

**JOB INSECURITY, JOB SATISFACTION AND GENERAL HEALTH IN A HIGHER
EDUCATION INSTITUTION**

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Triangle Campus of the North-West University

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COMMENTS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the *Publication Manual* (6th edition) of the American Psychological Association (APA) were followed in this thesis.
- The thesis is submitted in the form of three research articles.

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I hereby declare that “Job insecurity, job satisfaction and general health in a higher education institution” is my own work, that it has not been submitted for any degree or examination at any institution of higher learning; and that all references have, to my best of my knowledge, been correctly reported. It is being submitted for the degree PhD at the North-West University.

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DECLARATION

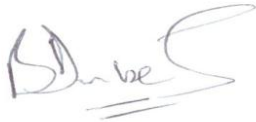
This is to certify that the following thesis was language edited:

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A handwritten signature in dark ink, appearing to read 'Bevelyn Dube', with a stylized flourish at the end.

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DEDICATION

This thesis is dedicated to my late grandfather, Jonas Mahloma Manamela and his wife Christina Machuene Manamela who encouraged me to further my studies, during the time when there was poverty and nothing to eat at home. Rakgolo wherever you are know that I am following your words, I will continue learning. My mother, Kgadi you have been there for me.

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SUMMARY

Title: Job insecurity, job satisfaction and general health in a higher education institution.

Key terms: Job insecurity, job satisfaction, occupational stress, sense of coherence, general health, merger, higher education institution.

Organisations throughout the world have to cope with an increasing rate of change. These organisational changes are due to a number of reasons, which include social, technological, economic and political reasons. These result in a change in government regulations. In South Africa, the changes include the merging of higher education institutions and changes in the educational landscape. The public higher education institutions were reduced by the Department of Higher Education and Training from 36 to 23. Some changes include new universities of technologies and mergers of other universities plus more comprehensive universities. Recently, government established two new universities, one in Mpumalanga and another in the Northern Cape.

Job insecurity, job satisfaction, occupational stress, sense of coherence, and general health are key aspects of the higher education institutions during and after the transformation process. This study aimed to determine the relationship between job insecurity, job satisfaction, occupational stress, sense of coherence, and general health of employees in a higher education institution. The literature reviewed showed that job insecurity occurs as a result of a merger, which is one of the multiple antecedents in a job insecurity model. However, a merger, as an organisational condition, changes individual perceptions about job insecurity and its consequences. Job satisfaction, occupational stress, and general health are consequences of job insecurity. From the reviewed literature, it is clear that the employees' lack of resources is a very serious challenge in their endeavour to perform their duties. Lack of resources results in the poor performance of employees and their inability to use their capabilities to deal with every day work-related challenges.

A cross-sectional design with employees in higher education institution ($N=229$) was used. The Job Insecurity Inventory, Minnesota Job Satisfaction Questionnaire, An Organisation Stress Screening Tool, Orientation to Life Questionnaire, and General Health Questionnaire, and a biographical questionnaire were utilised. Statistical analyses were carried out for the three articles in the study with the help of the Statistical Package for Social Sciences (IBM-SPSS) program. Statistical methods used in this article consisted of descriptive statistics (for example, means, standard deviations and frequencies), Cronbach alpha coefficients, explanatory factor analyses, Pearson product-moment correlation coefficients, multiple regression analysis and mediation analysis (Omnibus procedure).

The results of article 1 showed that job insecurity was statistically significantly related to general health (somatic symptoms, social dysfunction, hopelessness and worthlessness). This implies that employees who experience high job insecurity also experience problems with their health. General health had a practically significant negative correlation with sense of coherence. Literature reviewed states that a weak sense of coherence leads employees to perceive situations as threatening (that is, high job demands and low job resources), and could lead to ill health. The research findings clearly indicate that sense of coherence does not moderate the relationship between job insecurity and general health.

Regarding the results of article 2, a practically significant negative relationship exists between occupational stress and job satisfaction (intrinsic, supervision, extrinsic). This means that employees with high levels of occupational stress display lower job satisfaction and vice versa. Occupational stress and general health have a negative relationship, implying that different occupational stress factors (work demands, insecurity and work relations) relate to the general health of employees. Employees, who experience high work demands, are insecure and experience poor work relations with their colleagues or supervisors, have problems with their health and do not enjoy normal day-to-day activities in the organisation. Job satisfaction displays a practically significant negative correlation with general health. This implies that employees who are not satisfied with the intrinsic satisfaction of their job and working environment experience headaches and lack physical energy. Such employees generally feel sick. They do not enjoy every day activities since they doubt their own competence and the meaning of life. Both

occupational stress and job satisfaction are statistically significant predictors of general health. In conclusion, the results of this article report that job satisfaction mediates the relationship between occupational stress and the general health of employees in a higher education institution.

The results of article 3 showed that practically significant positive relationships exist between sense of coherence and job satisfaction. Employees with a higher sense of coherence are more satisfied and motivated to work. They are more comfortable with other colleagues and the general working conditions. Employees with a strong sense of coherence are more resourceful in handling different work-related aspects, and they tend to experience higher job satisfaction. It was concluded that sense of coherence moderates the relationship between job satisfaction and some aspects of general health. The results imply that people with lower levels of sense of coherence are more dependent on job satisfaction to experience good health. This has direct implications for vocational and industrial psychologists, as well as higher educational institutions.

Recommendations for future research were made.

1.1 INTRODUCTION

This thesis is about job insecurity, job satisfaction, occupational stress, general health and sense of coherence of employees in a higher education institution.

Chapter 1 discusses the problem statement, research objectives, research methods, measuring instruments, statistical analysis of the data and the division of chapters.

1.2 PROBLEM STATEMENT

Higher education worldwide is marked by dramatic changes (Arokiasamy & Nagappan, 2012; Gibbons, Habib, Jansen, & Parekh, 2001; Jansen, 2003) pressurising university leadership with various challenges (Herbst & Conradie, 2011). The approaches of transformation differ from one country to another, and each country has its own reasons for the restructuring of the higher education landscape. The British government used restructuring to create polytechnics and to expand the education system (Gale & Tranter, 2011; Hall, Symes, & Leuscher, 2004); the Australian government used it to create colleges of advanced education, while the Dutch used it to rationalise their non-university sector (Gale & Tranter, 2011; Hall et al., 2004).

The South African model of transforming higher education institution is largely drawn from developed countries such as the United States, Canada, the United Kingdom, the Netherlands, Norway and Australia. Unlike other countries, the South African restructuring of higher education was driven by a political agenda of transformation, redress and equity which explicitly sought to break the apartheid mould (Hall et al., 2004; Kirlidog & Zeeman, 2011). In addition to this, the need to address problems of institutional fragmentation, lack of financial and academic viability, low efficiency and quality of programmes also motivated the South African government to transform higher education institutions (Koontz, 2009).

However, these challenges and many more are still facing South African higher education institutions. According to the Department of Higher Education and Training (2012), South African higher education system has not sufficiently addressed the problem of inequality. The

majority still find it difficult to access higher education. There are few educational opportunities available to adults and young people while some learners are still leaving school at early stages. This indicates that the reality of the apartheid system still confronts the higher education sector. Higher education institutions are characterised by a low success rate, low throughput, low postgraduate enrolment as well as class exclusions (DHET, 2012).

It is imperative for universities to serve the need for knowledge development, economic development and quality education in new, highly competitive economies, in order for them to compete globally. Education is being set up as a critical element in a country's economic well-being and competitiveness (Stromquist & Monkman, 2002).

Kraak (2001) indicates that changes in the South African higher education landscape have been complex. In 2000, the then Minister of Education requested the Council on Higher Education (CHE) to advise him on the "size and shape" of higher education in South Africa (CHE, 2000). This resulted in the formation of the CHE Task Team to investigate the possibility of reducing higher education institutions. The task team and CHE proposed the reduction of higher education institutions from 36 (which consisted of 21 universities and 15 technikons) to 23 higher education institutions, which comprise traditional universities, universities of technology and comprehensive universities (Badat, 2010).

These changes in the South African higher education landscape mark a period of environmental or institutional change for employees who work within the institutions. The universities were also under pressure from society, students, politicians and government to service them with necessary knowledge and skills. Institutional leadership was confronted with challenges, both internally and externally (Herbst & Conradie, 2011). The leaders needed new skills to manage employees in the transformed higher education institutions (Herbst & Conradie, 2011; Schultz, 2010; Smith & Schurink, 2005). Employees in these institution consisted of people with different cultural backgrounds. The restructuring of higher education created additional pressure and increasing demands within the working environment (Bell & Barkhuizen, 2011). This was the case in the institution where this research was conducted.

The university management structures were changed to accommodate a new university council, senate and management team. The new structure made it imperative that higher education institutions introduce changes in strategy, structure, processes and culture to maintain their competitive advantage (Higgs, 2002). Due to these changes, employees had to adjust to new working methods and manage new techniques. These changes also reduced the number of jobs and put higher requirements on individual employees.

This situation has led to retrenchments and job insecurity among the employees. A study by Becker et al. (2004), on the impact of university incorporation of college lecturers, indicated that when the restructuring took place employees were retrenched and others were offered mutually agreed-upon severance packages. Remaining employees experienced job insecurity as a result of seeing others losing their jobs. This change resulted in uncertainty, that is, the fear of the unknown, which leads to employee job insecurity (Schreurs, Van Emmerik, Notelaers, & De Witte, 2010). Stander and Rothmann (2010) stated that employees who fear that they will lose their jobs might experience a loss of meaning in their lives. This loss of meaning might contribute to employee job insecurity.

According to Kivimaki, Vahtera, and Pentti (2000), Millward and Brewerton (2002), as well as Probst (2011), change by means of downsizing increases job insecurity, and results in an increase in ill health. In a study of 16 European countries, it is reported that job insecurity is associated with an increased risk of poor health (Laszlo et al., 2010). Job insecurity has an adverse effect on health (Virtanen, Janlert, & Hammarstrom, 2011), and it is found to be negatively related to job satisfaction and well-being (Bernhard-Oettel, De Cuyper, Schreurs, & De Witte, 2011). It is also associated with sense of coherence (Feldt, Kinnunen, & Mauno, 2000; Feldt, Kivimaki, Rantala, & Tolvanen, 2004).

Barkhuizen and Rothmann (2008) reported that occupational stress is associated with job dissatisfaction, which, in turn, increases the poor physical health of employees. This stress, at work, is known to lead to low motivation, a decrease in performance, high turnover, low job satisfaction and poor internal communication (Schabracq & Cooper, 2000). Based on the above statement, An Organisational Stress Screening Tool (ASSET) model will be used in this study.

An Organisation Stress Screening Tool (ASSET) model is a measurement instrument based on a conceptual framework, and it measures an employee's potential exposure to stress (Viljoen & Rothmann, 2009). The ASSET model (Cartwright & Cooper, 2002; Johnson & Cooper, 2003) has been applied in various studies on stress in higher education (Barkhuizen & Rothmann, 2008; Mostert, Rothmann, Mostert, & Nell, 2008; Rothmann, Barkhuizen, & Tytherleigh, 2008; Sang, Teo, Cooper, & Bohle, 2013; Tytherleigh, Webb, Cooper, & Ricketts, 2005).

According to the model, the sources of stress can lead to outcomes such as lower commitment to the organisation, poor health, lower productivity, job dissatisfaction, absenteeism and turnover (Barkhuizen & Rothmann, 2008; Mostert et al., 2008; Sang et al., 2013). Prolonged periods of stress can result in increased susceptibility to illness (Faragher, Cooper, & Cartwright, 2004). Eight sources that contribute to the experience of occupational stress are work relationships, work-life balance, work overload, job insecurity, control, insufficient resources and communication, low pay and benefits and certain job aspects (Cartwright & Cooper, 2002).

Sang et al. (2013) found that job stressors predicted job dissatisfaction and poor psychological well-being. They further concluded that greater psychological well-being is associated with greater physical well-being. Mostert et al. (2008) postulated that stress and ill health are costly for the organisation. Faragher et al. (2004) support this by stating that the challenge facing organisations is to identify work-place stressors and factors that moderate or mediate the effects.

It is reported that individuals with a high level of sense of coherence enjoy better health and well-being (Feldt et al., 2004) and that they experience higher levels of job satisfaction (Rothmann, 2001). The main objective of this study was to investigate job insecurity, job satisfaction, occupational stress, general health and sense of coherence of employees in higher education institution in South Africa. Each of these aspects is discussed below.

Job Insecurity

Most researchers have adopted a global view in describing job insecurity as an overall concern about the continued existence of the job in the future (De Witte et al., 2010; Klandermans,

Hesselink, & Van Vuuren, 2010; Sverke, Hellgren, & Naswall, 2002). Greenhalgh and Rosenblatt (2010), as well as Kinnunen, Mauno, Natti, and Happonen (2000), define job insecurity as multidimensional and as encompassing factors such as threats to various job features (employment conditions, career opportunities) and a powerlessness to counteract such threats.

Based on the multidimensional nature of job insecurity, two types of job insecurity have been identified in literature, namely objective job insecurity and subjective or perceived job insecurity (De Witte & Naswall, 2003; Jacobson, 1991; Klandermans & Van Vuuren, 1999). Objective job insecurity occurs where the employment contract is temporary, casual or short term, whereas subjective or perceived job insecurity is experienced where workers are fearful of job loss or worry about the continuation of their employment (De Witte & Naswall, 2003; Martinez, De Cuyper, & De Witte, 2010).

Martinez et al. (2010) describe objective job insecurity as an event that threatens the working situation, while subjective job insecurity is the process of perceptions and personal experiences of the negative consequences such an event can have on the individual. The majority of workers in temporary jobs report some worry or fear about their job or career future (Hesselink & Van Vuuren, 1999). In the context of restructuring and downsizing, many workers may experience heightened concerns about their job's future (De Witte & Naswall, 2003).

Researchers who regard job insecurity as multidimensional in nature also conceptualise it as having quantitative and qualitative dimensions (De Witte et al., 2010). According to Chirumbolo and Areni (2010), quantitative job insecurity refers to worries and concerns about losing the job itself, whereas qualitative job insecurity pertains to worries and concerns about the loss of important features, resulting in inadequate salary development, lack of career opportunities and worsening working conditions.

Other researchers conceptualise job insecurity as a stressor (Bernhard-Oettel et al., 2011; Cheng, Chen, Chen, & Chiang, 2005; Probst, 2002). Although job insecurity is present in all employees, this stressor does not affect everyone equally. Highly qualified employees, due to available

resources, perceive job insecurity as less stressful than a group of low-qualified employees (Sora, Gonzalez-Morales, Caballer, & Peiró, 2011; Sverke et al., 2002). Hart and Cooper (2001) state that reactions to a stressor depend on how people perceive; assess and cope with the situation they are facing. This depends on how individuals cognitively perceive, process and interpret a situation as stressful or not (Chirumbolo & Areni, 2010).

In this study, job insecurity is conceptualised in terms of Jacobson's (1991) as well as De Witte's (2005) assumption that job insecurity has cognitive and affective factors. Studies on cognitive and affective factors of job insecurity have been conducted by different researchers, both in South Africa (Bosman, 2005; Botha, 2006; Elbert, 2002; Laba, Bosman, & Buitendach, 2004) and internationally (Huang, Lee, Ashford, Chen, & Ren, 2010). Cognitive job insecurity relates to the perceived likelihood of job loss, while affective job insecurity relates to fear of job loss (Anderson & Pontusson, 2007; Bosman, Rothmann, & Buitendach, 2005; Huang et al., 2010).

Job insecurity is a source of anxiety and stress, and is related to illness, poor well-being, negative job attitudes and undesirable behavior (Martinez et al., 2010). Job insecurity has been found to have a significant association with somatic symptoms, social dysfunction, sleep disorders and depression (Dekker & Schaufeli, 1995; Martinez et al., 2010). In general it has negative consequences for employees' health (Sverke et al., 2002).

Job insecurity has been related to different types of mental health outcomes, such as psychological distress, anxiety and depression (Dekker & Schaufeli, 1995; Roskies, Louis-Guerin, & Fournier, 1993; Martinez et al., 2010). Job insecurity is positively associated with impaired general health (Schreurs et al., 2010). It is considered a work-stressor and has a negative impact on various indicators of work-related well-being (Klandermans et al., 2010). This may, therefore, result in continued negative consequences for both the organisation and individual (Schreurs et al., 2010). Cheng and Chan (2008) add that job insecurity is related to job dissatisfaction.

Probst (2002) as well as Van Wyk and Pienaar (2008), proposed an integrated model on job insecurity. For the purpose of this study, the model was adapted to suit the constructs that will be

tested in this study as depicted in Figure 1 below. This model is based on the premise that job insecurity occurs as a result of multiple antecedents, which may serve to stimulate a person's perception that the future of his/her job is in jeopardy. The organisational conditions are those antecedents that change individual perceptions about job insecurity and its consequences. These environmental and organisational conditions are regarded as retrenchment and the restructuring of the organisations or institutions (Van Wyk & Pienaar, 2008). In the model, general health and occupational stress are regarded as consequences of job insecurity.

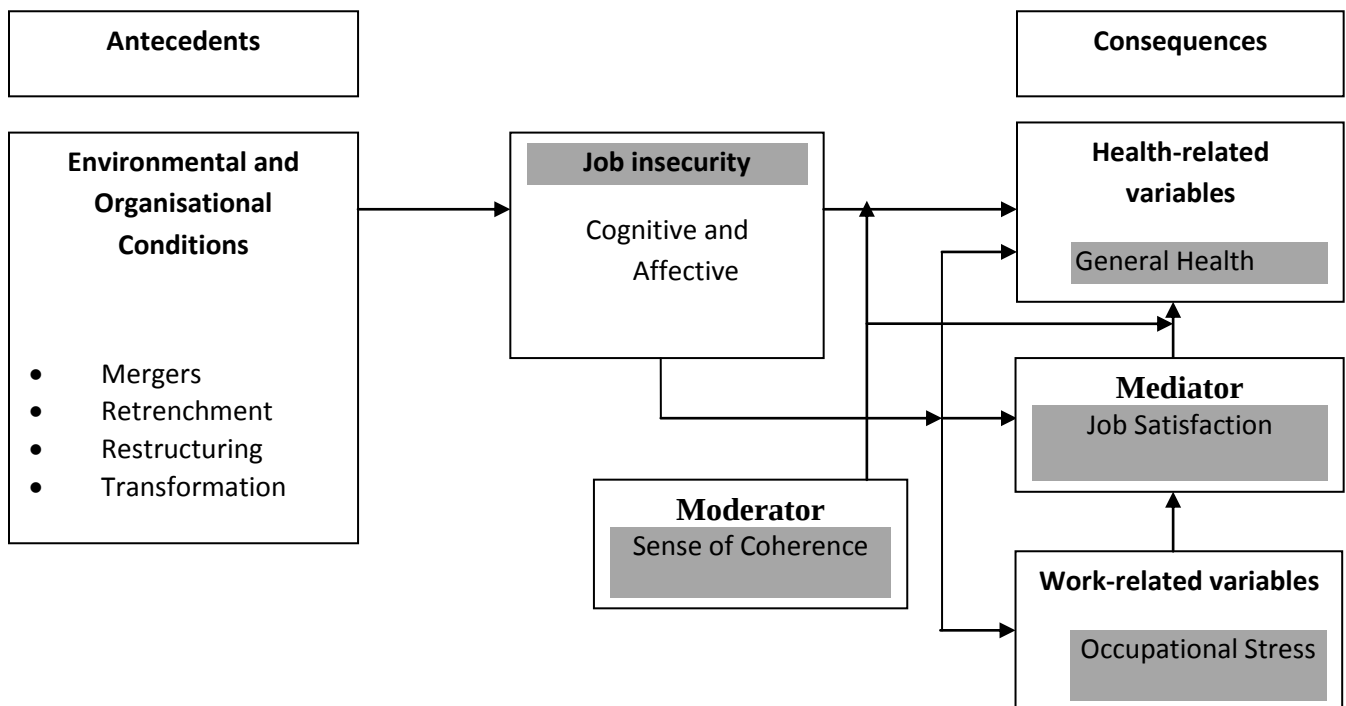


Figure 1. Model of antecedents of job insecurity, moderator, mediator and consequences as adapted from Probst (2002) and Van Wyk and Pienaar (2008).

According to this model, environmental challenges (organisational conditions) are contributing factors to job insecurity, which has individual and organisational consequences, such as poor general health, job dissatisfaction, and occupational stress, while employees' sense of coherence will assist them to cope with the consequences. The focus of this study is three fold, namely (a) to test sense of coherence as a possible moderator of the relationship between job insecurity and general health, (b) to establish job satisfaction as a possible mediator of the relationship between

occupational stress and general health, and (c) to determine sense of coherence as a moderator of the relationship between job satisfaction and general health.

The main research objective for this study is to investigate the relationships between job insecurity, job satisfaction, occupational stress, general health, and sense of coherence of employees in a higher education institution.

Job Satisfaction

Job satisfaction is described as an attitudinal consequence of job insecurity (Caldwell & Liu, 2011; Reisel, Probst, Chia, Maloles, & Kong, 2010; Sverke et al. 2002; Van Wyk & Pienaar, 2008). In their study Reisel et al. (2010) found that the effect of job insecurity on organisational outcomes is mediated by job satisfaction. In addition Buitendach and De Witte, (2005) as well as Reisel et al., (2010) found that job insecurity is negatively related to job satisfaction.

Job satisfaction is defined by different researchers as a feeling about the job, resulting from various aspects, facets and/or characteristics (Ivancevich & Mattesson, 2002; Lu, While & Barriball, 2005; Robbins, Judge, Odendaal, & Roodt, 2009). According to Lu et al. (2005), job satisfaction is a global feeling about the job, and this global approach is used when the overall attitude is of interest, while the facet approach is used to explore which part of the job produces satisfaction or dissatisfaction. This feeling is regarded as an attitude of an individual towards the work in an organisation. The feeling is an attitude and perception that consequently influences the degree of fit between individual work and the organisation. The definition of job satisfaction, therefore, includes an attitudinal variable that measures how a person feels about his or her job (Spector, 1997).

Job satisfaction can be described as an affective or emotional reaction to a job resulting from the comparison of actual outcomes of the job with those that are desired, expected or felt to be deserved (Cranny, Smith, & Stone, 1992; Weiss & Cropanzano, 1996). Cranny et al. (1992); Rothmann and Coetzer (2002) as well as Okpara (2006), view job satisfaction as a reaction to a job which is influenced by organisational and personal factors. This effect or emotional reaction

influences individual and organisational well-being (Sempene, Rieger, & Roodt, 2007), and, therefore, it has major consequences on the lives of the employees (Buitendach & Rothmann, 2009). These consequences have an effect on physical health and longevity, as well as mental health, and they impact on the employees' social life in general (Locke, 1976). The employees' satisfaction with their jobs offers important evidence concerning the well-being and profitability of an organisation (Okpara & Wynn, 2007). In addition, employers realise that the optimal functioning of their organisation depends on the level of job satisfaction of employees (Lumley, Coetzee, Tladinyane, & Ferreira, 2011).

Researchers such as Weiss and Cropanzano (1996) describe job satisfaction as a process whereby employees seek to achieve and maintain correspondence with their environment. The correspondence with the environment can be described in terms of the individuals' perceptions about the requirements of the organisation. This implies that individuals experience job satisfaction if they feel that their individual capacities, experience and values can be utilised in their work environment, and that their work environment offers them opportunities and rewards accordingly (Cranny et al., 1992).

The individuals' capacity, knowledge, experience and information about similar jobs in the organisation or other organisations determine how they perceive the current job and environment. Individuals develop attitudes from this background and react according to how similar jobs in the organisation are designed. This brings the researcher to the conclusion that job satisfaction is an interactive, evaluative process between the individual and the working environment (Van Schalkwyk & Rothmann, 2010) and how individuals evaluate jobs using factors that they perceive or regard as important to them (Sempene et al., 2007).

In this study, like in many other studies, job satisfaction is conceptualised in terms of Herzberg's two-factor theory. The theory is explained in a study by Lu et al. (2005). Herzberg and Mausner (1959) formulated the two-factor theory of job satisfaction. The theory postulates that satisfaction and dissatisfaction are two separate and sometimes unrelated phenomena. Job satisfaction is explained in terms of intrinsic and extrinsic factors. Intrinsic job satisfaction includes such factors as achievement, recognition, the work itself and responsibility, while

extrinsic job satisfaction includes factors such as company policy, administration, supervision, salary, interpersonal relations and working conditions. Spector (1997) refers to intrinsic job satisfaction as how people feel about the outcome of the job tasks themselves and extrinsic job satisfaction as how people feel about aspects of the work situation that are external to the job tasks or work itself.

Employees feel differently about different aspects of the job. Some employees lack satisfaction due to their inability to achieve the job outcomes. This creates a negative working environment. This negative working environment results in psychological or emotional consequences because employees experience stress that leads to job dissatisfaction (Lainas, 2010). As indicated above, employees experience job satisfaction or dissatisfaction from different aspects of the job. In a study by Bozeman and Gaughan (2011), it was found that faculty members tend to be satisfied if they feel that their pay reflects their market value and they have the respect of their co-workers. Paul and Phua (2011) added autonomy and flexibility as aspects that the job offered, while relationships with students contribute to both intrinsic and extrinsic job satisfaction (Schroder, 2008).

Eskildsen and Dahlgaard (2000) indicate that employees who are satisfied with their jobs are more likely to be retained by the organisation. A study by Sarker, Crossman, and Chinmeteepituck (2003) adds that satisfied employees are more productive and remain with the organisation longer, whereas dissatisfied employees are less productive and are more inclined to quit. Job dissatisfaction is associated with occupational stress (Barkhuizen & Rothmann, 2008) while occupational stress is negatively related to job satisfaction (Fairbrother & Warn, 2003). Fairbrother and Warn (2003) confirm that high job satisfaction decreases occupational stress and creates a positive working environment.

Occupational Stress

Occupational stress is defined as harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker (Ahghar, 2008). It is described as an interrelation between the working conditions and the individual

characteristics of the worker, when the demands exceed the worker's capabilities (Geese & Moss 2001; Ornelas & Kleiner, 2003; Topper, 2007; Varca, 1999; Vermunt & Steensma, 2005). Ganster and Rosen (2013; p.4) define work stress as "the process by which workplace psychological experiences and demands (stressors) produce both short-term (strains) and long term changes in mental and physical health".

According to Viljoen and Rothmann (2009), occupational stress has the same typical characteristics as stress, with the exception that it appears within the boundaries of the work environment, and it is caused by work-related factors and consequences of the work situation. Work-related factors cause stress and are called stressors (Robbins et al., 2009). Work-related factors, such as working conditions, work overload and frustrations require an effective management in order to be controllable.

This study places more emphasis on work-related stress caused by working conditions. For the sake of consistency, it is referred to as occupational stress as discussed in the literature. It consists of physiological and psychological dimensions (Ismail, Yao, Yeo, Lai-Kuan, & Soon-Yew, 2010; Lainas, 2010). According to Ismail et al. (2010) physiological stress is viewed as physiological reactions of the body (headache, migraine, abdominal pain, chest pain and fatigue) to various stressful triggers in the organisations whereas psychological stress is often seen as emotional reactions (anxiety, depression, anger, nervousness and frustration) as a result of demands caused by work-related factors

Lainas (2010) adds that stress has consequences which reflect in the relationship between a person and his/her work environment, and it comes about as a result of the perceived lack of power between the person and the environment. Lainas (2010) adds that psychological consequences are related to a feeling of job dissatisfaction, fear and boredom. A study by Jones and Bright (2001) indicates that occupational stress is associated with an increase in negative work-related outcomes such as ill-health. Occupational stress has been found to be one of the major work-related health problems (Gray, 2000) and is associated with poor health (Barkhuizen & Rothmann, 2008).

