intention to leave nursing profession

Using the Index of Job Satisfaction Scale, Lu, Lin, Wu, Hsieh and Chang (2002) investigated the impact of job satisfaction on intention to leave the nursing profession in a sample of Taiwanese nurses. The findings of their study indicated that job satisfaction had a positive relationship with

professional commitment and that job satisfaction had a negative relationship with intention to leave the hospital and the nursing profession in particular (Lu *et al.*, 2002).

2.3.6 Sources of job satisfaction among nurses

A study conducted by Adams and Bond (2000) found that factors such as the degree of cohesion among ward nurses, the degree of collaboration with medical staff and perceptions of staff organization contribute to nurse job satisfaction (Lu *et al.*, 2005). In addition, using the Job Satisfaction Questionnaire, Nolan, Brown and Naughton (2001) reported that perceived ability to deliver good patient care and good colleague relationships with co-workers were among factors that also contributed to nurses experiencing job satisfaction. The majority of nurse respondents (85%) in the study by Nolan *et al.* (2001) revealed that they found their work interesting. Nolan *et al.* (2001) indicated that this was one of the most important factors which led to job satisfaction.

Using the same sample, Nolan *et al.* (2001) argued that the highest levels of satisfaction were related to co-workers and extrinsic rewards. The findings of the study revealed that job satisfaction was also positively related to annual leave, nursing peers and hours worked among nurses. The highest levels of job dissatisfaction among nurses were related to the amount of control, responsibility and professional opportunities. Lastly, nurses also reported that they were dissatisfied with the rate of pay received for working during weekends and the limited amount of control they were given over their work conditions (Nolan *et al.*, 2001).

2.3.7 Job satisfaction and social support

A study conducted by Veiel and Baumann (1992) using the Social Support Questionnaire reported that belonging in small and cohesive work groups is an important source of job

satisfaction. The high levels of job satisfaction found among small cohesive work groups contradicts studies that state that work relationships are superficial and provide minor sources of satisfaction and social support. In a study among work colleagues, Veiel and Baumann (1992) found that job satisfaction is much greater for members of small, cohesive groups especially when they are popular. Veiel and Baumann (1992) suggest that job satisfaction in small work groups may be a result of working together in a synchronised manner and completing the same tasks together. Additionally, job satisfaction is also generated by the social side of life at work such as gossip, games and jokes (Hearney & Israel, 2009). Participating in the social aspects of organisational culture increases job satisfaction and also increases the bond between people and provides grounds for the exchange of social support (Hearney & Israel, 2009).

2.3.8 Job satisfaction and work engagement

Work engagement is positively related to job satisfaction (Giallonardo, Wong & Iwasiwo, 2010). A study by Simpson (2009) showed that a significant positive relationship exists between work engagement and job satisfaction. In a study of medical surgical nurses, Simpson (2009) found significant positive correlations between employee engagement and job satisfaction among registered nurses. Nurses who had high levels of job satisfaction with their professional status also reported high levels of work engagement (Giallonardo *et al.*, 2010). Significant positive relationships have also been found between work engagement, job satisfaction, job performance and retention (Harter, Schmidt & Hayes, 2002; Schaufeli & Bakker 2004; Laschinger & Leiter 2006; Simpson 2009). Harter *et al.* (2002) also demonstrated that work engagement is negatively related to turnover and positively associated with job satisfaction.

2.4. Work engagement

2.4.1. Definition

There are several definitions of work engagement. Kahn (1990) defines personal engagement as employing or expressing oneself physically, cognitively and emotionally during work role performances. When engaged, an employee is understood to be physically involved, cognitively vigilant, and emotionally connected (Kahn, 1990). On the other hand, Harter *et al.* (2002, p. 269) define employee engagement as an “individual’s involvement and satisfaction as well as enthusiasm for work”.

Maslach and Leiter (1997) argue that work engagement and burnout constitute the opposite poles of a continuum of work related well-being, with burnout representing the negative pole and work engagement the positive pole. Contrary to those who suffer from burnout, engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal well with the demands of their job (Schaufeli & Bakker, 2003)

This study shall be based on the definition of work engagement that is used by Schaufeli, Salanova and Gonzalez-Roma (2002). According to Schaufeli *et al.* (2002), work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption. Vigour is characterized by high levels of energy and mental resilience while working, willingness to invest effort in one’s work, and persistence in the face of difficulties (Schaufeli & Bakker, 2003). Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge (Schaufeli *et al.*, 2002). Absorption is characterized by being fully concentrated and happily

preoccupied in one's work, that time passes quickly and one has difficulties with detaching oneself from work (Schaufeli & Bakker, 2003).

This study conceptualises work engagement as being composed of three factors: vigour, dedication and absorption (Schaufeli *et al.*, 2002). It has been reported that work engagement is likely to be connected to employees' attitudes, intentions and behaviours (Saks, 2006, Koyuncu, Burke, & Fiksenbaum, 2006).

2.4.2 Job resources and work engagement

Job resources have been identified as significant predictors of work engagement (Schaufeli & Bakker, 2004; Xanthopoulou, Bakker, Demerouti & Schaufeli (2007), Schaufeli *et al.*, 2002).

Job resources refer to physical, social, or organizational aspects of the job that may reduce job demands and the associated physiological and psychological costs (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004).

Employees with higher levels of control, reward and recognition display more work engagement (Koyuncu *et al.*, 2006). Previous studies have shown that job resources such as social support from colleagues and supervisors, performance feedback, skill variety, autonomy and learning opportunities are positively associated with work engagement (Bakker & Demerouti, 2008; Halbesleben, Harvey & Bolino, 2009). The availability of job resources becomes more important when employees are confronted with high job demands (Bakker & Demerouti, 2008). In a sample of Finnish dentists employed in the public sector, Hakanen, Bakker, and Demerouti (2005) hypothesized that job resources are most beneficial in maintaining work engagement under conditions of high job demands.

2.4.3 Work engagement and performance

Using the Utrecht Work Engagement Scale, Schaufeli and Bakker (2004) found that engaged employees received higher ratings from their colleagues on in-role and extra-role performance, indicating that engaged employees perform well in their jobs. Furthermore, in a survey of Dutch employees from a wide range of occupations, Schaufeli *et al.* (2006) found that work engagement is positively related to in-role performance. Lastly, Gierveld and Bakker (2005) found that engaged secretaries scored higher on in-role and extra-role performance than secretaries with low levels of work engagement.

2.4.4 Work engagement and employee turnover

Work engagement mediates the relationship between available job resources and turnover intentions (Schaufeli & Bakker, 2004). Demerouti, Bakker, Nachreiner and Schaufeli (2001) suggest that a shortage of available resources affects a person's ability to meet job demands and results in withdrawal behaviours. Withdrawal behaviours can lead to work disengagement (Demerouti *et al.*, 2001). The Job Demands and Resources model depicts job resources as the sole predictor of work engagement. The Job Demands and Resources model also depicts work engagement as the mediator between job resources and turnover intentions (Bakker *et al.*, 2003). Additionally, work engagement is shown to be directly related to turnover intentions (Schaufeli & Bakker, 2004). The findings of Hakanen, Bakker and Schaufeli (2006) suggest that a lack of job resources to meet job demands may be linked to burnout which may lead to decreased work engagement. According to Schaufeli & Bakker (2004) decreased work engagement could in turn lead to increased turnover intentions.

2.4.5 Work engagement and social support

Xanthopoulou *et al.* (2007) used the Utrecht Work Engagement Scale to measure work engagement in a sample of fast-food restaurant employees. The researchers found that daily work engagement was a function of daily changes in supervisor support, social support from colleagues and team cohesion. Therefore, Coetzer and Rothmann (2007) state that support from colleagues and proper feedback from supervisors increase an individual's likelihood of achieving work goals and that as a result, employees will be more successful in their daily tasks.

2.5 Social support

2.5.1 Definition

There is a lack of consensus regarding the definition of social support (Hearney & Israel, 2009). This is indicated by the use of several definitions which have been used to describe the concept of social support. Pierce, Sarason and Sarason (2001, p. 435) define social support as “a general perception that others are available and desire to provide assistance should the individual need it”. Perceived social support is associated with various positive outcomes and is more important than received social support (Cohen, Gottlieb & Underwood, 2000). On the other hand, Cohen *et al.* (2000) states that social support is the perceived qualitative functions performed for the individual by significant others. This may include the provision of emotional support, instrumental support and support satisfaction. According to Cohen *et al.* (2000) social support also refers to the perceived quantitative structure of one's social ties including the number and frequency of contacting friends and family, along with marital and parental status (Cohen, 2000). Pierce *et al.* (2001) conceptualises social support as being composed of two factors: social support available and social support satisfaction. Therefore, this study analyses social support as being composed of these two factors.

2.5.2 Availability of social support

Availability of social support refers to the quantity of interpersonal connections that an individual has with others, including both informal and formal social relationships (Kaul & Lakey, 2003). Informal relationships often include family members, relatives, friends, neighbors, and others, whereas the more formal relationships may include mental health professionals, physicians, counsellors and teachers. Availability of social support (Wills & Filer, 2001) is the subjective judgment that family and friends would provide quality assistance with future stressors. People with a high availability of social support believe that they can count on their family and friends to provide quality assistance during times of trouble. This assistance may include listening to the stressed person talk about troubles, expressing warmth and affection, offering advice or another way of looking at the problem, providing specific assistance such as looking after the children, or simply spending time with the stressed person (Wills & Filer, 2001).

2.5.3 Satisfaction with social support

Social support satisfaction is an individual's satisfaction with the quality of social support that is received from their social relationships. Despite some concerns about potential self-reporting biases of respondents (Kaul & Lakey, 2003) satisfaction with available social support have been found to have the strongest relationships with measures of reduced stress and psychological distress, as well as measures of improved well-being (Gjesfjeld, Greeno, Kim, & Anderson, 2010). An individual is likely to be satisfied with the available social support to the extent that it matches and buffers against the effects of the stressor.

2.5.4 Provider and recipient's perceptions of the support needed

Dunkel-Schetter and Bennet (2000) state that “before behaving supportively, an individual must recognise that the other person needs support and then determine what type of behaviour is needed” (p. 281). In order for social support to be effective, the support that is provided in a stressful situation must match the individual's need (Cutrona & Russel, 2000). For example Hupcey (2002) states that there must be a match between the appraisal of a potentially stressful event by recipient of support and the support that is provided by the provider of support.

According to Kahn (1990, p. 171) the “positive effects of social support are maximised when the kind of support offered is congruent with the requirement of the situation and the needs of the person”. If the recipient of social support and the provider of social support have different perceptions of the type of social support that should be provided, then the recipient of social support may be unhappy with the given support and feel that they did not receive the support they needed (Hearney & Israel, 2009). If support is given when the recipient does not expect it or for a situation that a recipient does not appraise as stressful then the support may not be appreciated (Dunkel-Schetter & Skokan, 2000). Furthermore, the timing of support that is given is equally important as matching the type of support provided to the need (Hupcey, 2002). During a stressful event such as an illness, different types of support are needed at different times (Hupcey, 2002). Thus providers must be aware of the changing needs for support on the part of the recipient.

2.5.5 Providers of support

Dunkel-Schetter and Skokan (2000) state that the provision of social support does not only involve the decision to help, but also the complex choice about what actions to take and in what

manner. The appraisal of the situation by the provider of social support influences the provision of social support. Assessment of the amount of time one needs support, which may not be congruent with what the recipient needs may result in premature withdrawal of needed support. In addition, providers of social support may not be able to empathize with the recipient, be unable to read the requests for support, be unwilling to give what is needed, or be hesitant to provide support because they do not know what is needed (Hupcey, 2002). The provider of support may in turn become stressed or suffer burnout after providing support for an extended period of time and therefore cease providing needed support.

2.5.6 Sources of social support

Hearney and Israel (2009) have linked social support with three sources. Hearney and Israel have argued that emotional support is associated with close relationships. The development of self-esteem came from public relationships and social status. Belonging support and socialising was related to one's social network structure. Weiss (1974) (cited in Bradley & Cartwright, 2002) named six social needs and linked them to different sources. Bradley and Cartwright argue that people experienced social support as a result of feelings of attachment in close relationships (2002). Social integration was received from friends, acquaintances and group members. Nurturance came from family, children and close friends. Feelings of reassurance of worth came from network members (Bradley & Cartwright, 2002). Reliable alliance was received from close relationships such as children and a spouse or partner; guidance was received from people accepted as authorities (Bradley & Cartwright, 2002).

Bradley and Cartwright (2002) state that social support may encompass a range of formal or informal processes in the workplace. For example, managers may provide support through the

provision of resources and through help in managing the workload. The organization may provide support through training in required skills and resources such as employee assistance (Bradley & Cartwright, 2002). Colleagues may provide support through practical help and emotional support.

2.5.7 Social support as a resource

Hobfoll (2008) conceptualises social support as a reservoir for resources such as high self-esteem and sense of mastery. In addition, Hobfoll states that individuals may build a resource reservoir, such as social networking in order to cope with stress (2008). Therefore, if people perceive themselves to receive sufficient social support, social support can be utilised as a resource to reduce levels of stress by reframing the appraisal of stress (Hobfoll, 2008).

2.5.8 Types of social support

There are different types of social support. Hearney and Israel (2009) have named four of these: emotional support, appraisal support, informational support and instrumental support.

Emotional support

Emotional support refers to acts of care, empathy, love and trust (Hearney & Israel, 2009).

Cohen argued that emotional support was the most important type of support shown to others (2000). Research confirms that emotional support is mentioned more frequently (Hearney & Israel, 2009) than other types of support among respondents. Hearney and Israel (2009) suggested that emotional support can be shown through communication that leads to the belief that one is cared for, loved and valued. An individual who receives emotional support also belongs to a network where these behaviours are reciprocated (Cohen *et al.*, 2000).

Instrumental support

Instrumental support is the provision of tangible goods and services, or tangible aid (Hearney & Israel, 2009). Tangible aid is described as concrete assistance; for example, giving financial assistance (Cohen *et al.*, 2000). Although the provision of instrumental support may suggest caring and love for an individual, it is different from emotional support.

Informational support

Informational support is the information that is provided to others during times of stress (Hearney & Israel, 2009). According to Cohen (2000), informational support helps a person to solve a problem. Research by Cohen (2000) confirms the effectiveness of the use of informational support during the problem solving process.

Appraisal support

Appraisal support involves the communication of information which is relevant to self-evaluation (Hearney & Israel, 2009). Appraisal support includes behaviours that affirm the appropriateness of acts or statements that are made by another person (Cohen (2000).

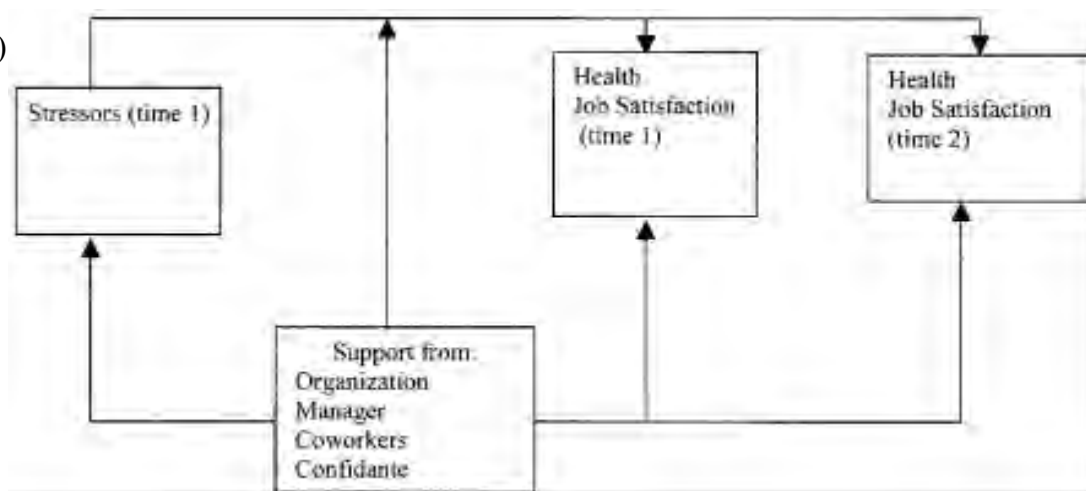
2.5.7 Social support and health

Hearney and Israel (2009) argue that social support has become an important concept for mental health research. There are higher mortality rates among people who not have a strong and resourceful social network (Bradley & Cartwright, 2002). This finding has been confirmed for several causes of cardiovascular diseases (Cohen, 2004). Studies also confirm that individuals who have access to social networks are healthier than people who do not have access to social networks (Pennix, van Tilberg, Kriegsman, Deeg, Boeke & van Eijk, 1997).

2.5.8 Provision of social support by nurses

Bradley and Cartwright (2002) state that nurses play an important role in providing support to patients who may be experiencing physical and psychological distress. Cohen *et.al* (2001) states that there is some evidence that nurses' perceptions of professional support are related to their responses to patients. In addition, research shows that nurses' ability to provide support has a major impact on how health care users view the quality of service (Bradley & Cartwright, 2002). For example, Murphy and Athansou (1999) note that in a survey of over a million patients drawn from 500 hospitals in the United States, factors that correlated most highly with patients' satisfaction were interpersonal factors such as nurses' friendliness and their sensitivity to patients' personal needs.

Figure 2: Relationship between social support, stressors and outcomes (Bradley & Cartwright, 2002)



2.6 The mediating role of social support

The concept of social support is used in research studies involving mediation models. Social support is particularly useful in mediation studies because social support helps to improve the understanding of variables and their relationships to each other (Huang, Hsu, Cheng, Lin, Chuang, 2010). Several studies have been conducted on the mediating impact of social support

on stress (Baker, Israel, & Schurman, 1996; Cohen, 2004; Heard, Whitfield, Edwards, Bruce & Beech, 2011). The concept of social support is linked to improved health, social integration and subjective wellbeing. Therefore, in studies involving mediation, social support is described as a variable which reduces the negative effects of one variable on another (Huang *et al.*, 2010).

Figure 2 shows that social support received from the organisation, manager, co-workers and a confidante helps to reduce the negative effects of stress on health and job satisfaction.

2.7 The theoretical framework

This study attempted to understand the relationship between occupational stress, job satisfaction, social support and work engagement using the concept of positive psychology. Occupational stress is not a variable which fits under the concept of positive psychology. However, the field of positive psychology holds that negative states such as occupational stress can be remedied through the nurturance and growth of positive states among people. The theoretical framework shall be based on occupational stress since nursing is widely recognized as a stressful profession.

Lazarus' Transactional Model of Stress and the Conservation of Resources Theory in particular was used as a framework to consider how the variables of job satisfaction, work engagement and social support are related to occupational stress. The Lazarus Transactional Model of Stress shall be discussed first. This model can shed more light on the occurrence and dynamics of stress as one of the important variables in the study.

2.7.1 Lazarus' Transactional Model of Stress (1984)

Lazarus and Folkman (1984) state that stress is a result of the transaction between individuals and their environment. According to Lazarus and Folkman (1984) psychological stress occurs when the relationship between a person and the environment exceeds a person's available coping resources'. There are two processes which mediate the person and environment transaction. They are cognitive appraisal and coping.

According to Lazarus and Folkman (1984) the primary mediator of person-environment transactions is appraisal. They identified three types of appraisal: primary, secondary and re-appraisal (Lazarus & Folkman, 1984). Primary appraisal is a judgment about what the person perceives a situation holds in store for him or her. A person assesses the possible effects of demands and resources on well-being (Lazarus & Folkman, 1984). If the demands of the situation exceed the provisions of available resources, then the individual may determine that the situation presents potential for harm or loss; that actual harm has already occurred and that the situation has potential for some type of gain or benefit (Lazarus & Folkman, 1984).

The perception of threat triggers secondary appraisal, which is the process of determining what coping behaviours are available to deal with a threat (Lyon, 2000). Re-appraisal is the process of continually evaluating, changing, or relabeling earlier primary or secondary appraisals as the situation changes (Lyon, 2000). After re-appraisal what was perceived as threatening may end up being seen as a challenge or as irrelevant (Lyon, 2000).

Folkman and Lazarus (1980) define coping as the cognitive and behavioural efforts made by an individual who attempts to master, tolerate, or reduce external and internal demands and

conflicts among them. Coping may include behavioural and cognitive reactions by the individual (Folkman & Lazarus, 1984). Individuals may use problem focused coping. They can attempt to change the person's environment realities behind negative emotions or stress using problem-focused coping. People can also relate to internal elements and try to reduce a negative emotional state, or change the appraisal of the demanding situation through emotion-focused coping (Folkman & Lazarus, 1984).

The Transactional Model of Stress points out that stress occurs as a result of the interaction between an individual and the environment. An important contribution of the Transactional Model of Stress is that it acknowledges that people may respond to stressful situations through appraisal and by adopting coping behaviours. Therefore, the Transactional Model of Stress acknowledges that people may appraise the same stressful environment differently. The Transactional Model of Stress helps to determine how the appraisal of occupational stress causes change in the levels of work engagement and job satisfaction among nurses. Social support is studied as a variable which mediates the effect of occupational stress on job satisfaction and work engagement. The Transactional Model of Stress also points out that different people may adopt different kinds of coping behaviours when confronted by a stressful situation. Individuals may use coping behaviours to reduce levels of stress.

Since it was first produced in the 1960's, the Transactional Model of Stress has undergone many modifications and revisions so that it provides an accurate representation of stress and the interaction the individual has with their environment. Consequently, the Transactional Model of Stress has been widely used in numerous studies on stress around the world (Cohen, 2004).

