OCCUPATIONAL STRESS AND STRAIN OF SUPPORT STAFF AT A HIGHER EDUCATION INSTITUTION IN THE NORTH-WEST PROVINCE

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REMARKS

The reader is reminded of the following:

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

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

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ABSTRACT

Title: Occupational stress and strain of support staff at a higher education institution in the North-West province.

Key terms: Occupational stress, strain, organisational commitment, support staff, higher education institution, tertiary education, moderating effect.

Higher education institutions across the globe have been confronted with a series of complex changes. These include changes in management style and structure, increased competitveness, mergers with other institutions, changes in working conditions, increases in student numbers in the context of decreased expenditure per student, higher student-staff ratios, modularization of courses, and the introduction of quality monitoring systems. Tertiary institutions in South Africa are experiencing a similar transformation that is necessary because of changes in the political, economic, technological and social environments.

As a result of these transformations support staff operating within such environments are likely to experience a sense of powerlessness, to report feelings of anxiety and insecurity, including a lack of confidence in their abilities and uncertainty about their future in their organisations, resulting in occupational stress and strain. Possible uncertainties that these same employees may be faced with are lack of job security, decreased career prestige and professional recognition, scarcity of resources, difficulty in understanding the changing values of the organisation, increased centralisation of authority, increased bureaucracy and an increased demand for accountability. Many tertiary education support staff will now be involved in greater interaction with other people, either students or co-workers and would therefore be more vulnerable to occupational stress and strain. Furthermore the workload of support staff is increasing and the nature of the support work is changing. Support personnel groups are being asked to take on more duties and do work for a greater number of people. They are also required to use new technology, sometimes without adequate training, resulting in high stress levels. It is well documented that high levels of occupational stress, if left unchecked and unmanaged, undermine the quality of employees' health, wellbeing and morale, as well as a reduction in productivity and creativity.

Therefore the objectives of this research are to determine the levels of occupational stress and strain of support staff at a higher education institution in the North-West province, to investigate possible demographic differences and to determine whether perceived organisational commitment moderates the effect of occupational stress and strain. A stratified sample ($N = 315$) of support staff at a higher education institution in the North-West province was taken. The ASSET Organisational Stress Screening Tool was used as measuring instrument. Descriptive and inferential statistics were used to analyse the results.

The results of the study showed that the support staff have fairly poor physical and psychological health indicating that support staff experience stress-related strain which could be mainly attributed to their work relationships and job characteristics respectively. The levels of the stress were relatively low, while high levels of both individual commitment to the organisation and perceived commitment from the organisation were found. Furthermore, differences in terms of occupational stress levels were found for different biographical groups.

Practically significant positive relationships were found for job security, job characteristics and control. This means that in order for employees to feel secure about their jobs, they need to have perceived control over the aspects of their jobs. Work relationships were significantly related to job characteristics, overload and control which means that employee's relationships with others depended to a large extent on the element of control that they have of their jobs and the amount of work that they have.

Contrary to the findings in the literature, organisational commitment did not moderate the occupational stress-strain relationship of support staff in the present study. Organisational commitment was significantly negatively related to occupational stress, while occupational stress was significantly positively related to ill-health (strain). Occupational stress explained 18% of the variance in ill-health (strain) and 23% of the variance in organisational commitment.

Recommendations for the organisation and future research are made.

OPSOMMING

Onderwerp: Beroepstres and -spanning van ondersteuningspersoneel by 'n hoër onderwysinstelling in die Noordwes provinsie.

Sleutelterme: Beroepstres, spanning, organisasiegebondenheid, ondersteuningspersoneel, hoër onderwysinstelling, tersiêre onderwys, modereringeffek.