General Health

General health is defined by the Constitution of the World Health Organisation (2000) as a condition of absolute physical, social and mental well-being and not the absence of disease or ill-health. Goldberg and Hillier (1979) discussed general health and identified four facets or subscales. According to Goldberg and Hillier (1979), the four facets or subscales of general health are described as follows:

Firstly, somatic symptom is known as somatisation disorder. Simon, VonKorff, Piccinelli, Fullerton, and Ormel (1999) as well as Barlow and Durand (2005) state that somatisation is a psychiatric state marked by multiple medically unexplained physical or somatic symptoms. The majority of somatic symptoms are categorised as medically unexplained (Rief, Mewes, Martin, Glaesmer, & Brahler, 2011). It refers to individuals' complaints about serious health conditions that interfere significantly with their capacity to perform important activities (Barlow & Durand, 2005). Patients with somatisation are those who have a psychiatric disorder (Simon et al., 1999).

Secondly, anxiety and insomnia. Anxiety is described as a negative mood condition characterised by bodily symptoms of physical tension and worry about the future (Barlow & Durand, 2005). Its conditions are linked to difficulties in falling asleep (Morin, 1993). Insomnia is classified into three categories, namely individuals who find it incredibly difficult to get to sleep in the first place (primary insomnia); individuals who wake up multiple times at night and struggle to get back to sleep (middle insomnia); and those who wake up very early and are not able to get back to sleep at all (terminal insomnia) (Barlow & Durand, 2005; Belanger, Morin, Langlois, & Ladouceur, 2004).

The major causes of insomnia include psychological factors such as stress, anxiety and depression; physical factors such as pain, hormone changes or any number of medical conditions; and temporary factors such as disturbed sleep patterns, excessive use of caffeine or other stimulants, or a drastic change in one's situation (Barlow & Durand, 2005). Insomnia serves as a predisposing cause for future physical problems (Zhang et al., 2012), and it can affect a person's relationships, work life, business, and physical health (Barlow & Durand, 2005).

Thirdly, social dysfunction is considered as a diagnostic feature of schizophrenic disorders, but its definition lacks validity (Barlow & Durand, 2005). It is developed from an individual shyness, which includes impaired social skills and competence (Goldberg & Schmidt, 2001). Emotional flattening, social isolation and interpersonal oddity are risk factors of social dysfunction, and they are considered to be core features of illness (Chemerinski, Nopoulos, Crespo-Facorro, Andreason, & Magnotta, 2002).

Lastly, severe depression is the most serious condition (Barlow & Durand, 2005) that affects every day life, leading to hopelessness feelings and even loss of desire to live altogether. Its episodes are associated with the greatest hazards of morbidity and mortality (Thase, 2000). According to Thase (2000), these depressive episodes are described as symptom intensity, diagnostic subtypes, and degree of functional impairment. Severe depression affects the patient's ability to work, study, sleep, eat and lead a normal life (Barlow & Durand, 2005). A person who has hopelessness feelings becomes less interested in life and thinks about ending his or her life if the person is incapable of coping with the situation.

Sense of Coherence

A person's health and well-being are related to their sense of coherence (Antonovsky, 1993; Rothmann, 2003). Antonovsky (1993: p. 725) defines sense of coherence as “a global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic, feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges, worthy of investment and engagement”. According to Antonovsky's (1987, 1993) definition, sense of coherence is a coping resource presumed to mitigate life's stress by affecting the overall quality of one's cognitive and emotional appraisal of the stimuli that impact on one, and is presumed to endanger, sustain and enhance health as well as strength.

Sense of coherence is a key concept in Antonovsky's (1979, 1987, 1993) theoretical model of salutogenesis. It is a central concept of the health-oriented salutogenic model and seeks to

describe the process of staying healthy despite exposure to stress (Skarsater et al., 2009). The model indicates that individuals with a strong sense of coherence are more likely to show a “readiness and willingness to exploit the resources that they have at their potential disposal” (Antonovsky, 1984:121). Sense of coherence serves as a psychological stress resistance resource (Skarsater et al., 2009), that reflects a person’s view of life and capacity to respond to stressful situations (Antonovsky, 1987).

Antonovsky (1987) states that the primary development of the dynamics of sense of coherence takes place in the first decade of one’s adult life. He also mentions that one’s sense of coherence is tried continually, but individuals who have developed a strong sense of coherence early in adulthood have the ability to use general resistance resources to restore equilibrium. A strong sense of coherence is related to competence and life satisfaction (Kalimo & Vuori, 1990), general wellness (Feldt, 1997), emotional stability (Mlonzi & Strumpfer, 1998) and successfully coping with life stress (McSherry & Holm, 1994).

Studies by Antonovsky (1993) as well as Rothmann (2003) confirmed that a person’s sense of coherence is an important component of the person’s health and well-being. Feldt et al., (2004) add that individuals with a high level of sense of coherence enjoy better health and well-being. Volanen, Suominen, Lahelma, Koskenvuo, and Silventoinen (2007) argue that mental health is related to sense of coherence. Skarsater et al. (2009), as well as Vastamaki (2009) indicate that sense of coherence is not based on specific coping strategies. It is an estimate of the ability individuals or groups have in coping with difficult situations. Individuals select the particular coping strategy that is most appropriate to deal with the stressor or difficult situation being confronted (Van der Colff & Rothmann, 2009). Sense of coherence is related to resistance to stress and helps understand individual differences in responding to difficult situations (Amirkhan & Greaves, 2003).

Sense of coherence is represented by the concepts of comprehensibility, manageability and meaningfulness (Antonovsky, 1987, 1993). Antonovsky (1987) described comprehensibility as the extent to which persons find structure in their world to be understandable; manageability as the extent to which people experience events in life as situations that are endurable or

manageable and can even be seen as new challenges; and meaningfulness as the extent to which the individual's life makes sense at an emotional level and not just at a cognitive level, and that life's demands are worthy of commitment. Sense of coherence can be applied both at the level of the individual and groups and at the level of society as a whole (Skarsater et al., 2009).

In this study, the outcomes of job insecurity are indicated as occupational stress and general health, which become negative if not managed well. In this research, job demands are considered to be job insecurity, sense of coherence as a personal resource, occupational stress, job satisfaction, and general health as outcomes.

The following research questions were formulated:

- How are job insecurity, job satisfaction, occupational stress, sense of coherence, and general health conceptualised in literature?
- What is the relationship between job insecurity, job satisfaction, occupational stress, sense of coherence, and general health of employees in a higher education institution?
- What is the effect of sense of coherence on the relationship between job insecurity and general health of employees in a higher education institution?
- What is the effect of job satisfaction on the relationship between occupational stress and general health of employees in a higher education institution?
- What is the effect of sense of coherence on the relationship between job satisfaction and general health of employees in a higher education institution?

1.3 RESEARCH OBJECTIVES

The research objectives are divided into a general objective and specific objectives.

1.3.1 General Objective

The general objective of this study was to investigate job insecurity, job satisfaction, occupational stress, sense of coherence, and general health of employees in higher education institution. In order to investigate the manner in which interactions among some of these variables may relate to health related outcomes.

1.3.2 Specific Objectives

The specific objectives of this research were to:

- Review job insecurity, job satisfaction, occupational stress, general health and sense of coherence as conceptualised in the literature;
- Determine the relationship between job insecurity, general health, job satisfaction, occupational stress, and sense of coherence of employees in a higher education institution.
- Investigate the relationship between sense of coherence, job insecurity and general health of employees in a higher education institution;
- Investigate the relationship between job satisfaction, occupational stress and general health of employees in a higher education institution; and
- Investigate the relationship between sense of coherence, job satisfaction and general health of employees in a higher education institution.

The study contributes to the theoretical knowledge on the subject of job insecurity, job satisfaction, occupational stress, general health and sense of coherence. It generates better understanding regarding the phenomenon of the constructs and their consequences. The interest or curiosity of the researcher regarding the phenomenon of all constructs and their potentially negative consequences are addressed. The information gained from this study creates opportunities to proactively develop and implement effective programmes that will help employers to understand the working environment and assist employees to cope with job pressures that lead to better health. The study shows the reliability and validity of the measuring instruments in a new cultural environment, which can be recommended for future research.

1.4 RESEARCH METHOD

The research method comprises two phases, a literature review and an empirical study.

1.4.1 Phase 1: Literature Review

The literature review focuses on previous research conducted on job insecurity, job satisfaction, occupational stress, general health, sense of coherence of employees and the relationships between these constructs. For the literature review, the researcher used library catalogues, international journals, the Internet, NRF-Nexus, Sabinet, SA books, PsychInfo, and various other search engines.

1.4.2 Phase 2: Empirical Study

Phase 2 consists of the following steps in the form of descriptive research:

1.4.2.1 Research Design

A cross sectional survey research design was used to obtain the data within a higher education institution in South Africa. This design was ideally suited to the descriptive functions associated with correlation research (Shaughnessy, Zechmeister, & Zechmeister, 2003). Specific questionnaires were distributed to collect data. Questionnaires were used to gather primary data from research participants (Davis, 2005; Garcia et al., 2012).

1.4.2.2 Participants

In this study, the total population comprised of 3086 academic and non-academic staff members from two campuses. From the total population, 500 questionnaires representing 16% of total population were distributed and 229 were returned which represents 45.8% of the selected sample. A simple random sample was used to ensure the sample's representativeness of the sample size. Each member of the population was given an equal opportunity to be included in the research, both as males and females, young and old.

Research assistants gave the employees a brief description of the purpose of the study, its benefits, risks, and significance. Participation was totally voluntary. Participants were asked not

to write their names on the questionnaires, and they were assured that the information they would provide would be confidential and used only for the purpose of the study.

A biographical questionnaire was developed and attached to other questionnaires. The biographical questionnaire included aspects such as educational level, age, gender, cultural group, marital status and the working experience of employees.

1.4.2.3 Research Procedure

Prior to conducting the study, a request for permission to conduct a research was made to the university management and permission was granted to the researcher to conduct the research. The managers and employees of the university were informed about the objectives of the study, and when the study would be conducted. Issues of confidentiality, anonymity and the voluntary nature of the study were also addressed. Assurance was given that the information acquired would only be used for research purposes. The researcher distributed questionnaires to the participants. The questionnaires were collected from the participants at a central place within the university. The data was captured and analysed with a use of IBM-SPSS program. The results of the study were analysed and interpreted, the conclusions and recommendations were made from the results.

1.4.2.4 Measuring Instruments

The following measuring instruments were used to gather data:

The *Job Insecurity Inventory* (JII; De Witte, 2005) was used as a measure of job insecurity. This 11-item questionnaire measures both the cognitive and affective dimensions of job insecurity and was arranged along a five-point Likert-type scale, varying from 1 (*strongly disagree*) to 5 = (*strongly agree*). An example of a question relating to cognitive job insecurity was, “I think that I will be able to continue working here”, whereas an example of a question relating to affective job insecurity would be, “I fear that I might lose my job”. De Witte (2005) reported a Cronbach

alpha coefficient of 0.92 for global job insecurity. A satisfactory Cronbach's alpha coefficient of 0.85 was obtained in a study of 500 educators in the Sedibeng West District (Matla, 2009).

The *Minnesota Job Satisfaction Questionnaire* (MSQ; Weiss, Dawis, England, & Lofquist, 1967) was used to measure the job satisfaction of employees. The revised 20 items questionnaire gives employees the opportunity to indicate how they felt about their present work. Items were arranged along a five-point scale ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). The questionnaire consists of different items used to measure intrinsic and extrinsic job satisfaction. Items 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16 and 20 were representative of intrinsic job satisfaction which measures feelings about the nature of the job. For example item 10 reads, "The chance to do something that makes use of my abilities". Items 5, 6, 12, 13, 14 and 19 are representative of extrinsic job satisfaction which measures feelings about situational job aspects, external to the job. For example item 5 reads, "The way my boss handles his/her workers".

Weiss et al. (1967), Weiss and Cropanzano (1996), Liam, Baum, and Pine (1998), Yousef (1998), Kaplan (1990) and Dwyer (2001) reported reliability coefficients to vary from 0.87 to 0.95 for the Revised Minnesota Job Satisfaction Questionnaire. Yousef (1998) found a reliability coefficient of 0.92 in his study of job satisfaction in a cross-cultural context. In a random sample of 474 in selected organisations in South Africa a reliability coefficient between 0.86 and 0.91 was found (Buitendach & Rothmann, 2009).

An Organisational Stress Screening Tool (ASSET; Cartwright and Cooper, 2002) was used to assess the occupational stress of the employees. This 37 item questionnaire measures the individual's perception of his or her job and are scored on a six-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). This subscales includes questions relating to eight potential sources of stress, example: work relationship, "My relationships with colleagues are poor"), work-life balance, "My work interferes with my home and personal life", overload, "I am given unmanageable workloads", job security, "My job is insecure", control, "I have little control over many aspects of my job", resources and communication, "I do not have the proper equipment or resources to do my job", job overall, "My work is dull and repetitive", pay and benefits, "My pay and benefits are not as good as other people doing the same or similar work".

A reliability coefficient of 0.64 to 0.94, which indicates good reliability, was considered satisfactory within a population of 613 in a study of occupational stress of employees in an insurance company (Coetzer & Rothmann, 2006).

The *Orientation to Life Questionnaire* (SOC; Antonovsky, 1987) was used to measure the participants' sense of coherence. The 29 item questionnaire measures sense of coherence and was arranged on seven-point Likert-type scale, ranging from 1 (*never*) to 7 (*always have this feeling*) and differ from one item to the other as an example item 9 range from 1(*very often*) to 7 (*very seldom or never*). Antonovsky (1987) proposed three subscales for the questionnaire, as comprehensibility (COMP) which is measured by 11 items, meaningfulness (MEAN) which is measured by eight items and manageability (MANA) by ten items. In studies by Antonovsky (1993) Cronbach's alpha coefficients varying between 0.85 and 0.91 were reported. Antonovsky (1987) conceded that sense of coherence should be regarded as a unidimensional construct. Muller and Rothman (2009) found a satisfactory Cronbach's alpha coefficient of 0.85 in a sample of 2678 for financial institutions in Gauteng province.

The *General Health Questionnaire* (GHQ; Goldberg & Hillier, 1979) was used for measuring general health. The 28 item questionnaire measures somatic syndrome, "Have you recently been feeling in need of a good tonic?", anxiety and insomnia, "Have you recently lost much sleep over worry?", social dysfunction, "Have you recently been managing to keep yourself busy and occupied?", and severe depression, "Have you recently been thinking of yourself as a worthless person?" (Goldberg & Hiller, 1979). The items are measured on a five-point Likert-type scale, ranging from 1 (*not at all*) to 5 (*a great deal*). In a study by Goldberg and Hillier (1979), internal consistency coefficients of 0.69 to 0.90 were reported. Goldberg et al. (1997) reported good reliability and validity indices for the GHQ across various cultures. In a study by Nagyova et al. (2000) Cronbach's alpha coefficients varying around 0.82 and internal consistency of the the total scale of 0.90 was reported on the sample of 148 of Slovak and Western European participants

1.4.2.5 Statistical Analysis

Statistical analysis was carried out with the use of the IBM-SPSS program (IBM-SPSS, 2011). Cronbach's alpha coefficients were used to assess the reliability of the measuring instruments (Clark & Watson, 1995). Exploratory factor analyses were computed to assess the validity of the constructs that were measured in this study. Descriptive statistics were used to analyse the data. Pearson correlations were used to specify the relationship between different variables. The statistical significance was set at $p < 0.05$ and the effect sizes were computed to assess the practical significance of the relationships. A cut-off point of 0.30, which represents a medium effect, was set (Cohen, 1988). Hierarchical multiple regression analyses were conducted to determine the proportion of variance in the dependent variable that is predicted by the independent variable. The value of R^2 was used to determine the proportion of the total variance of the dependent variable that is explained by the independent variables. The F-test was used to test if significant regression exists between the independent and dependent variables (Tabachnick & Fidell, 2001).

Hierarchical regression analyses were used to determine the moderating and mediating effects of the constructs. Hierarchical regression analyses were conducted to determine whether sense of coherence moderated the relation between job insecurity and general health and also between job satisfaction and general health. According to Preacher, Curran, and Bauer (2006) moderation is important in explaining and testing interactive effects of two or more variables in predicting a dependent variable while controlling for associated main effects. Heuven, Bakker, Schaufeli, and Huisman (2006) indicate that the significance of standardised regression coefficients is evidence of moderation with the significance of the change in the coefficient of R^2 determination (ΔR^2).

The MEDIANTE procedure was used to estimate the indirect effects of independent variables on outcomes variables through a proposed mediator variable (Preacher & Hayes, 2009). The procedure provides an omnibus effect of all independent variables per mediator variables. Bootstrap procedures (Preacher & Hayes, 2009) were used to make inferences for indirect effect, and its percentile confidence intervals were used to assess whether indirect effects were different from zero, and were set at 0.95.

1.5 CHAPTER LAYOUT

- Chapter 1: Introduction
- Chapter 2: Article 1: Job insecurity, sense of coherence and general health of employees in higher education institution.
- Chapter 3: Article 2: Occupational stress, job satisfaction and general health of employees in a higher education institution.
- Chapter 4: Article 3: Job satisfaction and general health of employees: The role of sense of coherence.
- Chapter 5: Conclusions, limitations and recommendations.

1.6 SUMMARY

In this chapter, the problem statement and research objectives are outlined and discussed. The general and specific objectives are provided and discussed, and the research methods and statistical analyse are explained and discussed. The next chapter focuses on job insecurity, general health and sense of coherence as a mediator.

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CHAPTER 2

ARTICLE 1

JOB INSECURITY, SENSE OF COHERENCE AND GENERAL HEALTH OF EMPLOYEES IN A HIGHER EDUCATION INSTITUTION

ABSTRACT

This study investigated the relationship between job insecurity, sense of coherence and general health of employees in a higher education institution in South Africa. A cross-sectional survey design was used. A random sample ($n = 229$) was taken from academic and non-academic staff members of the institution. The Job Insecurity Inventory, General Health Questionnaire and Orientation to Life Questionnaire were administered. The results showed that a negative relationship exists between job insecurity and general health, while a positive relationship exists between sense of coherence and general health. High job insecurity and a weak sense of coherence predicted ill health. Based on the findings of this study, it is recommended that higher education institutions must deal with job insecurity by communicating with employees, clarify expectations, and ensure support from supervisors. Developing the employees' sense of coherence can positively impact on their wellness. Due to the cross-sectional design of the study, no conclusions regarding causality can be drawn.

Key terms: Job insecurity, general health, sense of coherence, higher education institutions, moderation effect.

Since 1994, the post-apartheid government of South Africa has attempted to redress the inequalities and struggles inherited from the apartheid era, by initiating strategies and systems to change the education systems through a restructuring process. These changes have generated a new field of studies on the origins, motives, processes and outcomes that result from combining various kinds of institutions (Habib & Parekh, 2000; Kotecha & Harman, 2001; Reddy, 2001). The process led to fear of job insecurity among employees in higher education institutions (Hay & Fourie, 2002). It increased demands within the academic environment and impacted upon employees' levels of morale and fear (Hay & Fourie, 2002; Lalla, 2009; Stephen, 2010).

According to Nyasha (2011), restructuring leads to extreme uncertainty and fear of job losses amongst employees. It creates job insecurity and becomes a threat to individual well-being (Kavangh & Ashkanasy, 2006) and reduces general health (Burchell, Ladipo, & Wilkinson, 2002). Studies by Van Wyk and Pienaar (2008) and Burchell et al. (2002) found that levels of job insecurity increase when organisations undergo restructuring. In turn, job insecurity causes increasingly emotional turmoil and stress to employees in higher education (Barkhuizen & Rothmann, 2008; Viljoen & Rothmann, 2009). Employees use different strategies to cope with psychological and work-related stress.

According to Antonovsky (1979), sense of coherence is a pervasive feeling of confidence that life events that employees face are comprehensible. This means that they need the resources to cope with work-related demands and that these demands are meaningful and worthy of engagement. Job demands are physical, social and organisational aspects that require continued physical and psychological effort (Bakker & Demerouti, 2008), while job resources constitute those aspects that stimulate motivation towards reaching workplace goals (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In this research, the relationship between job insecurity (job demand), sense of coherence (personal resource) and general health (outcome) are investigated.

Sense of coherence can be seen as personal resources that assist individuals in dealing with challenges and stressors within their particular working environment (Pearlin & Schooler, 1978). Based on the above statement, An Organisational Stress Screening Tool (ASSET) model was

used in this study. The ASSET model is a measurement instrument based on a conceptual framework. It measures an employee's potential exposure to stress (Viljoen & Rothmann, 2009). The ASSET model (Cartwright & Cooper, 2002; Johnson & Cooper, 2003) has been applied in various studies on stress in higher education (Barkhuizen & Rothmann, 2008; Mostert, Rothmann, Mostert, & Nell, 2008; Rothmann, Barkhuizen, & Tyterleigh, 2008; Sang, Teo, Cooper, & Bohle, 2013; Tyterleigh, Webb, Cooper, & Ricketts, 2005).

According to the model the sources of stress can lead to outcomes such as lower commitment to the organisation, poor health, lower productivity, job dissatisfaction, absenteeism and a high turnover (Barkhuizen & Rothmann, 2008; Mostert et al., 2008; Sang et al., 2013). Prolonged periods of stress can result in increased susceptibility to illness (Faragher, Cooper, & Cartwright, 2004). Eight sources that contribute to the experience of occupational stress are work relationships, work-life balance, overload, job insecurity, control, resources and communication, pay and benefits, and job aspects (Cartwright & Cooper, 2002). Sang et al. (2013) found that job stressors predicted job dissatisfaction and poorer psychological well-being. They further made the conclusion that greater psychological well-being is associated with greater physical well-being. Mostert et al. (2008) postulates that stress and ill health are costly for the organisations. Faragher et al. (2004) support this by stating that the challenge facing organisations is to identify work place stressors and factors that moderate or mediate the effects.

In this study, sense of coherence is discussed as a potential moderator of the relationship between job insecurity and general health. Sense of coherence is useful in dealing with adverse situations and creating more favourable circumstances for the attainment of personal goals (Van den Heuvel, Demerouti, Schaufeli, & Bakker, 2010). It has been found that personal resources explain why job resources translate to positive outcomes, such as engagement and job performance (Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008). Personal resources alter the perception of job resources over time (Van den Heuvel et al., 2010). It means that through sense of coherence, individuals experience a higher level of wellness (Peterson & Seligman, 2004), which in this case is general health.

The effect of job insecurity on the employees' morale must be acknowledged in the study of job insecurity as indicated in the study by Hay and Fourie (2002). These levels of morale are related to stress and have an effect on the university's efficiency and effectiveness. This study aimed to investigate sense of coherence as a possible moderator of the relationship between job insecurity and general health of employees in a higher education institution.

Job Insecurity

Most researchers have adopted a global view on job insecurity and they describe it as an overall concern about the continued existence of the job in the future (Cheng & Chan, 2008; De Witte, 1999; Kasto, Elo, Lipponen, & Elovainio, 2005; Sverke, Hellgren, & Naswall, 2002). The existence of jobs is based on the assurance employees have, which is based on the employee contract. Various studies (Bartrum, 2006; Kinnunen, Mauno, Natti, & Happonen, 2000) indicate that job insecurity has been based on a multidimensional definition, which encompasses factors such as threats to various job features (employment conditions) and a powerlessness to counteract such threats.

Job insecurity involves the experience of a threat and implies a great deal of uncertainty regarding whether individuals will keep their jobs in the future (De Witte, 2005), while a subjective experience reflects uncertainty about future employment (De Witte, 2005; Sverke, De Witte, Naswall, & Hellgren, 2010). Employees who feel uncertain cannot always satisfactorily or adequately prepare themselves for the future existence of the job. Job insecurity is a subjective experience of involuntary job loss, and is associated with feelings of powerlessness and helplessness on the part of the employee (Sverke et al., 2002). According to Viljoen, Bosman, and Buitendach (2005), job insecurity refers to an employee's negative feelings towards changes relating to his/her job. It is regarded as a job stressor (Bernhard-Oettel, De Cuyper, Schreurs, & De Witte, 2011; De Cuyper, Baillien, & De Witte, 2009; Emberland & Rundmo, 2010; Hellgren & Sverke, 2003; Sverke et al., 2002).

In this study, job insecurity is conceptualised in relation to two dimensions, namely cognitive and affective job insecurity. Cognitive job insecurity relates to people's perceptions of possible

job loss, whereas affective job insecurity relates to the fear of job loss (Bosman, Rothmann, & Buitendach, 2005; De Witte, 2005). According to De Witte (2005), examples relating to cognitive job insecurity are captured in a statement such as “I think that I will continue working here”, whereas, affective job insecurity are captured in a statements such as “I am worried about keeping my job”. Cognitive job insecurity relates to present job conditions, and affective job insecurity to both present and future oriented job conditions.

According to Probst (2002), as well as Quick and Tetrick (2003) job insecurity leads to negative job-related reactions. This change causes greater stress to the employees who are not certain about the future existence of their jobs. Stress depends on the perceived imbalance between an individual’s perceptions of the demands made by the environment and the individual’s perceived ability and motivation to cope with those demands (Probst, 2002). Potential future unemployment may have significant consequences on the job and on the responsibility of the employees.

According to Rothmann (2003), employees cope with work-related demands with limited resources. Lack of resources to deal with work-related demands might lead to negative consequences and uninformed decisions. Vander Elst, Bailleien, De Cuyper, and De Witte (2010) indicate that possible ways to cope with job insecurity may take two forms, firstly, by pursuing ways to prevent perceptions of job insecurity, and, secondly, by pursuing ways to buffer its negative effects on employees’ functioning. According to Cooper, Dewe, and O’Driscoll, (2001) stress occurs when the demand exceeds the supply and threatens an individual’s health.

General Health

General health is defined by the Constitution of the World Health Organisation (2000) as a state of absolute physical, social and mental well-being. It is defined by the Occupational Health and Safety Act (no 85 of 1993) as being free from illness or injury attributable to occupational causes. The Act’s definition is based on the diseases and physical injuries which are caused by work-related factors that occur within the organisations. Health is a fundamental right of every

person or human being regardless of race, religion, and political beliefs, economic or social condition (Constitution of South Africa, 1996).

Edwards (2006) defines general health as a positive component of mental health. It measures the integration of various psychological components of being well. In this study, general health is conceptualised according to Goldberg and Hillier's (1979) definitions. It is discussed in relation to four facets, namely, somatic symptoms; anxiety and insomnia; social dysfunction; and severe depression. These four facets are caused by work related stress and psychological stress (Goldberg & Hillier, 1979).

According to Goldberg and Hillier (1979), somatic symptoms are characterised by an individual's inability to feel perfectly well and in good health, as well as feelings of being in need of a tonic, feelings that one is getting pains in one's head and feelings of tightness or pressure in one's head. Simon, VonKorff, Piccinelli, Fullerton, and Ormel (1999) as well as Barlow and Durand (2005) state that somatisation is a psychiatric state marked by multiple medically unexplained physical or somatic symptoms. The majority of somatic symptoms are categorised as medically unexplained (Rief, Mewes, Martin, Glaesmer, & Brahler, 2011). It refers to individuals' complaints about serious health conditions that interfere significantly with their capacity to perform important activities (Barlow & Durand, 2005).

Anxiety and insomnia are represented by questions such as "I have lost much sleep over worry" and "I have felt constantly under strain" (Goldberg & Hillier, 1979). Anxiety is described as a negative mood condition characterised by bodily symptoms of physical tension and worry about the future (Barlow & Durand, 2005). It is linked to difficulties in falling asleep (Morin, 1993). Insomnia is classified into three categories, namely individuals who find it incredibly difficult to get to sleep in the first place (primary insomnia), individuals who wake up multiple times at night and struggle to get back to sleep (middle insomnia), and those who wake up very early and are not able to get back to sleep at all (terminal insomnia) (Barlow & Durand, 2005; Belanger, Morin, Langlois, & Ladouceur, 2004).