2.7.2 Conservation of Resources theory

Conservation of Resources (COR) theory (Hobfoll, 2008) emerged from psychosocial theories of stress and motivation. Social scientists have found that personal resources and social resources act as a buffer against the potential negative impact of stressful life events (Lazarus & Folkman, 1984). Like the Transactional Model of Stress, the COR theory acknowledges that stress stems from the subjective perception of an event as taxing or exceeding available resources and actual environmental circumstances that threaten or reduce a person's available resources (Lazarus & Folkman, 1984).

However, COR theory goes beyond the insights presented by the Transactional Model of Stress by suggesting that not only does stress occur as a result of a person's interaction with environment but that the cause of stress is related to resources. The COR theory (Hobfoll, 2008) assumes that stress occurs when people experience a loss of resources, when resources are threatened, or when people invest resources without subsequent gain. In COR theory, resources are defined as objects, conditions, personal characteristics, and energies that are valued because they are a means of achieving and acquiring resources (Hobfoll, 2011). Object resources have a physical presence. Condition resources are states that allow access to or the possession of other resources. Personal resources include skills and traits. Energy resources are those whose value is derived from their ability to be exchanged for other resources.

Social support is an important resource which the individual can draw upon in order to reduce the occurrence and appraisal of stressful events (Hobfoll, 2011). Hobfoll's COR theory (2011) suggests that some types of resources may be more important than others and that some resources may be more important at different stages than others (Hobfoll, 2011). After

experiencing stressful circumstances, individuals have depleted resources which limits their ability to combat further stress. Therefore, a depletion of resources usually means that individuals are unable to cope with other stressors in the environment. Hobfoll (2011) states that since individuals and groups are threatened by the potential or actual loss of resources individuals may be motivated to obtain and protect valued resources for anticipated future needs. Under the COR theory the antecedents of job satisfaction and work engagement can be seen as resources which individuals may appraise as valuable. In addition, the presence of job satisfaction and work engagement can also be seen as resources which are associated with low levels of stress. This is proved in that individuals with high levels of job satisfaction and work engagement report lower levels of occupational stress. Therefore, the COR theory explains that when the resources of job satisfaction and work engagement are depleted or are threatened, individuals may experience occupational stress. Furthermore, when the resources of job satisfaction and work engagement are reduced, individuals can be motivated to pursue these resources through social support; which acts as a buffer against the experiences of occupational stress.

People who have fewer resources are vulnerable to losing further resources and are less capable of gaining resources that will help them to maintain existing resources rather than risk total resource depletion (Hobfoll, 2008). Losing resources impacts an individual more severely than if they were to gain the same resource (Alvaro, Lyons, Warner, Hobfoll, Martens, Labonte & Brown, 2010). Alvaro *et al.* (2010) surmised that individuals and social units with greater resources are often less vulnerable to resource loss and are more capable of resource gain than those with fewer resources.

The model of Conservation of Resources also suggests that although loss of resources is stressful, individuals may draw upon resources such as social support in order to reduce the effect of resource loss (Hobfoll, 2008). Replacement is the most common way through which this is accomplished. For example, after a divorce a divorcee may attain replacement through remarriage. Following miscarriage, women may be told by close friends and family to attempt to get pregnant again. Replacing a resource that has been lost with another valued resource may help the individual to cope with loss and to rediscover feelings of joy (Hobfoll, 2008).

The COR theory also states that individuals may cope with a threat of resources by re-interpreting threat as a challenge to be overcome (Hobfoll, 2008). People may cope with their sense of loss by re-evaluating the value of resources that are threatened or that have been lost (Hobfoll, 2008). So, for example as a result of stress caused by poor academic performance in school, a student may respond by lowering the value that they placed on education. In a similar manner, in a case of social rejection an individual may respond by lowering the value on a relationship that has been lost (Hobfoll, 2008).

The COR theory allows for a better understanding of stress and its implications because it goes beyond looking at how the environment causes stress. The COR theory also looks at how the loss of a stressor impacts upon the individual and the courses of action that an individual is most likely to take after resources are lost or threatened. Importantly, the COR theory states that the possession of resources is a buffer and defence against experiencing stress (Hobfoll, 2008).

The COR theory represents a balanced perspective. The COR theory states that an individual who experiences stress may suffer from a depletion of resources and may find it difficult to acquire resources that are needed to cope with stress. However the theory also takes into account individuals who are motivated to acquire and gain resources once they have suffered a loss or threat in resources, through the process of replacement and re-interpretation. On the other hand the COR theory also considers how individuals cope in the face of resource loss and are motivated to acquire more resources so that they do not find themselves in a position where they will not have anything remaining in their reservoir.

In contrast to the Transactional Model of Stress, the COR theory acknowledges that stress may be associated with positive outcomes. The COR theory is appropriate for use in this study because nursing is widely recognised as a stressful career. In the nursing profession, stress is caused by a loss or a threat in resources available in hospitals. Therefore this study explores how social support acts as a resource which buffers against the occurrence of occupational stress, and the resulting relationship between occupational stress, job satisfaction and work engagement. This study includes occupational stress since nursing is recognized as a stressful profession. The concepts of job satisfaction and work engagement also fits in with COR theory as the availability of job resources leads to an increase in job satisfaction and work engagement (Hobfoll, 2008). Social support also fits in within the COR theory as Hobfoll (2011) states that social support acts as a resource reservoir and a resource which reduces the appraisal of stress. In this study, social support is studied as a variable which mediates the relationship between job satisfaction and stress; and the relationship between work engagement and stress. Therefore, COR theory is a fitting theoretical framework for this study as the focus of this study will be on the relationship

between occupational stress, job satisfaction, work engagement and the mediating role of social support among nurses at a public hospital in Durban.

2.8 Summary of Chapter Two

This chapter has explored the conceptualisation of the constructs of occupational stress, job satisfaction, work engagement and social support in the literature. Various research studies which have investigated these variables were also explored. Instruments used to measure such constructs were also identified. Lazarus' Transactional Model of Stress and the Conservation of Resources (COR) theory were reviewed as the theoretical framework of the study. The next chapter focuses on the research methodology and design that was used to conduct the research.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This section provides an outline of the research methodology employed in achieving the objectives of this study. This section also includes the design of the study, the sampling method used, the characteristics of the sample, measuring instruments, procedure for data collection and the statistical techniques used during the research.

3.2 Research Design

This research was a cross sectional quantitative design guided by the positivist social sciences approach. The positivist social sciences approach holds that research findings must be scientifically verifiable (Blaikie, 2003). In a cross sectional design the sample is drawn from the population and data are collected to help answer the research questions of interest. A cross sectional design provides information about what is going on at only one point in time (Olsen, 1993). A cross sectional design is appropriate for this study since literature suggests that stress levels among nurses are currently severely high (Olsen, 1993). Therefore, the cross sectional design will help to measure the current levels of occupational stress, job satisfaction, work engagement and social support. For data collection purposes four questionnaires and one short biographical data sheet were used.

3.3 Sampling

3.3.1 Convenience sampling method

A convenience sample is a non-random sample that is chosen for practical reasons (McBurney & White, 2004). This study used a non-probability sampling design based on convenience (McBurney & White, 2004). A convenience sample includes participants who are accessible and available to participate in the study. The advantage of using the convenience sampling method is that it reduces costs and is an inexpensive way of ensuring a sufficient number of participants in

a study within a relatively short period of time. A limitation of using the convenience sampling method is that it may not always be representative of the population from which the sample is drawn. Therefore, this limits the generalisations that can be made about the population (McBurney & White, 2004). The research participants for this study consisted of 120 nurses from a Durban based public hospital in the KwaZulu-Natal region.

3.4 Characteristics of the sample:

3.4.1 The demographic information of the research participants

Table 1

Demographic information of the research participants

	Item	Frequency	Percentage
Gender	Male	11	9.2
	Female	109	90.8
Race group	Black	92	76.7
	Indian	16	13.3
	Coloured	12	10
Marital status	Married	40	33
	Widowed	12	10
	Divorced	15	13
	Single	53	44
Category of nurse	Professional nurse	29	24.2
	Enrolled nurse	55	45.8
	Enrolled auxiliary nurse	36	30
Tenure	Less than 1 year	15	12.5
	1-5 years	38	31.7
	6-10 years	38	31.7
	More than 10 years	29	24.2
Highest academic qualification	High School Matric certificate	33	27.5
	Diploma	62	24.7
	Graduate degree	20	16.6
	Post-graduate degree	5	4.2

*Number (N) of respondents were 120

Table 1 shows the majority of the nurses who participated in the study were female (90.8%, n=109), while there were only a few male nurses (9.2%, n=11). Table 1 shows that the sample for this study comprised of 77% (n=92) Black nurses, 13.3% (n=16) Indian nurses and 10% (n=12) Coloured nurses. Table 1 shows that this sample of nurses was also made up of 33% (n=40) married nurses, 10% (n=12) widowed nurses, 13% (n=15) divorced nurses and 44% (n=53) single nurses. Table 1 shows that 24.2% (n=29) professional nurses, 45.8% (n=55) enrolled nurses and 30% (n=36) enrolled auxiliary nurses participated in the study.

Table 1 also shows the nurses who have worked at the hospital for less than one year constitute 12.5% (n=15) of the sample, 31.7% (n=38) of the nurses have worked at the hospital for between one and five years, 31.7% (n=38) of the nurses have worked for between six and ten years at the hospital, 24.2 % (n=29) of the nurses have worked at the hospital for more than ten years. Table 1 shows that 27.5% (n=33) of nurses have obtained a High School Matric Certificate as their highest qualification, 51.7% (n=62) of nurses have obtained a Diploma as their highest academic qualification, 16.6% (n=20) of nurses have obtained a Graduate degree as their highest academic qualification. Only 4.2% (n=5) of nurses have obtained a Post-graduate degree as their highest qualification.

3.5 Data collection procedure

The researcher sent an email message to the KwaZulu-Natal (KZN) Health Member of the Executive Council (MEC) Research Department to be granted permission to conduct the study. The researcher informed the KZN Health MEC Research Department about the purpose of the research along with the research proposal and a letter of approval to begin data collection from

the university (UKZN) (refer to Appendix C). After the researcher received an email message of approval to conduct the research from the KZN Health MEC Research Department, the researcher contacted the Administration office of the hospital. The researcher asked to have a meeting with the Hospital Superintendent to ask for permission to conduct the research. At a scheduled meeting the researcher informed the Hospital Superintendent about the purpose of the study and asked for permission to conduct the research on the hospital premises. The Hospital Superintendent then gave the researcher a letter of permission to conduct the research on hospital premises.

A total of 180 questionnaires were distributed to the nurses in the medical, children, surgical and maternity wards. The researcher received a total of 120 questionnaires, some of which contained missing values. After informing the nurses in the hospital of the research, nurses in these four wards showed more willingness to participate in the study than nurses in the other wards, like the general ward and Intensive Care Unit. The researcher decided to target these four wards because it was easier to gain access to this sample. The willingness displayed by nurses in these words convinced him that he would gain a better response rate among these nurses.

The target sample of the study was: Professional nurses, Enrolled nurses, and Enrolled auxiliary nurses. During the data collection phase the researcher asked the Senior Professional ward nurse in charge of the relevant ward to help distribute the questionnaires to the sample of nurses. The researcher made prior arrangements with the relevant Senior Professional ward nurses about the day and time scheduled for data collection.

On completion of the informed consent sheet, nurses were asked to start answering the questionnaires (refer to Appendix B) beginning with the Biographical Information Questionnaire, followed by the Nursing Stress Inventory (NSI), and then the Minnesota Satisfaction Questionnaire (MSQ), and finally the Utrecht Work Engagement Scale (UWES), and the Social Support Questionnaire. The Biographical Questionnaire took 5 minutes to complete. The Nursing Stress Inventory (NSI) took between 15-20 minutes to complete. The Minnesota Satisfaction Questionnaire took 5-7 minutes to complete. The Utrecht Work Engagement Scale took 5 minutes to complete and the Social Support Questionnaire took 10 minutes to complete. Overall the four questionnaires along with the Biographical Questionnaire took 40 minutes to complete. Nurses filled in the questionnaires in the wards on which they were on duty.

3.6 Research Instruments

3.6.1 ‘Nursing Stress Indicator’

The Nursing Stress Indicator (NSI) is used to measure occupational stress and is based on the STP model of occupational stress (Spielberger *et al.*, 2003). The NSI was developed to measure job stressors in the nursing environment (van der Colff & Rothmann, 2009). The NSI consists of 116 items and uses a 9 point Likert scale. Firstly, in part A, participants are required to rate each of the 58 statements in terms of perceived amount of the particular stressor on a 9-point scale, ranging from 1 (low) to 9 (high). Secondly, in part B, the participants are required to rate the perceived frequency in experiencing these stressors over a period of the past 6 months on a 10 point scale ranging from 0 (no days) to 9+ (more than 9 days). The severity of a stressor is expressed as the product of the amount and frequency of a stressor.

Reliability and Validity of Nursing Stress Indicator

In a study conducted among 1780 South African nurses, van der Colff & Rothmann, (2009) showed that the NSI had a reliability alpha coefficient of 0.85.

3.6.2 The Minnesota Satisfaction Questionnaire

The Minnesota Satisfaction Questionnaire (MSQ) (Nel & Haycock, 2005) assesses the level of job satisfaction amongst employees. The MSQ is designed to measure an employee's satisfaction with his or her job. The MSQ provides specific information on the aspects of a job that an individual finds rewarding (Nel & Haycock, 2005). The short form of the MSQ (MSQ-20) was used in this study. This questionnaire consists of 20 items from the long form MSQ and uses a 5 point Likert scale. The MSQ-20 measures: intrinsic and extrinsic satisfaction (Nel & Haycock, 2005). The purpose of the MSQ-20 is to determine the degree of job satisfaction in the characteristics associated with the task itself, and in task characteristics of the job (Nel & Haycock, 2005).

Reliability and Validity of Minnesota Satisfaction Questionnaire

The Minnesota Satisfaction Questionnaire has acceptable levels of reliability. For reliability, Sempane, Rieger and Roodt (2002) achieved a Cronbach's alpha of 0.92 on a sample of government welfare employees in South Africa. Buitendach and Rothamann (2009) reported sub-scale reliability coefficients of 0.82 and 0.79 for extrinsic and intrinsic motivation respectively. A study by Jacobs (2005) has also found a validity coefficient of 0.89 in a study involving nurses in South Africa.

3.6.3 Utrecht Work Engagement Scale

The Utrecht Work Engagement Scale (UWES) (Schaufeli & Bakker 2003) is used to measure work engagement and consists of 17 items (UWES-17) based on the factors of work engagement: vigour, dedication and absorption. The UWES-17 uses a 7 point Likert scale. Confirmatory factor analyses have supported the three-dimensional structure of the instrument (Schaufeli & Bakker 2006).

Reliability and validity of Utrecht Work Engagement Scale

Storm and Rothmann (2003) report alpha coefficients ranging between 0.78 and 0.89 for the UWES 17 item scale. Schaufeli and Bakker (2004) have obtained reliability alpha coefficients between 0.68 and 0.91 for this scale. In a study conducted among academic staff members in a South African Higher Institution, Barkhuizen and Rothmann (2006) found sub-scale reliability co-efficients of 0.75, 0.85 and 0.69 for vigour, dedication and absorption respectively. Seppala, Mauno, Feldt, Hakanen, Kinnunen, Tolvanen and Schaufeli (2009) showed that the UWES 17 item scale reported a validity co-efficient of 0.90. Scores on the UWES are relatively stable across time. Two year stability coefficients for vigor, dedication and absorption are 0.30, 0.36, and 0.46, respectively (Schauefli & Bakker, 2003).

3.6.4 The Social Support Questionnaire

The Social Support Questionnaire (SSQ) is used to measure the availability and satisfaction with social support that an individual has. The Social Support Questionnaire includes 27 items and uses a 6 point Likert scale (Pierce *et al.*,2000). Each item involves two parts. In part A, respondents are asked to list the individuals that are available to them for help in specific

situational circumstances. In part B, participants are required to rate how satisfied they are with the social support available.

Reliability and Validity of Social Support Questionnaire

Criterion validity tests show that correlations of 0.57 and 0.34 were obtained between an optimism scale and the satisfaction score and the number score, respectively (Sarason *et al.*, 1983). The Cronbach's alpha for internal reliability was 0.97. Test-retest correlations of 0.90 for overall number scores and satisfaction scores of 0.83 were obtained (Sarason *et al.*, 1983).

3.7 Data Analysis

Statistical analysis was carried out using SPSS version 19.0 for Windows (SPSS Inc, 2011). This study used descriptive and inferential statistics. Descriptive statistics provide a quantitative summary of the data collected from the sample (McBurney & White, 2004). Inferential statistics make it possible to make generalizations from a sample in order to make estimates about the population (McBurney & White, 2004). The statistical procedures that were computed using SPSS included: descriptive summary statistics, Cronbach alpha coefficients, Pearson Product Moment Correlation coefficients and multiple regression. Mediation was calculated using the Sobel test calculator (Preacher & Hayes, 2004).

3.7.1 Descriptive statistics

Descriptive statistics are used to analyse and summarize numerical data. Descriptive statistics analyse data using frequencies, dispersions of dependent and independent variables, measures of central tendency and variability (McBurney & White, 2004). The mean, standard deviation, standard error, standardised and un-standardised co-efficients were used to describe the data

obtained from the Nursing Stress Indicator, Minnesota Satisfaction Questionnaire, Utrecht Work Engagement Scale and the Social Support Questionnaire. The mean (M) is a measure of central tendency and represents the arithmetic average of a collection of scores (McBurney & White, 2004). The standard deviation (SD) is a measure of variability and represents the degree to which scores are dispersed around, or are different from, the mean. The standard error (SE) is the standard deviation of errors of measurement that are associated with scores obtained from a particular sample (McBurney & White, 2004).

3.7.2 Cronbach alpha

The Cronbach alpha co-efficient is used to test the reliability of measuring instruments (McBurney & White, 2004). Specifically, it was used to measure the internal consistency of items in the Nursing Stress Indicator, Minnesota Satisfaction Questionnaire, Utrecht Work Engagement Scale and the Social Support Questionnaire, given that these questionnaires used a Likert type of scale. Internal consistency is an estimation of the reliability of a measuring instrument. Reliability coefficients of .70 are regarded as acceptable for research instruments and indicate a high degree of inter-correlation among the items in a scale (McBurney & White, 2004).

3.7.3 Factor analysis

Factor analysis is a method used to examine how underlying constructs influence the responses on a number of measured variables (DeCoster, 1998). This study used exploratory factor analysis. Exploratory factor analysis has traditionally, has been used to explore the possible underlying factor structure of a set of observed variables without imposing a preconceived structure on the outcome (DeCoster, 1998). By performing exploratory factor analysis, the underlying factor structure is identified. This study used Principal component extraction with a

varimax rotation. Based on the Kaiser criterion, only factors with eigenvalues greater than 1 were retained. The cut-off point for factor analysis was set at 0.4 (DeCoster, 1998). Exploratory factor analysis was conducted for the Nursing Stress Indicator, Minnesota Satisfaction Questionnaire, Utrecht Work Engagement Scale and the Social Support Questionnaire. Factor analyses are performed by examining the pattern of correlations (or co-variances) between the observed measures (DeCoster, 1998). Measures that are highly correlated (either positively or negatively) are likely influenced by the same factors, while those that are uncorrelated are likely influenced by different factors (DeCoster, 1998).

3.7.4 Inferential statistics

Inferential statistics allow the researcher to present the data obtained in research in statistical format to facilitate the identification of important patterns and to make data analysis more meaningful (McBurney & White, 2004). According to Sekaran (2003), inferential statistics are used to make generalisations from a sample to a population. The inferential statistical methods used in this research were the Pearson Product Moment correlation co-efficients as well as multiple regression analysis.

3.7.4.1 Pearson product moment correlation

For the purposes of determining whether a statistically significant relationship exists between occupational stress, job satisfaction, work engagement and social support the Pearson product moment correlation coefficient was used (McBurney & White, 2004). The Pearson product moment correlation provides an index of the strength of the relationship between occupational stress, job satisfaction, work engagement and social support (McBurney & White, 2004).

Pearson's product moment correlation coefficient (r) is used to calculate the direction and strength between two variables. The correlation coefficient is a point on the scale between -1.00 and +1.00 and the closer the coefficient is to either of these points, the stronger the relationship is between the two variables (Howell, 1995). A correlation of +1.00 indicates a perfect positive relationship, a correlation of 0.00 indicates no relationship, and a correlation of -1.00 represents a perfect negative relationship.

In this study, the Pearson product moment correlation coefficient was used to determine positive or negative relationships that exist between occupational stress, job satisfaction, work engagement and social support. The Product moment correlation coefficient is therefore suitable for the purposes of the present study since the study is concerned with the relationship between occupational stress, job satisfaction, work engagement and social support.

Where statistically significant relationships were found through correlation coefficients, the adjusted r -values will be interpreted according to the following guidelines (McBurney & White, 2004): $r \geq 0.10$ (small practical effect), $r \geq 0.30$ (medium practical effect), $r \geq 0.50$ (large practical effect). The significance level of $p \leq 0.05$ and $r \geq 0.30$ was chosen as the cut-off point for rejecting the null hypotheses.

3.7.4.2 Multiple regression analysis

Multiple regression is a multivariate statistical technique that is used for studying the relationship between a single dependent variable (criterion) and several independent variables (predictors). It provides a method to predict the changes in the dependent variable in response to changes in more than one independent variable (McBurney & White, 2004). Hence, it allows the researcher

to determine the relative importance of each predictor as well as to ascertain the collective contribution of the independent variables (McBurney & White, 2004). In this study, the dependent variables are: job satisfaction and work engagement since the objective is to ascertain how the levels of job satisfaction and work engagement are influenced by the independent variable. The independent variable in this study was occupational stress. The mediating variable in this study was social support. The mediating role of social support was assessed using the unstandardised beta co-efficients from the multiple regression analysis.