Hoëronderwysinstellings regoor die wêreld word gekonfronteer met 'n reeks komplekse veranderinge. Dit sluit in veranderinge in bestuurstyl en struktuur, verhoogde mededinging, samesmeltings met ander instellings, veranderende werksomstandighede, verhoogde studentegetalle teen die agtergrond van 'n afname in kapitaaluitleg per student, hoër personeel-student verhoudinge, modularisasie van studierigtings en die bekendstelling van 'n kwaliteitsbeheerstelsel. Tersiêre instellings in Suid-Afrika gaan onder soortgelyke transformasie gebuk, wat genoodsaak is deur veranderinge in politieke, ekonomiese, tegnologiese en sosiale omgewings.

Te midde van hierdie veranderinge rapporteer ondersteuningspersoneel gevoelens van magteloosheid, angstigheid en kwesbaarheid, 'n tekort aan selfvertroue in hul vermoëns en onsekerheid oor hul toekoms in die organisasie, wat tot beroepstress en –spanning lei. Moontlike onsekerhede waarmee hierdie werknemers gekonfronteer word is verlaagde werksekuriteit, loopbaan- en professionele erkenning, ontoereikende bronne, moeilike begrip rakende die veranderde waardes van die organisasie, toenemende sentralisasie van outoriteit, verhoogde burokrasie en toenemende verantwoordelikheid. In 'n toenemende mate sal hoër-onderwysinstellings se ondersteuningspersoneel groter interaksie met ander mense, hetsy studente of mede-werkers, beleef wat hul meer kwesbaar maak vir beroepstres en –spanning. Boonop neem die werkslading van ondersteuningspersoneel toe en die aard van die ondersteuningswerk verander. Ondersteuningspersoneelgroepe word verwag om meer take te onderneem, om vir 'n groter groep mense te werk en om nuwe tegnologie te gebruik; telkens sonder die nodige opleiding, wat tot verdere verhoging in stresvlakke lei. Navorsing het getoon dat hoë stresvlakke wat nie bestuur word nie lei tot die ondermyning van gehalte van

werknemers se gesondheid, welstand en moreel, asook 'n afname in produktiwiteit en kreatiwiteit.

Gevolglik is die doelwitte van hierdie studie om die vlakke van beroepstres en –spanning van ondersteuningspersoneel by 'n hoëronderwysinstelling in die Noordwes provinsie te bepaal, om moontlike demografiese verskille te bepaal, asook om te bepaal of waargenome organisasiegebondenheid die effek van beroepstres en –spanning modereer. 'n Gestratifiseerde ondersoekgroep (N = 315) van ondersteuningspersoneel by 'n hoër onderwysinstelling in die Noordwes provinsie is geneem. Die ASSET vraelys is gebruik. Beskrywende en inferensiële statistiek is gebruik om die resultate te analiseer.

Die resultate het getoon dat ondersteuningspersoneel relatief swak fisiese en psigiese gesondheid rapporteer wat aandui dat ondersteuningspersoneel stressverwante spanning beleef wat grootliks toegeskryf kan word aan werksverhoudinge en poseienskappe respektiewelik. Die vlakke van stres was relatief laag terwyl hoë vlakke van individuele gebondenheid tot die organisasie en waargenome gebondenheid vanaf die organisasie gerapporteer is. Verskille in terme van beroepstres vir verskillende biografiese groepe is gevind.

Prakties betekenisvolle positiewe verhoudings is gevind vir werksekuriteit, poseienskappe en kontrole. Dit beteken dat indien werknemers waargenome kontrole oor aspekte van hul werk beleef, hulle ook werksekuriteit sal beleef. Werksverhoudinge is ook betekenisvol verwant aan poseienskappe, oorlading en kontrole wat beteken dat werknemerverhoudinge met ander tot 'n groot mate bepaal word deur die mate waarin ondersteuningspersoneel voel dat hul kontrole oor hul werk het, asook die volume werk wat hul het om te doen.