Social dysfunction refers to the inability of an individual to enjoy normal daily activities. The individual feels that he/she is not playing an important role. Social dysfunction is represented by

statements such as “had difficulty in staying asleep once you are off, felt constantly under strain as well as getting edgy and bad tempered” (Goldberg & Hillier, 1979). It is considered a diagnostic feature of schizophrenic disorders, but its definition lacks validity (Barlow & Durand, 2005). It is developed from an individual shyness which includes impaired social skills and competence (Goldberg & Schmidt, 2001). Emotional flattening, social isolation and interpersonal oddity are risk factors of social dysfunction, and they are considered to be a core feature of illness (Chemerinski, Nopoulos, Crespo-Facorro, Andreason, & Magnotta, 2002).

Severe depression is represented by statements such as "I felt that life is not worth living" and "I felt that life is entirely hopeless" (Goldberg & Hillier, 1979). Its episodes are associated with the greatest hazards of morbidity and mortality (Thase, 2000). According to Thase (2000), these depressive episodes are described as symptom intensity, diagnostic subtypes, and a degree of functional impairment. It is the most serious condition that affects every-day life, leading to hopelessness feelings and even loss of desire to live altogether. It affects the patient's ability to work, study, sleep, eat and lead a normal life (Barlow & Durand, 2005). In a study by Matsuzaki et al., (2007), it was reported that depression and anxiety influence the levels of one's sense of coherence.

Sense of Coherence

Sense of coherence is defined by Antonovsky (1993, p. 725) as a “global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges worthy of investment and engagement”. Sense of coherence has also been defined by Antonovsky (1993) as a relatively stable dispositional orientation that is represented by the concepts of comprehensibility, manageability and meaningfulness.

According to Antonovsky (1987), *Comprehensibility* is the extent to which persons find or structure their world to be understandable, meaningful, orderly and consistent, instead of chaotic,

random and unpredictable. *Manageability* is the extent to which people experience events in life as situations that are endurable or manageable. These events can even be seen as new challenges. Lastly, *Meaningfulness* is the extent to which the individual's life makes sense not only at an emotional level, but at a cognitive level, as well. The constructs of sense of coherence explain that individuals with a high sense of coherence have confidence that the world is understandable and that it makes sense to them (comprehensibility). They believe that the world has resources available for meeting the demands that they face (manageability) (Shiu, 1998).

Rothmann, Steyn, and Mostert (2005) add that the persons' sense of coherence requires certain inherent prerequisites for coping successfully. These prerequisites are also represented by the concepts of comprehensibility, manageability and meaningfulness. Antonovsky (1987) reported that the stronger the level of sense of coherence, the more individuals actively utilise generalised resistance resources, which are the resources they have at their disposal for handling the demands of life. Researchers further reported that a strong sense of coherence enables one to mobilise effective coping resources (Levert, Lucas, & Orllepp, 2000). A weak sense of coherence results in poor tension management and an inability to mobilise adequate resources, culminating in the breakdown of one's health (Antonovsky, 1987).

According to Muller and Rothmann (2009), there are various ways in which sense of coherence can affect individuals. Basinska, Andruszkiewicz, and Grabowska (2011) assert that a strong sense of coherence is the manifestation of the healthy functioning of an individual at work and in other human activities. People who find their environment more comprehensible, meaningful and manageable are less likely to appraise stimuli as stressors (Antonovsky, 1987). Grayson (2008) views sense of coherence as a product of the interaction between an individual and the social and cultural environment in which he/she is raised and lives. Sense of coherence requires certain inherent prerequisites for coping successfully (Rothmann et al., 2005). Individuals will select the appropriate method for coping with stress within the environment.

Relationship between Job Insecurity, General Health and Sense of Coherence

The literature review revealed that job insecurity is associated with low general health (Hellgren & Sverke, 2003; Schreurs, Van Emmerik, Notelaers, & De Witte, 2010; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2009). It correlates negatively with employee health (Bernhard-Oettel et al., 2011; De Cuyper et al., 2009; Sparks, Faragher, & Cooper, 2001) and is associated with increased poor health (Cheng, Chen, Chen, & Chiang, 2005; Laszlo et al., 2010). Job insecurity is a job stressor (Cheng et al., 2005) which implies that feelings of powerlessness relate to poor well-being (De Witte, 1999). The feeling of powerlessness in employees may be due to the lack of necessary resources to reduce work related demands. Resources are capable of diminishing the impact of job demands on health (Bakker, Demerouti, & Verbeke, 2004). Employees who lack the necessary resources, are unable to cope with work-related stressors, and this results in increased ill-health.

Physical health complaints and mental distress are regarded as the general health of the employees that increases proportionately with the level of job insecurity (Lim, 1996; Sverke & Hellgren, 2002). In addition, job insecurity is associated with psychological distress and somatic complaints (Ferrie, 2001; Sverke et al., 2002) as well as anxiety and depression (Burchell, 2005; Orpen, 1994). Work related demands require the employee to utilise necessary resources to overcome the negative consequences that might affect employee performance and engagement. A number of studies indicated that employees who are insecure about their jobs report physical health complaints more often than employees who feel secure about the future of their jobs (Burchell, 2005; Heaney, Israel, & House, 1994; Hellgren & Sverke, 1999).

A person's sense of coherence is an important predictor of his or her health (Antonovsky, 1993; Rothmann, 2003). A strong sense of coherence is related to general wellness (Feldt, 1997), mental health (Eriksson & Lindstrom, 2006) and successful coping with life stress (McSherry & Holm, 1994). It influences the levels of depression and anxiety (Matsuzaki et al., 2007). Strumpfer, Danana, Gouws, and Viviers (1998) found a relationship between sense of coherence and job insecurity. Employees with high levels of job insecurity displayed a lower sense of coherence (Grant, 2005). Low job insecurity is related to a strong sense of coherence (Feldt,

Kivimaki, Rantala, & Tolvanen, 2004). This relationship is supported by Van Vuuren, Klandermans, Jacobson, and Hartley (1999), as well as Feldt, Kinnunen, and Mauno (2000), who indicate that there is a negative correlation between job insecurity and sense of coherence.

From the reviewed literature, it is clear that job insecurity (job demands) has a negative relationship with general health (outcomes) (Bernhard-Oettel et al., 2011; Cheng & Chan, 2008; Goslinga et al., 2005; Silla et al., 2009; Tucker, 2010) and sense of coherence (job resource) (Feldt et al., 2000; Feldt et al., 2004; Van Vuuren et al., 1999).

In this study, the researcher explored the possible moderation effect of sense of coherence on the relationship between job insecurity and general health. Barbosa (2009) found that sense of coherence moderated the relationship between job insecurity and general health. According to Baron and Kenny (1986), a moderator is a qualitative (e.g. sex, race, class) or quantitative (e.g. level of reward) variable that affects the direction and/or strength of the relationship between an independent or predictor variable and a dependent or criterion variable. The moderator effect is seen as an interaction in which the effect of one variable depends on the level of another. In this study, sense of coherence is tested as a moderator on the relationship between job insecurity and general health.

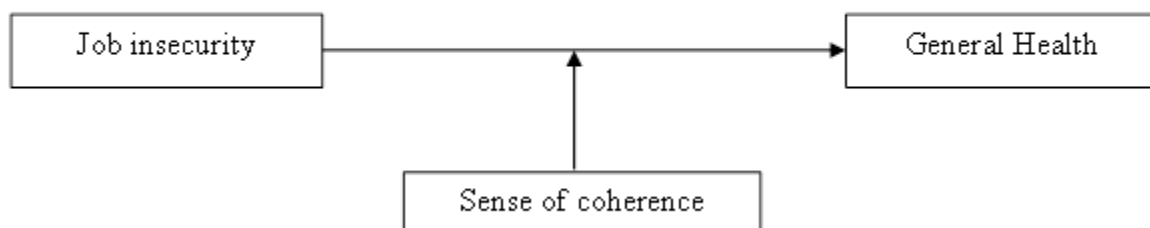


Figure 1. Moderating effects of sense of coherence on the relationship between job insecurity and general health

This schematic presentation suggests that the relationship between job insecurity and general health differs at different levels of sense of coherence.

Aim and Hypotheses

The aim of this study is to determine the relationship between job insecurity, sense of coherence and general health. It further assesses sense of coherence as a moderating effect of the relationship between job insecurity and general health. The rationale of this study is to evaluate sense of coherence as a moderator of the relationship between job insecurity and general health in a higher education institution.

The following hypotheses were formulated:

H₁: Job insecurity negatively relates to general health.

H₂: Sense of coherence positively relates to general health.

H₃: Sense of coherence moderates the relationship between job insecurity and general health.

METHOD

Research Design

A cross-sectional survey based research design was used to obtain data within a higher education institution in South Africa. This design was ideally suited to the descriptive functions associated with correlation research (Shaughnessy, Zechmeister, & Zechmeister, 2003). Specific questionnaires were applied to reach the research objectives. Questionnaires were used to gather primary data from research participants (Davis, 2005; Garcia et al., 2012).

Participants

In this study, the total population comprised of 3086 academic and non-academic staff members from two campuses. From the total population, 500 questionnaires representing 16% of total population were distributed and 229 were returned which represents 45.8% of the selected sample. A simple random sample was used to ensure the sample's representativeness of the

sample size. Each member of the population was given an equal opportunity to be included in the research, both as males and females, young and old.

Research assistants gave the employees a brief description of the purpose of the study, its benefits, risks, and significance. Participation was totally voluntary. Participants were asked not to write their names on the questionnaires, and they were assured that the information they would provide would be confidential and used only for the purpose of the study.

A biographical questionnaire was developed and attached to other questionnaires. The biographical questionnaire included aspects such as educational level, age, gender, cultural group, marital status and the working experience of employees.

Table 1 describes the characteristics of the participants in the study. The majority of the participants (42.8%) were black. Males made up 55.9% of the sample, 34% were between the ages of 25-35. Master's degree holders were 41.9%, academics, 62.4% while administrative staff made up 37.6% of the sample. Forty-one percent of the respondents participated in academic association activities of the institution.

Table 1

Characteristics of the Participants (n = 229)

Item	Category	Frequency	Percentage (%)
Age	Less than 24 years	26	11.4
	25 – 35 years	78	34.0
	36 – 45 years	56	24.5
	46 – 55 years	49	21.4
	56 years and older	20	8.7
Gender	Male	128	55.9
	Female	101	44.1
Cultural group	Black	98	42.8
	White	92	40.2
	Coloured	27	11.8
	Asian	12	5.2
Qualification	Diploma	9	3.9
	Degree	34	14.8
	Honours	41	17.9
	Masters	96	41.9
	Doctoral	49	21.4
Years in the institution	Less than 1 year	31	13.5
	2 – 5 years	80	34.9
	6 – 10 years	51	22.3
	11 – 20 years	52	22.7
	Longer than 20 years	15	6.6
Work category	Academic	143	62.4
	Administrative	86	37.6
Union	Nehawu	89	38.9
	Academic Association	94	41.0
	Non-member	41	17.9
	Other	5	2.2

Measuring Instruments

The following measuring instruments plus the biographic questionnaire were used to gather data.

The *Job Insecurity Inventory* (JII; De Witte, 2005) was used as a measure of job insecurity. This 11-item questionnaire measure both the cognitive and affective dimensions of job insecurity and are arranged along a five-point Likert-type scale, varying from 1 (*strongly disagree*) to 5 = (*strongly agree*). An example of a question relating to cognitive job insecurity would be, “I think that I will be able to continue working here”, whereas an example of a question relating to affective job insecurity would be, “I fear that I might lose my job”. De Witte (2005) reported a Cronbach alpha coefficient of 0.92 for global job insecurity. A satisfactory Cronbach’s alpha coefficient of 0.85 was obtained in a study of 500 educators in the Sedibeng West District (Matla, 2009).

The *General Health Questionnaire* (GHQ; Goldberg & Hillier, 1979) was used for measuring general health. The 28 item questionnaire measures the somatic syndrome, “Have you recently been feeling in need of a good tonic?”, anxiety and insomnia, “Have you recently lost much sleep over worry?”, social dysfunction, “Have you recently been managing to keep yourself busy and occupied?”, and severe depression, “Have you recently been thinking of yourself as a worthless person?” (Goldberg & Hiller, 1979). The items are measured on a five-point Likert-type scale, ranging from 1 (*not at all*) to 5 (*a great deal*). In a study by Goldberg and Hillier (1979), internal consistency coefficients of 0.69 to 0.90 were reported. Goldberg et al. (1997) reported good reliability and validity indices for the GHQ across various cultures. In a study by Nagyova et al. (2000) Cronbach’s alpha coefficients varying around 0.82 and the internal consistency of the scale of 0.90 was reported on a sample of 148 of Slovak and Western European participants.

The *Orientation to Life Questionnaire* (OLQ; Antonovsky, 1987) was used to measure the participants’ sense of coherence. The 29 item questionnaire measures sense of coherence and arranged on seven-point Likert-type scale, ranging from 1 (*never*) to 7 (*always have this feeling*) and differs from one item to the other as an example item 9 range from 1(*very often*) to 7 (*very seldom or never*). Antonovsky (1987) proposed three subscales for the questionnaire, as comprehensibility (COMP) which is measured by 11 items, meaningfulness (MEAN) which is measured by eight items and manageability (MANA) measured by ten items. In studies by Antonovsky (1993) Cronbach’s alpha coefficients varying between 0.85 and 0.91 were reported. Antonovsky (1987) conceded that sense of coherence should be regarded as a unidimensional construct. Muller and Rothman (2009) found a satisfactory Cronbach’s alpha coefficient of 0.85 in a sample of 2678 financial institution employees in Gauteng province.

Research Procedure

Prior to conducting the study, a request for permission to conduct a research was made to the university management and permission was granted to the researcher to conduct the research. The managers and employees of the university were informed about the objectives of the study, and when the study would be conducted. Issues of confidentiality, anonymity and the voluntary

nature of the study were also addressed. Assurance was given that the information acquired would only be used for research purposes. The researcher distributed questionnaires to the participants. The questionnaires were collected from the participants at a central place within the university. The data was captured and analysed with a use of IBM-SPSS program. The results of the study were analysed and interpreted, the conclusions and recommendations were made from the results.

Statistical Analysis

Statistical analysis was carried out with the use of the IBM-SPSS program (IBM-SPSS, 2011). Exploratory factor analyses were carried out to assess the validity of the constructs that were measured in this study. Cronbach's alpha coefficients were used to assess the reliability of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means and standard deviations) were used to analyse the data. Pearson product-moment correlations were used to specify the relationship between different variables. The statistical significance was set at $p < .05$ and the effect sizes were computed to assess the practical significance of the relationships. A cut-off point of .30, which represents a medium effect, was set (Cohen, 1988).

Hierarchical regression analyses were conducted to determine whether sense of coherence moderated the relationship between job insecurity and general health. According to Preacher, Curran, and Bauer (2006) moderation is important in explaining and testing the interactive effects of two or more variables in predicting a dependent variable while controlling for associated main effects. In the first step both predictor variables in their interval form (job insecurity and sense of coherence) followed by the interaction in the second step, were entered into the regression equation. A significant interaction term indicates that the effect of sense of coherence on either job insecurity or general health differs. Heuven, Bakker, Schaufeli, and Huisman (2006) indicate that the significance of standardised regression coefficients is evidence of moderation with the significance of the change in the coefficient of R^2 determination (ΔR^2).

RESULTS

Exploratory Factor Analyses

An exploratory factor analysis was computed for the JII to verify the construct validity of the components of the questionnaire. An analysis of the eigenvalues (> 1.00) indicated that one factor explained 40.77% of the variance.

According to literature, items 1, 2, 3, 4, 10 and 11 are representative of the cognitive job insecurity scale, whereas items 5, 6, 7, 8, and 9 are representative of the affective scale (De Witte, 2005). Table 2, shows that all items of the JII loaded together and item 2, “There is only a small chance that I will become unemployed”, was deleted to improve the reliability. Based on the above information, the researcher decided to use job insecurity as one construct (Total-Job insecurity). In previous studies by Bosman et al. (2005), as well as Viljoen et al. (2005), it was reported that item 2 of the JII was also removed from the scale. Table 2 shows the item loadings of the JII scale.

Table 2

Pattern Matrix of the Job Insecurity Inventory

Items	Component	
	1	h^2
1. I think that I will be able to continue working here.	.53	.28
3. I am certain/sure of my job environment.	.54	.29
4. I am very sure that I will be able to keep my job.	.33	.11
5. It makes me anxious that I might become unemployed.	.60	.36
6. I feel uncertain about the future of my job.	.55	.30
7. I worry about the continuation of my career.	.51	.26
8. I fear that I might lose my job.	.73	.53
9. I fear that I might get fired.	.75	.56
10. There is a possibility that I might lose my job in the near future.	.77	.59
11. I think that I might be dismissed in future.	.52	.27

An exploratory factor analysis was computed for the 28 items of the GHQ to verify the construct validity of the components of the questionnaire. An analysis of the eigenvalues (> 1.00) indicated that five factors explained 52.99% of the variance. The results of the principal axis factor analysis with loadings of variables on factors are shown in Table 3.

According to literature, the GHQ should load on four factors as supported by Goldberg, (1979), whereas in this study it resulted in a split on original Factor 4. This led to the five factors reported for GHQ. Severe depression has been divided into two subscales, namely Hopelessness and Worthlessness.

Table 3

Pattern Matrix of the General Health Questionnaire

Items	Factor					h^2
	F1	F2	F3	F4	F5	
A Been feeling in need of a good tonic?	.15	-.01	.03	.01	.48	.23
Been feeling run down and out of sorts?	.04	-.28	-.18	-.15	.64	.41
Felt that you are ill?	-.09	-.13	-.08	-.15	.69	.47
Been getting any pains in your head?	.01	.14	-.09	.04	.62	.38
Been getting a feeling of tightness or pressure in your head?	.09	.28	.12	.07	.50	.25
B Lost much sleep over worry?	.07	.24	.04	-.42	.14	.18
Had difficulty in staying asleep once you are off?	.03	.16	.09	-.72	.04	.52
Felt constantly under strain?	.10	-.07	-.12	-.70	-.02	.49
Been getting edgy and bad tempered?	.07	.09	-.24	-.36	.04	.13
C Been managing to keep yourself busy and occupied?	.71	.06	.08	.03	.07	.49
Been taking longer over the things you do?	.74	-.11	.13	-.08	-.03	.64
Felt on the whole you were doing things well?	.68	-.09	-.02	-.09	-.04	.46
Been satisfied with the way you've carried out your task?	.55	-.09	-.26	-.01	.11	.30
Felt capable of making decisions about things?	.41	-.08	-.10	-.10	.12	.16
Been able to enjoy your normal day-to-day activities?	.42	.08	-.36	.03	.16	.18
D1 Felt that life is entirely hopeless?	.10	.15	-.57	-.02	.20	.32
Felt that life isn't worth living?	-.03	-.02	-.67	-.12	-.00	.45
Thought of the possibility that you might do away with yourself?	-.06	.07	-.81	.04	.01	.66
D2 Found at times you couldn't do anything because your nerves were too bad?	-.06	.68	.01	-.09	.14	.46
Been thinking of yourself as a worthless person?	.34	.41	-.18	.15	.02	.17
Found yourself wishing you were dead and away from it all?	.06	.58	-.12	-.24	-.05	.34
Found that the idea of taking your own life kept coming into your mind.	-.34	.52	-.07	-.09	-.07	.27

An exploratory factor analysis was computed for the 12 items of the SOC to verify the construct validity of the components of the questionnaire. The one factor structure proved to be the best option. It was selected based on internal consistency reliability (Barnard, Peters, & Muller, 2010). Sense of coherence indicates an acceptable Cronbach's alpha coefficient of 0.73. One item was deleted to improve Cronbach's alpha coefficient.

Reliabilities, Descriptive Statistics and Correlations

Descriptive statistics, Cronbach's alpha coefficients and correlations of the measuring instruments (JII, GHQ and OLQ) are reported in Table 4. Table 4 indicates the mean values, standard deviations, Cronbach's alpha coefficients and correlations of job insecurity, general health and sense of coherence. The information reflected in Table 4 indicates that the ten items of the job insecurity scale have a Cronbach's alpha coefficient of 0.83.

According to Table 4, a statistically significant positive relationship exists between job insecurity and general health. It appeared that a practically significant positive correlation of medium effect exists between job insecurity and anxiety. Job insecurity is statistically significantly related to somatic symptoms, social dysfunction, hopelessness and worthlessness. It is important to keep in mind that a higher score on general health indicates bad health, and when employees experience less job insecurity they enjoy better health. Thus, the results of this study support Hypothesis 1, indicating a negative relationship between job insecurity and general health.

As indicated in Table 4, acceptable Cronbach's alpha coefficients for the subscales of GHQ are as follows: somatic symptoms (0.75), anxiety/insomnia (0.73), social dysfunction (0.79), hopelessness (0.69) and worthlessness (0.79). Hopelessness has a Cronbach's alpha coefficient just below the acceptable cut-off point of 0.70 (Nunnally & Bernstein, 1994). A Cronbach's alpha coefficient of 0.73 is indicated for sense of coherence. Table 4 indicates a statistically significant negative correlation between job insecurity and sense of coherence. Sense of coherence has a practically significant negative correlation of medium effect with somatic symptoms, anxiety/insomnia and social dysfunction. It also indicates a statistically significant negative correlation with hopelessness and worthlessness. It is important to keep in mind that a higher score on general health indicates bad health. Thus, the results support Hypothesis 2, which indicates that a positive relationship exists between sense of coherence and general health.

Table 4

Descriptive Statistics, Alpha Coefficients and Correlations of the Scales

Variable	α	Mean	SD	1	2	3	4	5	6	7
1. JI	0.83	2.35	0.71	-	-	-	-	-	-	-
2. GHQ_A– Somatic Symptoms	0.75	1.44	0.53	.19*	-	-	-	-	-	-
3. GHQ_B– Anxiety/Insomnia	0.73	1.47	0.53	.40*†	.43*†	-	-	-	-	-
4. GHQ_C – Social Dysfunction	0.79	1.51	0.54	.14*	.51*††	.43*†	-	-	-	-
5. GHQ_D1 – Hopelessness	0.69	1.34	0.45	.14*	.28*	.41*†	.40*†	-	-	-
6. GHQ_D2 –Worthlessness	0.79	1.32	0.55	.30*	.46*†	.47*†	.42*†	.38*†	-	-
7. SOC – Total	0.73	4.79	0.90	-.28*	-.46*†	-.35*†	-.45*†	-.28*	-.28*	-

*Correlation is statistically significant at the .05 level (2-tailed)

**Correlation is significant at the .01 level (2-tailed)

† Correlation is practically significant $r \geq .30$ (medium effect)

††Correlation is practically significant $r \geq .50$ (large effect)

Multiple Regression Analyses

Table 5 shows the multiple regression analyses with job insecurity and sense of coherence as predictors of general health. The entry of job insecurity and sense of coherence at the first step of the regression analysis produced statistically significant models: Somatic symptoms, $F = 31.16$, $p < .05$, $R^2 = 0.22$; Anxiety, $F = 31.98$, $p < .05$, $R^2 = 0.22$, Social dysfunction, $F(df = 28.53)$, $p < .05$, $R^2 = 0.20$, Hopelessness, $F = 10.03$, $p < .05$, $R^2 = 0.08$ and Worthlessness, $F = 17.13$; $p < .05$, $R^2 = 0.13$. All aspects of general health made a statistically significant contribution to the regression model when sense of coherence was entered in the first step. This implies that sense of coherence predicted general health.

Job insecurity significantly predicted anxiety ($F = 31.98$, $p < .05$, $R^2 = 0.22$) and worthlessness ($F = 17.13$; $p < .05$, $R^2 = 0.13$). Two variables made a statistically significant contribution to the regression model: Anxiety ($\beta = 0.33$, $p < .05$) and worthlessness ($\beta = 0.23$, $p < .05$). This implies that job insecurity predicted general health. The results of the main effect indicate that sense of coherence predicts general health, and job insecurity predicts anxiety and worthlessness. The entry of the interaction term between job insecurity and sense of coherence in the second step of the model made no statistically significant contribution ($\Delta R^2 = .00$) for all general health factors.

Interaction Effects

Moderating effects were assessed using the guidelines suggested by Baron and Kenny (1986). These examined moderating effects between variables. The moderation of sense of coherence between job insecurity and aspects of general health was tested with hierarchical regressions. In an attempt to test the possibility of any interaction effects, the centred predictors and moderator were entered first into the regression equation, followed by their interactions in the second step, in order to predict job insecurity and different aspects of general health. The results of hierarchical regression are indicated in Table 5. According to Baron and Kenny (1986), evidence of a moderator effect is present when the interaction term between the predictor and moderator is significant.

Table 5

Interaction of Job Insecurity and Sense of Coherence on General Health

	Somatic Symptoms		Anxiety		Social Dysfunction		Hopelessness		Worthlessness	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Sense of coherence	-.44*	-.43*	-.25*	-.24*	-.44*	-.42*	-.26*	-.27*	-.21*	-.22*
Job insecurity	.06	.05	.33*	.32*	.01	.01	.06	.06	.23*	.24*
Job insecurity x Sense of coherence		.07		-.05		-.10		.06		-.04
R^2	.22*	.22	.22*	.22	.20*	.21	.08*	.08	.13*	.13
F	31.16*	21.32*	31.98*	21.55*	28.53*	20.13*	10.03*	7.05	17.13*	11.53*
ΔR^2		.00		.00		.01		.00		.00
ΔF		1.50		.76		2.85		1.07		.41

* $p < .05$ – statistically significant

Table 5 shows that the interaction terms of job insecurity with sense of coherence as predictors of general health were not statistically significant. There is no significant change in the coefficient of R^2 associated with the interaction term. The coefficient of the interaction between job insecurity and sense of coherence was not statistically significant ($R^2 = .00$) on somatic symptoms, anxiety, social dysfunction, hopelessness or worthlessness. When the interaction term

between job insecurity and sense of coherence was entered in a model, no statistically significant change in R^2 was found. No interaction effect between job insecurity and general health expectation was found for sense of coherence. This implies that sense of coherence is not a moderator of the relationship between job insecurity and general health.

The hypothesis that indicates that sense of coherence moderates the relationship between job insecurity and general health was not supported, thus Hypothesis 3 is not accepted.

DISCUSSION

The aim of this study was to examine the relationships among job insecurity, general health and sense of coherence in a higher education institution. The results of the study showed that job insecurity related to ill-health. Previous studies have shown that employees' physical health complaints and mental distress increase proportionately with the level of job insecurity (Sverke & Hellgren, 2002) while Grant (2005) indicated a practically significant relationship between job insecurity and general health. Job insecurity is statistically significantly related to somatic symptoms, social dysfunction, hopelessness and worthlessness. Employees who experience high job insecurity also experience problems with their health and tend to have less energy.

When employees experience workload demands, it becomes difficult for them to use their energy efficiently. They begin to feel insecure in their work environment. This can cause employees to doubt their own competence, thus resulting in ill-health (De Witte, 1999). High job insecurity acts as a chronic threat and has more immediate health consequences (Schreurs et al., 2010). It was expected that employees' health would be negatively affected by job insecurity.

Job insecurity predicted anxiety. People feeling insecure in their jobs may experience negative moods, physical tension and worry about their future, thus leading to anxiety. This can further lead to problems such as failing to sleep, waking up during the night or very early. Job insecurity predicted worthlessness. Insecure employees feel worthless and experience negative feelings; they wish they were dead. This implies that job insecurity is an important determinant of employee health. General health is one of job insecurity's consequences, hence the relationship

of job insecurity to general health. This is confirmed in literature, which indicates that job insecurity has a negative relationship with general health (Cheng & Chan, 2008; Oettel et al., 2011; Silla et al., 2009; Tucker, 2010).

The results of the study found that job insecurity was negatively related to sense of coherence. The negative relationship between job insecurity (demands) and sense of coherence (resources) is due to employees' perception of the work environment. If employees perceive the environment as comprehensible, manageable and meaningful to their life, they will feel less secure. This relationship that high levels of job-related resources purportedly transform job demands into positive challenges is supported in the literature (Grönlund, 2007). Employees that structure their work environment to be understandable, meaningful and orderly will experience less job insecurity. A strong sense of coherence enables one to mobilise effective coping resources in the face of tension (Levert et al., 2000). Sense of coherence in this study is discussed as a personal resource that assists individuals in dealing with challenges and stressors within their particular working environment (Pearlin & Schooler, 1978). Personal resources allow individuals to address and confront work related demands in stressful situations.