According to Cullen and Newman (1997), multiple regression results highlight two things. Firstly, the adjusted R^2 values tell how well a set of variables explains a dependent variable and secondly the regression results measure the direction and size of the effect of each variable on a dependent variable. The value of adjusted R^2 was used to interpret the results. In order to counter the probability of a Type I error, it was decided to set the significance value at a 95% confidence interval level ($p \leq 0.05$). The F-test was used to test whether there was a significant regression between the independent and dependent variables.

Each variable in the equation is tested for statistical significance, by testing whether the value of each regression coefficient is greater than 0. The levels of statistical significance of multiple regressions used in this study were: $p < 0.001$; $p < 0.01$; and $p < 0.05$.

3.7.4.3 Analysis of variance (ANOVA)

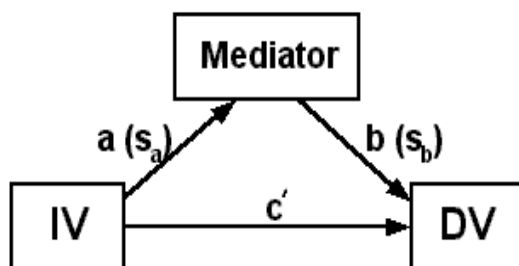
The Analysis of Variance (ANOVA) is the statistical technique used to determine differences in means of several groups (Cullen & Newman, 1997). The one-way ANOVA, F-test, is a statistical technique used to test the significant differences between the means of a number of different

groups (Cullen & Newman, 1997). For the purpose of this study, ANOVA was used to test the differences between sample means.

3.7.5 A note on mediation effects

A variable may be called a mediator to the extent that it accounts for the relation between the predictor and the criterion (MacKinnon, 2008). Mediation hypotheses posit that an independent variable (X) affects a dependent variable (Y) through one or more potential intervening variables, or mediators (M) (MacKinnon, 2008). Mediation processes involving only one mediating variable is termed simple mediation. A variable may be considered a mediator to the extent to which it carries the influence of a given independent variable to a given dependent variable (DV). Mediation can be said to occur when: (1) the independent variable significantly affects the mediator, (2) the independent variable significantly affects the dependant variable in the absence of the mediator, (3) the mediator has a significant unique effect on the dependant variable, and (4) the effect of the independent variable on the dependant variable shrinks upon the addition of the mediator to the model (see Figure 3) (MacKinnon, 2008).

Figure 3: Mediation effect (MacKinnon, 2008)



a = un-standardised regression coefficient for the association between the independent variable and mediator.

s_a = standard error of a .

b = un-standardised regression coefficient for the association between the mediator and the dependant variable (when the independent variable is also a predictor of the dependant variable).

s_b = standard error of b .

c' = represents the path from the independent variable to the dependant variable when the mediator is included.

3.7.6 Sobel test

The Sobel test performs a statistical test to see if the indirect path from the independent variable to the dependant variable is statistically significantly different from zero using raw (un-standardized) regression (MacKinnon, 2008). Therefore the Sobel test provides support for partial mediation. According to the Sobel test, mediation takes place when the test statistic is equal to or greater than the value of 1, and the p-value is significant at the 0.05 level. The Sobel test is more accurate for sample sizes greater than 50 (MacKinnon, 2008).

3.7.7 Ethical considerations

Before the researcher began with data collection, the researcher received permission from the Human and Social Sciences Ethics Committee of the University of the KwaZulu-Natal (Howard College) to conduct the research study. The researcher informed the research participants about the purposes of the study. Before questionnaires were distributed, the researcher distributed an informed consent sheet to the participants so that the study was done with their consent. The researcher also informed the participants that their participation in the study is voluntary. The researcher ensured the participants that the results of the study will remain confidential. The researcher also assured the participants that their status of anonymity shall be guaranteed throughout the study, by giving them pseudo-names. The research results will remain with the

researcher for a period of five years. During this period the results of the study will be kept confidential between the researcher and research supervisor of the researcher.

3.8 Summary of Chapter Three

This chapter described the design of the study, the sampling method that was chosen, and the characteristics of the sample. This chapter also included the data collection procedure and a description of the research instruments that were used to conduct this study. The method of data analysis used in this study was also described in this section. This section concluded by outlining the ethical considerations for this study.

CHAPTER FOUR: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents the results obtained from the sample of nurses in a public hospital in Durban. Descriptive statistics including minimum, maximum, mean and reliability will be presented first. Correlation analysis will follow and then multiple regression analysis. Finally, the results of the Sobel test will be presented to report the mediation effect.

4.2 Descriptive statistics

Descriptive statistics were used to analyse and summarise numerical data. The descriptive statistics for each research instrument are reported in the tables below. The descriptive statistics of the research instruments are reported in the following order: Nursing Stress Indicator, Minnesota Satisfaction Questionnaire, Utrecht Work Engagement Scale and the Social Support Questionnaire.

Table 2

Descriptive summary statistics for research instruments

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis	α
Total occupational stress	110	152	436	322.84	7.464	78.32	.23	.98
Job demands	111	60.00	222.00	158.36	44.231	-.34	-1.19	.97
Patient care	114	21.00	108.00	59.57	20.214	-.15	-3.74	.93
Staff issues	113	7.00	54.00	41.76	8.631	-1.81	4.36	.95
Lack of support	111	15.00	571.00	186.68	117.582	.55	.54	.95
Working over-time	114	2.00	16.00	4.88	3.437	1.69	2.19	.82
Total job satisfaction	118	20.00	100.00	53.08	1.924	.58	-1.08	.98
Intrinsic Motivation	109	10.00	50.00	23.96	10.821	.64	-.89	.96

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis	α
Total work engagement	116	17.00	102.00	55.46	24.014	.35	-1.41	.98
Vigour	116	7.00	42.00	20.73	10.421	.34	-1.28	.96
Dedication	116	5.00	30.00	18.87	7.352	.10	-1.31	.95
Absorption	116	5.00	30.00	15.85	7.582	.41	-1.34	.96
Total social support	111	53.00	328.00	180.80	87.733	.13	-1.61	.99
Social support available	111	21.00	180.00	83.18	46.974	.45	-1.40	.98
Social support satisfaction	111	26.00	162.00	97.61	46.401	-.12	-1.76	.95

*N represents the number of respondents

4.2.1 Results for Nursing Stress Indicator

Table 2 shows the descriptive statistics for the Nursing Stress Indicator. Appendix F shows the factors that were extracted for occupational stress using the Nursing Stress Indicator. Five factors were extracted. These factors included: job demands, staff issues, patient care, lack of support and working over-time (see Appendix F). The criterion for factor loadings was set at 0.4 (Douka, Grammatopoulou, Skordilis, Koutsouki, 2009). Table 2 shows that the Cronbach alpha calculated for Nursing Stress Inventory was 0.984, the Cronbach alpha for the Minnesota Satisfaction Questionnaire was 0.976, the Cronbach alpha for the Utrecht Work Engagement Scale was 0.979. and the Cronbach alpha for the Social Support Questionnaire was 0.991.

Table 3 shows that the skewness for job demands was -0.34 (SE=0.22) and the kurtosis was -1.194 (SE=0.45). The skewness for patient care was -0.15 (SE=0.22) and the kurtosis was -0.37

(SE=0.44). The skewness for staff issues was -1.81 (SE=0.22) and the kurtosis was 4.368 (SE=0.45). The skewness for lack of support was .552 (SE=0.22) and the kurtosis was .54 (SE=0.45). The skewness for working over-time was 1.69 (SE=0.22) and the kurtosis was 2.193 (SE=0.44).

The Likert-type scale was used to record participants' responses regarding occupational stress and its subscales questions, with the scale ranging from 1 to 9. Participants reporting occupational stress above the mid-point were regarded as having high levels of occupational stress, while participants who scored below the mid-point were regarded as having low occupational stress levels. The highest mean scores for the sub-scales are above the mid-point for the 9 point Likert scale. This indicates that nurses experience a high level of occupational stress. The results show that the sample perceived the following items as being the most stressful: shortage of staff (M=7.32. SD=1.64, fellow workers not doing their job (M=6.97. SD=1.56), insufficient time to perform tasks (M=6.96. SD=1.60), poorly motivated co-workers (M=6.92. SD=1.60) (see Appendix D).

According to appendix D the lowest levels of occupational stress were experienced in the following items: working overtime and emergency hours (M=1.81. SD=1.54) irregular working hours (M=3.08. SD=2.4), caring for the emotional and spiritual needs of a patient or his/her family (M=3.93. SD=1.92), frequent interruptions (M=4.05. SD=1.84).

4.2.2 Results for Minnesota Satisfaction Questionnaire

Table 2 shows the descriptive statistics for the Minnesota Satisfaction Questionnaire. Two factors were extracted from the Minnesota Satisfaction Questionnaire (see Appendix F). These

factors are: extrinsic motivation and intrinsic motivation (see Appendix F). The criterion for factor loadings was set at 0.4 (Douka *et al.*, 2009). Table 2 shows that skewness for intrinsic motivation was 0.64 (SE=0.22) and the kurtosis was -0.89 (SE=0.44). The skewness for extrinsic motivation was 0.44 (SE=0.22) and the kurtosis was -1.18 (SE=0.44).

The Likert-type scale was used to record participants' responses regarding job satisfaction and its sub-scale questions, with the scale ranging from 1 to 5. Participants reporting job satisfaction above the mid-point were regarded as having high levels of job satisfaction, while participants who scored below the mid-point were regarded as having low job satisfaction levels. The highest means for the sub-scales are below the mean for the 5 point Likert scale. This indicates that nurses' experience between low levels of job satisfaction.

The highest levels of job satisfaction among nurses were expressed in the following items (see Appendix D): the chance to do something that makes use of my abilities (M=3.06. SD=1.35), the chance to do things for people (M=3.01. SD=1.24), the chance to do things that do not go against my conscience (M=2.99. SD=1.31), the chance to do different things from time to time (M=2.92. SD=1.234).

The lowest levels of job satisfaction were expressed in the following items: my pay and the amount of work I do (M=2.00. SD=1.24), the working conditions and the environment (M=2.02. SD=1.230), the praise I get for doing a good job (M=2.13. SD=1.32) (see Appendix D).

4.2.3 Results for the Utrecht Work Engagement Scale

Table 2 shows the descriptive statistics for the Utrecht Work Engagement Scale. Three factors were extracted from the Utrecht Work Engagement Scale (see Appendix F). These factors were: vigour, dedication and absorption (see Appendix F). The criterion for factor loadings was set at 0.4 (Douka *et al.*, 2009).

Table 2 shows that skewness for vigour was .34 (SE=.22) and the kurtosis was -1.28 (SE=.44). The skewness for dedication was .10 (SE=.22) and the kurtosis was -1.31 (SE=.44). The skewness for absorption was .41 (SE=.22) and the kurtosis was -1.34 (SE=.44). The Likert-type scale was used to record participants' responses regarding occupational stress and its subscales questions, with the scale ranging from 0 to 6. Participants reporting working engagement above the mid-point were regarded as having high levels of work engagement, while participants who scored below the mid-point were regarded as having low work engagement levels. The highest mean scores were below the mid-point for the 7 point Likert scale which means that nurses experience a low level of work engagement.

The Utrecht Work Engagement Scale revealed that nurses showed higher levels of work engagement as measured by the following items: To me my job is challenging (M=3.87. SD=1.56), I am proud of the work that I do (M=3.84. SD=1.65), I am enthusiastic about my job (M=3.78. SD=1.66), my job inspires me (M=3.71. SD=1.59) (see Appendix D).

The lowest levels of work engagement were expressed in the following items: I can continue working for long periods of time (M=2.72. SD=1.67), at my job I am very resilient, mentally

(M=2.79. SD=1.680), when I get up in the morning, I feel like going to work (M=2.81. SD=1.71) (see Appendix D).

4.2.4 Results for Social Support Questionnaire

Table 2 shows the descriptive statistics for the Social Support Satisfaction Questionnaire. Two factors were extracted for the Social Support Questionnaire (see Appendix F). These factors were: social support available and social support satisfaction (see Appendix F). The criterion for factor loadings was set at 0.4 (Douka *et al.*, 2009).

The skewness for social support available was 0.45 (SE=0.22) and the kurtosis was -1.409 (SE=0.45). Table 2 shows that skewness for social support satisfaction was -.12 (SE=0.22) and the kurtosis was -1.76 (SE=0.45) Appendix D shows that nurses experience moderate levels of social support.

The Likert-type scale was used to record participants' responses regarding social support and its subscales questions, with the scale ranging from 1 to 6. Participants reporting social support above the mid-point were regarded as having high levels of social support, while participants who scored below the mid-point were regarded as having low levels of social support. The highest mean scores are just above the mid-point for the 6 point Likert scale. This indicates that nurses experience moderate levels of social support.

The highest levels of social satisfaction were reported by the following items: satisfaction with whose lives do you feel an important part of (M=3.85. SD=1.97), satisfaction with who loves

you deeply (M=3.80.SD=2.05) satisfaction with who will comfort you when you need it by holding you in their arms (M=3.74. SD=1.94) (see Appendix D).

The lowest levels of social support were expressed in the following items: whom can you really count on to help you feel better when you are very irritable, ready to get angry at almost anything? (M=2.77. SD= 1.99), whom do you feel would help if you were married and had just separated from a spouse? (M=2.91. SD=2.09), whom can you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again (M=2.92. SD=1.92) (see Appendix D).

4.4 Factor analysis

4.4.1 Factor analysis for the Nursing Stress Indicator

Exploratory factor analysis was conducted for the 116 items on the Nursing Stress Indicator. The Nursing Stress Indicator included two sections: Part A included 58 items and measured occupational stress amount. Part B also included 58 items and measured occupational stress frequency. Five factors were extracted for part A and part B of the Nursing Stress Indicator. The five factors that were extracted include: job demands, patient care, staff issues, lack of support and working over-time (see Appendix F). The five factors that were extracted in this study were job demands, staff issues, patient care, lack of support and working over-time and are consistent with those found by van der Colff and Rothmann (2009) among nurses in South Africa. The scores of part A and part B were multiplied to produce occupational stress severity. Together, the five factors that were extracted accounted for 71.16 % of the variance in occupational stress (see

Appendix F). This shows that the factors that were extracted are good measures of the levels of occupational stress.

4.4.2 Factor analysis for Minnesota Satisfaction Questionnaire

Exploratory factor analysis was conducted for each of the 20 items on the Minnesota Satisfaction Questionnaire. Two factors were extracted from the Minnesota Satisfaction Questionnaire.

These two factors were: extrinsic motivation and intrinsic motivation (see Appendix F). These two factors are consistent with the factors reported by Nel and Haycock (2005). Together these two factors accounted for 74.57% of the variance in job satisfaction (see Appendix F). This shows that the factors that were extracted are good measures of job satisfaction.

4.4.3 Factor analysis for the Utrecht Work Engagement Scale

Exploratory factor analysis was conducted for the 17 items on the Utrecht Work Engagement Scale. Three factors were extracted from the Utrecht Work Engagement Scale. These three factors were: vigour, dedication and absorption (see Appendix F). These three factors are consistent with those reported by Schaufeli *et al.* (2002). The factor analysis of the results supported the three factors of work engagement that were found in a study conducted by Schaufeli & Bakker (2004). Together these three factors accounted for 84.77% of the variance in work engagement (see Appendix F). This shows that the factors that were extracted are good measures of work engagement.

4.4.4 Factor analysis for the Social Support Questionnaire

Exploratory factor analysis was conducted for the 54 items in the Social Support Questionnaire.

The Social Support Questionnaire included two sections. Part A included 27 items and measured social support availability. Two factors were extracted from the social support satisfaction (see Appendix F). These factors accounted for 76.40% of the variance in social support (see

Appendix F). The results of the factor analysis differed from a previous research study conducted by Pierce *et al.* (1996) which found that social support included social support available and social support satisfaction. The factor analysis results indicate that the factors that were extracted from the Social Support Questionnaire are good measures of social support.

4.5 Inferential statistics

4.5.1 Correlations analysis

The Pearson moment correlation co-efficients were used to determine the relationship between occupational stress, job satisfaction, work engagement and social support. The results of the Pearson moment correlation co-efficients are reported in the table below.

Table 3

Correlations between occupational stress, job satisfaction, work engagement and social support

	1	2	3	4	5
1. Occupational stress					
2. Minnesota Satisfaction Questionnaire: Job satisfaction	-.662***+				
3. Social Support Questionnaire: Social support	-.552***+	.793***+			
4. Utrecht Work Engagement Scale Work engagement	-.486**+	.798***+	.789***+	.872***+	

***p < 0.01. Correlation is significant at the 0.01 level (2 tailed).

*p < 0.05. Correlation is significant at the 0.05 level (1 tailed).

+ r > 0.30. Correlation is practically significant (medium effect).

++ r > 0.50. Correlation is practically significant (large effect).

Table 3 shows the correlation between occupational stress, job satisfaction, work engagement and social support. Occupational stress severity is the product of occupational stress amount and occupational stress frequency. Occupational stress severity displayed a high statistically and practically significant (large effect) negative correlation with job satisfaction ($p < 0.01$). Occupational stress severity had a statistically and practically significant (large effect) negative relationship with social support available ($p < 0.01$). Occupational stress severity had a statistically and practically significant (medium effect) correlation with social support satisfaction ($p < 0.01$). Occupational stress severity displayed a high statistically and practically significant (medium effect) negative correlation with work engagement ($p < 0.01$).

Job satisfaction was found to have a statistically and practically significant (large effect) positive correlation with social support satisfaction ($p < 0.01$), work engagement ($p < 0.01$), and social support available ($p < 0.01$). Work engagement yielded a statistically and practically significant (large effect) positive correlation with support satisfaction ($p < 0.01$) and social support available ($p < 0.01$). Social support available yielded a statistically and practically significant (large effect) positive correlation with social support satisfaction ($p < 0.01$).

Table 4*Correlations between factors of occupational stress, job satisfaction, work engagement and social support*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Job demands												
2. Staff issues	.368***											
3. Patient care	.407***	.353***										
4. Lack of support	.590***	.230**	.557***									
5. Working over-time	-.126	.126	.485***	.186+								
6. Social support available	-.666***	-.279**	-.490**	-.474**	.100							
7. Social support satisfaction	-.825***	-.260**	-.327**	-.461**	.228*	.765***						
8. Extrinsic satisfaction	-.819***	-.384***	-.498**	-.615***	.019	.638***	.801***					
9. Intrinsic satisfaction	-.763***	.288***	-.461**	-.572***	-.014	.705***	.721***	.847***				
10. Vigour	-.786***	-.273**	-.273**	-.412**	.227*	.763***	.816***	.731***	.785**			
11. Dedication	-.698***	-.353***	-.353***	-.466**	.121	.762***	.815***	.721***	.704**	.836**		
12. Absorption	-.751***	-.257**	-.257***	-.505**	.126	.705***	.771***	.677**	.713***	.878***	.800***	

Table 4 shows the relationship between the factors of occupational stress, job satisfaction, work engagement and social support. Job demands displayed a statistically and practically significant (large effect) positive correlation with lack of support ($p < 0.01$), staff issues ($p < 0.01$) and patient care ($p < 0.01$). Job demands reported a statistically and practically significant (large effect) negative correlation with intrinsic motivation ($p < 0.01$), extrinsic motivation ($p < 0.01$), social support available ($p < 0.01$), absorption ($p < 0.01$), social support satisfaction ($p < 0.01$), dedication ($p < 0.01$), and vigour ($p < 0.01$).

Staff issues displayed a statistically and practically significant (large effect) negative correlation with intrinsic motivation ($p < 0.01$) and extrinsic motivation ($p < 0.01$), social support available ($p < 0.01$) and social support satisfaction ($p < 0.01$). Staff issues had a statistically and practically significant (medium effect) positive correlation with lack of support ($p < 0.01$) and patient care ($p < 0.01$). Staff issues displayed a statistically and practically significant (medium effect) negative correlation with lack of vigour ($p < 0.05$), dedication ($p < 0.05$).

Patient care yielded a statistically and practically significant (large effect) positive correlation with lack of support ($p < 0.01$). Patient care had a statistically and practically significant (medium effect) negative correlation with intrinsic motivation ($p < 0.01$), social support available ($p < 0.01$) and extrinsic motivation ($p < 0.01$), dedication ($p < 0.01$) and social support satisfaction ($p < 0.01$).

Lack of support displayed a statistically and practically significant (large effect) negative correlation with intrinsic motivation ($p < 0.01$) and extrinsic motivation ($p < 0.01$), social support

available ($p < 0.01$), absorption ($p < 0.01$), social support satisfaction ($p < 0.01$), dedication ($p < 0.01$) vigour ($p < 0.01$) and working over-time ($p < 0.01$).

Working over-time had a statistically and practically significant (medium effect) positive correlation with vigour ($p < 0.50$) and social support satisfaction.

Extrinsic motivation had a statistically and practically significant (large effect) positive relationship with intrinsic motivation ($p < 0.01$), vigour ($p < 0.01$), absorption ($p < 0.01$) and dedication ($r < 0.01$). Intrinsic motivation yielded a statistically and practically significant (large effect) positive correlation with dedication ($p < .001$), vigour ($p < 0.01$), and absorption ($p < 0.01$). Dedication had a statistically and practically significant positive correlation with absorption ($p < 0.01$).

4.5.2 Multiple regression analysis

Multiple regression analysis was used to determine whether occupational stress predicts job satisfaction and work engagement. Similarly, this analysis was also used to determine whether social support mediates the effects of occupational stress on job satisfaction and work engagement.

4.5.3 The mediating role of social support

Multiple regression analysis was used to determine whether social support mediated the effects of occupational stress on job satisfaction and work engagement. Un-standardised and standardised co-efficients were used to analyse the mediation effect. The steps to determine mediation effects were followed as is explained in section 3.7.4.