In teenstelling met ander navorsingsbevindinge het organisasieverbondenheid nie die beroepstress-spanning verhouding van ondersteuningspersoneel in die huidige studie gemodereer nie. Organisasieverbondenheid is betekenisvol negatief verwant aan beroepstres, terwyl beroepstres betekenisvol positief aan ongesondheid (spanning) verwant is.

Beroepstres het 18% van die variansie in swak gesondheid (spanning) en 23% van die variansie in organisasieverbondenheid verklaar. Aanbevelings vir die organisasie en die toekoms was gedoen.

CHAPTER 1

INTRODUCTION

This mini-dissertation is about occupational stress and strain of support staff at a higher education institution in the North-West province.

In this chapter, the problem statement is discussed. Research objectives are set out, including general and specific objectives. The research method is explained and a division of chapters is given.

1.1 PROBLEM STATEMENT

The world is changing and so are higher education institutions, if they are to survive (Gilbert, 2000). Higher education institutions from all over the globe have been confronted with a series of complex changes (Doyle & Hind, 1998; Hugo, 1998; Nixon, Marks, Rowland & Walker, 2001). In recent years, the Australian university sector has undergone large-scale organisational change, including restructuring, downsizing and government funding cuts (Gillespie, Walsh, Winefield, Dua and Stough, 2001). Higher education in the United Kingdom has also undergone major changes at both national and local levels. These include changes in management style and structure, and increased competitveness. Other changes include mergers with other institutions, changes in working conditions, increases in student numbers in the context of decreased expenditure per student, higher student-staff ratios, modularization of courses, and the introduction of quality monitoring systems (Court, 1994). Tertiary institutions in South Africa are experiencing a similar transformation that is necessary because of changes in the political, economic, technological and social environments (Bainbridge, 1996; Brill & Worth, 1997).

In South Africa the transformation includes: revoultionary change (in the sense that previous management practices and ways of doing things are discontinued); qualitative change (which is difficult to measure, but which changes the experiences of organisational members); and multi-dimensional change (which affects all structures, processes and procedures and which requires changes in values, norms, attitudes, perceptions and behaviour) (Viljoen & Rothmann, 2002). These changes seem to be in line with international trends in the higher education sector.

It may be argued that many employees in the tertiary sector may perceive the restructuring of the higher education sector as an imposition by external forces, as it is mentioned that institutions up for mergers have not chosen their own partners at all. Many do not know what the mergers will entail and are sceptical of the outcome (Smith, 2002; Kotecha, 2003). This uncertainty arises from a multitude of environmental factors largely beyond the control of individual employees. Employees operating within such environments are likely to experience a sense of powerlessness, report feelings of anxiety and insecurity, a lack of confidence in their abilities and uncertainty about their future in their organisations, resulting in occupational stress and strain (McHugh & Brennan, 1994; Dua, 1996; Kinman, 1998).

The possible uncertainties that employees and organisations may be faced with are: lack of job security, decreased career prestige and professional recognition, scarcity of resources, difficulty in understanding the changing values of the organisation, increased centralisation of authourity, increased bureacracy and an increased demand for accountability. Many of the employees will now be involved in greater interaction with other people, either students or co-workers and therefore would again be more vulnerable to occupational stress and strain (Davis, 1996; Gillespie et al., 2001).

It is believed that mergers and the other transformations have influenced changes in the nature of work and the individuals who work for these organisations will face highly demanding and rapidly changing work environments that challenge both competency and established behavioural repertoires (Kinman, 1998; Dua, 1996). Other studies have

concluded that the restructuring of the higher education that is taking place will impact greatly on the scope and complexity of employees' jobs. These changes can be described as changes in the character of higher education, pressures arising from the (lack of) structure in academic life, faster pace of work, a general intensification of work effort and an increased rate of change. These are major contributory factors leading to the increase in occupational stress levels of staff at higher education institutions (Davis, 1996; Kinman, 1998; Franzsen, 2003).