Employees who have resources view work situations as manageable and they are more hopeful about new challenges and the future of their job. They have confidence that the world is understandable and makes sense to them (comprehensibility); that resources are available for meeting the demands that they face (manageability); and are worthy of taking action on the demands, which have meaning in their lives (Shiu, 1998). A South African study by Naude and Rothmann (2006) supported the practically significant negative relationship that exists between job insecurity and sense of coherence.

General health was positively related to sense of coherence. Employees with a low sense of coherence experience problems with their health. A weak sense of coherence results in poor tension management and an inability to mobilise adequate resources, culminating in health breakdown (Antonovsky, 1987). This study further indicates that a person's sense of coherence is an important component of a person's health (Antonovsky, 1993; Rothmann, 2003). It can then be argued that a weak sense of coherence can lead employees to perceive situations as

threatening (i.e. high job demands and low job resources), which in turn could lead to ill health. A practically significant negative correlation between sense of coherence and general health is supported in a study by Ying, Lee, and Tsai (2007) which shows that sense of coherence was significantly negatively associated with depressive symptoms.

Individuals want to have a purpose in life and wish to live meaningful lives. This can be fulfilled when they are able to effectively manage stress and situations around them in order to maintain healthy life styles. When individuals feel in control of the resources used for coping with the situations, manageability is enhanced by comprehensibility to make life meaningful for employees (Endo, Kanou, & Oishi, 2012). Individuals manage the situation they are in through the manageable capacity and find meaning to move in a healthy direction, to make life meaningful.

The results of the study showed that sense of coherence is a predictor of somatic symptoms, anxiety, social dysfunction, hopelessness and worthlessness. This implies that sense of coherence predicts general health. The research indicates that a strong sense of coherence is a manifestation of the healthy functioning of an individual at work (Muller & Rothmann, 2009).

No moderation was found when job insecurity and sense of coherence were entered in the model. This implies that there is no interaction reported in the regression model. Sense of coherence did not affect the direction of the relationship between job insecurity and general health. A possible explanation for the lack of moderation is that sense of coherence can be seen as personal resources that assists individuals in dealing with stress (job insecurity) within their particular working environment. Personal resources explain why job resources translate into positive outcomes (Xanthopoulou et al., 2008). This is because personal resources alter the perception of job resources (Van den Heuvel et al., 2010) and job demands over time. In other words, the individual, through a personal resource (sense of coherence), perceives a demand (job insecurity) more positively, thus leading to a higher level of wellness (Peterson & Seligman, 2004), in this case general health.

In conclusion, job insecurity is strongly negatively associated with general health under the condition of a low sense of coherence. The research indicates that strong sense of coherence is a manifestation of the healthy functioning of an individual at work (Muller & Rothmann, 2009). The stronger the levels of sense of coherence, the more individuals actively utilise generalised resistance resources, which are the resources they have at their disposal for handling the demands of life. Sense of coherence facilitates one's ability to perceive and control the environment for meaningful and appropriate action (Van Schalkwyk & Rothmann, 2008). People tend to perceive themselves as having the ability to cope with the situation and the environment.

The study had limitations. First, due to the cross-sectional design of the study no conclusions regarding causality can be drawn. In future, research should include all higher education institutions in South Africa to assess employees' perspectives in terms of the constructs as discussed in this study. Secondly, latent variable modelling was not used to get a more accurate estimation of interaction effects.

RECOMMENDATIONS

Managers in higher education institutions should be encouraged to train and support employees to understand the world they live in, gain experience of the environment and confidence to deal with issues. Individuals with a strong sense of coherence have confidence that the world is understandable, that it makes sense to them, has resources for meeting the demands that they face, and that it is worthy taking action on the demands, which have meaning in their lives (Shiu, 1998).

Employees with a strong sense of coherence perceive life as comprehensible, manageable and meaningful. This helps them to stay healthy despite encounters with stressors. It is important for employees to learn different coping strategies that will assist them to manage the situation around them. Sense of coherence should be developed in higher education through proper training and coaching of employees to understand that life is constant, structured, ordered and should be understandable. Higher education management should design programmes that will assist in developing a strong sense of coherence, by providing information to employees. More

energy and time should be directed at personal development such as self-esteem, locus of control, hope, resilience and optimism training.

It is recommended that higher education institutions should deal with employees' low sense of coherence in different ways. In terms of comprehensibility, the higher education institutions should provide information in a consistent, structured, ordered and understandable format. Regarding manageability, the information should equip employees with the necessary knowledge, skills, materials, instruments and other resources, as well as ensure that there is a balance in the load of tasks to be handled. Lastly, it should be the higher education institution's responsibility to meaningfully allow independence and freedom of choice in the employee's performance of their tasks, promote participation in decision-making, and allow employees the freedom to discuss with their supervisors what needs to be done (Rothmann, 2009).

It is necessary for the supervisor in higher education institutions to provide employees with leadership, support, guidance and direction, as well as job information necessary for their work. Employees should be allowed to participate in institutional activities and decision-making. Participation in decision-making will reduce insecurity and increase employees' control over the situation.

Insecurity is stimulated by a lack of communication about future events. Open communication regarding organisational changes is effective in reducing insecurity (Schweiger & Denisi, 1991). Greenberg and Lind (2000) indicate that communication and participation strengthen the perception that employees are treated fairly by the employer. Kinnunen and Natti (1994), in their research, indicate that adequate information received by employees can reduce job insecurity. Open, honest and early communication increases the predictability and controllability of future events. Open communication can be achieved by using the informal networks of key employees to disseminate information and deal with any resistance encountered. It is thus imperative for the higher education management to keep open lines of communication with employees at all levels of institutions.

Future research should focus attention on the longitudinal and experimental design. This will make it possible to make causal inferences of the variables as discussed in this study. Longitudinal studies should address issues of causality, and analyse the effects of job satisfaction, and occupational stress on general health. Due to the cross-sectional design used in this study no conclusions regarding the causality could be drawn. Due to the small sample size from higher education institutions, partly owing to the unavailability and commitments of staff members, the results cannot be generalised.

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CHAPTER 3

RESEARCH ARTICLE 2

OCCUPATIONAL STRESS, JOB SATISFACTION AND GENERAL HEALTH OF EMPLOYEES IN A HIGHER EDUCATION INSTITUTION

ABSTRACT

The objective of this study was to determine the relationship between occupational stress, job satisfaction and general health of employees in higher education institution. A cross-sectional survey design was used. A random sample ($n = 229$) was taken from academic and non-academic staff members of the institution. The Organisational Stress Screening Tool, Minnesota Job Satisfaction Questionnaire and General Health Questionnaire were administered. The results showed a practically significant negative relationship between occupational stress and job satisfaction, and also a practically significant negative relationship between job satisfaction and general health. Occupational stress had a practically significant negative relationship with general health. Occupational stress had a significant indirect effect on general health via job satisfaction. The results confirm the significant effects of occupational stressors and job dissatisfaction on the health of employees in a higher education institution. Higher education institutions should focus on interventions dealing with work demands, resources, relationships and employees feelings of security. Due to the cross-sectional design of the study, no conclusions regarding causality can be drawn.

Key terms: Occupational stress, job satisfaction, general health, higher education institution, managers.

Universities around the world have recently undergone dramatic changes (Aula & Tienari, 2011). In South Africa, the Council on Higher Education (CHE) proposed that in the interest of a sustainable higher education landscape, there is a need to reduce the number of institutions through the mechanism of combinations (Council on Higher Education, 2000). The combinations resulted in the reduction of the number of institutions from 36 to 23 (Badat, 2010; CHE, 2009; Wangenge-Ouma, 2011). This transformation process of higher education was also meant to open access to students who had previously been excluded (Ngugi, 2011), and also to serve the new social order by meeting pressing national needs and responding to new realities and opportunities (Chipunza & Gwarinda, 2010; Kirlidog & Zeeman, 2011).

The changes in higher education led to change on how employees function and change the working environment. It placed increased pressures on academics and resulted in growing concerns about increased stress and dissatisfaction (Pop-Vasileva, Baird, & Blair, 2011). Employees were forced to deal with higher job demands with fewer resources (Idris, Dollard, & Winefield, 2011).

According to An Organisational Stress Screening Tool (ASSET) model, the stressor or sources of stress include work relationships, work-life imbalance, work overload, job insecurity, control, resources and communication, pay and benefits, and aspects of the job itself (Cartwright & Cooper, 2002). Bakker, Demerouti, and Schaufeli (2003), state that those jobs with high demands and few resources are found to be detrimental to employees' physical and mental health.

This situation of high job demands and few resources in an organisation causes greater stress among employees who are not certain about the future existence of their job. The stress value depends on the perceived imbalance between an individual's perceptions of the demands made by the environment and the individual's perceived ability and motivation to cope (resources) with those demands (Probst, 2002). As a result of that employees have more responsibilities (demands) added to their normal working functions as other employees are retrenched due to mergers (Becker et al., 2004).

According to Bell and Barkhuizen (2011), change in institutions created additional pressure and increased demands within the working environment. Those demands put employees in a situation where their workloads increase and this situation compels employees to demand more from the institutions. Topper (2007) argues that increased workload due to a shortage of staff is a major stress factor among employees. This work-related stress impacts severely on psychological health and is related to job dissatisfaction (Idris et al., 2011). In this study, work-related stressors are conceptualised as occupational stress. Occupational stress is associated with job dissatisfaction, which, in turn, increases the physical ill-health of employees (Barkhuizen & Rothmann, 2008).

Despite empirical evidence of the level of stress among the employees in higher education, limited systematic study has been conducted on the relationship between occupational stress, job satisfaction and general health in South African higher education institution. Higher education institutions in South Africa have to be managed effectively and efficiently by controlling the effect of occupational stress on the employees. To improve the understanding of occupational stress and its impact on the employees in higher education, the current study seeks to fill the gap in literature. The study investigates the relationship between occupational stress, job satisfaction and general health, and further assesses job satisfaction as a mediating factor of the relationship between occupational stress and general health. There are limited systematic studies on occupational stress, job satisfaction and general health of employees in higher education in South Africa. This study will close the gap in literature by producing new knowledge.

Occupational Stress

Occupational stress refers to the interrelation between the working conditions and the individual characteristics of the worker when the demands exceed the worker's capabilities (Geese & Moss, 2001; Ornelas & Kleiner, 2003; Topper, 2007; Varca, 1999; Vermunt & Steensma, 2005) to deal with the situation and are unable to deal adequately with the demands placed upon them (Lainas, 2010; Robbins, Judge, Odendaal, & Roodt, 2009). According to the ASSET model, resources as well as communication are categorised together as stressors, and these include having the appropriate training, equipment and resources.

According to the ASSET model, work-related factors such as working conditions, work overload and frustrations encountered by the employees are job stressors. The employees must manage and control these working conditions with available resources. Lack of employees' capabilities (resources) to deal with job related demands become stress when employees are required to expend considerable effort, in order to meet these demands (Opie et al., 2010) and when the requirements of the job do not match the capabilities and resources of the employees (Ahghar, 2008). Stress is defined in terms of its physical and physiological effects on a person. This can be in the form of mental, physical or emotional strain (Henry & Evans, 2008). Occupational stress is a work related stress, and it occurs when there is a discrepancy between the demands of the environment/workplace and an individual's ability to carry out and complete these demands (Henry & Evans, 2008).

As outlined by Lainas (2010) occupational stress is grouped into three main categories: Firstly, as emotional/psychological consequences (feeling of undefined anxiety, job dissatisfaction, depression, fear, boredom, frustration, low self-esteem and emotional burnout); secondly, behavioural consequences (excessive alcohol and cigarette consumption, drug abuse, eating and sleeping disorder, violent behavior, tendency for withdrawal and isolation); and lastly, physiological consequences (cardiovascular diseases, diabetes, musculoskeletal problems, gastrointestinal problems, headaches, feelings of fatigue, psychosomatic illnesses).

Viljoen and Rothmann (2009) as well as Lainas (2010) indicate that emotional/psychological consequences can lead to detrimental physical and emotional outcomes for the employees. According to Kinman, (2008) growth in student numbers, diversification of modes of delivery, restructuring and mergers increase stress. According to literature, job demands such as heavy workload and resource constraints are the most stressful aspects of academic work (Kinman, 2008). According to the ASSET model, additional factors such as job satisfaction, moderate the stress levels experienced at work (Cartwright & Cooper, 2002).

Job Satisfaction

Job satisfaction is the extent of the positive emotional response to the job resulting from an employee's appraisal of the job as fulfilling or congruent with the individual's values (Janssen, 2001). It refers to the individual's overall assessment of his/her job, and this is determined subjectively, and is influenced by personal values (Hwu, 2003). As indicated by Sempane, Rieger, and Roodt (2002) as well as Buitendach and Rothmann (2009) job satisfaction has to do with an individual's perceptions and evaluation of his or her job. The perception is influenced by the person's unique circumstances such as needs, values and expectations (Sempane et al., 2002).

Furthermore, perception is influenced by a person's background and level of knowledge, skills and experience in different aspects of life. Job satisfaction is influenced by personal perceptions, and people themselves decide whether they are satisfied or not (Chen, Lee, Weng, & Chen, 2010). This perception is informed by the personal experience of individuals on different aspects of work and related outcomes of the construct. The level of job satisfaction depends on the person's perception about what he/she actually wants from his/her job and what he/she expects. It is a general attitude of the person about all aspects of the job (Luzzi & Spencer, 2011). Job satisfaction is attitudinal and it is possible that employees can be satisfied with some aspects of the job and at the same time be dissatisfied with others.

In this regard, employees seek to achieve and maintain correspondence with their environment (Weiss & Cropanzano, 1996). They feel and think about their lives and different aspects of their job (Spector, 1997). The correspondence with the environment can be described in terms of individuals fulfilling the requirements of the environment. These requirements can be work related functions and activities undertaken by the employees. The requirements sometimes exceed the capability and capacity the employees have at their disposal (Ongori & Agolla, 2008).

In this study, job satisfaction is discussed in terms of intrinsic and extrinsic factors. Intrinsic job satisfaction includes factors such as achievement, recognition, work itself and responsibility, whilst extrinsic job satisfaction includes factors such as company policy, administration, supervision, salary, interpersonal relations, and working conditions (Sharma & Jyoti, 2009).

Spector (1997) describes intrinsic job satisfaction as how people feel about the outcome of the job tasks themselves and extrinsic job satisfaction as how people feel about aspects of the work situation that are external to the job tasks or work itself. Job satisfaction is the attitude an individual displays towards his/her job. Herzberg in his theory claimed that factors leading to job satisfaction are separate and distinct from factors leading to job dissatisfaction. However, job satisfaction contributes to employee well-being (Lee & Chang, 2008; Robbins, Peterson, Tedrick, & Carpenter, 2003) while job dissatisfaction is less strongly related to mental health problems such as depression and anxiety (Roelen, Koopmans, & Groothoff, 2008).

General Health

Goldberg and Hillier (1979) discussed general health in relation to four facets, namely: somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression. Firstly, somatic symptoms are known as somatisation disorders. Simon, VonKorff, Piccinelli, Fullerton, and Ormel (1999); Barlow and Durand (2005); as well as Rief, Mewes, Martin, Glaesmer, and Brahler, (2011) state that somatisation is a psychiatric state marked by multiple medically unexplained physical or somatic symptoms. Somatic symptoms refer to individuals' complaints about serious health conditions that interfere significantly with their capacity to perform important activities (Barlow & Durand, 2005).

Anxiety is described as a negative mood condition characterised by bodily symptoms of physical tension and worry about the future (Barlow & Durand, 2005), and its conditions are linked to difficulties in falling asleep (Morin, 1993). Insomnia is classified into three categories, namely individuals who find it incredibly difficult to get to sleep in the first place (primary insomnia); individuals who wake up multiple times at night and struggle to get back to sleep (middle insomnia); and those who wake up very early and are not able to get back to sleep at all (terminal insomnia) (Barlow & Durand, 2005; Belanger, Morin, Langlois, & Ladouceur, 2004).

The major causes of insomnia include psychological factors such as stress, anxiety and depression; physical factors such as pain, hormone changes or any number of medical conditions; and temporary factors such as disturbed sleep patterns, excessive use of caffeine or

other stimulants, or a drastic change in one's situation (Barlow & Durand, 2005). Insomnia serves as a predisposing cause for future physical problems (Zhang et al., 2012) and it can affect a person's relationships, work life, business, and physical health (Barlow & Durand, 2005).

Social dysfunction is considered as a diagnostic feature of schizophrenic disorders, but its definition lacks validity (Barlow & Durand, 2005). It is developed from an individual shyness, which includes impaired social skills and competence (Goldberg & Schmidt, 2001). Emotional flattening, social isolation and interpersonal oddity are risk factors of social dysfunction, and they are considered to be core features of illness (Chemerinski, Nopoulos, Crespo-Facorro, Andreason, & Magnotta, 2002).

Lastly, severe depression episodes are associated with the greatest hazards of morbidity and mortality (Thase, 2000). According to Thase (2000), these depressive episodes are described as symptom intensity, diagnostic subtypes, and a degree of functional impairment. Depression is the most serious condition that affects every day life, leading to hopelessness feelings and even loss of desire to live altogether. It affects the patient's ability to work, study, sleep, eat and lead a normal life (Barlow & Durand, 2005). The following paragraph will discuss the relationship between occupational stress, job satisfaction and general health.

Occupational Stress, Job Satisfaction and General Health

According to Terry, Nielson, and Perchard (1993) high levels of stress are associated with low levels of job satisfaction. High job satisfaction decreases occupational stress and creates a positive working environment (Fairbrother & Warn, 2003). According to Ongori and Agolla (2008) occupational stress indicates high dissatisfaction among employees and less effective interpersonal relations at work. A study by Barkhuizen and Rothmann (2008) indicates that occupational stress is associated with job dissatisfaction, which, in turn, increases physical ill-health and poor psychological well-being of employees. Occupational stress and lack of job satisfaction are associated with general health problems such as hypertension, heart disease, stomach ulcers, asthma and alcohol misuse (Zuma, Van Wyk, & Zungu-Dirwayi, 2009).

Kinman (2008) as well as Jones and Bright (2001) support the findings that occupational stress is associated with an increase in negative work-related outcomes such as ill-health. In addition to that, a study by Barkhuizen (2005) as well as Mahomed and Naude (2006) found a positive relationship between occupational stress and the physical and psychological ill-health of both academic and support staff. Occupational stress can cause significant changes in one's behaviour and lifestyle patterns and eventually lead to poor physical and psychological well-being (Gillespie, Walsh, Winfield, Dua, & Stough, 2005; Karatzias, Chouliara, Power, & Kilfedder, 2010). Gray (2000) found occupational stress to be one of the major work-related health problems. Sadeh, Keinan, and Daon (2004) add that occupational stress contributes to physical illness and somatic symptoms. It negatively affects the immune system and increases the occurrence of the common cold (Boscolo, Youinou, Theoharides, Cerulli, & Conti, 2008).

In a study by Faragher, Cass, and Cooper (2005) job satisfaction was found to relate negatively to health problems, with the strongest associations being for depression and anxiety. Faragher et al. (2005) as well as Fisher and Sousa-Poza (2007) further state that a correlation occurs across all health measures. There is a strong negative correlation between job satisfaction and psychological problems like burnout, depression and anxiety (Fisher & Sousa-Poza, 2007). Job satisfaction plays an important role as a determinant of the individual's well-being, and it has an indirect influence on employee health through both physical and psychosocial employment conditions like work stress and job security (Fisher & Sousa-Poza, 2007). It is related to subjective well-being as explained by Diener (1984).

Based on the above findings, the researcher sought to explore the possible mediating effect of job satisfaction on the relationship between occupational stress and general health as depicted in Figure 1. A mediator variable in statistics is a variable that describes how and when effects occur, by accounting for the relationship between independent and dependent variables (Baron & Kenny, 1986). A mediating relationship is one whose path from the independent variable to the dependent variable is mediated by a third variable. It is hypothesised that job satisfaction would mediate the relationships between occupational stress and general health. The mediation is performed according to the procedure explained by Mackinnon and Dwyer (1993).

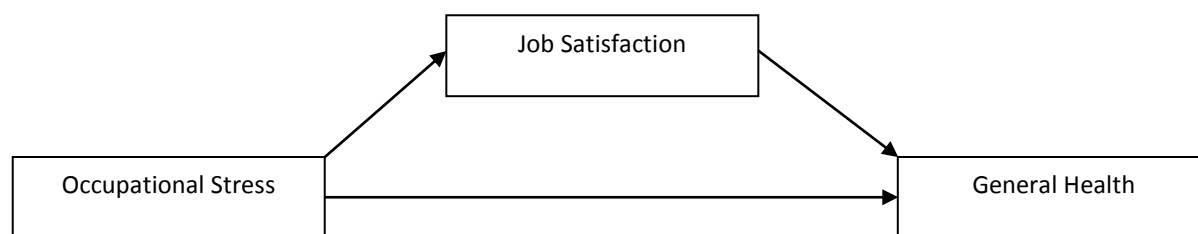


Figure 1. The hypothesised model

In this research, the relationship between occupational stress (job demand), job satisfaction (mediator) and general health (outcome) were investigated as highlighted in the hypothesised model.

Aim and Hypotheses

The aim of this study is to determine the relationship between occupational stress, job satisfaction and general health. It further assesses job satisfaction as a mediating variable on the relationship between occupational stress and general health.

The following hypotheses were formulated:

- H₁ There is a practically significant negative relationship between occupational stress and job satisfaction of employees in a higher education institution.
- H₂ There is a practically significant negative relationship between occupational stress and general health of employees in a higher education institution.
- H₃ There is a practically significant positive relationship between job satisfaction and general health of employees in a higher education institution.
- H₄ Occupational stress is a statistically significant predictor of job satisfaction and general health of employees in a higher education institution.
- H₅ Job satisfaction mediates the relationship between occupational stress and general health of employees in a higher education institution.

METHOD

Research Design

A cross sectional survey research design was used to obtain the data within a higher education institution in South Africa. This design is ideally suited to the descriptive functions associated with correlation research (Shaughnessy, Zechmeister, & Zechmeister, 2003). Questionnaires were used to gather primary data from research participants (Davis, 2005; Garcia et al., 2012).

Participants

In this study, academic and non-academic staff members of the educational sector were studied. Out of 500 questionnaires distributed, 229 were returned, and this represents 45.8% of the selected sample. A simple random sample ensured the sample's representativeness, irrespective of sample size. Each member of the population was given an equal opportunity to be included in the research, both males and females, young and old.

Research assistants gave the employees a brief description of the purpose of the study, its benefits, risks, and significance. Participation was totally voluntary. Participants were asked not to write their names on the questionnaires, and they were assured that the information they would provide would be confidential and used only for the purpose of the study.

Table 1 describes the characteristics of the participants in the study. The majority of the participants (42.8%) were black. Males made up 55.9% of the sample, 34% were between the ages of 25-35. Master's degree holders were 41.9%, academics, 62.4% while administrative staff made up 37.6% of the sample. Forty-one percent of the respondents participated in academic association activities of the institution.

Table 1

Characteristics of the Participants (n=229)

Item	Category	Frequency	Percentage (%)
Age	Less than 24 years	26	11.4
	25 – 35 years	78	34.0
	36 – 45 years	56	24.5
	46 – 55 years	49	21.4
	56 years and older	20	8.7
Gender	Male	128	55.9
	Female	101	44.1
Cultural Group	Black	98	42.8
	White	92	40.2
	Coloured	27	11.8
	Asian	12	5.2
Qualification	Diploma	9	3.9
	Degree	34	14.8
	Honours	41	17.9
	Masters	96	41.9
	Doctoral	49	21.4
Years in the Institution	Less 1 year	31	13.5
	2 – 5 years	80	34.9
	6 – 10 years	51	22.3
	11 – 20 years	52	22.7
	Longer than 20 years	15	6.6
Work category	Academic	143	62.4
	Administrative	86	37.6
Union	Nehawu	89	38.9
	Academic Association	94	41.0
	Non-member	41	17.9
	Other	5	2.2

Measuring Instruments

The following measuring instruments, plus the biographic questionnaire, were used to gather data.

An Organisational Stress Screening Tool (ASSET; Cartwright & Cooper, 2002) was used to assess the occupational stress of the employees. This 37 item questionnaire measures the individual's perception of his or her job and are scored on a six-point scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). This subscale includes questions relating to eight potential sources of stress, example: work relationship, “My relationships with colleagues are poor”), work–life balance, “My work interferes with my home and personal life”, overload, “I am given unmanageable workloads”, job security, “My job is insecure”, control, “I have little control over many aspects of my job”, resources and communication, “I do not have the proper

equipment or resources to do my job”, job overall, “My work is dull and repetitive”, pay and benefits, “My pay and benefits are not as good as other people doing the same or similar work”. A reliability coefficient of 0.64 to 0.94, which indicates good reliability, was obtained within a population of 613 in a study of occupational stress of employees in an insurance company (Coetzer & Rothmann, 2006).

The *Minnesota Job Satisfaction Questionnaire* (MSQ; Weiss, Dawis, England, & Lofquist, 1967) was used to measure job satisfaction of employees. The revised 20 items questionnaire gives employees the opportunity to indicate how they feel about their present work and items are arranged along a five-point scale ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). The questionnaire consists of different items used to measure intrinsic and extrinsic job satisfaction. Items 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16 and 20 are representative of intrinsic job satisfaction which measures feelings about the nature of the job. For example item 10 reads, “The chance to do something that makes use of my abilities”. Items 5, 6, 12, 13, 14 and 19 are representative of extrinsic job satisfaction which measures feelings about situational job aspects, external to the job. For example item 5 reads, “The way my boss handles his/her workers”.

Weiss et al. (1967), Weiss and Cropanzano (1996), Liam, Baum, and Pine (1998), Yousef (1998), Kaplan (1990) and Dwyer (2001) reported reliability coefficients to vary from 0.87 to 0.95 for the Revised Minnesota Job Satisfaction Questionnaire. Yousef (1998) found a reliability coefficient of 0.92 in his study of job satisfaction in a cross-cultural context. In a random sample of 474 in selected organisations in South Africa a reliability coefficient between 0.86 and 0.91 were found (Buitendach & Rothmann, 2009).

The *General Health Questionnaire* (GHQ; Goldberg & Hillier, 1979) was used for measuring general health. The 28 item questionnaire measures somatic syndrome, “Have you recently been feeling in need of a good tonic?”, anxiety and insomnia, “Have you recently lost much sleep over worry?”, social dysfunction, “Have you recently been managing to keep yourself busy and occupied?”, and severe depression, “Have you recently been thinking of yourself as a worthless person?” (Goldberg & Hillier, 1979). The items are measured on a five-point Likert-type scale, ranging from 1 (*not at all*) to 5 (*a great deal*). In a study by Goldberg and Hillier (1979), internal

consistency coefficients of 0.69 to 0.90 were reported. Goldberg (1979) reported good reliability and validity indices for the GHQ across various cultures. In a study by Nagyova et al. (2000) Cronbach's alpha coefficients varying around 0.82 and internal consistency of the total scale of 0.90 was reported on the sample of 148 Slovak and Western European participants.

Research Procedure

Prior to conducting the study, a request for permission to conduct a research was made to the university management and permission was granted to the researcher to conduct the research. The managers and employees of the university were informed about the objectives of the study, and when the study would be conducted. Issues of confidentiality, anonymity and the voluntary nature of the study were also addressed. Assurance was given that the information acquired would only be used for research purposes. The researcher distributed questionnaires to the participants. The questionnaires were collected from the participants at a central place within the university. The data was captured and analysed with a use of IBM-SPSS program. The results of the study were analysed and interpreted, the conclusions and recommendations were made from the results.