4.5.3.1 The independent variable affects the mediator

The first step in measuring mediation was to determine whether the independent variable significantly affects the mediator. Therefore, the results of a stepwise multiple regression analysis with occupational stress as the independent variable and social support satisfaction as the dependant variable, are reported in Table 5 below.

Table 5

Predictive value of occupational stress on social support satisfaction

Model	Unstandardized Coefficients		Standardized Coefficients	P	F	R	R ²	Adjusted R ²	
	B	Std. Error	Beta						
1	(Constant)	231.544	9.473		.000				
	Job demands	-.859	.058	-.823	.000	221.031	.823	.678	.675
2	(Constant)	219.462	10.244		.000				
	Job demands	-.843	.056	-.808	.000	7.216	.836	.699	.693
	Working over-time	1.931	.719	.145	.008				

In Table 5 the first model shows that job demands and working over-time predict the levels of overall social support satisfaction. Table 5 shows that in the first model, job demands predicts 67.5% of the variance in social support satisfaction. Table 5 shows that in the first model, the standardised beta for job demands ($\beta=-.829$, $p<0.00$) explains the variance in the dependant variable. In Table 6 the results suggest that the stepwise multiple regressions of the first model are significant ($F=221.03$, $p<0.00$). Table 5 shows that in the second model, job demands and working over-time predicts 69.3% of the variance in social support satisfaction. Table 5 shows that in the second model, the standardised beta for job demands ($\beta=-.843$, $p<0.00$) and working over-time ($\beta=1.93$, $p<0.00$) contribute to the variance in social support satisfaction. Table 5

shows that the results of the stepwise multiple regressions in the first model are significant (F=7.21, p<0.00).

4.5.3.2 The independent variable affects the dependant variable in the absence of the mediator

The second step in measuring mediation was to determine whether the independent variable affects the dependant variable in the absence of the mediator. Therefore, the results of a stepwise multiple regression analysis with occupational stress as the independent variable and job satisfaction and work engagement as the dependant variables are reported below.

4.5.3.3 Predictive value of occupational stress on intrinsic motivation

The results of a stepwise multiple regression analysis with occupational stress as the independent variable and intrinsic motivation as the dependent variable are reported in Table 6.

Table 6

Predictive value of occupational stress on intrinsic motivation

Model	Unstandardized Coefficients		Standardized	P	F	R	R ²	Adjusted R ²	
	B	Std. Error	Coefficients						
1	(Constant)	53.169	2.501						
	Job demands	-.185	.015	-.761	.000	148.704	.761	.579	.575
2	(Constant)	52.018	2.483						
	Job demands	-.157	.018	-.647	.000	6.357	.776	.603	.595
	Lack of support	-.017	.007	-.191	.013				

In Table 6 the first model shows that job demands and lack of support are significant in terms of predicting the levels of intrinsic motivation. In Table 6 the first model shows that job demands

predicts 57.5% of the variance in the levels of intrinsic motivation. Table 6 shows that in the first model, the standardised beta for job demands ($\beta=-.185$, $p<0.00$) explains the variance in intrinsic motivation. In Table 6 the results show that the stepwise multiple regression in the first model is significant ($F=148.70$, $p<0.00$). Table 6 shows that in the second model, job demands and lack of support predict 59.5% of the variance in the levels of intrinsic motivation. In Table 6 the standardised beta in the second model show that job demands ($\beta=-.157$, $p<0.00$) and lack of support ($\beta=-.017$, $p<0.00$) explain the variance in intrinsic motivation. Table 6 shows that the result of the stepwise multiple regression in the second model is significant ($F=6.357$, $p<0.00$).

4.5.3.4 Predictive value of occupational stress on extrinsic motivation

The results of a stepwise multiple regression analysis, with occupational stress as the independent variable, and extrinsic motivation as the dependant variable are reported in Table 7.

Table 7

Predictive value of occupational stress on extrinsic motivation

	Model	Unstandardized Coefficients		Standardized	P	F	R	R ²	Adjusted R ²
		B	Std. Error	Coefficients					
1	(Constant)	60.986	2.256		.000				
	Job demands	-.202	.014	-.817	.000	217.575	.817	.668	.665
2	(Constant)	59.704	2.205		.000				
	Job demands	-.171	.016	-.693	.000	9.992	.835	.697	.691
	Lack of support	-.019	.006	-.210	.002				
3	(Constant)	62.248	2.515		.000				
	Job demands	-.167	.016	-.677	.000	4.056	.841	.708	.7000
	Lack of support	-.014	.007	-.148	.044				
	Patient care	-.070	.035	-.128	.047				

In Table 7 the first model that job demands, lack of support and patient care predict the levels of extrinsic motivation. In Table 7 the first model shows that job demands predicts 66.5% of the variance in extrinsic motivation. In Table 7 the standardised beta in the first model show that job demands ($\beta=-.817$, $p<0.00$) explains the variance in extrinsic motivation. Table 7 shows that the result of the stepwise multiple regression in the first model is significant ($F=217.575$, $p<0.00$). Table 7 shows that in the second model, job demands and lack of support predict 69.1% of the variance in extrinsic motivation. In Table 7 the standardised beta in the second model show that job demands ($\beta=-.693$, $p<0.00$) and lack of support ($\beta=-.210$, $p<0.005$) explain the variance in extrinsic motivation. Table 7 shows that the result of the stepwise regressions in the second model is significant ($F=9.99$, $p<0.00$). Table 7 shows that in the third model, job demands, lack of support and patient care predict 70% of the variance in extrinsic motivation. In Table 7 the standardised beta in the third model show that job demands ($\beta=-.667$, $p<0.00$), lack of support ($\beta=-.148$, $p<0.00$), and patient care ($\beta=-.128$, $p<0.00$) explain the variance in extrinsic motivation. Table 7 shows that the result of the stepwise multiple regression in the third model is significant ($F=4.056$, $p<0.00$).

4.5.3.5 Predictive value of occupational stress on vigour

The results of a stepwise multiple regression with occupational stress as the independent variable and vigour as the dependant variable are reported in Table 8.

Table 8***Predictive value of occupational stress on vigour***

	Model	Unstandardized Coefficients		Standardized	P	F	R	R ²	Adjusted R ²
		B	Std. Error	Coefficients Beta					
1	(Constant)	49.973	2.318		.000				
	Job demands	-.185	.014	-.784	.000	172.399	.784	.615	.611
2	(Constant)	47.448	2.537		.000				
	Job demands	-.181	.014	-.769	.000	5.057	.795	.632	.625
	Working over-time	.400	.178	.133	.027				

In Table 8 the first model shows that job demands and working over-time predict the levels of vigour. In Table 8 the first model shows that job demands predicts 61.1% of the variance in in vigour. In Table 8 the standardised beta in the first model shows that job demands ($\beta=-.784$, $p<0.00$) explains the variance in vigour. Table 8 shows that the result of the stepwise multiple regression is significant ($F=172.399$, $p<0.05$). Table 8 shows that in the second model, job demands and working over-time predict the levels of vigour. In Table 8 the second model shows that job demands and working over-time predict 63.2% of the variance in extrinsic motivation. In Table 8 the standardised beta show that job demands ($\beta=-.769$, $p<0.00$) and working over-time ($\beta=-.133$, $p<0.05$) explains the variance in vigour. Table 8 shows that the result of the stepwise regressions is significant ($F=5.057$, $p<0.00$).

4.5.3.6 Predictive value of occupational stress on dedication

The results of a stepwise multiple regression with occupational stress as the independent variable and vigour as the dependant variable are reported in Table 9.

Table 9

Predictive value of occupational stress and dedication

Model	Unstandardized Coefficients		Standardized Coefficients	P	F	R	R ²	Adjusted R ²
	B	Std. Error	Beta					
1	(Constant)	36.753	1.861					
	Job demands	-.114	.011	-.695	.000	101.049	.695	.483

It can be seen from Table 9 that occupational stress predicts 47.9% of the variance in the levels of dedication and the remaining 52.1% can be attributed to factors which are beyond the scope of this study. In Table 9, the standardised beta for job demands ($\beta=-.695$, $p<0.00$) explains most of the variance in the dependant variable. The results suggest that the linear multiple regression are significant ($F=101.049$, $p<0.00$).

4.5.3.7 Predictive value of occupational stress on absorption

The results of a stepwise multiple regression with occupational stress as the independent variable and absorption as the dependant variable are reported in Table 10.

Table 10***Predictive value of occupational stress on absorption***

Model		Unstandardized Coefficients		Standardized Coefficients	P	F	R	R ²	Adjusted R ²
		B	Std. Error	Beta					
1	(Constant)	36.829	1.741		.000				
	Job demands	-.132	.011	-.768	.000	155.146	.768	.590	.586
2	(Constant)	31.770	2.455		.000				
	Job demands	-.143	.011	-.835	.000	8.042	.786	.618	.611
	Staff issues	.164	.058	.182	.005				

In Table 10 the first model shows that job demands and staff issues predict the levels of absorption. In Table 10 the first model shows that job demands predicts 58.6% of the variance in absorption. In Table 10 the standardised beta in the first model shows that job demands ($\beta=-.768$, $p<0.00$) explains the variance in absorption. Table 10 shows that the result of the stepwise multiple regression in the first model is significant ($F=155.14$, $p<0.00$). Table 10 shows that in the second model, job demands and staff issues predict 61.1% of the variance in absorption. In Table 10 the second model shows that the standardised beta for job demands ($\beta=-.835$, $p<0.00$) and staff issues ($\beta=-.182$, $p<0.00$) explain the variance in absorption. Table 10 shows that the result of the stepwise multiple regression in the second model is significant ($F=8.04$, $p<0.05$).

4.5.4 The mediator has a significant unique impact on the dependant variable

The third step in measuring mediation was to determine whether the mediator has a significant unique impact on the dependant variable. Therefore, the results of the stepwise multiple regression with social support as the independent variable and job satisfaction and work engagement as the dependant variables are reported below.

4.5.4.1 Predictive value of social support satisfaction on extrinsic motivation

The results of a linear multiple regression analysis with social support satisfaction as the independent variable, and job satisfaction as the dependent variable, are reported in Table 11.

Table 11

Multiple regression between social support satisfaction and extrinsic satisfaction

Model	Unstandardized Coefficients		Standardized	P	F	R	R ²	Adjusted R ²	
	B	Std. Error	Coefficients Beta						
1	(Constant)	11.102	1.469		.000				
	Social support satisfaction	.190	.014	.801	.000	195.589	.801	.642	.639

It can be seen from Table 11 that social support satisfaction predicts 63.9% of the variance in extrinsic motivation and the remaining 36.1% can be attributed to factors which were outside the scope of this study. In Table 11 the standardised beta ($\beta=.801$, $p<0.00$) show that social support satisfaction contributes to the variance in work engagement. Table 11 shows that the result of the linear multiple regression is significant ($F=195.58$, $p<0.00$).

4.5.4.2 Predictive value of social support satisfaction on intrinsic motivation

The results of a linear multiple regression analysis with social support satisfaction as the independent variable, and job satisfaction as the dependant variable are reported in Table 12 below.

Table 12***Predictive value of social support satisfaction on intrinsic motivation***

Model	Unstandardized Coefficients		Standardized Coefficients	P	F	R	R ²	Adjusted R ²
	B	Std. Error	Beta					
1 (Constant)	7.555	1.23		.009				
Social support satisfaction	.282	.721	.000	118.210	.721	.520	.516	.282

Table 12 shows that social support satisfaction predicts 51.6% of the variance in intrinsic motivation and the remaining 48.4% can be attributed to factors which were outside the scope of this study. In Table 12 the standardised beta ($\beta=.721$, $p<0.00$) show that social support satisfaction contributes significantly to the variance in intrinsic motivation. Table 12 shows that the result of the linear multiple regression is significant ($F=118.21$, $p<0.00$).

4.5.4.3 Predictive value of social support satisfaction on vigour

The results of a linear multiple regression analysis, with social support satisfaction as the independent variable, and vigour as the dependant variable are reported in Table 13.

Table 13***Predictive value of social support satisfaction on vigour***

Model	Unstandardized Coefficients		Standardized Coefficients	P	F	R	R ²	Adjusted R ²
	B	Std. Error	Beta					
1 (Constant)	3.549	1.332		.009				
Social support satisfaction	.182	.012	.816	.000	216.662	.816 ^a	.665	.662

Table 13 shows that that social support satisfaction predicts 66.2% of the variance in vigour and the remaining 33.8% can be attributed to factors which were outside the scope of this study.

Table 13 shows that the standardised beta ($\beta=.816$, $p<0.00$) of social support satisfaction contributes the most to the variance in work engagement. Table 13 shows that the results of the linear multiple regression is significant ($F=216.66$, $p<0.00$).

4.5.4.4 Predictive value of social support satisfaction and dedication

The results of a linear multiple regression with social support satisfaction as the independent variable and dedication as the dependant variable listed below in Table 14.

Table 14

Predictive value of social support satisfaction on dedication

Model	Unstandardized Coefficients		Standardized Coefficients	P	F	R	R ²	Adjusted R ²	
	B	Std. Error	Beta						
1	(Constant)	6.672	.945	.000					
	Social support satisfaction	.128	.009	.815	.000	214.954	.815 ^a	.664	.660

Table 14 shows that social support satisfaction predicts 66% of the variance in dedication and the remaining 34% can be attributed to factors which were outside the scope of this study. Table 14 shows that the standardised beta ($\beta=.815$, $p<0.00$) for social support satisfaction contributes to the variance in dedication. Table 14 shows that the results of the linear multiple regression is significant ($F=214.95$), $p<0.00$).

4.5.4.5 Predictive value of social support satisfaction on absorption

The results of a linear multiple regression with occupational stress as the independent variable and absorption as the dependant variable are listed in Table 15.

Table 15***Predictive value of social support on absorption***

	Model	Unstandardized		Standardized	P	F	R	R ²	Adjusted R ²
		Coefficients		Coefficients					
		B	Std. Error	Beta					
1	(Constant)	4.030	1.068		.000				
	Social support satisfaction	.125	.010	.771	.000	159.796	.771 ^a	.594	.591

Table 15 shows that social support satisfaction predicts 59.1% of the variance in absorption and the remaining 40.9% can be attributed to factors which were outside the scope of this study.

Table 15 shows that the standardised beta ($\beta=.771$, $p<0.00$) for social support satisfaction contributes to the variance in absorption. Table 15 shows that the results of the linear multiple regression is significant ($F=159.79$, $p<0.00$).

4.5.5 The effect of the independent variable on the dependant variable shrinks upon the addition of the mediator

The fourth step in measuring mediation was to determine whether the effect of the independent variable on the dependant variable shrinks upon the addition of the mediator. Therefore, stepwise multiple regression was performed to determine whether the inclusion of social support mediates the impact of occupational stress on job satisfaction and work engagement.

4.5.5.1 Predictive value of social support satisfaction on the relationship between occupational stress and intrinsic motivation

The results of a stepwise multiple regression with occupational stress and social support satisfaction as the independent variables and intrinsic motivation as the dependant variable are reported below in Table 16.

Table 16***Predictive value of occupational stress and social support satisfaction on intrinsic motivation***

	Model	Unstandardized		Standardized	P	F	R	R	Adjusted R ²
		Coefficients		Coefficients					
		B	Std. Error	Beta					
1	(Constant)	53.506	3.791		.000				
	Job demands	-.158	.022	-.649	.000				
	Patient care	-.047	.049	-.088	.342				
	Staff issues	.025	.088	.020	.775				
	Lack of support	-.013	.008	-.141	.105				
	Working over-time	-.099	.245	-.032	.687	.780	.608	.589	.780
2	(Constant)	54.167	2.998		.000				
	Job demands	-.156	.021	-.642	.000				
	Patient care	-.045	.048	-.083	.358				
	Lack of support	-.013	.008	-.143	.097				
	Working over-time	-.095	.244	-.031	.698	.779	.608	.592	.779
3	(Constant)	53.873	2.888		.000				
	Job demands	-.153	.019	-.629	.000				
	Patient care	-.055	.040	-.103	.174				
	Lack of support	-.013	.008	-.146	.088	.779	.607	.596	.779
4	(Constant)	51.902	2.514		.000				
	Job demands	-.156	.019	-.642	.000				
	Lack of support	-.018	.007	-.196	.013	.775	.600	.592	.775
5	(Constant)	36.666	6.262		.000				
	Job demands	-.098	.029	-.404	.001				
	Lack of support	-.019	.007	-.207	.007				
	Social support satisfaction	.066	.025	.281	.009	.791	.625	.614	.791

Table 16 shows that the unstandardized beta in the first model show that job demands ($\beta=-.158$, $p<0.00$) has the largest impact on intrinsic motivation. Table 16 shows that the result of the stepwise multiple regression in the first model is significant ($F=31.32$, $p<0.00$). In Table 16 the unstandardized beta ($\beta=0.066$, $p<0.05$) reported in the fifth model show that social support satisfaction does have an impact on the relationship between occupational stress and intrinsic motivation.

4.5.5.2 Predictive value of social support satisfaction on the relationship between occupational stress and extrinsic motivation

The results of a stepwise multiple regression with occupational stress, social support satisfaction as the independent variables and extrinsic motivation as the dependant variable are reported in Table 17.

Table 17

Predictive value of social support satisfaction on the relationship between occupational stress and extrinsic motivation

	Model	Unstandardized		Standardized	P	F	R	R ²	Adjusted R ²
		Coefficients		Coefficients					
		B	Std. Error	Beta					
1	(Constant)	64.124	3.287		.000				
	Job demands	-.152	.019	-.621	.000				
	Patient care	-.082	.043	-.151	.058				
	Staff issues	-.095	.076	-.074	.214				
	Lack of support	-.015	.007	-.163	.030				
	Working over-time	.171	.212	.055	.423	49.850	.844	.712	.697
2	(Constant)	64.555	3.237		.000				
	Job demands	-.158	.017	-.645	.000				
	Patient care	-.063	.036	-.117	.081				
	Staff issues	-.091	.076	-.071	.230				
	Lack of support	-.014	.007	-.158	.035	.646	.842	.710	.698
3	(Constant)	62.106	2.527		.000				
	Job demands	-.164	.016	-.669	.000				
	Patient care	-.073	.035	-.136	.039				
	Lack of support	-.014	.007	-.150	.044	1.456	.840	.706	.697
4	(Constant)	39.748	5.165		.000				
	Job demands	-.078	.023	-.316	.001				
	Patient care	-.082	.032	-.151	.012				
	Lack of support	-.015	.006	-.159	.019				
	Social support	.097	.020	.414	.000	23.331	.872	.760	.751

Model	Unstandardized Coefficients	Standardized Coefficients	P	F	R	R ²	Adjusted R ²
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Table 17 shows that the unstandardized beta in the first model show that job demands ($\beta=-.152$, $p<0.00$) has the largest impact on extrinsic motivation. Furthermore, the unstandardized beta show that lack of social support ($\beta=-.015$, $p<0.05$) also impacts extrinsic motivation. Table 17 shows that the result of the stepwise multiple regression in the first model is significant ($F=49.85$, $p<0.00$). In Table 17 the unstandardized beta ($\beta=.097$, $p<0.00$) in the fourth model show that social support satisfaction does have an impact on the relationship between occupational stress and extrinsic motivation.

4.5.5.3 Predictive value of social support satisfaction on the relationship between occupational stress and vigour

The results of a stepwise multiple regression with occupational stress and social support satisfaction as the independent variables and vigour as the dependant variable are reported in Table 18.

Table 18

Predictive value of social support satisfaction on the relationship between occupational stress and vigour

	B	Std. Error	Beta	P	F	R	R ²	Adjusted R ²
(Constant)	44.677	3.521		.000				
Job demands	-.190	.020	-.814	.000				
Patient care	-.022	.046	-.043	.626				
Staff issues	.119	.082	.098	.147				
Lack of support	.004	.007	.047	.572				
Working over-time	.375	.228	.126	.102	34.971	.796	.634	.616
(Constant)	44.490	3.487		.000				
Job demands	-.192	.019	-.824	.000				
Staff issues	.113	.080	.093	.163				
Lack of support	.003	.007	.034	.664				
Working over-time	.316	.192	.106	.103	.240	.796	.633	.619
(Constant)	44.172	3.397		.000				
Job demands	-.187	.015	-.802	.000				
Staff issues	.111	.080	.091	.167				
Working over-time	.343	.181	.115	.061	.190	.795	.632	.622
(Constant)	47.305	2.557		.000				
Job demands	-.179	.014	-.766	.000				
Working over-time	.386	.179	.130	.034	1.940	.791	.625	.618
(Constant)	22.539	5.332		.000				
Job demands	-.084	.022	-.359	.000				
Working over-time	.168	.166	.057	.315				
Social support satisfaction	.113	.022	.504	.000	26.463	.838	.702	.693
(Constant)	22.283	5.326		.000				
Job demands	-.080	.022	-.344	.000				
Social support satisfaction	.118	.021	.529	.000	1.020	.836	.699	.693

Table 18 shows that unstandardized beta in the first model show that job demands ($\beta=-.190$, $p<0.00$) has the largest impact on vigour. Table 18 shows that the stepwise multiple regression in the first model is significant ($F=34.97$, $p<0.00$). In Table 18 the unstandardized beta in the sixth model ($\beta=.118$, $p<0.00$) indicates that social support satisfaction does have an impact on the relationship between occupational stress and vigour.