A higher education institution, as a work organisation, can be classified in terms of two distinct social structures; namely, academic staff engaged in teaching and research, and support staff. Although the work of academic and support staff is closely linked in terms of strategic objectives and delivery of products and services, the nature of work is totally different, which means that the two constituencies rarely share similar supervisory structures. Consequently, different employee problems and concerns are experienced by these two groups (Davis, 1996; Franzsen, 2003).

Support staff are key performers in establishing service quality (Hitman, 1993). However the support side of higher education has been largely overlooked when the issue of quality service is considered. This is not surprising, as higher education institutions remain focused on teaching and research, with the admininistration tasks existing to facilitate these aims (Pitman, 2000). The term 'support staff' is used in this dissertation to refer to all the non-academic staff employed within the higher education sector, including staff in academic support, administrative support, library and technical areas.

Workload is increasing in volume and employees of higher education institutions at all levels are working longer hours (Early, 1994; Smewing & Cox, 1998; Kinman, 1998). Support personnel groups are being asked to take on more duties, and do work for a greater number of people. They are also required to use new technology, sometimes without adequate training resulting in high stress levels (Smewing & Cox, 1998). Recent studies by the Association of University Teachers in the United Kingdom (1990; 1996) have indicated that administrative and computer staff stress levels have increased. This

could be attributed to the abolishing of job security due to the merging of institutions, as well as the changing nature of support staff work (Kinman, 1998; Gillepsie et al., 2001).

The South African higher education sector will have to adapt to similar challenges identified in the global arena. They will have to adapt to the changing circumstances and will have to maintain the desire for excellence amongst employees. Higher education institution employees, in addition to education and training, play a vital role in the creation and development of knowledge and innovation. It is well documented that high levels of occupational stress, if left unchecked and unmanaged, undermine the quality, productivity and creativity of employees' health, wellbeing, and morale (Hrebeniak & Alutto, 1982; Zohar, 1980).

The question that presents itself is what higher education institutions are doing to assist employees' to overcome the feelings of powerlessness, anxiety and stress in the face of the current transformations in the higher education sector. The evidence seems to suggest that transformation can be overwhelming to employees. Since previous studies have focused heavily on the stress experienced by academics, with little exploration of stress on support staff, a comprehensive understanding of the sources and consequences of stress requires research (Gillespie et al., 2001). Furthermore, the effectiveness of a modern university, as a human organisation, depends fundamentally on the effectiveness of its individual staff members (Davis, 1996). Consequently, the current research is much needed.

In the literature several theoretical models or appoaches has been developed in order to understand the stress-response in occupational settings. The Person-Environment Fit Model (French, Kaplan and Harrison, 1982) states that stress results from demands (e.g difficulty of the job) that the individual may not be able to meet, or insufficient resources (e.g. pay) to meet the individual's needs. The Job Demands-Control Model developed by Karasek (1979) is based on the proposition that the interaction between job demands and job control (referred to as job decision latitude, and defined in terms of decision authority and skill level) is the key to explaining strain-related outcomes. In this model, strain

occurs when high job demands (or pressure) are combined with low decision latitude (a perceived inability to influence tasks and procedures at work). In other words, jobs that combine high levels of demand with low levels of autonomy, control or decision latitude are the most stressful (Winefield, Gillespie, Stough, Dua & Hapuarachchi, 2002). Although these models or approaches influenced a considerable body of research on stress, they focus on general demands of the job and the skills and abilities of the individual, not taking into account the specific pressures and the role of individual differences in personality and coping resources (Spielberger & Vagg, 1999).