Statistical Analysis

The statistical analysis was carried out with the use of the IBM-SPSS program (IBM-SPSS, 2011). Cronbach alpha coefficients were used to assess the reliability of the measuring instruments (Clark & Watson, 1995). Exploratory factor analyses were computed to assess the validity of the constructs that were measured in this study. Descriptive statistics (e.g. means, standard deviations) were used to analyse the data. Pearson correlations were used to test the relationship between different variables. The statistical significance was set at $p < 0.05$ and the effect sizes were computed to assess the practical significance of the relationships. A cut-off point of 0.30, which represents a medium effect, was set (Cohen, 1988).

Hierarchical regression analyses were conducted to determine whether job satisfaction mediates the relation between occupational stress and general health. Mediation analyses were used to

assess the mediating effect of job satisfaction on the relation between occupational stress and general health. The product of coefficients was used to quantify the size of the indirect effects (Preacher & Hayes, 2009). The MEDIANTE procedure was used to estimate the indirect effects of independent variables on outcome variables through a proposed mediator variables (Preacher & Hayes, 2009). The procedure provides an omnibus effect of all independent variable per mediator variable of job satisfaction. Bootstrap procedures (Preacher & Hayes, 2009) were used to make inferences for indirect effect, and its percentile confidence intervals were used to assess whether indirect effects were different from zero. The significance of mediation steps are stated in terms of zero and nonzero coefficients, not in terms of statistical coefficients.

RESULTS

Exploratory Factor Analyses

An exploratory factor analysis was computed for the 20 items of the MSQ to verify the construct validity of the components of the questionnaire. The scree plot indicated what three components based on the analysis of the eigenvalues (> 1), explaining 30.78% of the variance could be extracted. A simple principal axis analysis was conducted on all the items of the MSQ on the total research sample as seen on Table 2.

Items 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16 and 20 are representative of intrinsic job satisfaction, whereas 5, 6, 12, 13, 14 and 19 are representative of extrinsic job satisfaction (Weiss et al., 1967). Table 2 shows that the MSQ resulted in a three component structure with items 4, 5 and 6 loading together, and being named Supervision. The three variables are Intrinsic, Supervision and Extrinsic job satisfaction.

An exploratory factor analysis was computed for the 28 items of the GHQ to verify the construct validity of the components of the questionnaire. The scree plot indicated that five factors based on the analysis of the eigenvalues (> 1), explaining 27.56% of the variance could be extracted.

Table 2

Pattern Matrix of the Minnesota Job Satisfaction Questionnaire

		Factor			h²
		F1	F2	F3	
MIN_1	Being able to keep busy all the time.	0.70	0.12	0.02	0.49
MIN_2	The chance to work alone on the job.	0.60	0.03	0.11	0.36
MIN_9	The chance to do things for other people.	0.58	-0.08	-0.22	0.34
MIN_16	The chance to try my own methods of doing the job.	0.57	0.03	-0.01	0.32
MIN_8	The way my job provides for steady employment.	0.56	0.18	0.04	0.31
MIN_11	The chance to do something that makes use of my abilities.	0.55	-0.28	-0.11	0.30
MIN_10	The chance to tell people what to do.	0.49	-0.28	-0.22	0.24
MIN_7	Being able to do things that don't go against my conscience.	0.47	0.39	0.08	0.22
MIN_15	The freedom to use my own judgment.	0.45	-0.14	-0.29	0.20
MIN_3	The chance to do different things from time to time.	0.39	0.25	-0.12	0.15
MIN_6	The competence of my supervisor in making decisions.	0.09	0.70	0.01	0.49
MIN_5	The way my boss handles his/her workers.	-0.00	0.66	-0.07	0.44
MIN_4	The chance to be "somebody" in the community.	0.07	0.39	-0.24	0.15
MIN_17	The working conditions.	-0.09	0.10	-0.74	0.55
MIN_13	My pay and the amount of the work I do.	-0.03	-0.00	-0.69	0.48
MIN_14	The chances for advancement on this job.	0.20	-0.06	-0.65	0.42
MIN_18	The way my co-workers get along with each other.	0.02	0.41	-0.56	0.31
MIN_12	The way company policies are put into practice.	0.05	-0.07	-0.51	0.26
MIN_19	The praise I get for doing a good job.	0.04	0.42	-0.46	0.21
MIN_20	The feeling of accomplishment I get from my job.	0.21	0.24	-0.43	0.18

A simple principal axis analysis was conducted on all the items of the GHQ on the total research sample as seen on Table 3. According to the literature the GHQ should load on four factors (Goldberg, 1979). In this study GHQ has loaded on five components which resulted in a split on factor 4. This led to the five components reported for GHQ. The last subscale of the questionnaire is Depression, which has been divided into two subscales, namely Hopelessness and Worthlessness. No similar results were found in other studies.

Table 3

Pattern Matrix of the General Health Questionnaire

		Factor					
		F1	F2	F3	F4	F5	h ²
A	Been feeling in need of a good tonic?	0.15	-0.01	0.03	0.01	0.48	0.23
	Been feeling run down and out of sorts?	0.04	-0.28	-0.18	-0.15	0.64	0.41
	Felt that you are ill?	-0.09	-0.13	-0.08	-0.15	0.69	0.47
	Been getting any pains in your head?	0.01	0.14	-0.09	0.04	0.62	0.38
	Been getting a feeling of tightness or pressure in your head?	0.09	0.28	0.12	0.07	0.50	0.25
B	Lost much sleep over worry?	0.07	0.24	0.04	-0.42	0.14	0.18
	Had difficulty in staying asleep once you are off?	0.03	0.16	0.09	-0.72	0.04	0.52
	Felt constantly under strain?	0.10	-0.07	-0.12	-0.70	-0.02	0.49
	Been getting edgy and bad tempered?	0.07	0.09	-0.24	-0.36	0.04	0.13
C	Been managing to keep yourself busy and occupied?	0.71	0.06	0.08	0.03	0.07	0.49
	Been taking longer over the things you do?	0.74	-0.11	0.13	-0.08	-0.03	0.64
	Felt on the whole you were doing things well?	0.68	-0.09	-0.02	-0.09	-0.04	0.46
	Been satisfied with the way you've carried out your task?	0.55	-0.09	-0.26	-0.01	0.11	0.30
	Felt capable of making decisions about things?	0.41	-0.08	-0.10	-0.10	0.12	0.16
	Been able to enjoy your normal day-to-day activities?	0.42	0.08	-0.36	0.03	0.16	0.18
D1	Felt that life is entirely hopeless?	0.10	0.15	-0.57	-0.02	0.20	0.32
	Felt that life isn't worth living?	-0.03	-0.02	-0.67	-0.12	-0.00	0.45
	Thought of the possibility that you might do away with yourself?	-0.06	0.07	-0.81	0.04	0.01	0.66
D2	Found at times you couldn't do anything because your nerves were too bad?	-0.06	0.68	0.01	-0.09	0.14	0.46
	Been thinking of yourself as a worthless person?	0.34	0.41	-0.18	0.15	0.02	0.17
	Found yourself wishing you were dead and away from it all?	0.06	0.58	-0.12	-0.24	-0.05	0.34
	Found that the idea of taking your own life kept coming into your mind.	-0.34	0.52	-0.07	-0.09	-0.07	0.27

An exploratory factor analysis was computed for the 37 items of the Occupational Stress Questionnaire to verify the construct validity of the components of the questionnaire. The scree plot indicated that three factors based on the analysis of the eigenvalues (> 1), explaining 20.39% of the variance could be extracted. The three factors of occupational stress (Work demands, Insecurity and Work relations) and their Cronbach alpha coefficients are reported in Table 4.

Reliabilities, Descriptive Statistics and Correlations

The results in Table 4 show that three scales of occupational stress, namely work demands, insecurity and work relations had acceptable alpha coefficients ranging from 0.70 to 0.81. In a South African study by Barkhuizen and Rothmann (2008) on the occupational stress of academic staff in South African higher education institutions, the Cronbach alpha coefficient was reported

below the guideline of 0.70. Tytherleigh (2003) reported Cronbach alpha coefficients subscales varying from 0.64 to 0.94.

As seen in Table 4, Cronbach alpha coefficients for the dimensions of job satisfaction were as follows: Intrinsic job satisfaction = 0.83, Extrinsic job satisfaction = 0.81 and Supervision = 0.71. The three job satisfaction factors have acceptable Cronbach alpha coefficients. Cronbach alpha coefficients for job satisfaction varying from 0.86 to 0.95 were reported by various researchers (Buitendach & Rothmann, 2009; Dwyer, 2001; Liam et al., 1998).

Table 4 shows acceptable Cronbach alpha coefficients for the subscales of GHQ: Somatic symptoms (0.75), anxiety/insomnia (0.73), social dysfunction (0.79); hopelessness (0.69) and worthlessness (0.79). In South African studies, acceptable Cronbach alpha coefficients were obtained (Isaksson & Johansson, 2000; Snoer, 2005; Van Eeden, 1996; Viljoen, Bosman, & Buitendach, 2005). As reported in Table 4, occupational stress, job satisfaction and general health have acceptable Cronbach alpha coefficients, excluding hopelessness (0.69), which is below a cut-off point of 0.70. According to Foxcroft and Roodt (2005), a Cronbach alpha coefficient of 0.65 or higher is acceptable.

Table 4 indicates statistically significant negative correlations between most of the occupational stress constructs and job satisfaction. Work demands have a practically significant negative correlation with extrinsic job satisfaction (large effect) and with intrinsic job satisfaction (medium effect). They have a statistically significant relationship with supervision. Insecurity has reported a practically significant negative correlation of medium effect with extrinsic, supervision and intrinsic job satisfaction. Work relations has a practically significant negative correlations of medium effect with intrinsic and extrinsic job satisfaction.

These results support H₁ which indicates a practically significant negative relationship between occupational stress and job satisfaction. Hypothesis 1 is accepted.

Table 4

Descriptive Statistics, Alpha Coefficients and Correlations of the Scales

Variable	Mean	SD	α	1	2	3	4	5	6	7	8	9	10	11
1. OS – Work demands	2.54	0.82	0.78	-	-	-	-	-	-	-	-	-	-	-
2. OS – Insecurity	2.22	0.82	0.81	.57***+	-	-	-	-	-	-	-	-	-	-
3. OS – Work relations	2.67	0.90	0.70	.37***+	.37***+	-	-	-	-	-	-	-	-	-
4. JSat – Intrinsic	3.96	0.61	0.83	-.31***	-.37***+	-.40***	-	-	-	-	-	-	-	-
5. JSat – Supervise	3.64	1.02	0.71	-.27**	-.41***+	-.12	.23**	-	-	-	-	-	-	-
6. JSat – Extrinsic	3.69	0.83	0.81	-.60***+	-.47***+	-.42***	.51***+	.33***+	-	-	-	-	-	-
7. GHA – Somatic symptoms	1.44	0.53	0.75	.40***	.24**	.19**	-.34***	-.03**	-.37***	-	-	-	-	-
8. GHB – Anxiety	1.47	0.53	0.73	.33***	.29**	.26**	-.29**	-.04**	-.43***	.43***+	-	-	-	-
9. GHC – Social dysfunction	1.50	0.54	0.79	.54***+	.53***+	.24**	-.36***	-.04**	-.40***	.51***+	.43***	-	-	-
10. GHD1 – Hopelessness	1.34	0.45	0.69	.32***	.36***	.29**	-.39***	-.13**	-.39***	.28**	.41***	.40***	-	-
11. GHD2 – Worthlessness	1.32	0.55	0.79	.30***	.39***	.33***	-.33***	.00**	-.29**	.46***	.47***	.42***	.38***	-

*Correlation is significant at the .05 level (2-tailed)

**Correlation is significant at the .01 level (2-tailed)

+Practically significant, medium effect ($r > .30$)++Practically significant, large effect ($r > .50$)

Table 4 further illustrates positive correlations between occupational stress and general health. It appears that a practically significant positive correlation of large effect exists between work demands and social dysfunction, as well as between social dysfunction and insecurity. Work demands have a practically significant correlation of medium effect with somatic symptoms, anxiety, hopelessness and worthlessness. Insecurity has a practically significant correlation of medium effect with hopelessness and worthlessness, and work relations have a practically significant negative correlation of medium effect with worthlessness.

These results support H₂ which indicates a practically significant negative relationship between occupational stress and general health. It must be noted that a high score on general health indicates ill health. Hypothesis 2 is accepted.

Table 4 indicates that job satisfaction has a practically significant negative correlation with general health. A practically significant negative correlation of medium effect exists between intrinsic job satisfaction and somatic symptoms, social dysfunction, hopelessness and worthlessness, whereas a practically significant negative correlation of medium effect exists between extrinsic job satisfaction with somatic symptoms, anxiety, social dysfunction and hopelessness. Supervision, as one facet of job satisfaction, has indicated a statistically significant negative correlation with somatic symptoms, anxiety, social dysfunction and worthlessness. It can then be argued that job satisfaction is negatively associated with ill-health.

These results support H₃ which indicates a practically significant positive relationship between job satisfaction and general health. It must be noted that a high score on general health indicates ill health. Hypothesis 3 is accepted.

Multiple Regression Analyses

Table 5 shows that work demands, insecurity and work relations accounted for 23% of the variance in intrinsic job satisfaction ($F = 19.31$; $p < 0.05$). The regression coefficients of insecurity ($\beta = -0.19$; $p < 0.05$) and work relations ($\beta = -0.19$; $p < 0.05$) were statistically significant. Work demands, insecurity and work relations accounted for 18% of the variance in

supervision satisfaction ($F = 14.13$; $p < 0.05$). The regression coefficients of insecurity ($\beta = -0.40$; $p < 0.05$) were statistically significant. Work demands, insecurity and work relations accounted for 42% of the variance in extrinsic job satisfaction ($F = 47.42$; $p < 0.05$). The regression coefficients of work demands ($\beta = -0.47$; $p < 0.05$; $\Delta R^2 = 0.00$) and work relations ($\beta = -0.47$; $p < 0.05$) were statistically significant.

Table 5 indicates that work demands, insecurity and work relations accounted for 15% of the variance in somatic symptoms ($F = 11.39$; $p < 0.05$). The regression coefficients of work demands ($\beta = 0.36$; $p < 0.05$) were statistically significant. Work demands, insecurity and work relations accounted for 15% of the variance in anxiety ($F = 11.30$; $p < 0.05$). The regression coefficients of work demands ($\beta = 0.21$; $p < 0.05$) and work relations ($\beta = 0.16$; $p < 0.05$) were statistically significant. Work demands, insecurity and work relations accounted for 36% of the variance in social dysfunction ($F = 36.19$; $p < 0.05$). The regression coefficients of work demands ($\beta = 0.34$; $p < 0.05$) and insecurity ($\beta = 0.34$; $p < 0.05$) were statistically significant. Table 5 shows that work demands, insecurity and work relations accounted for 18% of the variance in hopelessness ($F = 14.74$; $p < 0.05$). The regression coefficients of insecurity ($\beta = 0.24$; $p < 0.05$) and work relations ($\beta = 0.18$; $p < 0.05$) were statistically significant. Work demands, insecurity and work relations accounted for 22% of the variance in anxiety ($F = 18.42$; $p < 0.05$). The regression coefficients of insecurity ($\beta = 0.31$; $p < 0.05$) and work relations ($\beta = 0.23$; $p < 0.05$) were statistically significant. This implies that occupational stress is a statistically significant predictor of job satisfaction and general health.

These results support H_4 , which indicates that occupational stress is a statistically significant predictor of job satisfaction and general health. Hypothesis 4 is accepted.

Table 5

Multiple Regression Analyses with Job Satisfaction and General Health as Dependent Variables and Occupational Stress as Independent Variable

Variable	Sat- Intrinsic	Sat- Supervise	Sat- Extrinsic	Somatic Symptoms	Anxiety	Social Dysfunction	Hopelessness	Worthlessness
	β	β	β	β	β	β	β	β
(Constant)	4.97	7.76	4.72	.77	.72	.47	.65	.43
Occupational stress – Work demands	-.08	-.05	-.47**	.36**	.21**	.34**	.13	.04
Occupational stress – Insecurity	-.19**	-.40**	-.12	.02	.12	.34**	.24**	.31**
Occupational stress – Work relations	-.31**	.05	-.20**	.04	.16**	-.01	.18**	.23**
R^2	.23	.18	.42	.15	.15	.36	.18	.22
F	19.32	14.13	47.72	11.39	11.30	36.19	14.74	18.42
ΔR^2	.00	.00	.00	.00	.00	.00	.00	.00

* $p < .05$

** $p < .01$

Indirect Effects

Mediation analyses were conducted to test whether intrinsic, supervision and extrinsic job satisfaction function as mediators of the relationship between occupational stress and general health. A lower coefficient interval (LCI) and an upper coefficient interval UCI were reported. The omnibus and indirect effect of the independent variables on occupational stress and general health are reported in Table 6.

Regarding the indirect effects on somatic symptoms, the omnibus effect (and the effect of work demands, insecurity and work relations) for intrinsic job satisfaction did not include zeros. Therefore, intrinsic job satisfaction mediated the relationship between occupational stress and somatic symptoms. The omnibus effect (and the effect of all independent variables) for supervision did not include zeros. Therefore, supervision mediated the relationship between occupational stress and somatic symptoms. Regarding the indirect effects on somatic symptoms, the omnibus effects for extrinsic job satisfaction include zeros. Therefore, extrinsic job satisfaction did not mediate the relationship between occupational stress and somatic symptoms.

The indirect effects on anxiety, the omnibus indirect effect (and the effect of work demands, insecurity and work relations) for extrinsic job satisfaction did not include zeros. Therefore, extrinsic job satisfaction mediated the relationship between occupational stress and anxiety.

Regarding the indirect effects on social dysfunction, the omnibus indirect effect (and the effect of independent variable) for supervision did not include zeros. Therefore, supervision mediated the relationship between occupational stress and social dysfunction. Regarding the indirect effects on social dysfunction, the omnibus effects for intrinsic and extrinsic job satisfaction include zeros. Therefore, intrinsic and extrinsic job satisfaction did not mediate the relationship between occupational stress and social dysfunction.

Table 6

Indirect Effects of Occupational Stress and General Health

Variable	Somatic symptoms				Anxiety				Social dysfunction				Hopelessness				Worthlessness			
	EFF	SE	LCI	UCI	EFF	SE	LCI	UCI	EFF	SE	LCI	UCI	EFF	SE	LCI	UCI	EFF	SE	LCI	UCI
INTRINSIC																				
Omnibus	-.04	.02	-.08	-.00	-.00	.02	-.04	.02	-.03	.02	-.07	.00	-.03	.02	-.08	-.00	-.03	.02	-.07	-.00
Work demands	.01	.01	-.01	.04	.00	.00	-.01	.02	.01	.01	.01	.03	.01	.01	-.00	.04	.00	.01	-.01	.04
Insecurity	.02	.02	-.00	.06	.00	.01	-.02	.03	.02	.01	-.00	.04	.02	.02	-.00	.06	.02	.01	-.01	.05
Work relations	.03	.02	.00	.08	.00	.02	-.02	.04	.03	.02	-.00	.06	.03	.01	.00	.06	.03	.02	.00	.06
SUPERVISION																				
Omnibus	.14	.00	.00	.03	.01	.00	-.00	.04	.02	.01	.00	.05	.00	.00	-.00	.02	.02	.01	.01	.05
Work demands	-.00	.01	-.03	.02	-.00	.01	-.04	.01	-.00	.02	-.05	.03	-.00	.00	-.02	.00	-.01	.02	-.04	.03
Insecurity	-.04	.02	-.08	-.00	-.04	.02	-.09	.00	-.07	.02	-.12	-.03	-.01	.02	-.05	.02	-.07	.03	-.12	-.02
Work relations	.00	.00	-.00	.02	.00	.00	-.00	.02	.00	.01	-.01	.03	.00	.00	-.00	.01	.01	.01	-.01	.03
EXTRINSIC																				
Omnibus	-.04	.03	-.09	.01	-.09	.03	-.15	-.02	-.02	.02	-.07	.02	-.04	.02	-.09	.00	-.00	.02	-.06	.04
Work demands	.05	.01	-.00	.11	.10	.04	.03	.18	.03	.03	-.01	.08	.04	.02	-.00	.10	.01	.03	-.05	.07
Insecurity	.01	.01	-.00	.04	.03	.02	-.00	.07	.01	.00	-.00	.03	.01	.00	-.00	.03	.00	.01	-.01	.02
Work relations	.02	.03	-.00	.05	.04	.02	.00	.08	.01	.01	-.01	.04	.02	.01	-.00	.04	.00	.01	-.02	.03

Lower confidence interval (LCI), Upper confidence interval (UCI), Effect (EFF), and Standard Error (SE)

The indirect effects on hopelessness, the omnibus indirect effect (and the effect of independent variable) for extrinsic and supervision includes zeros. Therefore, supervision and extrinsic job satisfaction did not mediate the relationship between occupational stress and hopelessness.

The 95% of CIs for the omnibus indirect effect of intrinsic job satisfaction did not include zeros. Therefore, intrinsic job satisfaction mediates the relationship between occupational stress and hopelessness. Regarding the indirect effects on worthlessness, the omnibus indirect effect for intrinsic and supervision job satisfaction did not include zeros. Therefore, intrinsic and supervision satisfaction mediates the relationship between occupational stress and worthlessness. Regarding the indirect effects on worthlessness, the omnibus indirect effects for extrinsic job satisfaction include zeros. Therefore, extrinsic job satisfaction did not mediate the relationship between occupational stress and worthlessness.

These results partly support H₅, which indicates that job satisfaction mediates the relationship between occupational stress and general health.

DISCUSSION

The study set out to investigate the relationships between occupational stress, job satisfaction and general health of the employees in a higher education institution. A secondary aim of this study was to determine whether occupational stress is a statistically significant predictor of job satisfaction and general health and also to explore whether job satisfaction mediates the relationship between occupational stress and general health of employees in higher education institution.

The results showed that occupational stress (work demands, insecurity, and work relations) has a practically significant negative correlation with job satisfaction (intrinsic, supervise, extrinsic). This implies that employees with high levels of occupational stress displayed lower job satisfaction and vice versa. Work demands, such as overload, lack of equipment and over time, lead to lower levels of extrinsic job satisfaction. This indicates that employees are less satisfied with working conditions, pay, policies and co-workers. Fairbrother and Warn (2003) as well as De Nobile and McCormick (2005), report that higher job satisfaction has a practically significant

negative relationship with occupational stress. This result is supported by Bokti and Talib (2009) in their research on male navy personnel at a Naval base in Lumut, Malaysia, which asserted that high levels of occupational stress are associated with low levels of job satisfaction.

Employees' job security influences supervision, intrinsic and extrinsic job satisfaction. Tytherleigh et al. (2005) found that job insecurity was the most significant source of stress of higher education staff. Insecure people tend to be less satisfied with their supervisors, their working conditions as well as the intrinsic value of the job. Employees experiencing stress because of insecurity may feel that they do not have the opportunity to use their strengths, that they do not have a say in the way they do things in the work place, or that they are not allowed to make judgements. They may feel uncomfortable with the way their manager treat them, resulting in a lower level of trust and a general feeling of dissatisfaction with the relationship.

Work relationships as a stressor lead to people being less satisfied with the intrinsic value of the job. Intrinsic value includes aspects such as freedom in their job, using strengths, doing things differently and being busy with meaningful activities. At the same time, they are less satisfied with aspects such as relationships with co-workers, getting recognition, pay and general working conditions. Barkhuizen and Rothmann (2008), as well as Zuma et al. (2009) indicate that occupational stress is associated with job dissatisfaction, which, in turn, increases the physical ill health of employees. This is supported by Tytherleigh (2003), in a study of occupational stress in a higher education institution, which concluded that occupational stress is associated with ill health.

Regarding the relationship between occupational stress and general health, a negative relationship exists. This relationship implies that different occupational stress factors (work demands, insecurity and work relations) are related to general health. Rothmann et al. (2008) concluded that job demands and lack of resources predicted burnout that leads to ill health. Employees who experience high work demands, and who are more insecure, have bad work relations with colleagues or supervisors and they might experience ill health. Unmanageable workloads, unsocial work hours and high pressure from their work environment constantly worries employees and they do not enjoy normal day to day activities in the organisation.

In general, employees are not happy with the way they do their job. People that fear that they may lose their jobs may experience feelings that they are not doing well in general, that they are not managing their time well. Their social interactions are not optimal and they may even find it difficult to make decisions. From time to time, they may experience feelings of hopelessness and, in extreme cases, ask themselves if life is worth living. This implies that employees who are stressed about work related activities are more prone to ill health.

Stress created by work relations with colleagues and supervisors, for example, having a judgemental boss and not having support from co-workers, may lead to employees feeling worthless and wanting to get away from everything. Work-related stress has been associated with an increase in negative work-related outcomes such as ill-health (Jones & Bright, 2001; Kinman, 2008). Employees' capabilities to control work-related stress are contextualised in the demand-control model, which indicates that high demands on employees with little personal control will lead to adverse health consequences (Shultz, Wang, & Olson, 2009). The inability of employees to deal with job-related demands become stress and this requires considerable effort, in order to meet the demands (Opie et al., 2010).

Job satisfaction has a practically significant negative correlation with general health. It can then be argued that job satisfaction is negatively associated with ill-health. Lower intrinsic, supervise and extrinsic job satisfaction results in employees' ill health. Employees who are not satisfied with the intrinsic satisfaction of their job and working environment may feel ill, experience headaches and lack physical energy. They may further find it difficult to enjoy every day activities, doubt their own competence, and, in extreme cases, doubt the meaning of life.

Employees who are not happy with the extrinsic satisfaction of their job and working environment may experience pains, lack physical energy and constantly feel under strain and are not comfortable in the way they are doing their job. Employees experience feelings of wanting to get away from everything. According to Terry et al. (1993); Fairbrother and Warn (2003); De Nobile and McCormick (2005); Fisher and Sousa-Poza, (2007); Ortega, Brenner, and Leather, (2007); Ahsan, Abdullah, Fie, and Alam, (2009) as well as Sterud, Hem, Lau, and Ekeberg, (2011) the relationship between job satisfaction and occupational stress has been established as a

negative one. Job satisfaction was found to relate to health problems, with the strongest associations being for depression and anxiety (Faragher et al., 2005).

Multiple regressions were used to investigate the predictive value of occupational stress on job satisfaction and general health of employees in higher education institution. The results showed that work demands and work relations, as stressors, explained the highest variance in extrinsic job satisfaction (42%) whereas insecurity and work relations made a significant contribution (23%) to the variance in intrinsic job satisfaction.

Focusing on good work relationships with the manager and colleagues and a supportive work environment will lead to people experiencing more positive attitudes towards aspects such as achievement, recognition, work itself and responsibility, as well as aspects external to the work, such as institutional policies, supervision, salary and working conditions. Insecurity made a significant contribution to the variance in supervision. This implies that employees, who feel insecure, do not experience optimal work relations with supervisors. It is important that supervisors frequently communicate with their subordinates. Communication can lessen feelings of insecurity.

The results showed that work demands, as stressors, explained 15% of the variance in somatic symptoms. This implies that employees feel sick because of the pressure of the work. They may complain about serious health conditions that interfere significantly with their capacity to perform important activities (Barlow & Durand, 2005).

Work demands, as stressors explained 15% of the variance in anxiety. It implies that high work demands leads to employees being under strain and having difficulties in sleeping. Employees have negative mood conditions which result in physical tension and worry about the future (Belanger et al., 2004). Employees who have pressure due to work demands are socially dysfunctional and they may experience difficulty in carrying out tasks and making proper decisions.

According to Thase (2000) feelings of hopelessness and worthlessness are associated with the greatest hazards of morbidity and mortality. Insecurity affects every day life, leading to feelings

of hopelessness and even a loss of desire to live altogether. It affects the employees' ability to work, study, sleep, eat and lead a normal life (Barlow & Durand, 2005). Employees may become unproductive and influence the functioning of the whole institution or organisation.

Work relations, as a stressor, explained the variance in anxiety, hopelessness and worthlessness. Kinman (2008) supports Jones and Bright's (2001) findings that occupational stress is associated with an increase in negative work-related outcomes such as ill-health. In addition, studies by Barkhuizen (2005) as well as Mahomed and Naude (2006) found a negative relationship between occupational stress, and physical and psychological ill-health of both academic and support staff.