4.5.5.4 Predictive value of social support satisfaction on the relationship between occupational stress and dedication

The results of a stepwise multiple regression with occupational stress and social support satisfaction as the independent variables and dedication as the dependant variable are reported in Table 19

Table 19

Predictive value of social support satisfaction on the relationship between occupational stress and dedication

Model		Unstandardized		Standardized	P	F	R	R ²	Adjusted R ²
		Coefficients		Coefficients					
		B	Std. Error	Beta					
1	(Constant)	33.858	2.866		.000				
	Job demands	-.100	.016	-.612	.000				
	Patient care	-.047	.037	-.131	.210				
	Staff issues	.076	.066	.090	.254				
	Lack of support	-.005	.006	-.078	.426				
	Working over-time	.253	.185	.122	.174	20.303	.708	.501	.477
2	(Constant)	34.388	2.783		.000				
	Job demands	-.106	.014	-.650	.000				
	Patient care	-.056	.035	-.157	.112				
	Staff issues	.081	.066	.096	.222				
	Working over-time	.241	.184	.116	.195	.638	.706	.498	.478
3	(Constant)	36.613	2.120		.000				
	Job demands	-.101	.014	-.620	.000				
	Patient care	-.050	.035	-.140	.152				
	Working over-time	.253	.184	.122	.174	1.513	.700	.491	.476
4	(Constant)	37.312	2.066		.000				
	Job demands	-.109	.013	-.667	.000				
	Patient care	-.021	.028	-.059	.446	1.877	.694	.481	.471
5	(Constant)	36.664	1.881		.000				
	Job demands	-.113	.011	-.692	.000	.585	.692	.478	.474
6	(Constant)	9.802	3.968		.015				
	Job demands	-.013	.016	-.080	.434				
	Socials support satisfaction	.116	.016	.743	.000	53.894	.810	.656	.650

7	(Constant)	6.776	.953		.000				
	Social support satisfaction	.126	.009	.809	.000	.617	.809	.654	.651

Table 19 shows that the unstandardized beta in the first model show that job demands ($\beta=-.100$, $p<0.00$) has the largest impact on dedication. Table 19 shows that the result of the stepwise multiple regression in the first model is significant ($F=20.30$, $p<0.00$). Table 19 shows that the unstandardized beta ($\beta=0.126$, $p<0.00$) in the seventh model indicates that social support satisfaction does impact the relationship between occupational stress and dedication.

4.5.5.5 Predictive value of social support satisfaction on the relationship between occupational stress and absorption

The results of a stepwise multiple regression with occupational stress and social support satisfaction as the independent variables and absorption as the dependant variable are reported in Table 20.

Table 20

Predictive value of social support satisfaction on the relationship between occupational stress and absorption

Model		Unstandardized Coefficients		Standardized	P	F	R	R ²	Adjusted R ²
		B	Std. Error	Coefficients					
1	(Constant)	30.658	2.595		.000				
	Job demands	-.135	.015	-.794	.000				
	Patient care	.045	.034	.120	.185				
	Staff issues	.137	.060	.155	.024				
	Lack of support	-.009	.005	-.135	.114				
	Working over-time	-.025	.168	-.012	.882	33.470	.790 ^a	.624	.605
2	(Constant)	30.595	2.547		.000				
	Job demands	-.134	.013	-.789	.000				
	Patient care	.042	.028	.113	.140				

	Staff issues	.137	.060	.155	.024				
	Lack of support	-.009	.005	-.136	.109	.022	.790 ^b	.624	.609
3	(Constant)	31.483	2.491		.000				
	Job demands	-.133	.014	-.783	.000				
	Staff issues	.157	.058	.178	.008				
	Lack of support	-.005	.005	-.082	.285	2.216	.784 ^c	.615	.604
4	(Constant)	31.850	2.470		.000				
	Job demands	-.141	.011	-.831	.000				
	Staff issues	.157	.058	.177	.009	1.155	.782 ^d	.611	.604
5	(Constant)	15.375	4.187		.000				
	Job demands	-.074	.018	-.437	.000				
	Staff issues	.125	.054	.142	.022				
	Social support satisfaction	.075	.016	.463	.000	21.801	.824 ^e	.679	.670

Table 20 shows that the unstandardized beta in the first model show that that job demands ($\beta = -.135$, $p < 0.00$) has the largest impact on absorption. In Table 45 the unstandardized beta also show that staff issues also has an impact on absorption ($\beta = .137$, $p < 0.05$). Table 46 shows that the result of the stepwise multiple regression in the first model is significant ($F = 33.47$, $p < 0.00$). In Table 21 the unstandardized beta in the fifth model show that social support satisfaction ($\beta = 0.75$, $p < 0.00$) does have an impact on the relationship between occupational stress and absorption.

4.5.6 Mediation effect

Mediation was calculated by using the Sobel test. The results of the Sobel test are listed in the tables below. a represents the un-standardised regression coefficient for the association between the independent variable and mediator, s_a represents the standard error of a ; b represents the un-standardised regression coefficient for the association between the mediator and the dependant variable (when the independent variable is also a predictor of the dependant variable and s_b represents the standard error of b).

Table 21***Mediating role of social support satisfaction on the effects of staff issues on absorption***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.137	Sobel test	2.05	0.00	0.04
<i>b</i>	.075	Aroian test	2.01	0.00	0.04
<i>sa</i>	.060	Goodman test	2.09	0.00	0.03
<i>sb</i>	.016				

Table 21 shows that the test statistic for the Sobel test is 2.05 ($p > 0.05$). The results indicate that the impact of staff issues on absorption is significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is evidence of mediation. This was the only significant mediation effect found in this study. Please refer to Appendix E to see further tabulated results of where the mediation effect was investigated.

4.6 Summary of Chapter Four

Using the Cronbach alpha coefficients, this chapter showed that the research instruments used in this study meet the acceptable reliability requirement of 0.70. The Nursing Stress Indicator showed that this sample of nurses experience high levels of occupational stress. The Minnesota Satisfaction Questionnaire showed that the participants experience low levels of job satisfaction. The Utrecht Work Engagement Scale showed that nurses experience low levels of work engagement. The Social Support Questionnaire showed that nurses experience moderate levels of social support. Additionally, this chapter reported the Pearson product moment correlation coefficients between the variables and the results of the multiple regression analysis were also reported in this section. The chapter also presented the results of the factor analysis. The results of the exploratory factor analysis for each research instrument was also reported. Finally, the mediating role of social support was reported and was followed by the results of the Sobel test.

CHAPTER FIVE: DISCUSSION OF RESULTS

5.1 Introduction

The results obtained in this study will be discussed in line with the research questions stated earlier. In order to answer the key questions, the objectives that this study sought to achieve were as follows: 1) determine how the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature, 2) describe the levels of occupational stress, job satisfaction, work engagement and social support, 3) determine the relationship between occupational stress, job satisfaction, work engagement and social support, 4) assess the predictive value of occupational stress on job satisfaction and work engagement, 5) determine the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement. The discussion of the findings in relation to previous research will also be undertaken.

5.2 Objective two: Describe the levels of occupational stress, job satisfaction, work engagement and social support

Nurses at the public hospital experience high levels of occupational stress (see Appendix D). This is indicated in that most of the item mean scores fall above the mid-point of the 9 point Likert scale that is used in the Nursing Stress Indicator (see Appendix D). The results of the Nursing Stress Indicator show that lack of support and job demands made the most contribution to the levels of occupational stress (see Appendix D). The contribution of lack of support to the levels of occupational stress among the nurses was alarmingly high. These findings are supported by Almost (2010) who found similar results among a sample of nurses.

Nurses may expect their managers to support them and when they do not receive such support it may be perceived as betrayal (Bishop, 2004). This view is supported by Lawrence, Pisarski, and Callan (2005). These findings emphasize the importance of managers' support when dealing with conflict.

Job demands also made a large contribution to the levels of occupational stress. This indicates that the nurses perceive themselves as having to bare the burden of performing a high work-load. A high work-load among nurses in South Africa can be attributed to the shortage of nurses in public hospitals (Mokaka, *et al.*, 2010). A consistently heavy work-load could be hazardous to nurses' health. For example, Alterman, Shekelle, Vernon and Burau (1994) state that a high level of job demands experienced by nurses is a concern, as high levels of job demand makes nurses more susceptible to heart disease.

The nurses in this study experienced low levels of job satisfaction. This is indicated in that most of the item mean scores fall below the mid-point of the 5 point Likert scale that is used in the Minnesota Satisfaction Questionnaire (see Appendix D). The results of the Minnesota Satisfaction Questionnaire show that intrinsic motivation made the most contribution to the levels of job satisfaction among the sample of nurses. Thus, the results confirm that intrinsic motivation is a more effective motivator than extrinsic motivation as has been documented in research conducted by Ryan & Deci (2008). The low levels of job satisfaction indicate that the nurses currently do not derive satisfaction from their jobs. Lu *et al.* (2005) states that among the reasons for low levels of job satisfaction among nurses are low salaries and long working hours. Since job satisfaction is positively related to productivity and performance (Robbins *et al.*, 2009),

low levels of job satisfaction suggest that nurses may have decreased levels of productivity and performance. This may negatively impact their ability to provide adequate health care. Low levels of job satisfaction are undesirable for nurses working in hospital, as low levels of job satisfaction are also associated with increased turnover rates, absenteeism and low levels of organisational commitment (Lu *et al.*, 2005).

The nurses in this study experienced low levels of work engagement. This is indicated in that most of the item mean scores fall below the mid-point of the 5 point Likert scale that is used in the Utrecht Work Engagement Scale (see Appendix D). Vigour made the most contribution to the levels of work engagement (see Table 2). In addition, the low level of work engagement reported in this study may also explain the reason for the high turnover rates among nurses at the public hospital under study. This view is supported by Cullinan (2006).

The nurses in this study also experienced moderate levels of social support. This is indicated in that most of the item mean scores at the mid-point of the 6 point Likert scale that is used in the Social Support Questionnaire (see Appendix D). The results may indicate that the nurses receive adequate levels of social support from their managers and colleagues. In a stressful occupation such as nursing, it is desirable to have higher levels of social support. A study conducted by Malinauskiene, Leiste, Malinauskas (2009) reported that a lack of social support in a workplace, characterized by high levels of stress, might increase the risk of myocardial infarction and stroke. Therefore, due to the stressful nature of the nursing profession, the nurses may benefit more from receiving increased social support. Higher levels of social support may help to reduce a greater amount of occupational stress among the sample of nurses.

5.3 Objective three: Determine the relationship between occupational stress, job satisfaction, work engagement and social support

This study found a statistically and practically significant (large effect) negative correlation between occupational stress and job satisfaction (see Table 3). Research conducted by Fairbrother and Warn (2003) found similar findings in a sample of navy trainees. The present study also found that job demands had the highest negative correlation with intrinsic motivation (see Table 4). Karasek (1998) proposes that intrinsic motivation is likely to increase in jobs where there is a high level of job control and social support.

Additionally, occupational stress had a statistically and practically (medium effect) significant negative correlation with work engagement (see Table 3). Schaufeli & Bakker (2004) state that when workers work under conditions of severe stress, workers may experience positive stress, called eustress and become more engaged to their work. However, in this study it can be seen that nurses experience a negative form of stress called distress (Schaufeli & Bakker, 2004). Therefore when nurses experience distress, they are likely to have lower levels of work engagement. Such low levels of work engagement are associated with lower levels of performance (Bakker *et al.*, 2004). The low levels of work engagement experienced by nurses in this study is a concern because this could negatively impact the job performance of nurses and reduce their ability to provide adequate patient care (Bakker *et al.*, 2004).

Job demands had the highest negative correlations with vigour, dedication and absorption (see Table 4). These findings could suggest that nurses experience low levels of work engagement because of high job demands. Linked to this could also be that nurses experience low levels of work engagement because of the shortage of staff and related staff issues (see Appendix D).

Finally, occupational stress had a moderate statistically significant negative correlation with the availability of social support and social support satisfaction (see Table 4).

In this study there was a statistically and practically significant (large effect) positive correlation between job satisfaction and work engagement (see Table 3). This is consistent with the findings reported by Simpson (2009) who found significant positive correlations between work engagement and job satisfaction. Additionally, the results of this study show that extrinsic motivation had a high statistically significant positive correlation with vigour, dedication and absorption (see Table 3).

Intrinsic motivation also had a high statistically significant positive correlation with vigour, dedication and absorption (see Table 4). This is consistent with the findings of Rothmann (2008) who found positive relationships between extrinsic motivation and vigour, dedication and absorption in a sample of members of the police force. Rothmann (2008) also reported that intrinsic motivation was positively correlated with vigour and absorption.

Additionally, the results of the study show that there was a statistically and practically significant (large effect) positive relationship between job satisfaction and social support (see Table 3). This is in line with findings from Veiel and Baumann (1992) who have reported high levels of job satisfaction among small cohesive groups. However, in this study a positive correlation between job satisfaction and social support occurs among a relatively large group of employees. The results of the study also show that there was a statistically and practically significant (large effect) positive correlation between extrinsic motivation and social support available as well as extrinsic motivation and social support satisfaction (see Table 4). Similarly, there was also a

statistically and practically significant (large effect) positive correlation between intrinsic motivation and social support available.

5.4 Objective four: Assess the predictive value of occupational stress on job satisfaction

The results show that occupational stress predicts 66.5% of the variance in extrinsic motivation (see Table 7). Job demands made the highest contribution to the variance in the levels of extrinsic motivation (see Table 8). Occupational stress predicts 57.5% of the variance in the levels of intrinsic motivation (see Table 6). Job demands also made the highest contribution to the variance in the levels of intrinsic motivation (see Table 6). The predictive value of occupational stress on job satisfaction is supported by research conducted by Ryland and Greenfield (1991) who have found that high levels of occupational stress are a significant predictor of low levels of job satisfaction.

5.5 Objective four: Assess the predictive value of occupational stress on work engagement

The results show that occupational stress contributes to 61.1% of the variance in the levels of vigour (see Table 8). Job demands made the highest contribution to the variance in vigour (see Table 8). Occupational stress predicted 47.9% of the variance in the levels of dedication (see Table 9). Job demands made the highest contribution to the variance in dedication (see Table 9).

Occupational stress predicted 58.6% of the variance in the levels of absorption (see Table 10).

This shows that the factors of occupational stress are good predictors of the levels of absorption.

Job demands made the highest contribution to the variance in the levels of absorption (see Table 10).

On the whole, the findings show that occupational stress predicts both job satisfaction and work engagement. Furthermore, job demands predicts the most variance in job satisfaction and work engagement. The predictive value of occupational stress on work engagement is supported by van der Colff and Rothmann (2009). Research conducted by van der Colff and Rothmann (2009) among a sample of registered nurses in South Africa has also found that occupational stress predicts lower levels of work engagement.

5.6 Objective five: Determine the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement

In this study, the results of the Sobel test indicate that social support satisfaction only mediates the effects of staff issues on absorption (see Table 21). These findings suggest that the effect of staff issues on absorption is reduced by the presence of social support satisfaction. Social support satisfaction may only be effective in mediating the impact of staff issues on absorption as the stressful working conditions mean that nurses are only able to focus and concentrate on their work tasks when staff issues have been resolved. Therefore, the presence of social support satisfaction allows nurses to work with more concentration on their tasks. These findings are supported by Cohen's (2004) stress-buffer model which states that social support acts as a stress buffer to individuals in stressful situations.

One of the reasons why social support is an effective buffer against occupational stress experienced from staff issues, could be that nurses are likely to be pro-active in seeking and receiving social support when they are confronted with staff issues at work. Hearney and Israel (2009) state that nurses who experience occupational stress may receive emotional social support and instrumental social support from family and friends (Hearney & Israel, 2009) or they may receive informational social support from their colleagues at work (Hearney & Israel, 2009).

This view is also supported by Cohen (2004) as he argues that social support is effective in reducing the effects of stressful events only if the form of social support that is provided matches the demands of the stressful event. Perhaps this may also explain why social support satisfaction did not mediate the effects of occupational stress on any other factors of work engagement and job satisfaction.

5.7 Summary of Chapter Five

In this chapter, the most salient research findings were discussed, and where applicable these findings were discussed in relation to previous research findings. The research findings were discussed according to the research questions and objectives of this study. The research questions of the study were also answered in this chapter.

CHAPTER SIX: CONCLUSION, RECOMMENDATIONS, CONTRIBUTIONS AND LIMITATIONS

6.1 Introduction

In this chapter the conclusions drawn from chapter four and five will be discussed. Practical implications and the value add of the study are highlighted. Recommendations and limitations are also discussed. This chapter shall be discussed in relation to the objectives of this study. The main objectives of this study were as follows 1) how are the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature? 2) what are the levels of occupational stress, job satisfaction, work engagement and social support among nurses? 3) what is the relationship between occupational stress, job satisfaction, work engagement and social support among nurses? 4) what is the predictive value of occupational stress on job satisfaction and work engagement among nurses? 5) what is the mediating role of social support on the effects of occupational stress on job satisfaction and work engagement among nurses?

6.2 Conclusions regarding the literature review

6.2.1 Objective one: Determine how the variables of occupational stress, job satisfaction, work engagement and social support conceptualised in literature

This study explored the variables of occupational stress, job satisfaction, work engagement and social support using the positive psychology perspective. Positive psychology maintains a focus on factors that allow individuals to flourish. It was important to consider the concept of positive psychology as positive psychology is concerned with understanding how positive states can reduce the prevalence of negative states (Lewis, 2011) such as occupational stress.

The Transactional Model of Stress and the Conservation of Resources theory were considered as the theoretical framework. The Transactional Model of Stress (Lazarus & Folkman, 1984) was used to determine how the appraisal of occupational stress causes change in the levels of work engagement and job satisfaction among nurses. Using this theoretical framework, social support was studied as a variable which mediates the effect of occupational stress on job satisfaction and work engagement.

In the nursing profession, occupational stress is caused by a loss or a threat in resources available in hospitals. Using the Conservation of Resources theory (Hobfoll, 2008) social support was studied as a resource which buffers against the occurrence of occupational stress and the resulting relationship between occupational stress, job satisfaction and work engagement.

Nursing was discussed as a profession with a high prevalence of occupational stress. This view is supported by Gyurak and Ayduk (2007) who acknowledges that occupational stress among nurses contributes to organizational inefficiency, high staff turnover, absenteeism, decreased quality and quantity of health care, increased costs of health care and decreased levels of job satisfaction.

Job satisfaction was conceptualised as being composed of intrinsic and extrinsic motivation (Hirschfield, 2000). Workplace stressors such as a high workload and poor working conditions were found to be negatively related to job satisfaction (Gyurak & Ayduk (2007)). This study conceptualised work engagement as being composed of three factors: vigour, dedication and absorption (Schaufeli *et al.*, 2002). The concept of work engagement is particularly relevant to

public hospitals as it has been found to be linked to likely to employees' attitudes, intentions and behaviours (Saks, 2006).

Two factors were considered in social support: social support availability and social support satisfaction. Availability of social support refers to the quantity of interpersonal connections that an individual has with others (Kaul & Lakey, 2003). Social support satisfaction is an individual's satisfaction with the quality of social support that is received from their social relationships. An individual is likely to be satisfied with the available social support to the extent that it matches and buffers against the effects of the stressor.

6.3. Conclusions regarding the empirical results of the study

6.3.1 Objective two: Describe the levels of occupational stress, job satisfaction, work engagement and social support among nurses

The results of this study show that nurses experience high levels of occupational stress. This is supported by research conducted by Simpson (2009). Simpson (2009) acknowledges that nursing is considered as a stressful profession. In addition, results also showed that nurses experience low levels of job satisfaction. Rao and Malik (2012) found similar findings in a study of nurses working public and private hospitals. The results also showed that nurses experience low levels of work engagement. Hakanen and Schaufeli (2012) also reported low levels of work engagement among workers in health care. Lastly, the results showed that nurses experience moderate levels of social support. Similarly, Conde (2009) reported moderate levels of social support among nurse executives.

6.3.2 Objective three: Determine the relationship between occupational stress, job satisfaction, work engagement and social support among nurses

The results showed that there is a high negative correlation between occupational stress and job satisfaction. Sveinsdottir (2005) has also reported similar findings. The results also showed that occupational stress reported a moderate negative correlation with work engagement. Sloetjes (2012) has also reported a negative correlation between occupational stress and work engagement. Job satisfaction was found to have a high positive correlation with work engagement. Giallonardo et al. (2010) has also reported similar findings. In addition, occupational stress had a moderate negative correlation with social support.

6.3.3 Objective four: Assess the predictive value of occupational stress on job satisfaction and work engagement among nurses

The results showed that occupational stress predicts the levels of job satisfaction. Damondy and Smyth (2011) found similar results among a sample of Primary School teachers and School Principals in Ireland. The results also showed that occupational stress predicts the levels of work engagement. In a study among registered nurses in South Africa, van der Colff and Rothmann (2009) also found that occupational stress predicts the levels of work engagement.

6.3.4 Objective five: Determine whether social support mediates the effects of occupational stress on job satisfaction and work engagement among nurses

In this study the results of the Sobel test indicate that social support satisfaction only mediates the effects of staff issues on absorption (see Table 22). Social support was effective in reducing the effects of stressful events only if the form of social support that was provided matched the demands of the stressful event. This explained why social support satisfaction did not mediate the effects of occupational stress on any other factors of work engagement and job satisfaction.

The mediating role of social support is supported Cohen (2004) who states that social support acts as a buffer against occupational stress.

6.4 Recommendations

Future research on nurses conducted in Durban should seek to compare the differences or similarities in the occupational stress levels of Professional nurses, Enrolled nurses and Enrolled Auxilliary nurses located in different hospitals in the eThekwini Municipality. Attempts should also be made to measure occupational stress levels amongst larger samples of male nurses. In addition, building from the research conducted in this study, future research should aim to explore how nurses in Durban can be equipped to acquire higher levels of social support that can act as a buffer against the experiences of occupational stress in public hospitals.

6.5 Contributions

This study also added to what is known about the relationship between occupational stress, job satisfaction, work engagement and social support among nurses by showing that significant correlations exist between these variables in a public hospital located in the Durban region. Occupational stress was also found to be a significant predictor of job satisfaction and work engagement. The value of this study can be better appreciated considering the fact that it shows that the presence of social support mediates the effect of staff issues on absorption among nurses at the public hospital in Durban. In addition this study has added to what is known about social support as this variable has not been adequately investigated in the KZN region in recent years.