A third model known as the Transcational approach was developed by Lazarus (1991), conceptualing stress as a complex, multivariate process, resulting from a broad system of variables involving inputs, outputs and the mediating activities of appraisal and coping. According to this model the stress process is a dynamic cognitive state and is constantly changing as a result of the continual interplay between person and environment. A comprehensive understanding of stress from this approach involves assessing each important facet of the stress process (Lazarus, 1991). This includes the key environmental and personal antecedents (e.g. demands, resources, beliefs), the intervening processes (e.g. coping, personality), indicators of the immediate stress response (i.e. subjective, behavioural and physiological evidence of emotion), and the long-term consequences of stress for individuals and the workplace (e.g. psychological wellbeing, health and social functioning). Stress, therefore is a factor that resides neither in the individual nor in the environment alone. Rather, it is embedded in an ongoing relationship between the two.

Stress is a complicated phenomenon, which has been defined and researched in a number of different ways, but stress generally commences with a set of specific demands (Abouserie, 1996). Whether a particular demand produces stress depends on the individual's perception of the demand. If the individual does not have the physical, mental or emotional resources to meet the demand, the demand is perceived as a potential stressor.

Zastrow (1984, p. 143) defines stress as "the emotional and physiological reactions to stressors. A stressor is a demand, situation or circumstance which disrupts a person's equilibrium and initiates the stress response". It is important to identify potential occupational stressors as well as variables. Stressors can be seen as the stimuli of the transaction, which normally leads to individual strain (Siu, 2002). Strain refers to the individual's psychological, physical and behavioural response to stressors (Cooper, Dewe, O'Driscoll, 2001). Determinants of strain can generally be grouped into three major categories: job-specific sources, organisational sources and individual sources. These work related stressors (job-specific and organiational) refer specifically to factors intrinsic to the job, roles in the organisations, relationships at work, career development issues, organisational factors and home-work interface (Cartwright & Cooper, 1997).

Bowen and Schuster (1985) identified the negative impact of stress on staff morale; many of the academics reported feelings of anger, and they felt devalued and abandoned. Armour, Caffarella, Fuhrmann and Wergin (1987) further report that stress among academic and general staff of higher education institutions significantly affects the quality of both teaching and research, and results in feelings of detachment, low job satisfaction and low job commitment. Boyd and Wylie (1994) report that stress negatively impacted on the physical and emotional health, family relationships and leisure activities of both academic and support staff. Dua (1996) reported that higher levels of occupational stress are associated with dissatisfaction regarding work, psychological distress, negative affect, and anxiety and poor health. Research regarding occupational stress levels of support staff in South African higher education institutions seems to be lacking. Therefore, the second research problem is: determining the levels of occupational stres and strain of support staff in a higher education institution in the North-West province.

Stress researchers have identified a number of moderating factors that can reduce or eliminate the negative effects of occupational stress. Few studies have investigated these potential moderators of stress specifically within the higher education sector (Gillespie et al., 2001). It is imperative that the role of moderators in the stress-strain relationship is

investigated. A moderator can be defined as a variable that "affects the direction and /or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (Baron & Kenny, 1986; 1174). A moderator is therefore, some third factor that exerts an influence on the zero-order correlation between two variables. The influence of so-called moderators in terms of demands placed on the individual can only be fully understood in a transactional framework where individuals transact with their environments, make appraisals of the interaction and consequently attempt to deal with it (Cooper et al., 2001).

The most consistently identified moderators of occupational stress include an invididual's coping style (Lazarus and Folkman 1984), emotionality (Costa and McCrae, 1992), level of control (Spector, 1986), and social support (House, 1981). There is, however, continuing debate and mixed empirical support for the role these factors play in the stress process (Dollard, Winefield, Winefield & de Jonge, 2000; Parkes, 1994; Van der Doef & Maes, 1999). Few studies have investigated these potential moderators of stress specifically within the higher education sector. Notable exceptions include Dua (1994) and Penny, Menee, Struthers, Hechter, Schonwetter & Menges (1997), who report that university staff who perceive high levels of control over their work, experience less stress than those who perceive low levels of control. Given the subjective nature of stress (Lazrus, 1990), such an understanding may potentially have important implications for the effective management of stress.