Occupational stress has a significant effect on general health through job satisfaction. Job satisfaction partially mediated the relationship between occupational stress and general health (somatic symptoms, anxiety, social dysfunction, hopelessness and worthlessness). Employees' level of job satisfaction can play a contributing role in dealing with day to day work stresses. Higher levels of positive attitudes towards the job and work environment can play a buffering role, softening the impact of stress on employees' health. It is vital for managers to implement interventions to improve job satisfaction. Occupational stress is associated with job dissatisfaction, which in turn increases physical ill-health and poor psychological well-being of employees (Barkhuizen & Rothmann, 2008; Idris et al., 2011; Zuma et al., 2009). According to Toker (2011) there is growing interest in job satisfaction of employees in higher education. It is believed that higher education employees' satisfaction can improve productivity, reduce staff turnover and enhance creativity and commitment.

RECOMMENDATIONS

The objective of this study was to investigate occupational stress, job satisfaction and general health in a higher education institution. Higher education institutions should focus on interventions dealing with factors such as work demands and resources, relationships and employees feelings' of security. Employees must feel comfortable that the resources available to do their job are adequate to deal with the demands place on them. If they lack the necessary equipment, skills and support, the result would be lower levels of job satisfaction and ill-health.

Creating learning and development opportunities and empowering people may be useful job resources leading to less stress and higher levels of job satisfaction. Managers need to develop programmes to improve resilience in the institution. This will assist in decreasing the negative thoughts in employees' minds and enhance the quality of life of employees. The programme would reduce stress and enable employees to cope with anxiety. It will ensure that employees increase their resilience to deal with pressure, and also provide them with tools to fight the negative effects of stress.

After a merger, people may feel less secure, resulting in job dissatisfaction. Higher education institutions must deal with this insecurity by communicating, clarifying expectations, and ensuring support from supervisors. Organisational communication is a key resource that assists employees to understand and control a situation, especially when employees are insecure about their work. Employees must have enough resources to do their job, have good relationships with co-workers and experience feelings that they want to stay in their jobs.

Work relationships play a very important role in organisations. People want to know whether they can trust managers and employers. Employees will be motivated if they feel that managers support them and their efforts. It is important for employees to know that managers know their strengths, recognise them and that they are available to help them when they need help. Positive leaders will create positive relationships and optimistic employees. Managers need to work hard to make their employees happier and satisfied, by focusing on working conditions and the work environment. Job satisfaction can lead to high levels of performance and production in the work place. In addition to that, supportive and harmonious working relations create working environments that result in high levels of satisfaction in the organisation. Higher education institutions should learn that an effective workforce is happy, healthy, and committed. Implementing a wellness plan will assist in establishing the kind of employee who will function optimally to attain the organisational goals. Developmental workshops assist employees to discover personal resources as strengths.

The study had various limitations. The findings of the study were based on correlation data, making it impossible to prove the causality of the relationships between constructs. The results of the study were limited to cross-sectional data and the study relied on self-report instruments to

measure variables. Self-report was used to obtain data and this limited the generalisability of the findings, to some extent. According to Schaufeli, Enzmann, and Girault, (1993) self-report questionnaires increase the likelihood that at least part of the shared variances between measures could be attributed to method variance.

Future research should focus on longitudinal and experimental designs, which will make it possible to make causal inferences of the variables as discussed in this study. Longitudinal research will address issues of causality and analyse the effects of job satisfaction, and occupational stress on general health. This can assist higher education management to have insights into occupational stress, job satisfaction and general health in their institutions.

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CHAPTER 4

ARTICLE 3

JOB SATISFACTION AND GENERAL HEALTH OF EMPLOYEES: THE ROLE OF SENSE OF COHERENCE

ABSTRACT

The purpose of this study was to investigate the relationship between job satisfaction, general health and sense of coherence of employees in a higher education institution. A simple random sample ($n = 229$) was drawn from the academic and non-academic staff members of a higher education institution within South Africa. A cross-sectional survey design was used. The constructs were measured by means of the Revised Minnesota Job Satisfaction Questionnaire, General Health Questionnaire, Orientation to Life Questionnaire and a biographical questionnaire. Significant positive relationships between job satisfaction and general health existed in the higher education institution. The results showed significant positive relationships between sense of coherence and job satisfaction. It was also found that sense of coherence partly moderates the relationship between intrinsic job satisfaction and somatic symptoms and social dysfunction. Employees who have the capacity to deal with the situation around them experience less conditions that interfere with their capacity to perform important activities, regardless of whether or not they are satisfied with their jobs.

Key terms: Job satisfaction, general health, sense of coherence, higher education, mergers.

Over the last decade, higher education has experienced changes and different approaches in managerial control, government scrutiny and organisational restructuring (Jones, Lefoe, Harvey, & Ryland 2012). These changes are due to a number of reasons, which include social, technological, economic and political changes, and changes in government regulations (Vinger, 2008). Higher education institutions also change in response to globalisation (Stromquist & Monkman, 2002) and internationalisation (Coryel, Durodoeye, Wright, Pate, & Nguyen 2012). This puts higher education institutions in a better position to serve the need and knowledge development for the economic and social advantage of the stakeholders and the community at large. It increases accessibility to, and equity in the provision of higher education for all (Chipunza & Gwarinda, 2010).

In South Africa, the then Department of Education through the Council on Higher Education, proposed that in the interest of a sustainable higher education systems, there was a need to reduce the number of institutions through the mechanism of combinations (CHE, 2009). The post-apartheid government of South Africa attempted to redress the ethos and inequalities inherited from the apartheid era by initiating strategies and systems to change the education system (CHE, 2009). According to Dlamini (1995) this resulted in the restructuring of the education system through mergers and incorporations. This change resulted in the reduction of higher education institutions from 36 to 23. These included new universities of technology and comprehensive universities alongside traditional universities (Badat, 2010).

According to Clarke and Salleh (2011), mergers resulted in both positive gains for some and major losses for others. Employees lost their jobs in the process, and those who continued with their work are overloaded. This is supported by a study by Van der Westhuizen (2004) who argued that during the process of incorporation and mergers, employees are retrenched, redeployed and others compelled to apply for severance packages. According to Cranny, Smith, and Stone (1992), the retrenchment experienced by employees impacts upon the levels of morale, of the remaining employees and lead to high turnover and difficulties in human relations, which in turn lead to an increased workload and ill-health. Bezuidenhout (2011) adds that escalating job demands, administrative red tape, ever-increasing class sizes, student unrest and role conflict are in part the outcomes of the change process in higher education institutions. Institutions that follow mergers create negative attitudes which lead to low job satisfaction (Scweigner & DeNisi, 1991). Anderson, Johnson, and Saha (2002) as well as Anderson (2006) indicate that transformation in the academic environment placed increased

pressures on academics leading to growing concerns about academic work, and a decrease in job satisfaction. In turn, it led to health problems, with the strongest associations being for general health (depression and anxiety) (Faragher, Cass, & Cooper, 2005). Matsuzaki et al. (2007) indicated that depression and anxiety relate to the level of sense of coherence.

Sense of coherence is interpreted as a stress resistance resource and a key factor in maintaining health (Pahkin, Vaananen, Koskinen, Bergbom, & Kouvonen, 2011) and it reflects good coping resources (Sinikallio, Lehto, Aalto, Airaksinen, & Viinamaki, 2011). According to Antonovsky (1993), sense of coherence focuses on people's resources and capacity to create health. It is significantly associated with health (Erickson & Lindström, 2007) and promotes the development of a subjective state of health (Erickson, Lindström, & Lilja, 2007). (Erickson & Lindström, 2007) state that the relationship between a weak sense of coherence and health status is not known.

General Health

The Ottawa Charter of the World Health Organisation (1996, as cited in Tetrick, Quick, & Quick, 2005) defined health as a resource for everyday life, not the object of living. In addition to this definition, general health is defined by the Constitution of the World Health Organisation (2000) as a state of absolute physical, social and mental well-being, not the absence of disease or infirmity. Goldberg and Hillier (1979) identified four facets or subscales of general health as somatic symptoms, anxiety and insomnia, social dysfunction and severe depression.

Somatic symptoms refer to individuals' complaints about serious health conditions that interfere significantly with their capacity to perform important activities (Barlow & Durand, 2005). Patients with somatisation are those who identified with somatic symptoms (Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999). Anxiety is described as a negative mood condition characterised by bodily symptoms of physical tension and worry about the future (Barlow & Durand, 2005) while its condition is linked to difficulties in falling asleep (Morin, 1993). Insomnia is classified into three categories, namely primary insomnia, middle insomnia, and terminal insomnia (Barlow & Durand, 2005; Belanger, Morin, Langlois, & Ladouceur, 2004). Insomnia serves as a predisposing cause for future physical problems

(Zhang et al., 2012) and it can affect a person's relationships, and physical health (Barlow & Durand, 2005).

Social dysfunction is considered a diagnostic feature of schizophrenic disorders, but its definition lacks validity (Barlow & Durand, 2005). It is developed from an individual shyness, which includes impaired social skills and competence (Goldberg & Schmidt, 2001). According to Chemerinski, Nopoulos, Crespo-Facorro, Andreason, and Magnotta (2002) emotional flattening, social isolation and interpersonal oddity are risk factors of social dysfunction, and they are considered to be core features of illness.

Lastly, severe depression episodes are associated with the greatest hazards of morbidity and mortality (Thase, 2000). It is the most serious condition that affects every day life, leading to hopeless feelings and even loss of desire to live altogether. It affects the patient's ability to work, study, sleep, eat and lead a normal life (Barlow & Durand, 2005).

In a study by Matsuzaki et al. (2007) it was reported that depression and anxiety relate to the level of sense of coherence. Sense of coherence is a coping strategy that one can use to cope with any difficult situation and environment, but this also depends on individual capacity and competence as resources to deal with the situation. The relationship between health status and sense of coherence was reported in a study of academic employees working in UK universities (Kinman, 2008).

Sense of Coherence

Antonovsky (1993) defined the concept “sense of coherence” as “A global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that, the stimuli deriving from one’s internal and external environments in the course of living are structured, predictable and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges, worthy of investment and engagement” (p. 725). Sense of coherence plays an important role as a buffer in stress and difficult situation (Amirkhan & Greaves, 2003; Henje-Blom, Serlachius, Larsson, Theorell, & Ingvar, 2010). Sense of coherence is explained as a coping resource that is presumed to mitigate life stress by affecting the overall quality of one’s cognitive and emotional appraisal of the stimuli that impact on a person (Rothmann, Jackson, & Kruger,

2003). An individual's sense of coherence is developed by his or her personal experiences, background in terms of what he/she has learnt in life and the use of available resources. An individual becomes good at dealing with the situation at hand and the choices that the individual makes in life.

Diraz, Ortlepp, and Greyling (2003) as well as Naaldenberg, Tobi, Van den Esker, and Vaandrager (2011) support Antonovsky's (1987) argument that sense of coherence emerges from the salutogenic paradigm and conceptualises wellness as "health-ease"/disease continuum. Antonovsky (1979) confirmed that the salutogenic model is a cyclical process whereby an individual can feature anywhere at any point in time, along a health ease/disease continuum. This continuum is explained by Antonovsky (1987) in terms of the two theoretical poles of total illness and total wellness. The theoretical poles depend on the individual's ability to deal with life situations and to influence the way individuals cope. According to the model, the individual's position and direction in the continuum are determined by the interplay of opposing focuses of environmental threats such as stressors, one's resistance (generalised resistance resources) and the strength of one's sense of coherence.

Diraz et al. (2003) explained that people with a weak sense of coherence feel more distressed, and find it difficult to cope with life conflicts compared to people with a high sense of coherence, who approach life with confidence. Individuals find it difficult to cope with challenging situations when they do not have appropriate resources for coping, while people with personal resources may cope with the situations and reduce stress (Amirkhan & Greaves, 2003).

Sense of coherence consists of three dimensions, namely Comprehensibility, Manageability and Meaningfulness (Antonovsky, 1987). The three components of sense of coherence are discussed as follows:

Firstly, *comprehensibility* refers to the extent to which individuals perceive stimuli from inside and outside him/herself as clear, ordered, structured and consistent information, with the exception that these stimuli are explicable, orderable and possibly predictable (Antonovsky, 1987; Du Toit, 2002; Kalimo & Vuori, 1990). Secondly, *manageability* refers to the extent to which people see themselves as having the personal resources to cope and

bear with the difficulties and demands they may encounter during their life experiences. It is based on experiences of control over the environment and significant others (Antonovsky, 1987; Du Toit, 2002; Kalimo & Vuori, 1990). Lastly, *meaningfulness* refers to the extent to which the individual feels that events make sense emotionally rather than just cognitively. Individuals must feel that the challenges faced are worth the effort, that their lives have some purpose and that their life tasks are seen as worthy investments in terms of energy (Antonovsky, 1987; Du Toit, 2002; Kalimo & Vuori, 1990).

Antonovsky (1987) explained that meaningfulness is seen as the crucial element because, without it, comprehensibility and manageability are likely to be temporary. Manageability is contingent upon understanding, although it is viewed as vital to sense of coherence construct, since without the necessary resources to accomplish a goal, and its meaningfulness, it is diminished. According to Antonovsky (1987) the interdependence of these components are necessary for the maintenance of a strong sense of coherence.

According to Naaldenberg et al. (2011), individuals who view the world as meaningful and manageable with a strong sense of coherence, are more able to cope with potential future situations. Sense of coherence affects how individuals perceive the world and the events that happen to them, as well as the extent to which they perceive these events as controllable (Hogh & Mikkelsen, 2005). Individuals with a high sense of coherence are expected to be confident, to have control over the situation and the environment and to cope with difficult situations (Erickson & Lindström, 2007). According to Hobfoll (2001) sense of coherence is considered a broadband resource, and it is positively associated with job satisfaction (Rothmann, 2001).

Job Satisfaction

Job satisfaction has been extensively researched as an individual's attitude towards his or her job (Lee & Chang, 2008) or different aspects of work (Bontis, Richards, & Serenko, 2011; Lee & Chang, 2008; Llies & Judge, 2004; Robbins, Judge, Odendaal, & Roodt, 2009; Spector, 1997; Weiss, 2002). Many researchers describe job satisfaction as a feeling about a job resulting from an evaluation of its characteristics (Kim, Leong, & Lee, 2005; Robbins et al., 2009; Willem, Buelens, & De Jonghe, 2007) and as an attitude an employee has towards his/her job (Ivancevich & Matteson, 2002; Spector, 2003). As indicated in a study by

Robbins et al. (2009) employees with high levels of job satisfaction are more inclined to hold positive feelings about their jobs, while those who are dissatisfied hold negative feelings. Furthermore, employees view their work as either favourable or unfavourable (Arasli & Tumer, 2008; Mahmood, Nudrat, Asdaque, Nawaz, & Haider, 2011).

In this study, job satisfaction is described in terms of intrinsic and extrinsic job satisfaction components. Intrinsic job satisfaction is about how people feel about the nature of the job task, while extrinsic job satisfaction is about how people feel in relation to aspects of the work situation that are external to the job task (Hirschfeld, 2000). In literature related to Herzberg's theory of motivator-hygiene theory of job satisfaction, intrinsic factors are named motivators or satisfiers and extrinsic factors are named hygiene or dissatisfiers (Herzberg & Mausner, 1959; Sowmya & Panchanatham, 2011). The paragraph below discusses the relationship between job satisfaction, general health, and sense of coherence.

Job Satisfaction, General Health and Sense of Coherence

In a study by Faragher et al. (2005) as well as Fischer and Sousa-Poza (2007), a strong correlation between job satisfaction, depression and anxiety were reported. When job conditions deteriorate, the result is a decline in job satisfaction, which, in turn, influences employees' health (Fischer & Sousa-Poza, 2007).

Sense of coherence is strongly negatively related to anxiety, depression and hopelessness (Erickson & Lindström, 2007; Matsuzaki et al., 2007; Parkes, 2010). Antonovsky (1987), Erickson and Lindstrom (2005), Barnard, Peters, and Muller (2010) as well as Saivenchi et al. (2011) support the findings that sense of coherence is strongly correlated with general health. Sense of coherence acts as a psychological stress resistance resource (Skarsater et al., 2009) that influences job satisfaction (Bezuidenhout & Cilliers, 2010; Judge & Hurst, 2009). This implies that there is a relationship between sense of coherence and job satisfaction. An individual with a strong sense of coherence experiences high job satisfaction (Strumpfer & Bruin, 2009) and the relationship is positive in nature (Rothmann, 2001).

Job satisfaction is related to general health (Roelen, Koopmans, and Groothoff, 2006; Spector, 2003) and psychological problems such as burnout, depression and anxiety (Fischer & Sousa-Poza, 2007). According to a study by Rothmann, Steyn, and Mostert (2005)

employees who have a weak sense of coherence probably find it difficult to structure their world to make it understandable, orderly and consistent. They further indicate that sense of coherence moderates the effects of job stress on work wellness.

According to Antonovsky (1979) sense of coherence can widen the understanding of health. He indicated that an individual's health is determined, to a great extent, by how he/she experiences the world as meaningful, comprehensible and manageable. It encourages an individual to strengthen the healthy aspects even when they suffer from symptoms of illness. Health may be considered a multidimensional concept, which includes a positive body feeling, absence of excessive complaints or signs of disease, joy, happiness, job satisfaction and a sense of meaningfulness (Lindfors, 2012).

Based on the above literature the researcher sought to explore the possible moderating effect of sense of coherence on the relationship between job satisfaction and general health as depicted in Figure 1. According to Baron and Kenny (1986), a moderator is a qualitative (e.g. sex, race, or class) or quantitative (e.g. level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable. The moderator effect is seen as an interaction whereby the effect of one variable depends on the level of another. In this study sense of coherence is tested as a moderator on the relationship between job satisfaction and general health.

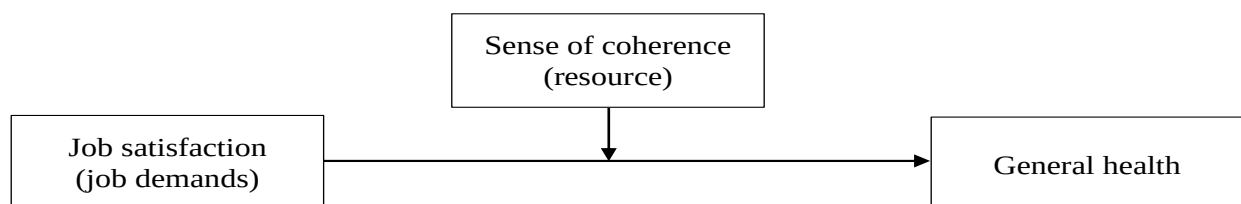


Figure 1. Moderating effect of sense of coherence on the relationship between job satisfaction and general health

In terms of the ASSET model, work relationships, work-life balance, work overload, job security, control, resources and communication, pay and benefits are treated as sources of stress, with job satisfaction as an outcome (Tytherleigh, 2003). In this research, the

relationship between job satisfaction as job demand, sense of coherence (resource) and general health (outcome) is investigated as highlighted in the hypothesised model.

Aim and Hypotheses

The aim of this study is to determine the relationship between job satisfaction, general health and sense of coherence. It further assesses sense of coherence as a moderating effect of the relationship between job satisfaction and general health.

The following hypotheses arise from the literature study:

- H₁: Job satisfaction positively relates to general health.
- H₂: Sense of coherence positively relates to job satisfaction.
- H₃: Sense of coherence positively relates to general health.
- H₄: Sense of coherence moderates the relationship between job satisfaction and general health.

The current study aspires to fill the gap in literature by investigating the relationship between job satisfaction, sense of coherence and general health of employees in a higher education institution. These concepts have not been researched in any other study relating to a higher education institution after merger. This study will contribute to the existing body of knowledge.

METHOD

Research Design

A cross-sectional survey based research design was used to obtain data within a higher education institution in South Africa. This design was ideally suited to the descriptive functions associated with correlation research (Shaughnessy, Zechmeister, & Zechmeister, 2003). Specific questionnaires were applied to reach the research objectives. Questionnaires were used to gather primary data from research participants (Davis, 2005; Garcia et al., 2012).

Participants

In this study, the total population comprised of 3086 academic and non-academic staff members from two campuses. From the total population, 500 questionnaires representing 16% of total population were distributed and 229 were returned which represents 45.8% of the selected sample. A simple random sample was used to ensure the sample's representativeness of the sample size. Each member of the population was given an equal opportunity to be included in the research, both as males and females, young and old.

Research assistants gave the employees a brief description of the purpose of the study, its benefits, risks, and significance. Participation was totally voluntary. Participants were asked not to write their names on the questionnaires, and they were assured that the information they would provide would be confidential and used only for the purpose of the study.

A biographical questionnaire was developed and attached to other questionnaires. The biographical questionnaire included aspects such as educational level, age, gender, cultural group, marital status and the working experience of employees.

Table 1 describes the characteristics of the participants in the study. The majority of the participants (42.8%) were black. Males made up 55.9% of the sample, 34% were between the ages of 25-35. Master's degree holders were 41.9%, academics, 62.4% while administrative staff made up 37.6% of the sample. Forty-one percent of the respondents participated in academic association activities of the institution.

Table 1

Characteristics of the Participants (n = 229)

Item	Category	Frequency	Percentage (%)
Age	Less than 24 years	26	11.4
	25 – 35 years	78	34.0
	36 – 45 years	56	24.5
	46 – 55 years	49	21.4
	56 years and older	20	8.7
Gender	Male	128	55.9
	Female	101	44.1
Cultural group	Black	98	42.8
	White	92	40.2
	Coloured	27	11.8
	Asian	12	5.2
Qualification	Diploma	9	3.9
	Degree	34	14.8
	Honours	41	17.9
	Masters	96	41.9
	Doctoral	49	21.4
Years in the institution	Less 1 year	31	13.5
	2 – 5 years	80	34.9
	6 – 10 years	51	22.3
	11 – 20 years	52	22.7
	Longer than 20 years	15	6.6
Work category	Academic	143	62.4
	Administrative	86	37.6
Union	Nehawu	89	38.9
	Academic Association	94	41.0
	Non-member	41	17.9
	Other	5	2.2

Measuring Instruments

The following measuring instruments including biographic questionnaire were used to gather data.

The *Minnesota Job Satisfaction Questionnaire* (MSQ; Weiss, Dawis, England, & Lofquist, 1967) was used to measure job satisfaction of employees. The revised 20 item questionnaire gives employees the opportunity to indicate how they feel about their present work and items are arranged along a five-point scale ranging from 1 (*very dissatisfied*) to 5 (*very satisfied*). The questionnaire consists of different items used to measures intrinsic and extrinsic job satisfaction. Items 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16 and 20 are representative of intrinsic job satisfaction which measures feelings about the nature of the job. For example item 10 reads, “The chance to do something that makes use of my abilities”. Items 5, 6, 12, 13, 14 and 19 are representative of extrinsic job satisfaction which measures feelings about situational job aspects, external to the job. For example item 5 reads, “The way my boss handles his/her

workers”. Weiss et al. (1967) reported reliability coefficients to vary from 0.87 to 0.95 for the Revised Minnesota Job Satisfaction Questionnaire.

The *General Health Questionnaire* (GHQ; Goldberg & Hillier, 1979) was used for measuring general health. The 28 item questionnaire measures somatic syndrome, “Have you recently been feeling in need of a good tonic?”, anxiety and insomnia, “Have you recently lost much sleep over worry?”, social dysfunction, “Have you recently been managing to keep yourself busy and occupied?”, and severe depression, “Have you recently been thinking of yourself as a worthless person?” (Goldberg & Hillier, 1979). The items are measured on a five-point Likert-type scale, ranging from 1 (*not at all*) to 5 (*a great deal*). In a study by Goldberg and Hillier (1979), internal consistency coefficients of 0.69 to 0.90 were reported. Goldberg et al. (1997) reported good reliability and validity indices for the GHQ across various cultures.

The *Orientation to Life Questionnaire* (OLQ; Antonovsky, 1987) was used to measure the participants’ sense of coherence. The 29 item questionnaire measures sense of coherence and arranged on seven-point Likert-type scale, ranging from 1 (*never*) to 7 (*always have this feeling*) and differ from one item to the other as an example item 9 range from 1(*very often*) to 7 (*very seldom or never*). Antonovsky (1987) proposed three subscales for the questionnaire, as comprehensibility (COMP) which is measured by 11 items, meaningfulness (MEAN) which is measured by eight items and manageability (MANA) by ten items. In studies by Antonovsky (1993) Cronbach’s alpha coefficients varying between .85 and .91 were reported. Antonovsky (1987) conceded that sense of coherence should be regarded as a unidimensional construct.

Research Procedure

Prior to conducting the study, a request for permission to conduct a research was made to the university management and permission was granted to the researcher to conduct the research. The managers and employees of the university were informed about the objectives of the study, and when the study would be conducted. Issues of confidentiality, anonymity and the voluntary nature of the study were also addressed. Assurance was given that the information acquired would only be used for research purposes. The researcher distributed questionnaires to the participants. The questionnaires were collected from the participants at a central place within the university. The data was captured and analysed with a use of IBM-SPSS program.

The results of the study were analysed and interpreted, the conclusions and recommendations were made from the results.

Statistical Analysis

The statistical analysis was carried out with the use of the SPSS-program (IBM-SPSS, 2011). Explanatory factor analyses were computed to assess the validity of the constructs that were measured. Cronbach's alpha coefficients and inter-item correlation coefficients were used to assess the reliability of the measuring instruments (Clark & Watson, 1995). Descriptive statistics (e.g. means, standard deviations) were used to analyse the data.

Pearson correlations were used to test the relationship between different variables. The statistical significance was set at $p < .05$ and the effect sizes were computed to assess the practical significance of the relationships. A cut-off point of .30, which represents a medium effect, was set (Cohen, 1988).

Multiple regression analysis was used to determine the moderating effect of sense of coherence on the relationship between job satisfaction and general health. According to Baron and Kenny (1986), a moderator is a qualitative (e.g. sex, race, class) or quantitative (e.g. level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable. It is a variable that alters the direction or strength of the relation between predictor variable and an outcome (Baron & Kenny, 1986; Holmbeck, 1997). They also indicate that a moderator is a third variable that affects the zero-order correlations between two other variables.

In order to examine the moderator effect of sense of coherence on the relation between job satisfaction and general health, a two-step hierarchical multiple regression procedure was followed. In Step 1, job satisfaction as independent variable and all general health factors: Somatic symptoms, anxiety, social dysfunction, hopelessness and worthlessness as dependent variables were entered to control the potential effects. In Step 2 sense of coherence was entered to examine the effects of the relationship between each general health factor and job satisfaction. The procedure is recommended by Baron and Kenny (1986) for testing a moderating effect.

RESULTS

Exploratory Factor Analyses

An exploratory factor analysis was computed for the 20 items of the MSQ to verify the construct validity of the components of the questionnaire. The scree plot indicated that three components based on the analysis of the eigenvalues could be extracted (> 1.00), explaining 30.78% of the variance. A simple principal axis factor analysis was conducted on all the items of the MSQ on the total research sample as seen on Table 2.

Items 1, 2, 3, 4, 7, 8, 9, 10, 11, 15, 16 and 20 are representative of intrinsic job satisfaction, whereas 5, 6, 12, 13, 14 and 19 are representative of extrinsic job satisfaction (Weiss et al., 1967). Table 2 shows that the MSQ resulted in a three component structure, with items 4, 5 and 6 loading together and named Supervision. The three variables are Intrinsic, Supervision and Extrinsic Job Satisfaction. Table 2 shows that the MSQ resulted in a three factor structure with items 4, 5 and 6 loading together and represent supervision.