6.6 Limitations

The study was conducted using the non-probability sampling method, therefore it may not be possible to generalise the findings of this study to another population (Balnaves & Caputi, 2001). The study made use of mid-point scales so that participants could indicate which score represents their views. A limitation which accompanied the use of a mid-point scale is that the results could not be compared to any existing norms. Comparing the results to an existing norm group could have enriched the research study. It would also have been ideal to add value to this research study by using qualitative data through the use of interviews. However, due to time constraints, this was not possible. This study also used a cross-sectional design. A limitation of using a cross sectional design study is that such studies only measure existing relationships. In future a longitudinal study may add more value in order to understand the complex relationships between the variables considered in the present study. Furthermore, in a longitudinal study more reliable inferences can be made from the mediation effects (Balnaves & Caputi, 2001).

6.7 Summary

This chapter discussed the conclusions reached regarding literature and the conclusions reached regarding the empirical results. Recommendations, contributions of this study and the limitations were also discussed. The limitations do not take away from the significance of this study as the findings enabled the researcher to understand the relationships between different variables in the chosen sample of nurses.

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6.9 Appendices

Appendix A:

Section A: Letter of informed consent and informed consent form



CONFIDENTIAL

Letter to participant

As a Masters student from the University of KwaZulu-Natal, I intend to conduct a study on “occupational stress, job satisfaction, work engagement and social support among nurses in a public hospital in Durban”. Your participation in this research study would be greatly appreciated. Through this research endeavour, we hope to make a valuable contribution to the field of Industrial psychology and the sub-field of positive psychology.

Your participation in this research is entirely voluntary. If you choose not to participate, nothing will be held against you. You are also free to withdraw at any time during the process and there will be no negative consequences associated with your withdrawal. Please note that during the research you will be given pseudonyms in order to protect your identity. Therefore you are able to be completely honest when answering the questions knowing that you will be anonymous. All the information you give will be dealt with in a confidential manner. Only the researchers for this study will have access to it. After analyzing the research data, it will be stored away safely and securely by the researchers for 5 years after which it will be destroyed.

If you have any queries about the research or wish to know the results of this research please contact Dr. Thandi Magojo. Her contact details are as follows:

Telephone number: 031 260 1034

E-mail address: magojo@ukzn.ac.za

By agreeing to take part in this research you are indicating your consent to be a participant in this study. Thank you for your participation.

Sincerely

Sibusiso Sibisi

Informed consent form

I agree to participate in the research entitled occupational stress, job satisfaction, work engagement and social support among nurses in a public hospital in Durban” conducted by Sibusiso Sibisi from the School of Psychology of the University of KwaZulu-Natal.

I am aware that participation in this research study is entirely voluntary. I am also aware that I can withdraw at any time during the interview. I am also fully aware that my name will not be used in any part of this research thus this research is completely confidential. I know that the researcher will use pseudonyms in order to protect my identity. Should I have any queries at any time during this research study, I will contact the supervisor of this research study Dr. Thandi Magojo.

.....
Signature of participant

.....
Date

.....
Signature of researcher

.....
Date

Appendix B

Section A: Biographical Information Questionnaire

Please read and answer the following questions and tick the appropriate answer in the box provided

a) What is your gender?

Male	Female
------	--------

b) How long have worked at Wentworth Hospital?

Less than 1 year	1-4 years	5-9 years	More than 10 years
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c) What is your highest academic qualification?

High School Matric	Diploma, specify	Graduate, specify	Post Graduate, specify	Other, specify
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d) What is the category of nurses you belong in?

Professional nurse	Enrolled nurse	Enrolled auxiliary nurse
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e) Please indicate your race group

Black	White	Indian	Coloured	Other, specify
-------	-------	--------	----------	----------------

f) Please indicate your marital status

Married	Widowed	Divorced	Single
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g) Do you moonlight?

Yes	No
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h) Which ward do you work in?

Medical	Children	Surgical	Maternity
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Section B: Nursing Stress Indicator

Job stress can have serious effects on the lives of employees and their families. The impact of stressful job events is influenced by both the **amount** of stress associated with a particular event and the **frequency** of its occurrence. This survey will determine your perception of important sources of stress in your work. The survey lists 53 job-related items that many employees find stressful. First, you will be asked to rate the amount of stress associated with each event. Then, indicate the **number of times within the last 6 months** that you have experienced each event.

In making your ratings of the amount of stress for each stressor event, use all your knowledge and experience. Consider the amount of time and energy that you would need to cope with or adjust to the event. Base your ratings on your personal experience as well as what you have seen to be the case for others. Rate the **average amount of stress** that you feel is associated with each event, rather than the extreme.

The first event, **ASSIGNMENT OF DISAGREEABLE DUTIES** *e.g. tasks assigned to you that you don't want to do*, was rated by persons in a variety of occupations as producing an average amount of stress. This event has been given a rating of "5" and will be used as the **standard** for evaluating the other events. Compare each event with this standard. Then assign a number from "1" to "9" to indicate whether you judge the event **to be less or more stressful than being assigned disagreeable duties**.

PART A – Amount of stress

For this questionnaire, assume that the Assignment of Disagreeable Duties e.g. tasks assigned to you that you don't want to do, will cause an amount of stress that equals a 5 on the scale for

any person including you. So think about all the statements in terms of how you would experience stress if the **Assignment of Disagreeable Duties** will be a **5** on the scale. Thus, the **Assignment of Disagreeable Duties (5)** is the standard in terms of your evaluation of the amount of stress you experience on the other statements.

If the event listed is more stressful to you than the **ASSIGNMENT OF DISAGREEABLE DUTIES**, cross out (X) the appropriate number that is larger than “5”. For example:

1A Assignment of disagreeable duties	1	2	3	4	5	6	7	8	9
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If the event listed is less stressful to you than the **ASSIGNMENT OF DISAGREEABLE DUTIES**, cross out (X) the appropriate number that is smaller than “5”. For example:

1A Assignment of disagreeable duties	1	2	3	4	5	6	7	8	9
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PART B – Frequency of event

Indicate the approximate number of days during the past 6 months on which you have personally experienced the event. For example, if you have experienced the event listed on 4 days during the past six months, cross out the “4”. If you have not experienced the event on any days during the past six months, cross out the “0”. If you have experienced the event listed on 9 or more days during the past six months, cross out the “9+”. If you **make a mistake or change** your mind on any item, **cross out and circle the correct response**. For example:



1A Assignment of disagreeable duties	1	2	3	4	5	6	7	8	9

PART A – AMOUNT OF STRESS

Instructions: For job-related events judged to produce approximately the same amount of stress as the **ASSIGNMENT OF DISAGREEABLE DUTIES**, cross out the number “5”. For those events that you feel are **more** stressful than the standard, cross out a number proportionately **HIGHER** than “5”. If you feel an event is **less** stressful than the standard, cross out a number appropriately smaller than “5”. If the event is not applicable to your situation mark **NA (Not Applicable)**.

Stressful Job-Related Events	Amount of Stress									
	Low		Moderate				High			
1. Assignment of disagreeable duties X	1	2	3	4	5	6	7	8	9+	NA
2. Working overtime and emergency hours	1	2	3	4	5	6	7	8	9+	NA
3. Lack of opportunity for advancement	1	2	3	4	5	6	7	8	9+	NA
4. Assignment of new or unfamiliar duties	1	2	3	4	5	6	7	8	9+	NA
5. Fellow workers not doing their job	1	2	3	4	5	6	7	8	9+	NA
6. Inadequate support by supervisor/manager	1	2	3	4	5	6	7	8	9+	NA
7. Dealing with crisis situations	1	2	3	4	5	6	7	8	9+	NA
8. Lack of recognition for good work	1	2	3	4	5	6	7	8	9+	NA
9. Performing tasks not in job description	1	2	3	4	5	6	7	8	9+	NA

10. Inadequate or poor quality equipment	1	2	3	4	5	6	7	8	9+	NA
11. Assignment of increased responsibility	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Amount of Stress									
	Low			Moderate			High			
12. Periods of inactivity	1	2	3	4	5	6	7	8	9+	NA
13. Difficulty getting along with supervisor/manager	1	2	3	4	5	6	7	8	9+	NA
14. Experiencing negative attitudes toward the organization	1	2	3	4	5	6	7	8	9+	NA
15. Insufficient personnel to handle workload	1	2	3	4	5	6	7	8	9+	NA
16. Making critical on-the-spot decisions	1	2	3	4	5	6	7	8	9+	NA
17. Personal insult from patients or their families	1	2	3	4	5	6	7	8	9+	NA
18. Lack of participation in policy-making decisions	1	2	3	4	5	6	7	8	9+	NA
19. Inadequate salary	1	2	3	4	5	6	7	8	9+	NA
20. Competition for advancement	1	2	3	4	5	6	7	8	9+	NA
21. Poor or inadequate supervision/management	1	2	3	4	5	6	7	8	9+	NA
22. Frequent interruptions	1	2	3	4	5	6	7	8	9+	NA
23. Frequent changes from boring to demanding activities	1	2	3	4	5	6	7	8	9+	NA
24. Excessive paperwork e.g. administrative duties	1	2	3	4	5	6	7	8	9+	NA
25. Meeting deadlines	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Amount of Stress									
	Low			Moderate			High			
26. Insufficient personal time (e.g., coffee breaks, lunch)	1	2	3	4	5	6	7	8	9+	NA
27. Covering work for another employee	1	2	3	4	5	6	7	8	9+	NA

28. Poorly motivated co-workers	1	2	3	4	5	6	7	8	9+	NA
29. Conflicts with other departments/divisions	1	2	3	4	5	6	7	8	9+	NA
30. Dealing with difficult clients/patients	1	2	3	4	5	6	7	8	9+	NA
31. Dealing with other health care professionals (e.g. medical practitioners, dieticians, social workers, pharmacists)	1	2	3	4	5	6	7	8	9+	NA
32. Adhering to the budget of the hospital/institution	1	2	3	4	5	6	7	8	9+	NA
33. Stock control in the ward/unit/ /institution	1	2	3	4	5	6	7	8	9+	NA
34. The management of staff	1	2	3	4	5	6	7	8	9+	NA
35. Demands of clients/patients	1	2	3	4	5	6	7	8	9+	NA
36. Language and communication barriers with clients/patients	1	2	3	4	5	6	7	8	9+	NA
37. Excessive involvement in committee meetings (e.g. Infection control)	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Amount of Stress									
	Low			Moderate			High			
38. Security risk posed in area where your job is located	1	2	3	4	5	6	7	8	9+	NA
39. Health risk posed by contact with patients (e.g. HIV/AIDS, Tuberculosis)	1	2	3	4	5	6	7	8	9+	NA
40. Performing procedures that patients experience as painful	1	2	3	4	5	6	7	8	9+	NA
41. Patients who fail to improve	1	2	3	4	5	6	7	8	9+	NA
42. Conflict with a supervisor / manager	1	2	3	4	5	6	7	8	9+	NA
43. Communicating with a patient about death	1	2	3	4	5	6	7	8	9+	NA
44. Lack of a opportunity to talk openly with other staff members	1	2	3	4	5	6	7	8	9+	NA
45. Death of a patient	1	2	3	4	5	6	7	8	9+	NA
46. Making a mistake when treating a patient	1	2	3	4	5	6	7	8	9+	NA

47. Lack of support from colleagues	1	2	3	4	5	6	7	8	9+	NA
48. Death of a patient with whom you developed a close relationship	1	2	3	4	5	6	7	8	9+	NA
49. Disagreement with medical practitioner or colleague(s) concerning the treatment of a patient	1	2	3	4	5	6	7	8	9+	NA
50. Caring for the emotional and spiritual needs of a patient or his/her family	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Amount of Stress									
	Low			Moderate			High			
51. Inadequate information from a medical practitioner regarding the medical condition of a patient	1	2	3	4	5	6	7	8	9+	NA
52. Floating to other units that are short of staff	1	2	3	4	5	6	7	8	9+	NA
53. Watching a patient suffer	1	2	3	4	5	6	7	8	9+	NA
54. Criticism by a supervisor/manager	1	2	3	4	5	6	7	8	9+	NA
55. Insufficient time to perform tasks	1	2	3	4	5	6	7	8	9+	NA
56. Operating specialised equipment	1	2	3	4	5	6	7	8	9+	NA
57. Shortage of staff	1	2	3	4	5	6	7	8	9+	NA
58. Irregular working hours	1	2	3	4	5	6	7	8	9+	NA

PART B – Frequency of event

For each of the job-related events listed, please indicate the approximate number of days during the past 6 months on which you have **personally** experienced this event. Cross out “0” if the event did not occur, cross out the number “9+” for each event you experienced personally on 9 or more days during the past 6 months.

Stressful Job-Related Events	Number of Days on Which the Event Occurred During the Past 6 Months										
	0	1	2	3	4	5	6	7	8	9+	NA
59. Assignment of disagreeable duties	0	1	2	3	4	5	6	7	8	9+	NA
60. Working overtime and emergency hours	0	1	2	3	4	5	6	7	8	9+	NA
61. Lack of opportunity for advancement	0	1	2	3	4	5	6	7	8	9+	NA
62. Assignment of new or unfamiliar duties	0	1	2	3	4	5	6	7	8	9+	NA
63. Fellow workers not doing their job	0	1	2	3	4	5	6	7	8	9+	NA
64. Inadequate support by supervisor/manager	0	1	2	3	4	5	6	7	8	9+	NA
65. Dealing with crisis situations	0	1	2	3	4	5	6	7	8	9+	NA
66. Lack of recognition for good work	0	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Number of Days on Which the Event Occurred During the Past 6 Months										
67. Performing tasks not in job description	0	1	2	3	4	5	6	7	8	9+	NA
68. Inadequate or poor quality equipment	0	1	2	3	4	5	6	7	8	9+	NA
69. Assignment of increased responsibility	0	1	2	3	4	5	6	7	8	9+	NA
70. Periods of inactivity	0	1	2	3	4	5	6	7	8	9+	NA

71. Difficulty getting along with supervisor/manager	0	1	2	3	4	5	6	7	8	9+	NA
72. Experiencing negative attitudes toward the organisation	0	1	2	3	4	5	6	7	8	9+	NA
73. Insufficient personnel to handle workload	0	1	2	3	4	5	6	7	8	9+	NA
74. Making critical on-the-spot decisions	0	1	2	3	4	5	6	7	8	9+	NA
75. Personal insult from patients or their families	0	1	2	3	4	5	6	7	8	9+	NA
76. Lack of participation in policy-making decisions	0	1	2	3	4	5	6	7	8	9+	NA
77. Inadequate salary	0	1	2	3	4	5	6	7	8	9+	NA
78. Competition for advancement	0	1	2	3	4	5	6	7	8	9+	NA
79. Poor or inadequate supervision/management	0	1	2	3	4	5	6	7	8	9+	NA
80. Frequent interruptions	0	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Number of Days on Which the Event Occurred During the Past 6 Months										
81. Frequent changes from boring to demanding activities	0	1	2	3	4	5	6	7	8	9+	NA
82. Excessive paperwork e.g. administrative duties	0	1	2	3	4	5	6	7	8	9+	NA
83. Meeting deadlines	0	1	2	3	4	5	6	7	8	9+	NA
84. Insufficient personal time (e.g., coffee breaks, lunch)	0	1	2	3	4	5	6	7	8	9+	NA
85. Covering work for another employee	0	1	2	3	4	5	6	7	8	9+	NA
86. Poorly motivated co-workers	0	1	2	3	4	5	6	7	8	9+	NA
87. Conflicts with other departments/divisions	0	1	2	3	4	5	6	7	8	9+	NA
88. Dealing with difficult clients/patients	0	1	2	3	4	5	6	7	8	9+	NA
89. Dealing with other health care professionals (e.g. medical practitioners, dieticians, social workers, pharmacists)	0	1	2	3	4	5	6	7	8	9+	NA

90. Adhering to the budget of the hospital/institution	0	1	2	3	4	5	6	7	8	9+	NA
91. Stock control in the ward/unit/ /institution	0	1	2	3	4	5	6	7	8	9+	NA
92. The management of staff	0	1	2	3	4	5	6	7	8	9+	NA
93. Demands of clients/patients	0	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Number of Days on Which the Event Occurred During the Past 6 Months										
94. Language and communication barriers with clients/patients	0	1	2	3	4	5	6	7	8	9+	NA
95. Excessive involvement in committee meetings (e.g. Infection control)	0	1	2	3	4	5	6	7	8	9+	NA
96. Security risk posed in area where your job is located	0	1	2	3	4	5	6	7	8	9+	NA
97. Health risk posed by contact with patients (e.g. HIV/AIDS, Tuberculosis)	0	1	2	3	4	5	6	7	8	9+	NA
98. Performing procedures that patients experience as painful	0	1	2	3	4	5	6	7	8	9+	NA
99. Patients who fail to improve	0	1	2	3	4	5	6	7	8	9+	NA
100. Conflict with a supervisor / manager	0	1	2	3	4	5	6	7	8	9+	NA
101. Communicating with a patient about death	0	1	2	3	4	5	6	7	8	9+	NA
102. Lack of a opportunity to talk openly with other staff members	0	1	2	3	4	5	6	7	8	9+	NA
103. Death of a patient	0	1	2	3	4	5	6	7	8	9+	NA
104. Making a mistake when treating a patient	0	1	2	3	4	5	6	7	8	9+	NA
105. Lack of support from colleagues	0	1	2	3	4	5	6	7	8	9+	NA
Stressful Job-Related Events	Number of Days on Which the Event Occurred During the Past 6 Months										

106. Death of a patient with whom you developed a close relationship	0	1	2	3	4	5	6	7	8	9+	NA
107. Disagreement with medical practitioner or colleague(s) concerning the treatment of a patient	0	1	2	3	4	5	6	7	8	9+	NA
108. Caring for the emotional and spiritual needs of a patient or his/her family	0	1	2	3	4	5	6	7	8	9+	NA
109. Inadequate information from a medical practitioner regarding the medical condition of a patient	0	1	2	3	4	5	6	7	8	9+	NA
110. Floating to other units that are short of staff	0	1	2	3	4	5	6	7	8	9+	NA
111. Watching a patient suffer	0	1	2	3	4	5	6	7	8	9+	NA
112. Criticism by a supervisor/manager	0	1	2	3	4	5	6	7	8	9+	NA
113. Insufficient time to perform tasks	0	1	2	3	4	5	6	7	8	9+	NA
114. Operating specialized equipment	0	1	2	3	4	5	6	7	8	9+	NA
115. Shortage of staff	0	1	2	3	4	5	6	7	8	9+	NA
116. Irregular working hours	0	1	2	3	4	5	6	7	8	9+	NA

Section C: Minnesota Satisfaction Questionnaire

20 questions of Minnesota Satisfaction Questionnaire (MSQ) Short Form:

Below are a number of statements about satisfaction. Please indicate how satisfied or how unsatisfied you agree

1= Not Satisfied	2= Somewhat Satisfied	3= Satisfied	4= Very Satisfied	5= Extremely Satisfied
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1. The chance to work alone on the job.	1	2	3	4	5
2. The chance to do different things from time to time.	1	2	3	4	5
3. The chance to be “somebody” in the community.	1	2	3	4	5
4. The chance to do things for other people.	1	2	3	4	5
5. The chance to tell people what to do.	1	2	3	4	5
6. The chance to try my own methods of doing the job.	1	2	3	4	5
7. The chance to do something that makes use of my abilities.	1	2	3	4	5
8. The chances for advancement on this job.	1	2	3	4	5

1= Not Satisfied	2= Somewhat Satisfied	3= Satisfied	4= Very Satisfied	5= Extremely Satisfied
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9. Being able to keep busy all the Time	1	2	3	4	5
10. The competence of my supervisor in making decisions.	1	2	3	4	5
11. Being able to do things that don't go against my conscience.	1	2	3	4	5
12. The way my job provides for steady employment.	1	2	3	4	5
13. The way company policies are put into practice.	1	2	3	4	5
14. The way my boss handles his/her workers.	1	2	3	4	5
15. The way my co-workers get along with each other.	1	2	3	4	5
16. My pay and the amount of work I do.	1	2	3	4	5
17. The freedom to use my own judgment.	1	2	3	4	5
18. The working conditions and environment.	1	2	3	4	5
19. The praise I get for doing a good job.	1	2	3	4	5
20. The feeling of accomplishment I get from the job.	1	2	3	4	5

Section D: Utrecht Work Engagement Scale (UWES)

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, cross the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by crossing the number (from 1 to 6) that best describes how frequently you feel that way.

<i>0=Never</i>	1=Almost never	2=Rarely	3=Sometimes	4= Often	5=Very often	6=Always
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1. At my work, I feel bursting with energy	0	1	2	3	4	5	6
2. I find the work that I do full of meaning and purpose	0	1	2	3	4	5	6
3. Time flies when I'm working	0	1	2	3	4	5	6
4. At my job, I feel strong and vigorous	0	1	2	3	4	5	6
5. I am enthusiastic about my job	0	1	2	3	4	5	6
6. When I am working, I forget everything else around me	0	1	2	3	4	5	6
7. My job inspires me	0	1	2	3	4	5	6
8. When I get up in the morning, I feel like going to work	0	1	2	3	4	5	6
9. I feel happy when I am working intensely	0	1	2	3	4	5	6
10. I am proud on the work that I do	0	1	2	3	4	5	6
11. I am immersed in my work	0	1	2	3	4	5	6
12. I can continue working for very long	0	1	2	3	4	5	6

periods at a time							
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0=Never	1=Almost never	2=Rarely	3=Sometimes	4= Often	5=Very often	6=Always
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13.To me, my job is challenging	0	1	2	3	4	5	6
14.I get carried away when I'm working	0	1	2	3	4	5	6
15. At my job, I am very resilient, mentally	0	1	2	3	4	5	6
16. It is difficult to detach myself from my job	0	1	2	3	4	5	6
17.At my work I always persevere, even when things do not go well	0	1	2	3	4	5	6

Section E: Social Support Questionnaire (short form)

Instructions:

The following questions ask about people in your environment who provide you with help or social support. Each question has two parts. For the first part list all the people you know, excluding yourself with whom you can count on for help or support in the manner described.