Recently, organisational commitment has been identified to be a significant moderator of the effects of stress (Begley & Cazjka, 1993). It represents the psychological link between the employee and the organisation, and is currently widely recognised as a multidimensional work attitude (Allen & Meyer, 1996). Organisational commitment is defined as "the relative strength of an individual's identification with and involvement in an organisation" (Mowday, Porter & Steers, 1982; 26).

According to Meyer and Allen (1991), organisational commitment can take three distinct forms: affective commitment refers to identification with, involement in and emotional

attachment to the organisation, in the sense that employees with strong affective commitment remain with the organisation, because they want to. Normative commitment refers to commitment based on sense of obligation to the organisation; because they feel they ought to do so. On the other hand, continuance commitment refers to commitment based on emploeeys' recognition of the costs associated with leaving the organisation, because they have to do so, either because of low perceived alternatives or because of personnel sacrifice associated with leaving the organisation.

Begley and Cazjka (1993) tested the moderating effects of organisational commitment, and concluded that commitment buffered the relationship between stress and job displeasure (including job dissatisfaction, intention to quit, and irritation). That means that stress increased job displeasure only when commitment was low. Information with regards to the possible moderating effect of organisational commitment seems to be lacking in the literature. Therefore, the third research problem is to determine the possible moderating effect of organisational commitment on the stressor-strain relationship of support staff in higher education institutions in the North-West province of South Africa.

In terms of the measurement of occupational stress specific to higher education institutions, the *ASSET Organisational Stress Screening Tool* has been developed. It is diagnostic in nature and is designed to survey the level of stress in an organisation; to examine the extent to which groups or departments in the organisation are differentially affected by stress and it can identify the sources of pressure for each group within the organisation as well as across the organisation as a whole. The ASSET tool draws upon psychological research and knowledge and puts it into practice. It also collects important stress-related data by asking straightforward questions about the sources and effects of workplace stress to those who are best qualified to answer them. The responses can then be analysed at the organisational or group level, to fit an organisation's needs. In this way ASSET can help employers to understand not just the extent, but also the dynamics of stress in their organisations so that directive and tailored solutions can be formed to solve organisational problems (Cooper & Cartwright, 2002).

This measuring instrument has been successfully used in the United Kingdom (Tytherleigh, 2003) and is generally a new tool being used in South Africa. Very little research has been conducted in South Africa using this diagnostic tool in higher education settings. Therefore, the first research problem is to determine the suitability of the ASSET tool for measuring the occupational stress levels of support staff in a higher education institution in the North-West province.

Consequently, the following contribution to industrial psychology as a science will be made:

- It will result in psychometric evidence for the suitability of using the ASSET Organisational Stress Screening Tool in measuring occupational stress and strain of support staff in a higher education institution in the North-West province.
- The levels of occupational stress and strain of support staff for different demographic groups in a higher education institution in the North-West province will be determined.
- Information will be available with regards to the moderating effect of organisational commitment on the occupational stress-strain relationship of support staff in a higher education institution in the North-West province.
- Recommendations will be made for the prevention and/or management of occupational stress and strain of support staff in a higher education institution in the North-West province.

1.2. RESEARCH OBJECTIVES

Arising from the problem statement described above, the following general and specific aims are set for this research.

1.2.1 General objective

The general aim of this research is to determine the levels of occupational stress and strain of support staff at a higher education institution in the North-West province and to determine whether perceived organisational commitment moderates the effects of occupational stress and strain.

1.2.2 Specific objectives

- To determine the psychometric suitability of using the ASSET Organisational Stress Screening Tool for the measurement of occupational stress and strain of support staff at a higher education institution in the North-West province;
- To determine the levels of occupational stress and strain of support staff at a higher education institution in the North-West province, and to compare the levels of occupational stress and strain of different demographic groups;
- To determine the moderating relationship of organisational commitment on the occupational stress-strain relationship of support staff at higher education institution in the North-West province.
- To make recommendations for the prevention and/or management of occupational stress and strain of support staff a higher education institution in the North-West province.