Table 2

Pattern Matrix of the Minnesota Job Satisfaction Questionnaire

Items		Factor			
		F1	F2	F3	h^2
MIN_1	Being able to keep busy all the time.	0.70	0.12	0.02	0.49
MIN_2	The chance to work alone on the job.	0.60	0.03	0.11	0.36
MIN_9	The chance to do things for other people.	0.58	-0.08	-0.22	0.34
MIN_16	The chance to try my own methods of doing the job.	0.57	0.03	-0.01	0.32
MIN_8	The way my job provides for steady employment.	0.56	0.18	0.04	0.31
MIN_11	The chance to do something that makes use of my abilities.	0.55	-0.28	-0.11	0.30
MIN_10	The chance to tell people what to do.	0.49	-0.28	-0.22	0.24
MIN_7	Being able to do things that don't go against my conscience.	0.47	0.39	0.08	0.22
MIN_15	The freedom to use my own judgment.	0.45	-0.14	-0.29	0.20
MIN_3	The chance to do different things from time to time.	0.39	0.25	-0.12	0.15
MIN_6	The competence of my supervisor in making decisions.	0.09	0.70	0.01	0.49
MIN_5	The way my boss handles his/her workers.	-0.00	0.66	-0.07	0.44
MIN_4	The chance to be "somebody" in the community.	0.07	0.39	-0.24	0.15
MIN_17	The working conditions.	-0.09	0.10	-0.74	0.55
MIN_13	My pay and the amount of the work I do.	-0.03	-0.00	-0.69	0.48
MIN_14	The chances for advancement on this job.	0.20	-0.06	-0.65	0.42
MIN_18	The way my co-workers get along with each other.	0.02	0.41	-0.56	0.31
MIN_12	The way company policies are put into practice.	0.05	-0.07	-0.51	0.26
MIN_19	The praise I get for doing a good job.	0.04	0.42	-0.46	0.21
MIN_20	The feeling of accomplishment I get from my job.	0.21	0.24	-0.43	0.18

An exploratory factor analysis was computed for the 28 items of the GHQ to verify the construct validity of the components of the questionnaire. An analysis of the eigenvalues (> 1.00) indicated that five factors explained 52.99% of the variance. The results of the principal axis factor analysis with loadings of variables on factors are shown in Table 3.

According to literature, the GHQ should load on four factors as supported by Goldberg, (1979), whereas in this study it resulted in a split on the original Factor 4. This led to the five factors reported for GHQ. Severe depression has been divided into two subscales, namely Hopelessness and Worthlessness.

Table 3

Pattern Matrix of the General Health Questionnaire

	Items	Factor					h^2
		F1	F2	F3	F4	F5	
A	Been feeling in need of a good tonic?	0.15	-0.01	0.03	0.01	0.48	0.23
	Been feeling run down and out of sorts?	0.04	-0.28	-0.18	-0.15	0.64	0.41
	Felt that you are ill?	-0.09	-0.13	-0.08	-0.15	0.69	0.47
	Been getting any pains in your head?	0.01	0.14	-0.09	0.04	0.62	0.38
	Been getting a feeling of tightness or pressure in your head?	0.09	0.28	0.12	0.07	0.50	0.25
B	Lost much sleep over worry?	0.07	0.24	0.04	-0.42	0.14	0.18
	Had difficulty in staying asleep once you are off?	0.03	0.16	0.09	-0.72	0.04	0.52
	Felt constantly under strain?	0.10	-0.07	-0.12	-0.70	-0.02	0.49
	Been getting edgy and bad tempered?	0.07	0.09	-0.24	-0.36	0.04	0.13
C	Been managing to keep yourself busy and occupied?	0.71	0.06	0.08	0.03	0.07	0.49
	Been taking longer over the things you do?	0.74	-0.11	0.13	-0.08	-0.03	0.64
	Felt on the whole you were doing things well?	0.68	-0.09	-0.02	-0.09	-0.04	0.46
	Been satisfied with the way you've carried out your task?	0.55	-0.09	-0.26	-0.01	0.11	0.30
	Felt capable of making decisions about things?	0.41	-0.08	-0.10	-0.10	0.12	0.16
	Been able to enjoy your normal day-to-day activities?	0.42	0.08	-0.36	0.03	0.16	0.18
D1	Felt that life is entirely hopeless?	0.10	0.15	-0.57	-0.02	0.20	0.32
	Felt that life isn't worth living?	-0.03	-0.02	-0.67	-0.12	-0.00	0.45
	Thought of the possibility that you might do away with yourself?	-0.06	0.07	-0.81	0.04	0.01	0.66
D2	Found at times you couldn't do anything because your nerves were too bad?	-0.06	0.68	0.01	-0.09	0.14	0.46
	Been thinking of yourself as a worthless person?						
	Found yourself wishing you were dead and away from it all?	0.34	0.41	-0.18	0.15	0.02	0.17
	Found that the idea of taking your own life kept coming into your mind.	0.06	0.58	-0.12	-0.24	-0.05	0.34
		-0.34	0.52	-0.07	-0.09	-0.07	0.27

An exploratory factor analysis was computed for the 12 items of the sense of coherence to verify the construct validity of the components of the questionnaire. The one factor structure proved to be the best option. It was selected based on internal consistency reliability (Barnard, et al., 2010). Sense of coherence indicates an acceptable Cronbach's alpha coefficient of 0.73. One item was deleted to improve the Cronbach's alpha coefficient.

Descriptive Statistics, Reliabilities and Correlations

Table 4 indicates the mean values, standard deviations, Cronbach's alpha coefficients and correlations of job satisfaction, general health and sense of coherence.

As seen in Table 4, Cronbach's alpha coefficient for job satisfaction was reported as follows: intrinsic job satisfaction (0.83), extrinsic job satisfaction (0.81) and supervision (0.71). in previous literature the three job satisfaction factors reported acceptable Cronbach's alpha coefficients varying from 0.86 to 0.95 (Dwyer, 2001; Liam, Baum, & Pine, (1998);

Buitendach & Rothmann, 2009). Yousef (1998) and Dwyer (2001) reported reliability coefficients that vary from 0.87 to 0.95 for the Revised Minnesota Job Satisfaction Questionnaire. Yousef (1998) found a reliability coefficient of 0.92 in his study of job satisfaction in a cross-cultural context. In a random sample of 474 in selected organisations in South Africa, a reliability coefficient between 0.86 and 0.91 was found (Buitendach & Rothmann, 2009).

As indicated in Table 4, acceptable Cronbach's alpha coefficients for the subscales of GHQ are as follows: somatic symptoms (0.75), anxiety/insomnia (0.73), social dysfunction (0.79), hopelessness (0.69) and worthlessness (0.79). Hopelessness has a Cronbach's alpha coefficient just below the acceptable cut-off point of 0.70 (Nunnally & Bernstein, 1994). A Cronbach's alpha coefficient of 0.73 is indicated for sense of coherence. In a study by Nagyova et al. (2000) Cronbach's alpha coefficients varying around 0.82 and the internal consistency of the total scale of 0.90 were reported on the sample of 148 Slovak and Western European participants. In South African studies by Isaksson and Johansson (2000), Snoer (2005) as well as Viljoen, Bosman, and Buitendach (2005) acceptable alpha coefficients were obtained.

As seen in Table 4, an alpha coefficient of 0.73 was indicated for sense of coherence. The results are supported by a study by Frenz, Carey, and Jorgensen (1993) who obtained intercorrelations of 0.71. Rothmann (2002) in his study reported an acceptable alpha coefficient of 0.89 for the Orientation to Life Questionnaire (OLQ). Muller and Rothman (2009) found a satisfactory Cronbach's alpha coefficient of 0.85 in a sample of 2678 for financial institutions in the Gauteng Province.

Table 4 indicates that a practically significant negative correlation of medium effect exists between intrinsic job satisfaction and somatic symptoms, social dysfunction, hopelessness and worthlessness. Anxiety reported a statistically significant negative correlation with intrinsic job satisfaction. Extrinsic job satisfaction reported a practically significant negative correlation of medium effect with somatic symptoms, anxiety, social dysfunction and hopelessness, while worthlessness reported a statistically significant correlation. This implies that a higher level of job satisfaction is related to a lower level of general health (low score on general health indicate better health). Although not significant, supervision, like other aspects of job satisfaction, reported negative relations with general health. These results partly

support H₁, which indicates a practically significant positive relationship between job satisfaction and general health.

Sense of coherence has a practically significant positive correlation of large effect with intrinsic job satisfaction and medium effect with extrinsic job satisfaction. These results partly support H₂, which indicates a significant positive relationship between sense of coherence and job satisfaction

Table 4 showed that sense of coherence has practically negative correlations of medium effect with somatic symptoms, anxiety and social dysfunction, as well as a statistically significant negative correlation with hopelessness. This implies that people with a higher score on sense of coherence will feel better about their general health. These results partly support H₃, which indicates a significant positive relationship between sense of coherence and general health (low score on general health indicates better health).

Table 4

Descriptive Statistics, Alpha Coefficients and Correlations of the Scales

Variable	α	Mean	SD	1	2	3	4	5	6	7	8
1. Job Sat – Intrinsic	0.83	3.96	0.61	-	-	-	-	-	-	-	-
2. Job Sat – Supervision	0.71	3.63	0.02	-0.23**	-	-	-	-	-	-	-
3. Job Sat – Extrinsic	0.81	3.69	0.83	0.51**++	0.33**+	-	-	-	-	-	-
4. GHQA – Somatic symptoms	0.75	1.44	0.53	-0.34**+	-0.03	-0.37**+	-	-	-	-	-
5. GHQB – Anxiety	0.73	1.47	0.53	-0.29**	-0.04	-0.43**+	0.43**+	-	-	-	-
6. GHQC – Social dysfunction	0.79	1.51	0.54	-0.36**+	-0.04	-0.40**+	0.51**++	0.43**+	-	-	-
7. GHQD1 – Hopelessness	0.69	1.34	0.45	-0.39**+	-0.13	-0.39**+	0.28**	0.41**+	0.40**+	-	-
8. GHQD2 – Worthlessness	0.79	1.32	0.55	-0.33**+	0.00	-0.29**	0.46**+	0.47**+	0.42**+	0.38**+	-
9. OLQ – Total SOC	0.73	4.79	0.90	0.51**++	0.01	0.38**+	-0.46**+	-0.35**+	-0.45**+	-0.28**	-0.28

* Correlation is statistically significant at the 0.05 level (2-tailed)

** Correlation is significant at the 0.01 level (2-tailed)

+ Correlation is practically significant $r \geq 0.30$ (medium effect)

++ Correlation is practically significant $r \geq 0.50$ (large effect)

Multiple Regression Analyses

Moderating effects were assessed using the guidelines suggested by Baron and Kenny (1986), which examine moderating effects between continuous variables. The moderation of sense of coherence between job satisfaction and aspects of general health was tested with hierarchical regressions. In an attempt to test the possibility of any interaction effects, the centred predictors and moderator were entered first into the regression equation, followed by their interactions in the second step to predict job satisfaction and different aspects of general health. The results of the hierarchical regression are indicated in Table 5. According to Baron and Kenny (1986), evidence of a moderator effect is present when the interaction term between the predictor and moderator is significant.

Table 5

Interaction of Job Satisfaction and Sense of Coherence on General Health

Variable	Somatic Symptoms		Anxiety		Social Dysfunction		Hopelessness		Worthlessness	
	β	β	β	β	β	β	B	β	β	β
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
(Constant)										
Intrinsic satisfaction	-0.05	0.05	-0.01	0.03	-0.07	0.02	-0.23*	-0.20*	-0.21*	-0.21*
Supervision satisfaction	-0.06	0.07	0.09	0.10	0.07	0.09	0.01	0.02	0.11	0.11
Extrinsic satisfaction	-0.24*	-0.24*	-0.38*	-0.37*	-0.27*	-0.27*	-0.25*	-0.24*	-0.18*	-0.17*
Sense of coherence	-0.34*	-0.36*	-0.19*	-0.21*	-0.30*	-0.32*	-0.06*	-0.08	-0.10	-0.10
Sense of coherence x Intrinsic	-	0.24*	-	0.16	-	0.41*	-	0.01	-	-0.04
Sense of coherence x Supervision	-	0.02	-	0.03	-	-0.15	-	0.10	-	-0.02
Sense of coherence x Extrinsic	-	-0.13	-	-0.01	-	-0.17*	-	0.01	-	0.07
R^2	0.26*	0.29*	0.23*	0.26	0.27*	0.36*	0.20*	0.22	0.15*	0.15
F	20.14*	13.19	17.10*	10.94*	21.00*	18.29*	14.56*	8.84	10.08*	5.89*
ΔR^2	-	0.03*	-	0.03	-	0.09*	-	0.02	-	0.00
ΔF	-	3.14	-	2.32	-	10.92	-	1.16	-	.42

* $p < .05$

Table 5 shows that intrinsic, supervision, extrinsic job satisfaction and sense of coherence accounted for 26% of the variance in somatic symptoms ($F(df) = 20.14, p < 0.05$). The regression coefficients of extrinsic job satisfaction ($\beta = -0.24, p < 0.05$) and sense of coherence ($\beta = -0.34, p < 0.05$) were statistically significant. To examine the possibility of a significant moderator effect, job satisfaction x sense of coherence were entered (Step 2), resulting in a statistically significant increase in predicting the variance of somatic symptoms ($F(df) = 13.19, \Delta R^2 = 0.03, p < 0.05$). The regression coefficients of extrinsic job satisfaction ($\beta = -0.24, p < 0.05$) and sense of coherence ($\beta = -0.36, p < 0.05$) were statistically significant.

The complete regression model accounted for 29% of the variance in somatic symptoms ($\beta = 0.24, \Delta F = 3.14, p < 0.05$). The interaction effect of sense of coherence and intrinsic job satisfaction is significant ($\beta = 0.24, \Delta F = 3.14, p < 0.05$), indicating a moderator effect. In support of Hypothesis 4, sense of coherence was found to significantly moderate the relationship between intrinsic job satisfaction and somatic symptoms. Sense of coherence has a direct influence on somatic symptoms beyond what can be accounted for by intrinsic job satisfaction.

Table 5 shows that job satisfaction and sense of coherence predicted 23% of the variance in anxiety ($F(df) = 17.10, p < 0.05$). The regression coefficients of extrinsic job satisfaction ($\beta = -0.38, p < 0.05$) and sense of coherence ($\beta = -0.19, p < 0.05$) were statistically significant. To examine the possibility of a significant moderator effect, job satisfaction x sense of coherence were entered (Step 2). The increase in predicting the variance of anxiety ($F(df) = 10.94, \Delta R^2 = 0.03, p > 0.05$) was not significant. The regression coefficients of extrinsic job satisfaction ($\beta = -0.37, p < 0.05$) and sense of coherence ($\beta = -0.21, p < 0.05$) were statistically significant. The interaction effect of sense of coherence and job satisfaction is not significant. Sense of coherence was found not to moderate the relationship between job satisfaction and anxiety. The result does not support Hypothesis 4.

Table 5 shows that intrinsic, supervision, extrinsic job satisfaction and sense of coherence predicted 27% of the variance in social dysfunction ($F(df) = 21.00, p < 0.05$). The regression coefficients of extrinsic job satisfaction ($\beta = -0.27, p < 0.05$) and sense of coherence ($\beta = -0.30, p < 0.05$) were statistically significant. To examine the possibility of a significant moderator effect,

job satisfaction x sense of coherence were entered (Step 2), resulting in a statistically significant increase in predicting the variance of social dysfunction ($F(df) = 18.29, \Delta R^2 = 0.09, p < 0.05$). The regression coefficients of extrinsic job satisfaction ($\beta = -0.17, p < 0.05$) and sense of coherence ($\beta = -0.32, p < 0.05$) were statistically significant.

The complete regression model accounted for 36% of the variance in social dysfunction ($\beta = 0.41, \Delta F = 10.92, p < 0.05$). The interaction effect of sense of coherence and intrinsic job satisfaction is significant ($\beta = 0.41, \Delta F = 10.92, p < 0.05$), indicating a moderator effect. In support of Hypothesis 4, sense of coherence was found to significantly moderate the relationship between intrinsic job satisfaction and social dysfunction. Sense of coherence has a direct influence on social dysfunction beyond what can be accounted for by intrinsic job satisfaction.

Table 5 shows that job satisfaction and sense of coherence predicted 20% of the variance in hopelessness ($F(df) = 14.56, p < 0.05$). The regression coefficients of intrinsic job satisfaction ($\beta = -0.23, p < 0.05$); extrinsic job satisfaction ($\beta = -0.25, p < 0.05$), and sense of coherence ($\beta = -0.06, p < 0.05$) were statistically significant. To examine the possibility of a significant moderator effect, job satisfaction x sense of coherence were entered (Step 2). The increase in predicting the variance of hopelessness ($F(df) = 1.16, \Delta R^2 = 0.02, p > 0.05$) was not significant. The regression coefficients of intrinsic job satisfaction ($\beta = -0.20, p < 0.05$), and extrinsic job satisfaction ($\beta = -0.24, p < 0.05$) were statistically significant. The interaction effect of sense of coherence and job satisfaction is not significant. Sense of coherence was found not to moderate the relationship between job satisfaction and hopelessness. The result does not support Hypothesis 4.

Table 5 shows that job satisfaction and sense of coherence predicted 15% of the variance in worthlessness ($F(df) = 10.08, p < 0.05$). The regression coefficients of intrinsic job satisfaction ($\beta = -0.21, p < 0.05$) and extrinsic job satisfaction ($\beta = -0.18, p < 0.05$) were statistically significant. To examine the possibility of a significant moderator effect, job satisfaction x sense of coherence were entered (Step 2). The increase in predicting the variance of worthlessness ($F(df) = 0.42, \Delta R^2 = 0.02, p > 0.05$) was not significant. The regression coefficients of intrinsic job satisfaction ($\beta = -0.21, p < 0.05$), and extrinsic job satisfaction ($\beta = -0.17, p < 0.05$) were statistically significant. The interaction effect of sense of coherence and job satisfaction is not

significant. Sense of coherence was found not to moderate the relationship between job satisfaction and worthlessness. The result does not support Hypothesis 4.

The significant interaction effects were plotted as Figure 2, 3 and 4 below. To examine the interaction effects that emerged, the simple slopes of the job satisfaction – general health linkage at one standard deviation below the mean and one standard deviation above the mean of sense of coherence were plotted (Aiken & West, 1991; Dawson & Richter, 2006). The research also tested whether each slope was statistically significant.

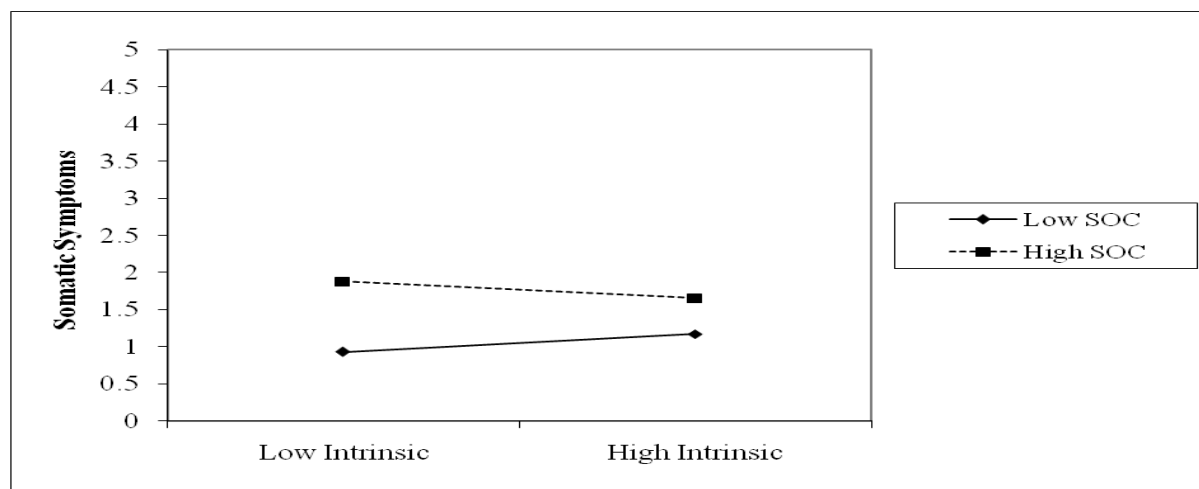


Figure 2. Simple slope for the interaction effect of intrinsic job satisfaction and sense of coherence on somatic symptoms

Figure 2 shows that the intrinsic job satisfaction – somatic symptoms linkage is stronger when sense of coherence is low (compared to high sense of coherence scores), indicating that when sense of coherence is low; there will be a stronger relationship between intrinsic job satisfaction and somatic symptoms. When sense of coherence is high, this relationship will not be strong. Therefore, a strong sense of coherence might protect employees with a high intrinsic job satisfaction from developing somatic symptoms.

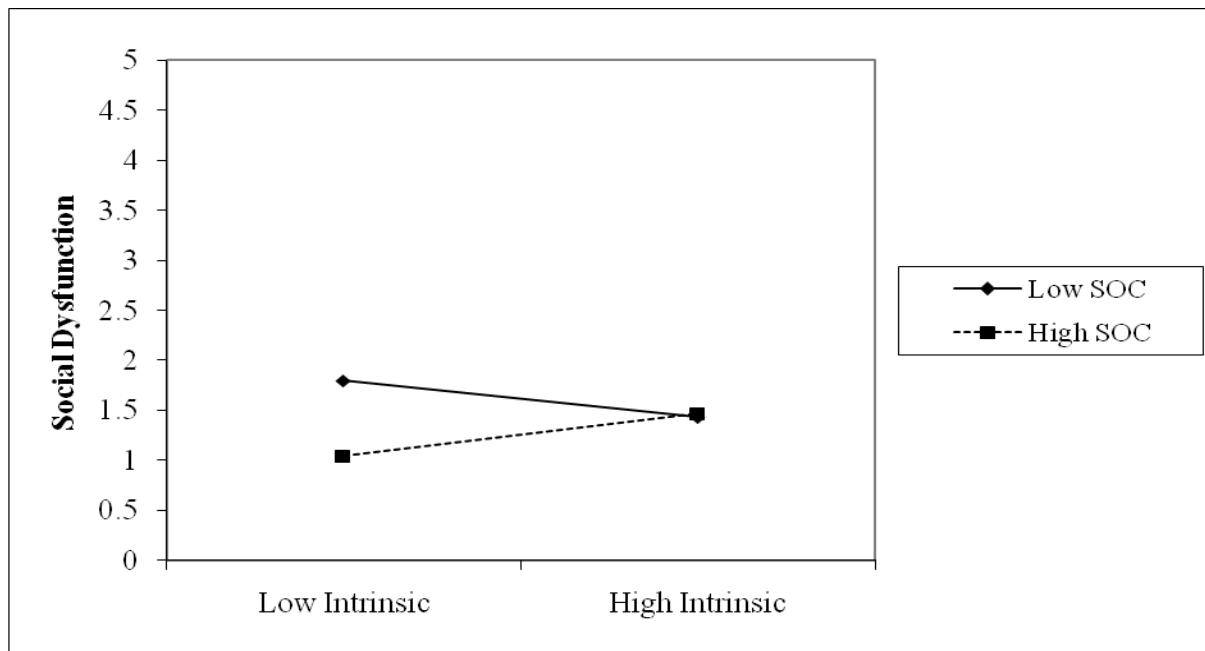


Figure 3. Simple slope for the interaction effect of intrinsic job satisfaction and sense of coherence on social dysfunction

Figure 3 shows that the intrinsic job satisfaction – social dysfunction linkage is stronger when sense of coherence scores are high (compared to low scores on sense of coherence), indicating that when sense of coherence is strong intrinsic job satisfaction might influence social functioning for the better.

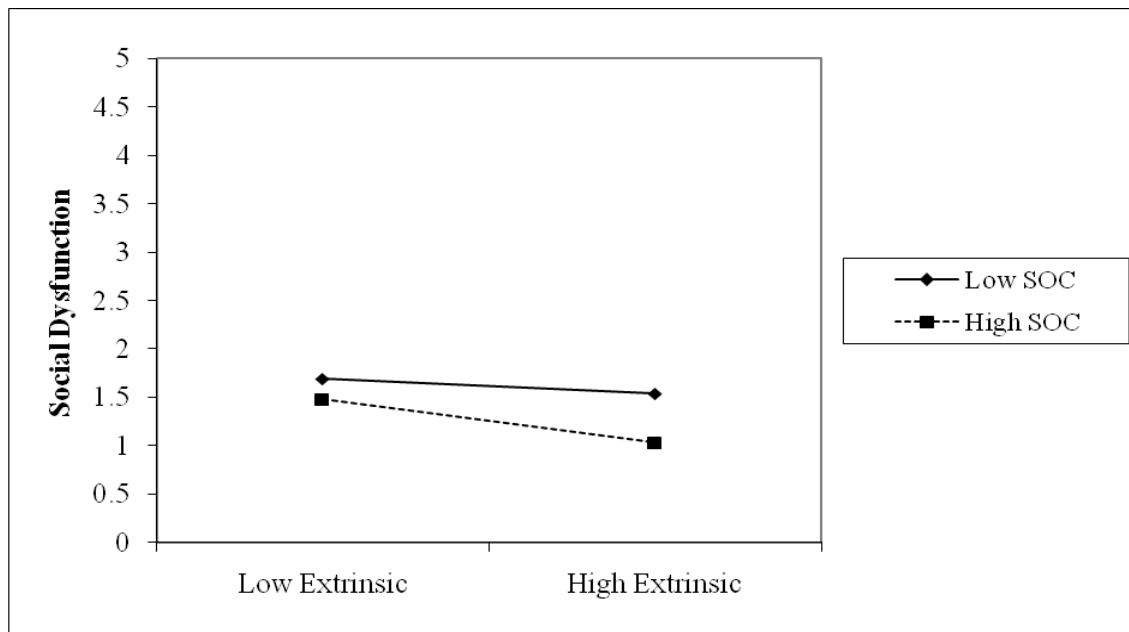


Figure 4. Simple slope for the interaction effect of extrinsic job satisfaction and sense of coherence on social dysfunction.

Figure 4 shows that the extrinsic job satisfaction – social dysfunction linkage is stronger when sense of coherence scores are high (compared with low scores), indicating that when sense of coherence is strong, social functioning will be stronger regardless of the fact that extrinsic job satisfaction is low.

These results partially support H₄, which indicates that sense of coherence moderates the relationship between job satisfaction and general health. Intrinsic and extrinsic job satisfactions have a direct effect on somatic symptoms and social dysfunction. No statistically significant moderating relationships were reported for anxiety, hopelessness and worthlessness.

DISCUSSION

The objective of this study was to investigate the relationships between job satisfaction, general health and sense of coherence of employees in a higher education institution. The results of this study showed practically significant negative relationships between job satisfaction and general

health. Fischer and Sousa-Poza (2007) indicated a strong correlation between job dissatisfaction, depression and anxiety. Employees who are satisfied with the intrinsic value of the job (such as freedom in their job, using their strengths, doing things differently, and being busy with meaningful activities) tend to be under less pressure (Mosadeghrad, Ferlie, & Rosenberg, 2008). Such employees are less depressed and their life experiences are more meaningful. They enjoy aspects of their job and they regard and enjoy promotion as a means of their personal growth. Their achievements and recognition display more positive feelings and healthy life styles and according to Burne, Chughtai, Flood, and Willis (2012) satisfied employees are happier.

Literature indicates that when employees are not satisfied, this might be due to a decline in job conditions. This results in a decline in job satisfaction, and it negatively influences employees' health (Barkhuizen and Rothmann, 2008; Faragher et al., 2005; Fischer and Sousa-Poza, 2007; Roelen et al., 2006; Spector, 2003; Zuma, Van Wyk, & Zungu-Dirwayi, 2009). It is interesting to note that in this study, satisfaction with supervision had less of an impact on general health. The reason might be that university employees' working arrangements are more flexible. In addition to that, supervisors or managers at higher educational institutions are less formal and more empowering. Staff members are more flexible and in control of their time and environment.

The results showed practically significant positive relationships between sense of coherence and job satisfaction. Employees with a higher sense of coherence can easily manage and understand different issues and are more satisfied with aspects of their job. They enjoy aspects such as freedom in their jobs, using their strengths to do things in a meaningful way and working comfortable with other colleagues. These employees find general working conditions more favourably. Employees with a strong sense of coherence have more resources to cope with different work related aspects. The above findings are supported in literature where researchers indicate that a strong sense of coherence results in high job satisfaction and that this relationship is positive in nature (Bezuidenhout & Cilliers, 2010; Judge & Hurst, 2009; Rothmann, 2001; Strumpfer & De Bruin, 2009).