Give the persons initials and their relationship to you. Do not list more than one person next to each of the letters beneath the question.

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
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For the second part, circle how satisfied you are with the overall support you have.

If you have no support for a question, check the words “No one”, but still rate your level of satisfaction. Do not list more than nine people per question.

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
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Example:

Who do you trust with information that could get you in trouble?

No one	1) T.N (brother)	2)L.M (friend)	3) R.S (friend)	4)T.N (father)	5)	6)	7)	8)	9)
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How satisfied?

6	5 X	4	3	2	1
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6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
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1. Whom can you really count on to listen to you when you need talk?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

2. Whom could you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

3. Whose lives do you feel an important part of?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
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4. Whom do you feel would help if you were married and had just separated from a spouse?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
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How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

5. Whom can you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

6. Whom can you talk with frankly, without having to watch what you say?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
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How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
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7. Who helps you feel that you truly have something positive to contribute to others?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
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How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

8. Whom can you really count on to distract you from your worries when you feel under stress?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
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How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

9. Whom can you really count on to be dependable when you need help?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

10. Whom can you really count on to help you out if you had just been fired from your job or expelled from school?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

11. With whom can you totally be yourself?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
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6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

12. Whom do you feel really appreciates you as a person?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

13. Whom can you really count on to give you useful suggestions that help you to avoid making mistakes?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

14. Whom can you count on to listen openly and uncritically to your innermost feelings?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

15. Who will comfort you when you need it by holding you in their arms?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

16. Whom do you feel help if a good friend of yours had been in a car accident and was hospitalized in a serious condition?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

17. Whom can you really count on to help you feel more relaxed when you are under pressure or tense?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

18. Whom do you feel would help if a family member close to you died?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

19. Who accepts you totally, including both your worst and best points?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

20. Whom can you really count on to care about you, regardless of what is happening to you?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

21. Whom can you really count on when you are very angry at someone else?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

22. Whom can you really count on to tell you, in a thoughtful manner when you need to improve in some way?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

23. Whom can you really count on to help you feel better when you are down- in- the- dumps?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

24. Whom do you feel truly loves you deeply?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

25. Whom can you count on to console you when you are very upset?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

26. Whom can you really count on to support you in major decisions that you make?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

6=very satisfied	5=fairly satisfied	4=a little satisfied	3-a little dissatisfied	2=fairly dissatisfied	1=very dissatisfied
------------------	--------------------	----------------------	-------------------------	-----------------------	---------------------

27. Whom can you really count on to help you feel better when you are very irritable, ready to get angry at almost anything?

No one	1)	2)	3)	4)	5)	6)	7)	8)	9)
--------	----	----	----	----	----	----	----	----	----

How satisfied?

6	5	4	3	2	1
---	---	---	---	---	---

End of Questionnaire

Appendix C:

Section A: Approval for request to conduct research study from UKZN



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

Research Office, Govan Mbeki Centre
Westville Campus
Private Bag x54001
DURBAN, 4000
Tel No: +27 31 260 3587
Fax No: +27 31 260 4609
mohase@ukzn.ac.za

21 July 2011

Mr SC Sibisi (207500423)
School of Psychology
Faculty of Humanities, Development and
Social Sciences
Howard College Campus

Dear Mr Sibisi

PROTOCOL REFERENCE NUMBER: HSS/0597/011M

PROJECT TITLE: Occupational stress, job satisfaction, work engagement and social support among nurses at a selected public hospital in Durban

In response to your application dated 15 July 2011, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

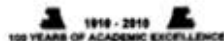
PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Professor Steven Collings (Chair)
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Supervisor: Dr T Magojo
cc. Mrs S van der Westhuizen, Post-Graduate Office



Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

Section B: Permission obtained from the KZN Department of Health



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Health Research & Knowledge Management
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg, 3200
Tel.: 033 – 395 2895
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM 124/11
Enquiries : Mr X. Xaba
Telephone : 033 – 395 2805

Dear Mr SC Sibisi

Subject: Approval of a Research Proposal

1. The research proposal titled 'Occupational stress, job satisfaction, work engagement and the mediating role of social support among nurses at a selected public hospital in Durban' was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby approved for research to be undertaken at Wentworth Hospital.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba.

Yours Sincerely

Mrs E. Snyman
Acting Chairperson: Provincial Health Research Committee
KZN Department of Health
Date: 16/08/2011

uMnyango Wezempilo . Departement van Gesondheid
Fighting Disease, Fighting Poverty, Giving Hope

Section C: Permission obtained from Hospital Superintendent



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

WENTWORTH HOSPITAL

Private Bag, Jacobs 4026
1 Boston Road, Jacobs 4026
Tel: 031-460 5000, Fax: 031-4689654
Email:
www.kznhealth.gov.za

Reference : Research Protocol
Your Ref : Protocol Ref. No. HSS/0597/011M
Enquiries : Dr. S.B. Kader
Telephone : 031-460 5001
E Mail : Suriva.kader@kznhealth.gov.za
Date : 2nd August 2011

Mr. S.C. Sibisi
School of Psychology
Faculty of Humanities, Development and
Social Sciences
Howard College Campus

Fax NO. 031-260 4609
mohunp@ukzn.ac.za

Dear Mr. Sibisi,k

RE: PERMISSION TO CONDUCT RESEARCH AT WENTWORTH HOSPITAL

I have a pleasure in informing you that permission has been granted to you to conduct research on:
**Occupational stress, job satisfaction, work engagement and social support among nurses
at a selected public hospital in Durban.**

Kindly take note of the following information before you continue:-

1. Please adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This research will only commence once this office has received confirmation from the Provincial Health Research Committee in the KwaZulu Natal Department of Health.
3. Kindly ensure that this office is informed before you commence your research.
4. The hospital will not provide any resources for this research.
5. You will be expected to provide feedback once your research is complete to the Chief Executive Officer.

Yours faithfully

DR. S.B. KADER
CHIEF EXECUTIVE OFFICER

uMnyango Wezempilo Department van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

Appendix D

Section A: Descriptive statistics for Nursing Stress Indicator

Table 22

Descriptive statistics for Nursing Stress Indicator

Item	Amount		Skewness	Kurtosis	Frequency		Skewness	Kurtosis	Severity
	Mean	Standard Deviation			Mean	Standard Deviation			
	Factor 1: Job demands								
Periods of inactivity	5.78	2.438	-.348	-.962	3.25	2.208	.184	-.483	18.785
Assignment of disagreeable duties	6.03	2.212	-.353	-.875	3.35	1.982	.340	.251	20.2005
Excessive involvement in committee meetings e.g.: infection control	5.99	2.382	-.389	-1.022	3.88	2.628	.175	-.834	23.2412
Stock control in the ward	5.96	2.374	-.472	-.774	4.09	2.619	.146	-.749	24.3764
Making critical on the spot decisions	6.04	2.200	-.387	-.792	3.39	2.122	.221	-.473	20.4756
Adhering to the budget of the hospital	5.89	2.418	-.452	-.881	3.71	2.386	.120	-.792	21.8519
Frequent changes from boring to demanding activities	5.98	2.281	-.433	-.734	3.61	2.196	.291	-.309	21.5878
Dealing with other health care professionals e.g. medical practitioners, dieticians, social workers, pharmacists	6.05	2.315	-.479	-.679	3.86	2.716	.334	-.765	23.353
Language and communications barriers with clients/patients	5.73	2.451	-.366	-.985	3.90	2.478	.279	-.578	22.347
Excessive paperwork e.g. administrative duties	6.35	2.226	-.556	-.693	4.49	2.645	.236	-.869	28.5115
The management of staff	6.25	2.188	-.573	-.606	4.33	2.716	.159	-.843	27.0625
Dealing with difficult clients/patients	6.33	2.144	-.477	-.752	4.23	2.687	.281	-.816	26.7759
Operating specialized equipment	6.07	2.233	-.546	-.598	3.62	2.279	.322	-.583	21.9734
Demands of the clients	6.30	2.153	-.520	-.656	4.61	2.757	.205	-.961	29.043
Meeting deadlines	6.48	2.312	3.63	2.351	3.57	2.391	.337	-.505	23.1336

Lack of opportunity for advancement	6.23	2.482	-.689	-.578	3.44	2.380	.483	-.269	21.4312
Security risk posed in area where your job is located	6.25	2.188	-.346	-.897	4.20	2.631	.109	-.813	26.25
Personal insults from patients or their families	6.48	2.195	-.594	-.766	3.76	2.494	.334	-.620	24.3648
Performing tasks not in job description	6.46	2.286	-.768	-.364	3.96	2.458	.437	-.453	25.5816
Assignment of increased responsibility	6.52	2.187	-.530	-.816	3.83	2.273	.334	-.329	24.9716
Assignment of new or unfamiliar duties	5.29	2.094	-.214	-.670	3.31	2.070	.122	-.721	17.5099
Health risk posed by contact with patients e.g. HIV /AIDS, T.B.	6.92	2.138	-.986	-.140	4.84	2.886	.046	1.182	33.4928
Competition for advancement	5.20	1.882	-.306	-.210	3.56	2.346	.396	-.400	18.512
Covering work for another employee	5.95	2.296	-.497	-1.022	4.53	2.753	.171	1.07	26.9535
Lack of support from colleagues	4.96	2.306	-.034	-1.113	3.27	2.282	.385	-.424	16.2192
Dealing with crisis situations	4.93	2.017	.158	-.900	3.41	2.073	.415	.048	16.8113
Insufficient personal time e.g. coffee breaks	6.11	2.192	-.722	-.266	4.13	2.741	.379	-.849	25.2343
Factor 2: Patient care									
Performing procedures that patients experience as painful	4.35	1.987	.225	-.458	4.26	2.607	.148	-.814	18.531
Making a mistake when treating a patient	4.35	2.308	.300	-.657	3.10	2.304	.565	-.262	13.485
Watching a patient suffer	4.75	2.345	.128	-.832	4.05	2.555	.336	-.733	19.2375
Patients that fail to improve	4.32	2.171	.171	-.615	4.35	2.624	.240	-.854	18.792
Disagreement with medical practitioner or colleague(s) concerning the treatment of a patient	4.39	2.208	.205	-.682	3.49	2.370	.391	-.366	15.3211
Death of a patient with whom you developed a close relationship	4.18	2.164	.371	-.299	3.46	2.461	.438	-.592	14.4628
Communicating with a patient about death	4.22	2.115	.192	-.436	3.47	2.243	.562	-.058	14.6434
Inadequate information from a medical practitioner regarding the medical condition of a patient	4.32	1.948	.269	-.007	3.46	2.343	.493	-.384	14.9472

Inadequate salary	6.18	2.100	-.248	-.808	4.23	2.810	.249	-.941	26.1414
Lack of recognition for good work	5.39	2.248	-.209	-.967	3.96	2.578	.308	-.696	21.3444
Caring for the emotional and spiritual needs of a patient or his/her family	3.93	1.922	.238	-.191	3.84	2.477	.547	-.373	15.0912
Lack of participation in policy making decisions	5.16	1.940	-.382	-.252	3.41	2.296	.383	-.382	17.5956
Frequent interruptions	4.05	1.838	.731	.408	3.89	2.349	.344	-.353	15.7545
Factor 3: Staff issues									
Shortage of staff	7.32	1.642	-1.791	4.095	5.61	2.437	.015	-.992	41.0652
Poorly motivated co-workers	6.92	1.592	-1.423	2.471	3.85	2.486	.223	-.650	26.642
Fellow workers not doing their job	6.97	1.561	-1.475	2.880	3.72	2.356	.546	-.261	25.9284
Conflicts with other departments	6.77	1.591	-1.241	2.190	3.54	2.443	.318	-.652	23.9658
Insufficient time to perform tasks	6.96	1.593	-1.665	3.608	3.96	2.548	.448	-.523	27.5616
Insufficient personnel to handle the workload	6.77	1.683	-1.129	1.544	4.30	2.597	.209	-.859	29.111
Factor 4: Lack of support									
Inadequate support by supervisor	5.01	2.283	-.152	-1.117	3.48	2.328	.382	-.316	17.4348
Conflict with supervisor/manager	4.84	2.164	-.161	-1.135	2.98	2.214	.605	.028	14.4232
Experiencing negative attitudes toward the organization	4.92	2.250	-.090	-1.069	3.46	2.066	.348	-.015	17.0232
Lack of opportunity to talk openly with other staff members	4.77	2.250	-.056	-1.059	3.36	2.250	.275	-.553	16.0272
Difficulty getting along with supervisor	4.74	2.170	-.031	-1.079	3.13	2.160	.332	-.130	14.8362
Poor or inadequate supervision	4.99	2.220	-.053	-.992	3.40	2.423	.473	-.378	16.966
Criticism by a supervisor/manager	4.91	2.264	-.015	-.905	3.24	2.282	.621	.032	15.9084
Floating to other units that are short of staff	6.17	2.265	-.550	-.968	4.24	2.769	.289	-1.05	26.1608
Inadequate or poor quality equipment	5.29	2.334	-.268	-1.097	4.07	2.491	.230	-.621	21.5303

Factor 5: Over-time

Irregular working hours	3.08	2.392	1.418	.856	4.13	2.543	.408	-.571	12.7204
Working overtime and emergency hours	1.81	1.534	2.639	6.749	3.64	2.211	.427	-.330	6.5884

Section B: Descriptive statistics for Minnesota Satisfaction Questionnaire

Table 23

Descriptive statistics for Minnesota Satisfaction Questionnaire

	N	Mean	Std. Deviation	Skewness	Kurtosis
The chance to work alone on the job	118	2.71	1.248	.377	-.965
The chance to do different things from time to time	118	2.94	1.229	.283	-1.010
The chance to be somebody in the community	118	2.92	1.308	.329	-1.151
The chance to do things for people	118	3.01	1.244	.309	-1.144
The chance to tell people what to do	118	2.90	1.215	.459	-1.008
The chance to try my own methods of doing the job	118	2.96	1.323	.214	-1.256
The chance to do something that makes use of my abilities	118	3.06	1.354	.164	-1.358
The chances for advancement on this job	118	2.75	1.358	.374	-1.085
Being able to keep busy all the time	118	2.87	1.258	.454	-.987
The competence of my supervisor in making decisions	118	2.37	1.225	.300	-1.031
Being able to do things that don't go against my conscience	118	2.99	1.311	.248	-1.216
The way my job provides for steady employment	118	2.85	1.285	.413	-1.013
The way company policies are put into practise	118	2.25	1.207	.446	-.958
The way my boss handles his/her workers	118	2.25	1.212	.510	-.821
The way my co-workers get along with each other	118	2.50	1.246	.513	-.733
My pay and the amount of work I do	118	2.00	1.240	.847	-.615
The freedom to use my own judgement	118	2.76	1.279	.481	-1.010
The working conditions and environment	118	2.02	1.233	.829	-.615
The praise I get for doing a good job	118	2.13	1.318	.765	-.681
The feeling of accomplishment I get from the job	118	2.84	1.281	.481	-1.033

Section C: Descriptive statistics for Utrecht Work Engagement Scale

Table 24

Descriptive statistics for Utrecht Work Engagement Scale

	N	Mean	Std. Deviation	Skewness	Kurtosis
At my work, I feel bursting with energy	116	2.81	1.598	.368	-1.088
I find the work that I do full of meaning and purpose	116	3.69	1.535	.082	-1.160
Time flies when I'm working	116	3.29	1.604	.306	-1.309
At my job, I feel strong and vigorous	116	2.84	1.615	.409	-1.029
I am enthusiastic about my job	116	3.78	1.669	-.003	-1.307
When I am working, I forget everything else around me	116	3.25	1.587	.416	-1.123
My job inspires me	116	3.71	1.594	.113	-1.126
When I get up in the morning, I feel I am going to work	116	2.81	1.719	.436	-1.174
I feel I am happy when I am working intensely	116	3.22	1.587	.369	-1.158
I am proud on the work that I do	116	3.84	1.652	.054	-1.313
I am immersed in my work	116	3.22	1.583	.265	-1.183
I can continue working for very long periods at a time	116	2.72	1.678	.562	-.969
To me, my job is challenging	116	3.87	1.563	.065	-1.286
I get carried away when I am working	116	3.26	1.555	.320	-1.188
At my job I am very resilient, mentally	116	2.84	1.682	.439	-1.092
It is difficult to detach myself from my job	116	3.25	1.693	.266	-1.307
At work I always persevere, even when things do not go well	116	3.08	1.866	.278	-1.420

Section D: Descriptive statistics for the Social Support Questionnaire

Table 25

Descriptive statistics for the Social Support Questionnaire

	N	Mean	Std. Deviation	Skewness	Kurtosis
Whom can you really count on when you need to talk?	111	3.29	2.042	.651	-.359
How satisfied?	111	3.70	1.876	-.180	-1.548
Whom could you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again?	111	2.92	1.922	.501	-.483
How satisfied?	111	3.63	1.935	-.152	-1.599
Whose lives do you feel an important part of?	111	3.44	2.012	.418	-.469
How satisfied?	111	3.85	1.969	-.292	-1.608
Whom do you feel would help you if you were married and had just separated from a spouse?	111	2.91	2.038	.459	-.976
How satisfied?	111	3.68	1.963	-.187	-1.579
Whom can you really count on to help you out in a crisis situation, even though they would have to go out of the way to do so?	111	3.08	2.054	.466	-1.005
How satisfied?	111	3.63	1.926	-.160	-1.541
Whom can you talk with frankly, without having to watch what to say?	111	3.00	2.178	.521	-.697
How satisfied?	111	3.70	1.966	-.137	-1.486
Who helps you feel that you truly have something to contribute to others?	111	3.14	2.219	.455	-.851
How satisfied?	111	3.51	1.939	.082	-1.401
Whom can you really count on to distract you from your worries when you feel under stress?	111	2.96	2.132	.541	-.773
How satisfied?	111	3.57	1.962	-.044	-1.551
Whom can you really count on to be dependable when you need help?	111	3.00	2.085	.484	-.699
How satisfied?	111	3.69	1.972	-.113	-1.629
Whom can you really count on to help you out if you had just been fired from your job or expelled from school?	111	3.14	2.049	.422	-.775
How satisfied?	111	3.67	1.946	-.128	-1.573
With whom can you totally be yourself?	111	3.04	2.009	.340	-.889
How satisfied?	111	3.67	1.899	-.157	-1.444
Whom do you feel really appreciates you as a person?	111	3.19	2.091	.394	-.612
How satisfied?	111	3.59	1.974	-.075	-1.595
Whom can you really count on to give you useful suggestions that help you avoid making mistakes?	111	3.05	2.064	.450	-.881

How satisfied?	111	3.50	1.925	-.030	-1.576
Whom can you count on to listen openly and uncritically to your innermost feelings	111	3.14	2.011	.522	-.559
How satisfied?	111	3.67	1.889	-.116	-1.506
Who will comfort you when you need it by holding you in their arms?	111	3.22	1.923	.444	-.748
How satisfied?	111	3.74	1.943	-.176	-1.566
Whom do you feel would help if a good friend of yours had been in a car accident and was hospitalised in a serious condition?	111	3.08	2.063	.534	-.758
How satisfied?	111	3.44	1.915	-.012	-1.558
Whom can you really count on to help you feel more relaxed when you are under pressure or tense?	111	2.98	1.991	.546	-.450
How satisfied?	111	3.56	1.924	.034	-1.500
Whom do you feel would help if a family member close to you died?	111	3.23	1.867	.374	-.599
How satisfied?	111	3.54	1.930	-.028	-1.504
Who accepts you totally, including both your worst and best points?	111	2.99	1.966	.569	-.453
How satisfied?	111	3.60	1.932	.009	-1.627
Whom can you really count on to care of you, regardless of what is happening to you?	111	3.23	2.003	.368	-.901
How satisfied?	111	3.68	1.945	-.217	-1.555
Whom can you really count on when you are very angry at someone else?	111	2.98	2.089	.451	-.744
How satisfied?	111	3.44	2.017	.026	-1.637
Whom can you really count on to tell you, in a thoughtful manner when you need to improve in some way?	111	2.99	2.069	.602	-.702
How satisfied?	111	3.56	1.929	-.071	-1.565
Whom can you really count on to help you if you feel better when you are down-in-the-dumps	111	2.99	2.056	.549	-.490
How satisfied?	111	3.56	1.910	-.103	-1.532
Whom do you feel loves deeply?	111	3.17	2.004	.568	-.559
How satisfied?	111	3.80	2.049	-.192	-1.684
Whom can you count on to console you when you are very upset?	111	3.13	2.014	.450	-.766
How satisfied?	111	3.59	1.816	-.085	-1.445
Whom can you count on to support you in major decisions that you make?	111	3.14	1.989	.537	-.513
How satisfied?	111	3.64	1.948	-.132	-1.588
Whom can you really count on to help you feel better when you are very irritable, ready to get angry at almost anything?	111	2.77	1.994	.675	-.430
How satisfied?	111	3.39	1.922	.058	-1.472

Appendix E

Section A: Mediation Effect

Table 26

Mediating role of social support satisfaction on the effects of job demands on intrinsic motivation

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.158	Sobel test	-2.47	0.004	0.013
<i>b</i>	.066	Aroian test	-2.45	0.004	0.014
<i>sa</i>	.022	Goodman test	-2.49	0.004	0.012
<i>sb</i>	.025				

Table 26 shows that the test statistic for the Sobel test is -2.47 ($p < 0.05$). The results indicate that the impact of job demands on intrinsic motivation is not reduced significantly by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 27

Mediating role of social support on the effects of patient care on intrinsic motivation

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.047	Sobel test	-.901	0.003	0.367
<i>b</i>	.066	Aroian test	-0.849	0.003	0.395
<i>sa</i>	.049	Goodman test	-.0964	0.003	0.334
<i>sb</i>	.025				

Table 27 shows that the test statistic for the Sobel test is -0.901 ($p < 0.05$). The results indicate that the impact of patient care on intrinsic motivation is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 28***Mediating role of social support satisfaction on the effects of staff issues on intrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.025	Sobel test	0.284	0.005	0.77
<i>b</i>	.066	Aroian test	0.264	0.006	0.79
<i>sa</i>	.088	Goodman test	0.304	0.005	0.76
<i>sb</i>	.025				

Table 28 shows that the test statistic for the Sobel test is 0.284 ($p > 0.05$). The results indicate that the impact of staff issues on intrinsic motivation is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 29***Mediating role of social support satisfaction on the effects of lack of support on intrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.013	Sobel test	-1.38	0.00	0.16
<i>b</i>	.066	Aroian test	-1.31	0.00	0.18
<i>sa</i>	.008	Goodman test	-1.46	0.00	0.14
<i>sb</i>	.025				

Table 29 shows that the test statistic for the Sobel test is -1.38 ($p > 0.05$). The results indicate that the impact of lack of support on intrinsic motivation is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 30***Mediating role of social support satisfaction on the effects of working over-time on intrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.095	Sobel test	-.385	0.01	0.700
<i>b</i>	.066	Aroian test	-0.360	0.01	0.718
<i>sa</i>	.244	Goodman test	-.415	0.01	0.677
<i>sb</i>	.025				

Table 30 shows that the test statistic for the Sobel test is -0.385 ($p > 0.05$). The results indicate that impact of working over-time on intrinsic motivation is not significantly reduced with the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation

Table 31***Mediating role of social support satisfaction on the effects of job demands on extrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.152	Sobel test	-4.147	0.00	0.00
<i>b</i>	.097	Aroian test	-4.123	0.00	0.00
<i>sa</i>	.019	Goodman test	-4.171	0.00	0.00
<i>sb</i>	.020				

Table 31 shows that the test statistic for the Sobel test is -4.14 ($p < 0.00$). The results indicate that the impact of job demands on extrinsic motivation is not reduced with the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 32***Mediating role of social support satisfaction on the effects of patient care on extrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.082	Sobel test	-1.77	0.00	0.07
<i>b</i>	.097	Aroian test	-1.74	0.00	0.08
<i>sa</i>	.043	Goodman test	-1.80	0.00	0.07
<i>sb</i>	.020				

Table 32 shows that the test statistic for the Sobel test is -1.77 ($p > 0.05$). The results indicate that the impact of patient care on extrinsic motivation is not reduced with the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 33***Mediating role of social support satisfaction on the effects of staff issues on extrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.095	Sobel test	-1.21	0.005	0.77
<i>b</i>	.097	Aroian test	-1.18	0.006	0.79
<i>sa</i>	.076	Goodman test	-1.23	0.005	0.76
<i>sb</i>	.020				

Table 33 shows that the test statistic for the Sobel test is -1.21 ($p > 0.05$). The results indicate that the impact of staff issues on extrinsic motivation is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 34***Mediating role of social support satisfaction on the effects of lack of support on extrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.015	Sobel test	-1.960	0.00	0.04
<i>b</i>	.097	Aroian test	-1.926	0.00	0.05
<i>sa</i>	.007	Goodman test	-1.995	0.00	0.04
<i>sb</i>	.020				

Table 34 shows that the test statistic for the Sobel test is -1.96 ($p < 0.05$). The results indicate that the impact of lack of support on extrinsic motivation is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 35***Mediating role of social support satisfaction on the effects of working over-time on extrinsic motivation***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.171	Sobel test	0.795	0.02	0.42
<i>b</i>	.097	Aroian test	0.779	0.02	0.43
<i>sa</i>	.212	Goodman test	0.812	0.02	0.41
<i>sb</i>	.020				

Table 35 shows that the test statistic for the Sobel test is 0.79 ($p > 0.05$). The results indicate that the impact of lack of support on extrinsic motivation is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 36***Mediating role of social support satisfaction on the effects of job demands on vigour***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.190	Sobel test	-4.83	0.004	0.00
<i>b</i>	.118	Aroian test	-4.81	0.004	0.00
<i>sa</i>	.020	Goodman test	-4.85	0.004	0.00
<i>sb</i>	.021				

Table 36 shows that the test statistic for the Sobel test is -4.83 ($p < 0.00$). The results indicate that the impact of job demands on vigour is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 37***Mediating role of social support satisfaction on the effects of patient care on vigour***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.022	Sobel test	-0.47	0.00	0.63
<i>b</i>	.118	Aroian test	-0.46	0.00	0.63
<i>sa</i>	.046	Goodman test	-0.48	0.00	0.62
<i>sb</i>	.021				

Table 37 shows that the test statistic for the Sobel test is -0.47 ($p > 0.05$). The results indicate that the impact of patient care on vigour is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 38***Mediating role of social support satisfaction on the effects of staff issues on vigour***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.119	Sobel test	1.40	0.00	0.159
<i>b</i>	.118	Aroian test	1.38	0.01	0.166
<i>sa</i>	.082	Goodman test	1.42	0.00	0.153
<i>sb</i>	.021				

Table 39 shows that the test statistic for the Sobel test is 1.40 ($p > 0.05$). The results indicate that the impact of stress caused by staff issues on vigour is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 39***Mediating role of social support satisfaction on the effects of lack of support on vigour***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.004	Sobel test	0.56	0.00	0.56
<i>b</i>	.118	Aroian test	0.55	0.00	0.57
<i>sa</i>	.007	Goodman test	0.577	0.00	0.56
<i>sb</i>	.021				

Table 39 shows that the test statistic for the Sobel test is 0.56 ($p > 0.05$). The results indicate that the impact of stress caused by lack of support on vigour is not reduced by the inclusion of social support as a mediator. Therefore, there is no evidence of mediation.

Table 40***Mediating role of social support satisfaction on the effects of working over-time on vigour***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.375	Sobel test	1.57	0.02	0.11
<i>b</i>	.118	Aroian test	1.55	0.02	0.11
<i>sa</i>	.228	Goodman test	1.60	0.02	0.10
<i>sb</i>	.021				

Table 40 shows that the test statistic for the Sobel test is 1.57 ($p > 0.05$). The results indicate that the impact of stress caused by working over-time on vigour is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 41***Mediating role of social support satisfaction on the effects of job demands impact on dedication***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.100	Sobel test	-5.70	0.00	0.23
<i>b</i>	.126	Aroian test	-5.69	0.00	0.23
<i>sa</i>	.016	Goodman test	-5.71	0.00	0.23
<i>sb</i>	.009				

Table 41 shows that the test statistic for the Sobel test is -5.70 ($p > 0.05$). The results indicate that the impact of job demands on dedication is not reduced with the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 42***Mediating role of social support on the effects of patient care on dedication***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.047	Sobel test	-1.26	0.00	0.20
<i>b</i>	.126	Aroian test	-1.26	0.00	0.20
<i>sa</i>	.037	Goodman test	-1.26	0.00	0.20
<i>sb</i>	.009				

Table 42 shows that the test statistic for the Sobel test is -1.26 ($p > 0.05$). The results indicate that the impact of stress caused by patient care on dedication is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 43:***Mediating role of social support satisfaction on the effects of staff issues on dedication***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.076	Sobel test	1.14	0.00	0.25
<i>b</i>	.126	Aroian test	1.14	0.00	0.25
<i>sa</i>	.066	Goodman test	1.15	0.00	0.24
<i>sb</i>	.009				

Table 43 shows that the test statistic for the Sobel test is 1.14 ($p > 0.05$). The results indicate that the impact of staff issues on dedication is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 44**Mediating role of social support satisfaction on the effects of lack of support on dedication**

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.005	Sobel test	-0.83	0.00	0.40
<i>b</i>	.126	Aroian test	-0.82	0.00	0.40
<i>sa</i>	.006	Goodman test	-0.83	0.00	0.40
<i>sb</i>	.009				

Table 44 shows that the test statistic for the Sobel test is -0.83 ($p > 0.05$). The results indicate that the impact of lack of support on dedication is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 45**Mediating role of social support satisfaction on the effects of working over-time on dedication**

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.253	Sobel test	1.36	0.02	0.17
<i>b</i>	.126	Aroian test	1.35	0.02	0.17
<i>sa</i>	.185	Goodman test	1.36	0.02	0.17
<i>sb</i>	.009				

Table 45 shows that the test statistic for the Sobel test is 1.36 ($p > 0.05$). The results indicate that the impact of working over-time on dedication is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 46***Mediating role of social support satisfaction on the effects of job demands on absorption***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.135	Sobel test	-4.15	0.002	0.00
<i>b</i>	.075	Aroian test	-4.13	0.002	0.00
<i>sa</i>	.015	Goodman test	-4.17	0.00	0.00
<i>sb</i>	.016				

Table 46 shows that the test statistic for the Sobel test -4.15 ($p < 0.00$). The results indicate that the impact of job demands on absorption is not reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 47***Mediating role of social support satisfaction on the effects of patient care on absorption***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	.045	Sobel test	1.27	0.00	0.20
<i>b</i>	.075	Aroian test	1.24	0.00	0.21
<i>sa</i>	.034	Goodman test	1.30	0.00	0.19
<i>sb</i>	.016				

Table 47 shows that the test statistic for the Sobel test is 1.27 ($p > 0.05$). The results indicate that the impact of patient care on absorption is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 48***Mediating role of social support satisfaction on the effects of lack of support on absorption***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.009	Sobel test	-1.68	0.00	0.09
<i>b</i>	.075	Aroian test	-1.64	0.00	0.09
<i>sa</i>	.005	Goodman test	-1.71	0.00	0.08
<i>sb</i>	.016				

Table 48 shows that the test statistic for the Sobel test is -1.68 ($p > 0.05$). The results indicate that the impact of lack of support on absorption is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Table 49***Mediating role of social support satisfaction on the effects working over-time on absorption***

	Input:		Test statistic	Standard error	p-value
<i>a</i>	-.025	Sobel test	-0.14	0.01	0.88
<i>b</i>	.075	Aroian test	-0.14	0.01	0.88
<i>sa</i>	.168	Goodman test	-0.15	0.01	0.87
<i>sb</i>	.016				

Table 49 shows that the test statistic for the Sobel test is -0.14 ($p > 0.05$). The results indicate that the impact of working over-time on absorption is not significantly reduced by the inclusion of social support satisfaction as a mediator. Therefore, there is no evidence of mediation.

Appendix F

Section A: Factor analysis for Nursing Stress Indicator

Table 50

Factor analysis for Nursing Stress Indicator

Items	Rotated Component Matrix				
	1	2	3	4	5
Periods of inactivity	.877	.014	-.022	.159	.011
Assignment of disagreeable duties	.860	.009	.041	.201	.035
Excessive involvement in committee meetings e.g. infection control	.849	-.023	.205	.096	-.033
Making critical on the spot decisions	.831	.005	.065	.241	.153
Frequent changes from boring to demanding activities	.831	-.050	.093	.294	.151
Stock control in the ward	.828	.008	.142	.240	-.040
Adhering to the budget of the hospital	.821	-.005	.098	.230	.066
Language and communications barriers with clients/patients	.803	-.162	.029	.178	.077
Dealing with other health care professionals e.g. medical practitioners, dieticians, social workers, pharmacists	.797	.008	.296	.111	-.076
Excessive paperwork e.g. administrative duties	.786	.208	.255	.116	.050
Operating specialised equipment	.775	.120	-.018	.181	.151
The management of staff	.768	.157	.232	.141	-.117
Lack of opportunity for advancement	.762	.054	-.035	.345	.232
Dealing with difficult clients/patients	.761	.205	.225	.201	-.022
Meeting deadlines	.757	.302	.114	.019	-.250
Demands of the clients	.750	.191	.324	.133	-.123
Performing tasks not in job description	.739	.134	.044	.434	.169
Assignment of increased responsibility	.737	.199	.138	.217	-.001
Security risk posed in area where your job is located	.736	.162	.283	.109	.007
Personal insults from patients or their families	.731	.237	.051	.064	-.065
Assignment of new or unfamiliar duties	.660	.036	-.101	-.148	.377
Competition for advancement	.568	-.040	-.007	-.016	.539
Health risk posed by contact with patients e.g. HIV /AIDS, T.B.	.553	.215	.154	.239	-.046
Covering work for another employee	.546	.462	.499	.228	-.018
Lack of support from colleagues	.508	.471	.194	.407	-.183
Dealing with crisis situations	.482	.436	.072	.130	.333
Insufficient personal time e.g. coffee breaks	.389	.337	.123	.139	.143

Performing procedures that patients experience as painful	.107	.895	.080	.049	-.115
Death of a patient	.132	.862	.119	.156	-.018
Watching a patient suffer	-.044	.845	.061	.299	.147
Making a mistake when treating a patient	.146	.841	.126	.025	-.242
Patients that fail to improve	.157	.839	.046	.083	-.175
Disagreement with medical practitioner or colleague(s) concerning th treatment of a patient	.065	.827	.127	.222	.128
Death of a patient with whom you developed a close relationship	.149	.811	-.027	.282	.012
Communicating with patients about death	.183	.807	.173	.151	-.067
Inadequate information from a medical practitioner regarding the medical condition of a patient	.225	.705	.203	.282	.039
Inadequate salary	-.099	.640	.079	-.020	.325
Lack of recognition for good work	.278	.545	.312	.486	.175
Irregular working hours	-.292	.544	.079	.052	.404
Caring for the emotional and spiritual needs of a patient or his/her family	.290	.488	.086	.343	.185
Working overtime and emergency hours	-.222	.478	.021	-.031	.375
Shortage of staff	.015	.125	.915	.019	.044
Fellow workers not doing their job	.184	.017	.871	.175	-.015
Poorly motivated co-workers	.137	.168	.863	-.009	.051
Conflicts with other departments	.207	.202	.831	.036	.155
Insufficient time to perform tasks	.106	.264	.830	.015	-.015
Insufficient personnel to handle the workload	.276	-.016	.813	.218	-.019
Inadequate support by supervisor	.454	.368	.100	.723	.089
Conflict with supervisor/manager	.524	.379	.069	.685	.022
Experiencing negative attitudes toward the organisation	.531	.345	.102	.653	.041
Poor or inadequate supervision	.437	.257	.267	.643	.131
Lack of opportunity to talk openly with other staff members	.566	.256	-.043	.633	-.074
Difficulty getting along with supervisor	.575	.267	.020	.627	-.010
Criticism by a supervisor/manager	.523	.341	.041	.595	-.041
Floating to other units that are short of staff	.371	.439	.353	.520	.162
Inadequate or poor quality equipment	.342	.426	.331	.506	.135
Lack of participation in policy making decisions	.154	-.043	.055	.083	.692
Frequent interruptions	-.038	.293	.175	.302	.394

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Table 51***Total Variance explained by the factors of occupational stress***

Component	Total Variance Explained					
	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	24.823	42.798	42.798	17.357	29.925	29.925
2	8.146	14.044	56.842	10.176	17.545	47.471
3	4.271	7.363	64.206	5.907	10.184	57.655
4	2.189	3.773	67.979	5.598	9.652	67.307
5	1.845	3.181	71.160	2.235	3.853	71.160

Extraction Method: Principal Component Analysis.

Section B: Factor analysis for Minnesota Satisfaction Questionnaire**Table 52*****Factor analysis for Minnesota Satisfaction Questionnaire***

Items	Rotated Component Matrix	
	Factor Loadings	
	1	2
My pay and the amount of work I do	.842	.326
The praise I get for doing a good job	.817	.371
The way company policies are put into practise	.809	.339
The working conditions and environment	.800	.351
The way my boss handles his/her workers	.794	.380
The competence of my supervisor in making decisions	.747	.416
The way my job provides for steady employment	.702	.439
The way my co-workers get along with each other	.696	.417
The feeling of accomplishment I get from the job	.676	.565
The freedom to use my own judgement	.669	.566
The chance to try my own methods of doing the job	.337	.872
The chance to be somebody in the community	.289	.827
The chance to do something that makes use of my abilities	.409	.816
The chance to do different things from time to time	.339	.789
The chance to do things for people	.416	.780
The chance to tell people what to do	.473	.769

The chances for advancement on this job	.420	.698
Being able to do things that dont go againts my conscience	.525	.646
Being able to keep busy all the time	.545	.625
The chance to work alone on the job	.432	.570
Extraction Method: Principal Component Analysis.		
Rotation Method: Varimax with Kaiser Normalization.		

Table 53

Total Variance explained by the factors of job satisfaction

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.606	68.028	68.028	7.554	37.768	37.768
2	1.309	6.546	74.574	7.361	36.806	74.574

Extraction Method: Principal Component Analysis.

Section C: Factor analysis for the Utrecht Work Engagement Scale

Table 54

Factor analysis for the Utrecht Work Engagement Scale

Items	Rotated Component Matrix		
	Factor Loadings		
	1	2	3
I can continue working for very long periods at a time	.820	.331	.276
At my job, i feel strong and vigorous	.756	.371	.386
At my work, I feel bursting with energy	.747	.365	.387
At work I always persevere, even when things do not go well	.662	.278	.543
I am immersed in my work	.658	.527	.312
When I get up in the morning, I feel I am going to work	.640	.407	.437
I get carried away when I am working	.636	.435	.454
My job inspires me	.316	.820	.322
I find the work that I do full of meaning and purpose	.409	.792	.247

I am enthusiastic about my job	.393	.771	.339
To me, my job is challenging	.220	.757	.452
I am proud on the work that I do	.501	.717	.293
It is difficult to detach myself from my job	.345	.327	.848
Time flies when I'm working	.367	.345	.809
I feel I am happy when I am working intensely	.381	.355	.795
When I am working, I forget everything else around me	.453	.476	.624
At my job I am very resilient, mentally	.578	.357	.599

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 55

Total Variance explained by the factors of work engagement

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.710	74.765	71.765	5.146	30.268	30.268
2	1.5020	5.625	79.390	4.777	28.101	58.369
3	1.3259	4.379	84.769	4.488	26.401	84.769

Extraction Method: Principal Component Analysis.

Section D: Factor analysis for Social Support Questionnaire

Table 56

Factor analysis for Social Support Questionnaire

	Rotated Component Matrix		
	Items	Factor Loadings	
		1	2
How satisfied?		.878	.305
How satisfied?		.867	.291
How satisfied?		.861	.334
How satisfied?		.851	.277
How satisfied?		.845	.366

How satisfied?	.842	.323
How satisfied?	.841	.326
How satisfied?	.841	.365
How satisfied?	.838	.365
How satisfied?	.836	.379
How satisfied?	.834	.364
How satisfied?	.831	.354
How satisfied?	.828	.347
How satisfied?	.819	.342
How satisfied?	.810	.377
How satisfied?	.808	.422
How satisfied?	.807	.379
How satisfied?	.801	.309
How satisfied?	.799	.376
How satisfied?	.787	.379
How satisfied?	.778	.410
How satisfied?	.748	.446
How satisfied?	.737	.489
How satisfied?	.726	.380
How satisfied?	.717	.477
How satisfied?	.716	.495
How satisfied?	.656	.405
Whom do you feel would help if a good friend of yours had been in a car accident and was hospitalised in a serious condition?	.315	.849
Whom can you really count on to tell you, in a thoughtful manner when you need to improve in some way?	.284	.845
Whom can you really count on when you are very angry at someone else?	.289	.828
With whom can you totally be yourself?	.358	.824
Whom can you really count on to help you out if you had just been fired from your job or expelled from school?	.353	.818
Whom can you count on to listen openly and uncritically to your innermost feelings	.358	.817
Whom can you count on to support you in major decisions that you make?	.342	.802
Whom can you really count on to care of you, regardless of what is happening to you?	.333	.797
Whom can you really count on to distract you from your worries when you feel under stress?	.397	.794
Whom do you feel really appreciates you as a person?	.395	.794
Whom can you really count on to help you feel better when you are very irritable, ready to get angry at almost anything?	.299	.793
Whom can you really count on to help you if you feel better when yo are down-in-the-dumps	.351	.790
Whom can you on to console you when you are very upset?	.289	.790
Whom can you talk with frankly, without having to watch what to say?	.345	.790
Whom can you really count on to be dependable when you need help?	.372	.789
Whom can you really count on to help you feel more relaxed when you are under pressure or tense?	.327	.783

Whom do you feel loves deeply?	.393	.783
Who will comfort you when you need it by holding you in their arms?	.417	.783
Whom do you feel would help you if you were married and had just separated from a spouse?	.343	.775
Who accepts you totally, including both your worst and best points?	.268	.770
Who helps you feel that you truly have something to contribute to others?	.459	.746
Whom can you really count on to give you useful suggestions that help you avoid making mistakes?	.393	.735
Whom could you really count on to help you if a person whom you thought was a good friend insulted you and told you that he/she didn't want to see you again?	.336	.722
Whom can you really count on to help you out in a crisis situation, even though they would have to go out of their way to do so?	.374	.704
Whom do you feel would help if a family member close to you died?	.420	.692
Whom can you really count on when you need to talk?	.466	.637
Whose lives do you feel an important part of?	.530	.629

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Table 57

Total variance explained by the factors of social support

Component	Total Variance Explained					
	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	36.199	67.036	67.036	21.179	39.220	39.220
2	5.054	9.360	76.396	20.075	37.176	76.396

Extraction Method: Principal Component Analysis.