This implies that employees with a strong sense of coherence can make use of their abilities by using innovative methods to perform their duties. Such employees feel that they are advancing or

accomplishing their goals and that they are in control of the situation (Erickson & Lindström, 2007). They have insight to manage the situation in which they find themselves.

The results of this study showed practically significant negative relationships between sense of coherence and general health. Antonovsky (1987), Erickson and Lindstrom (2005), Barnard, Peters, and Muller (2010) as well as Saivenchi et al. (2011) support the findings that sense of coherence is strongly correlated with general health. People with a high sense of coherence seem to be more resilient under stress than people with a low sense of coherence. Literature indicates a strongly negative relation with anxiety, depression and hopelessness (Erickson & Lindström, 2007; Matsuzaki et al., 2007; Parkes, 2010).

The results of this study showed that sense of coherence partially moderates the relationship between job satisfaction and general health. Employees with a higher sense of coherence are more satisfied and motivated to work. It was hypothesised that people who experience a higher sense of coherence will be healthier, regardless of the level of satisfaction they experience in their jobs. The interaction between job satisfaction and general health was found to be statistically significant for somatic symptoms and social dysfunction when sense of coherence were entered in the model.

This implies that employees who have a capacity to deal with the situation around them (high sense of coherence) would experience fewer conditions that interfere with their capacity to perform important activities. This is supported by Gropp, Geldenhuys, and Visser (2007) in their study which indicates that individuals with a high sense of coherence have a greater ability to mobilise and generate resources in the workplace than employees with a low sense of coherence. These employees feel that their job is meaningful and that they are in control of resources to deal with the challenges.

Employees with a strong sense of coherence organise their environment and they are comfortable in their social interactions. This means that a strong sense of coherence protects employees with a high intrinsic job satisfaction from developing somatic symptoms. According to Antonovsky

(1979), the individual's health is determined, to a great extent by how they experience their situation as meaningful, comprehensible and manageable.

When sense of coherence is strong, social functioning will be stronger regardless of the fact that extrinsic job satisfaction is low. This means that employees with a strong sense of coherence interact with other employees in the higher education institution regardless of low intrinsic job satisfaction. It seems that when sense of coherence is strong, intrinsic job satisfaction might influence employee social functioning for the better. The more employees interact effectively in the organisations; they will overcome misconceptions and work more productively.

The results showed that people with lower levels of sense of coherence are more dependent on job satisfaction to experience good health. This has direct implications for vocational and industrial psychologists, as well as higher educational institutions. If they can succeed in lifting the level of sense of coherence of their people, their employees would enjoy better health. This is supported in the literature which argues that employees with a high sense of coherence perceive their health to be better than that of those with a low sense of coherence (Antonovsky, 1987). These employees, who have a high sense of coherence, view their environment as manageable and comprehensible. They are more likely to perceive themselves as able to adapt to the demands they experience, be less vulnerable to stress and be more able to maintain good health (Parkes, 2010).

RECOMMENDATIONS

Based on the results of this study, it is recommended that managers in higher education institutions should train employees on different coping strategies needed to deal with the situation. Developing people at an intra-personal level can enable individual employees to gain the ability to control the environment they find themselves in when changes occur. The strategies initiated by government to improve higher education institutions should be communicated to employees. This will assist employees and higher education institutions to meet pressing national needs and to respond to new realities and opportunities. Clarity on the institutions' missions and

visions may lead to employees finding more meaning in what they are doing, and, at the same time, enhance job satisfaction.

If institutional and personal changes are not well communicated, this will create negative attitudes, which, in turn, lead to low job satisfaction. Employees in higher education institution should be trained to deal with different aspects of life, develop knowledge and experience to cope with different situations. This experience will assist employees to have a strong sense of coherence, which relates to competence and life satisfaction. Individuals with a high sense of coherence are expected to be confident and to control their situation and environment. These employees can easily cope with difficult situations. Effective communication strategies should be used by higher education institutions to communicate with employees.

Institutions should invest time and energy in determining what is important for employees. Knowing individual expectations and needs will enable leaders to develop interventions to increase people's satisfaction in their jobs as well as their engagement in the institution. This will ultimately lead to healthier and happier people. Higher education management should take responsibility for developing sense of coherence programmes. They should train employees to understand the world around them and to manage the available resources used to cope with the stressful environment.

Research recommendations

Future research should focus on the longitudinal and quasi-experimental design, which will make it possible to make causal inferences of the variables discussed in this study. Longitudinal studies should address issues of causality, and analyse the effects of job satisfaction and occupational stress on general health. Due to the cross-sectional design of the study, no conclusions regarding causality could be drawn.

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CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

This chapter discusses the conclusion based on the research questions posed at the beginning of the study. Conclusions are drawn in accordance with the aims of the study, limitations are discussed and recommendations for higher education institutions are made. Finally, recommendations for future research are proposed.

5.1 CONCLUSIONS

Conclusions that are drawn from theoretical and empirical studies are discussed in relation to the objectives of the study. The first objective of this study was to conceptualise and explore the relationship between job insecurity, job satisfaction, occupational stress, general health and sense of coherence in the literature. Conclusions pertaining to this study are discussed below.

Job Insecurity

Job insecurity was conceptualised in relation to two dimensions, namely cognitive and affective job insecurity. Cognitive job insecurity relates to perceptions of possible job losses whereas affective job insecurity relates to a fear of job loss (Bosman, Rothmann, & Buitendach, 2005; De Witte, 2005). Related literature indicates that employees who fear that they will lose their jobs, experience a loss of meaning in their lives (Stander & Rothmann, 2010), and have feelings of powerlessness and lack of control due to uncertainty of job existence (Schreurs, Van Emmerik, Notelaers, & De Witte, 2010).

Changes in higher education cause greater stress to employees who are not certain about the future existence of their jobs. The employees become insecure and have negative job-related reactions caused by changes in the job conditions. A study by Blackmore and Kuntz (2011) indicates that an insecure working environment affects work attitudes and behaviour, which in turn, impact on the vitality of the organisation. These employees experience uncertainty and an

imbalance between the demands made by the environment and the resources available to cope with those demands. Jacobs (2013) pointed out that increased levels of uncertainty in terms of job security lead to a decrease in health.

According to Rothmann (2003), employees cope with work related demands with limited resources. This implies that a lack of resources to deal with work related demands might lead to negative consequences. Rothmann and Malan (2011) concur when they indicate that a lack of resources led to burnout, which is a negative consequence for any employee. In their study of hospital pharmacists, they found that a lack of resources is the most severe job stressor.

Job Satisfaction

Job satisfaction was conceptualised in terms of Herzberg's two-factor theory (De Shields, Kara, & Kaynak, 2005; Ghazi, Shahzada, & Khan, 2013; Herzberg & Mausner, 1959) of intrinsic and extrinsic job satisfaction. Intrinsic job satisfaction refers to how people feel about the nature of the job task, while extrinsic job satisfaction is about how people feel in relation to aspects of the work situation that are external to the job task (Hirschfeld, 2000). Intrinsic factors are referred to as motivators or satisfiers, whereas extrinsic factors are referred to as hygiene or dissatisfiers (Herzberg & Mausner, 1959; Sowmya & Panchanatham, 2011). Intrinsic job satisfaction includes factors such as achievement, recognition, work itself and responsibility, whilst extrinsic includes factors such as company policy, administration, supervision, salary, interpersonal relations and work conditions (Sharma & Jyoti, 2009). Intrinsic factors are the only ones that cause satisfaction while the extrinsic factors cause dissatisfaction.

Occupational Stress

According to Viljoen and Rothmann (2009), occupational stress has the same typical characteristics as stress. It occurs when employees lack resources and are unable to deal adequately with the demands placed upon them (Lainas, 2010; Robbins, Judge, Odendaal, & Roodt, 2009). Ganster and Rosen (2013) define work stress as the process by which workplace stressors produce short and long term strains, leading to changes in mental and physical health.

The responsibility of controlling stress depends on the individual's ability (resources) to deal with issues. A lack of employees' capabilities (resources) to deal with job-related demands become stress when the employee is required to expend considerable effort in order to meet these demands (Opie et al., 2010).

Employees in higher education institutions experience a high level of stress and challenges (Kagaari, Munene, & Ntayi, 2013) when performing work-related tasks and these have a wide-ranging negative impact on them. Related literature reviewed in this study revealed that there are a number of stressors in higher education, such as salaries, classroom space, bigger classes, higher output expectations, less support, work overload, retrenchments and cutbacks, time pressure and contact clashes (Bezuidenhout & Cilliers, 2010; Van Zyl & Buitendach, 2004).

Kinman (2008), in his study, identifies stressors such as an increase in student numbers, diversification of modes of delivery, and restructuring and mergers as reasons for the increase of stress in higher education institutions. Out of these stressors, the heavy workload, time, and resource constraints have frequently been highlighted as the most stressful aspects of academic work (Kinman, 2008). Jacobs (2013) confirms that job insecurity is an important dimension of general work stress. According to Opie et al. (2010), lack of employees' capabilities to deal with job-related demands lead to stress when the employee is required to expend considerable effort, in order to meet these demands. Sang, Teo, Cooper, and Bohle (2013) reported a negative relationship between stress and health.

General Health

The phenomenon of a healthy workplace shows clearly that it can be beneficial to the workforce, as well as the productivity of the organisation (Jacobs, 2013). General health was defined, according to the Constitution of the World Health Organisation, as a state of absolute physical, social and mental well-being and not the absence of disease or infirmity (WHO, 2000). In this study general health was discussed according to Goldberg and Hillier (1979), who identified four facets or subscales of general health as somatic symptoms, anxiety, social dysfunction and severe depression.

According to Goldberg and Hillier (1979), somatic symptoms are characterised by an individual's inability to feel perfectly well and in good health, as well as by feelings of being in need of a tonic, feelings that one is experiencing pressure in one's head. It refers to individuals' complaints about serious health conditions that interfere significantly with their capacity to perform important activities (Barlow & Durand, 2005).

Anxiety is represented by statements such as “I have lost much sleep over worry” and “have felt constantly under strain” (Goldberg & Hillier, 1979). Anxiety is described as a negative mood condition characterised by bodily symptoms of physical tension and worry about the future (Barlow & Durand, 2005), and is linked to difficulties in falling asleep (Morin, 1993).

Social dysfunction refers to the inability of an individual to enjoy normal daily activities, and also feelings that one is not playing an important role. It includes statements such as “had difficulty in staying asleep once you are off”, “felt constantly under strain”, as well as “edgy and bad tempered” (Goldberg & Hillier, 1979).

Severe depression is represented by statements such as “felt that life is not worth living”, and “felt that life is entirely hopeless” (Goldberg & Hillier, 1979). It is the most serious condition that affects every day life, and leads to feelings of hopelessness and even a loss of desire to live altogether. It affects the patient's ability to work, study, sleep, eat and lead a normal life (Barlow & Durand, 2005). Literature indicates that depression and anxiety influence the levels of sense of coherence (Matsuzaki et al., 2007).

Sense of Coherence

Sense of coherence is defined by Antonovsky (1993, p.725) as a “global orientation that expresses the extent to which one has a pervasive, enduring, though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; the resources are available to one to meet the demands posed by these stimuli; and these demands are challenges, worthy of investment and

engagement”. Sense of coherence was discussed in the study in terms of comprehensibility, manageability and meaningfulness.

According to Antonovsky (1987), *comprehensibility* is the extent to which persons find or structure their world in an understandable, meaningful, orderly and consistent manner, so that they don’t seem to be chaotic, random and unpredictable. Secondly, *manageability* is the extent to which people experience events in life as situations that are endurable or manageable, and it can even be seen as a new challenge. Lastly, *meaningfulness* is the extent to which the individual’s life makes sense on an emotional level, and not just at a cognitive level, and to which demands seem worthy of commitment (Antonovsky, 1987).

Sense of coherence can be seen as personal resources that assist individuals in dealing with challenges and stressors within their particular working environment (Pearlin & Schooler, 1978). People with personal resources might cope with difficult situations and with stress (Amirkhan & Greaves, 2003). Basinska, Andruszkiewics, and Grabowska (2011) stated that sense of coherence is an element of personal resources. According to Hobfoll (2001); and Rothmann, (2001) it is a broadband resource which is positively associated with job satisfaction. Rothmann, Steyn, and Mostert (2005) conclude that sense of coherence moderates the effects of job stress on work wellness.

From the reviewed literature, it is clear that the employees’ lack of resources is a very serious challenge in the employees endeavours to perform their duties. Lack of resources result in employees’ poor performance and in employees being unable to use their capabilities to deal with every day work-related challenges.

This study was based on An Organisation Stress Screening Tool (ASSET) model. The ASSET model by Cartwright and Cooper (2002), as well as Johnson and Cooper (2003) has been applied in various studies on stress in higher education institutions (Barkhuizen & Rothmann, 2008; Mostert, Rothmann, Mostert, & Nel, 2008; Rothmann, Barkhuizen, & Tyterleigh, 2008; Sang et al., 2013; Tyterleigh, Webb, Cooper, & Ricketts, 2005). According to the model, sources of stress can lead to poor health. Sources of stress include poor relationships at work, work-life

imbalance, overload, fear of job loss, lack of control and resources, poor communication and the job itself (Cartwright & Cooper, 2002). Barkhuizen and Rothmann (2008) indicate that the model measures stress and includes factors such as job satisfaction, while Sang et al. (2013) found that job stressors predicted job dissatisfaction and poor psychological well-being. They further came to the conclusion that greater psychological well being is associated with greater physical well-being.

The second objective of the study was to determine the relationship between job insecurity, general health, job satisfaction, occupational stress, and sense of coherence of employees in a higher education institution.

The results showed that job insecurity was statistically significantly related to general health (somatic symptoms, social dysfunction, hopelessness and worthlessness). This implies that employees who experience high job insecurity also experience problems with their health. High job insecurity acts as a chronic threat and has more immediate health consequences (Jacobs, 2013; Schreurs et al., 2010; Selenko & Batnic, 2012). This is in line with Van Zyl's (2005) and Grant's (2005) findings that job insecurity has a practically significant positive correlation with anxiety and general health, respectively. In addition, Sverke and Goslinga (2003) indicate that the effects of job insecurity on an individual can lead to long term consequences in behaviour, health and well-being. The experiences of work stress can be a threat to the individual, as well as the organisation.

General health had a practically significant negative correlation with sense of coherence. According to Rothmann and Pieterse, (2007) a weak sense of coherence leads employees to perceive situations as threatening (i.e. high job demands and low job resources), and could lead to ill health. This was supported in a study by Ying, Lee, and Tsai (2007), which shows that sense of coherence was significantly and negatively associated with depressive symptoms.

Occupational stress (work demands, insecurity, and work relations) had a practically significant negative correlation with job satisfaction (intrinsic, supervision, extrinsic). This implies that employees with high levels of occupational stress display lower job satisfaction and vice versa.

Work demands, such as overload, lack of equipment and overtime leads to lower levels of extrinsic job satisfaction. This indicates that employees are less satisfied with working conditions, pay, policies and co-workers. Fairbrother and Warn (2003), De Nobile and McCormick (2005), as well as Mahfood, Pollock and Longimore (2013) report that higher job satisfaction has a practically significant negative relationship with occupational stress.

With regards to the relationship between occupational stress and general health, a negative relationship exists. This relationship implies that different occupational stress factors (work demands, insecurity and work relations) are related to general health. Employees who experience high work demands, who are insecure and are experiencing poor work relations with their colleagues or supervisors, have problems with their health. In addition, unmanageable workloads, unsocial work hours and high pressure from their work environment constantly worry employees and they do not enjoy normal day-to-day activities in the organisation. The impact of stress experiences can lead to lower productivity and absenteeism due to ill-health (Sieberhagen, Rothmann, & Pienaar, 2009).

In general, the same employees are not happy with their job situation because they fear that they may lose their jobs. Such people experience feelings that they are not doing well in general. They do not manage their time well, their social interactions are not optimal and they may even find it difficult to make decisions. From time to time these employees experience feelings of hopelessness and, in extreme cases they ask themselves if life is worth living. This implies that employees who are stressed about work related activities are more prone to ill-health.

Job satisfaction had a practically significant negative correlation with general health. Lower intrinsic, supervision and extrinsic job satisfaction results in employee ill health. Employees who are not satisfied with the intrinsic aspects of their job and working environment may experience headaches and lack physical energy. In general, they feel ill and may further find it difficult to enjoy every day activities, since they doubt their own competence and, in extreme cases, they doubt the meaning of life.

Employees who are not happy with the extrinsic aspects of their jobs and working environment may experience pains, lack physical energy, constantly feel under strain and be uncomfortable in the way they are doing their jobs. Employees may even experience feelings of just wanting to get away from everything. According to Terry, Nielsen, and Perchard (1993); Fairbrother and Warn (2003); De Nobile and McCormick (2005); Ortega, Brenner, and Leather (2007); Ahsan, Abdullah, Fie, and Alam (2009) and Sterud, Hem, Lau, and Ekeberg (2011), the relationship between job satisfaction and occupational stress has been established as a negative one, with the strongest associations being with aspects of general health (depression and anxiety) (Faragher, Cass, & Cooper, 2005).

The results showed practically significant positive relationships between sense of coherence and job satisfaction. Employees with a higher sense of coherence are more satisfied and motivated to work. They are more comfortable with other colleagues and general working conditions. Employees with a strong sense of coherence are more resourceful in handling different work-related aspects, and they tend to have higher job satisfaction. Literature indicates that a strong sense of coherence results in high job satisfaction and the relationship is positive in nature (Bezuidenhout & Cilliers, 2010; Judge & Hurst, 2009; Rothmann, 2001; Strumpfer & De Bruin, 2009). It implies that employees with a strong sense of coherence make use of their abilities by optimising innovative methods to perform their duties. According to Eriksson and Lindstrom (2006), people with a higher level of sense of coherence feel that they are advancing and in control of their situations. They have knowledge and experience to manage the situation they find themselves in. Strumpfer and De Bruin (2009) mention that sense of coherence reveals the ability that individuals have in coping with different situations.

The third objective was to investigate whether sense of coherence moderates the relationship between job insecurity and the general health of employees in a higher education institution.

Sense of coherence indicated a significant relationship with job insecurity and general health. When the interaction term between job insecurity and sense of coherence was entered in the model, no interaction was found. This implies that sense of coherence is not a moderator of the relationship between job insecurity and general health. Employees who feel insecure about their

job experience poor health. Literature indicates that job insecurity is associated with increased poor health (Laszlo et al., 2010; Schreurs et al., 2010). Employees with a high sense of coherence tend to cope well with job situations as compared to those with a low sense of coherence. Previous studies indicate that sense of coherence is an important component of health (Van der Colff & Rothmann, 2009). Results indicate that higher levels of sense of coherence reflect employees' feelings of confidence to deal with uncertainty. Results also reveal that employees experience the work situation as more structured and controllable and there is a willingness among them to confront challenges.

The fourth objective was to evaluate whether job satisfaction mediates the relationship between occupational stress and the general health of employees in a higher education institution.

Occupational stress had a significant indirect effect on general health through job satisfaction. Job satisfaction partially mediated the relationship between occupational stress and general health. Employees' level of job satisfaction can play a major role in dealing with day to day work stresses. Higher levels of positive attitudes towards work and the environment can play a buffering role, softening the impact of stress on employees' health. It will be worthwhile for managers to implement interventions to improve job satisfaction. Occupational stress is associated with job dissatisfaction, which, in turn, increases physical ill-health and affects the psychological well-being of employees (Barkhuizen & Rothmann, 2008; Idris, Dollard, & Winefield, 2011; Zuma, Van Wyk, & Zungu-Dirwayi, 2009). According to Toker (2011), there is growing interest in the satisfaction of employees in higher education, where higher employee satisfaction can improve productivity, reduce staff turnover and enhance creativity and commitment.

The last objective was to determine whether sense of coherence moderates the relationship between job satisfaction and the general health of employees in a higher education institution. The results showed that significant negative relationships between job satisfaction and general health existed in the higher education institution. The result also showed that significant positive relationships exist between sense of coherence and job satisfaction. Sense of coherence was found to moderate the relationship between job satisfaction and some aspects general health.

When sense of coherence is strong, social functioning will be stronger regardless of the fact that extrinsic job satisfaction is low. This means that employees with a strong sense of coherence interact with other employees in the higher education institution regardless of low extrinsic job satisfaction. It seems that when sense of coherence is strong, intrinsic job satisfaction might influence employee social functioning for the better. The more employees interact effectively in the organisations; they will overcome misconceptions and work more productively.

The results showed that people with lower levels of sense of coherence are more dependent on job satisfaction to experience good health. This has direct implications for vocational and industrial psychologists, as well as higher educational institutions.

Employees, who are satisfied with intrinsic, supervision and extrinsic job satisfaction have a high sense of coherence and are able to manage work situations in understandable, organised and orderly ways. A study by Gropp, Geldenhuys, and Visser (2007) indicates that individuals with a high sense of coherence have a greater ability to mobilise and generate resources in their workplace than employees with a low sense of coherence.

5.2 LIMITATIONS

The first limitation relates to the sample size of this study and the fact that it was only done at one university limited generalisability. The second limitation was the use of a cross-sectional method in this study. As a result, no causal inferences can be drawn. A further limitation of the study was that all data were collected using a self-report questionnaire. This may lead to a problem commonly referred to as “common method variance” or “nuisance”.

5.3 RECOMMENDATIONS

This research has implications for future research in the same field of study and assists the higher education management to have insights into occupational stress, job satisfaction and general health. The last part of this thesis makes recommendations for higher education institutions and suggests that more research on job insecurity, job satisfaction, occupational stress, sense of

coherence and the general health of employees in higher education institutions should be undertaken.

5.3.1 Recommendations for higher education institutions

Feelings of powerlessness, as a result of job insecurity or the lack of communication, can be addressed by involving employees in decision-making processes, being honest and fair, and making development opportunities available in order to widen the employability status of employees (Jacobs, 2013). Managers in higher education institutions should be encouraged to train and support employees to understand the world they live in, experience the environment and gain confidence to deal with issues. Managers should train employees to cope with the environment, especially with regards to job insecurity, job satisfaction, occupational stress, sense of coherence and general health. According to Ahmed, Shields, White, and Wilbert, (2010), research indicates a positive relationship between communication, feedback and health.

Employees should be allowed to participate in institutional activities and decision-making. Participation in decision making will reduce insecurity and increase employees' control over the situation. Insecurity is stimulated by a lack of communication about future events. Open communication regarding organisational changes is effective in reducing insecurity (Schweiger & DeNisi, 1991). Higher education institutions must deal with this insecurity by communicating effectively, clarifying expectations, and ensuring support from supervisors. Organisational communication is a key resource that assists employees to understand and control a situation when employees are insecure about their work. Employees must have enough resources to do their jobs, have good relationships with co-workers, and experience feelings to want to stay in their jobs.

Open, honest and early communication increases the predictability and controllability of future events (De Witte, 2005). Open communication can be achieved by using the informal networks of key employees to disseminate information and deal with any resistance encountered. It is, thus, imperative for higher education management to keep open lines of communication with employees at all levels of the institution. Institutions should spend time and resources on

developing the leadership ability of their managers. Positive and competent managers will create a more secure climate when they clarify roles and responsibilities and install a climate of support. Employees who make a significant contribution to the performance of the company can only be enabled to do so by managers who allow for good working relationships, openness and support (Ahmed et al., 2010).

Employees with a strong sense of coherence perceive life as comprehensible, manageable and meaningful. This helps them to stay healthy despite encounters with stressors (Antonovsky, 1987). It is important for employees to learn different coping strategies that will assist them to manage the situation around them. Sense of coherence which affects coping behaviour (Austen & Cilliers, 2011), should be developed to enable employees to understand that life can be structured, ordered and be understandable.

It is recommended that higher education institutions should deal with employees' low sense of coherence in different ways. In terms of comprehensibility, higher education institutions should provide information in a consistent, structured, ordered and understandable format (Rothmann, 2009). Regarding manageability, it should equip employees with the necessary knowledge, skills, materials, instruments and other resources and ensure that there is a balance in the load of tasks to be handled.

Lastly it should be the higher education institution's responsibility to meaningfully allow independence and freedom of choice in the employee's performance of their tasks, promote participation in decision-making, and allow employees the freedom to discuss what needs to be done with their supervisors (Rothmann, 2009). Institutions should create an empowering climate where people can be accountable and take ownership of their environment.

Jacobs (2013) found that social support from the supervisor and co-workers was strongly and positively related to health. Supervisors in higher education institutions should provide employees with leadership, support, guidance and direction, as well as the job information necessary for their work. Higher education institutions should focus on interventions dealing

with factors like work demands and resources, relationships and employees' feelings of insecurity.

Employees must feel comfortable that the resources available to do their jobs are adequate. If they lack the necessary equipment, skills and support, it would result in lower levels of job satisfaction and health. Creating learning and development opportunities, and empowering people, may be useful job resources leading to less stress and higher levels of job satisfaction.

Managers need to develop programmes to improve resilience in the institution. This will assist in decreasing negative thoughts in employees' minds and enhance the quality of life of employees. These programmes will reduce stress and deal with anxiety. They will ensure that employees' resilience to pressure increases and this will provide them with tools to fight the negative effects of stress.

Good working relations with the supervisor can ease the effects of job stressors, since leaders' support tends to shift the focus of negative demands (Jacobs, 2013). Work relationships play a very important role in the organisation. People want to know whether they can trust managers and co-workers. Employees will be motivated if they feel that managers support them and their efforts. The supervisor's social support has a strong positive influence on lessening the negative impact of work stress (Van Emmerik, Euwema, & Bakker, 2007).

It is important for employees to know that managers know their strengths, give them recognition and are available to help. Positive leaders will create positive relationships and optimistic employees. Managers need to work hard to make their employees happier and satisfied by focusing on working conditions and the work environment. This satisfaction can lead to high levels of performance and production in the work place. In addition to that, supportive and harmonious working relations create a working environment that results in high levels of satisfaction in the organisation.

Higher education institutions should learn that an effective workforce comprises of happy, healthy, and committed employees. Implementing a wellness plan will assist in establishing the

kind of employee who will function optimally to attain the organisational goals. Developmental workshops assist employees to discover personal resources as strengths.

More optimistic leaders are likely to envision and portray a positive future to their followers (Peterson, Walumba, Byron, & Myrowitz, 2008). This will create positive relationships and optimistic employees. These leaders need to work hard to make their employees happier and satisfied, by focusing on flexible working conditions and a conducive work environment. This will, in turn, lead to high levels of performance and production in the work place. Akinyele (2010) states that a conducive work environment stimulates the creativity of employees, and eradicates the problem of psychological pains, stress and ill health. He adds that it ensures the well-being of employees, which invariably enables employees to exert themselves in their roles with vigour that may translate to high productivity.

The strategies initiated by government to change higher education institutions should be communicated to employees. This will assist employees and higher education institutions to meet pressing national needs and to respond to new realities and opportunities. If institutional and personal changes are not well communicated, this will create negative attitudes, which will lead to low job satisfaction.

5.3.2 Recommendations for future research

Future research to assess employees' perceptions in terms of the constructs discussed in this study should include all public higher education institution in South Africa. Secondly, it should focus attention on the longitudinal and experimental design which will make it possible to make causal inferences of the variables. Longitudinal research will address issues of causality, and analyse the effects of job insecurity, job satisfaction, sense of coherence and general health.

Future research should focus on identifying moderators and mediators that can weaken the impact of job insecurity on attitudes (work engagement, job satisfaction and organisational citizenship) organisational outcomes (absenteeism, turnover intention, performance), as well as individual outcomes (performance, general health, satisfaction with life, happiness, feelings of

employability). Potential moderators and mediators can include employees and managers' psychological capital (PsyCap), trust in the leader and level of psychological empowerment.

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