1.3. RESEARCH METHOD

1.3.1 Research design

A survey design is used to reach the research objectives. The specific design is a cross-sectional design, in which a sample is drawn from a population at one time (Shaughnessy & Zechmeister, 1997). Information collected is utilized to report the population at that time. Cross-sectional designs are used to examine groups of subjects in various stages of development simultaneously, while the survey describes a technique of data collection in which questionnaires are used to gather data about an identified population (Burns & Grove, 1993). The design can also be used to assess interrelationships among variables in the populations. According to Shaughnessy and Zechmeister (1997) this design is ideal to address the descriptive functions associated with correlational research.

1.3.2 Sample

A stratified, random sample (N = 315) is taken from the support staff at a higher education institution in the North-West province of South Africa.

1.3.3 Measuring Instruments

The *ASSET Organisational Stress Screening Tool* (Cooper & Cartwright, 2002) will be used to measure the levels of occupational stress of support staff in higher education institutions. Cooper & Cartwright (2002) designed the ASSET as an initial screening tool, based on a large body of academic and empirical research, to help organisations assess the risk of stress in their workforce. It measures potential exposure to stress in respect to a range of common workplace stressors. It also provides important information on current levels of physical health, psychological wellbeing and organisational commitment and provides data that the organisation can be compared to. The ASSET is divided into four questionnaires. The first questionnaire measures the individual's perception of his or her job. This subscale includes questions relating to eight potential sources of stress, namely: work relationship; work-life balance; overload; job security; control; resources and

communication; job overall; and pay and benefits. The second questionnaire measures the individual's attitude toward his or her organisation: this subscale measures an effect of stress and includes questions relating to perceived levels of commitment both from and to the organisation. With **commitment of the organisation to the employee,** employees expect to be trusted and respected and expect to feel that it is worth "going the extra mile" for the organisation. This subscale measures the extent to which individuals feel that their organisation is committed to them. On the other hand, **commitment of the employee to organisation,** employers expect their employees to do their job as best they can and expect them to be loyal and dedicated to the organisation. This subscale measures the extent to which this commitment exists. The third questionnaire focuses on the individual's health, aimed at specific outcomes of stress, and includes questions relating to both physical and psychological health. A biographical questionnaire will be included to provide detail on cultural and language diversity. The questionnaire will make reference to age, gender, race, marital status, home language, level of education, position in the company, office, area, province and years of service.

Validity of the ASSET is still to be completed (Cartwright & Cooper, 2002). Reliability is based on the Guttman split-half coefficient. All but two factors returned coefficients in excess of 0,70 ranging from 0,60 to 0,91 (Cartwright & Cooper, 2002). Johnson and Cooper (2003) found that the Psychological Wellbeing subscale has good convergent validity, with an existing measure of psychiatric disorders, the General Health Questionnaire (GHQ – 12; Goldberg & Williams, 1988). Tytherleigh (2003) used the ASSET as an outcome measure of job satisfaction in a nationwide study of occupational stress levels in 14 English higher education institutions. A series of Cronbach alphas was carried out on each of the questions for the five ASSET subscales to identify the reliability of the ASSET questionnaire with these data. The results ranged from 0,64 – 0,94, showing good reliability.

1.3.4 Statistical Analysis

The data analysis was carried out with the help of the SPSS programme (SPSS Inc., 2003) in order to calculate the reliability, validity, construct equivalence and predictive bias of the measuring instruments, and correlation coefficients. Descriptive statistics (e.g. means, standard deviations, skewness, and kurtosis) and inferential statistics are used to analyse data.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) will be used to test causal models of occupational stress, strain and organizational commitment, using the maximum-likelihood method. SEM is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). Several aspects of SEM set it apart from the older generation of multivariate procedures (Byrne, 2001). Firstly, it takes a confirmatory rather than an exploratory approach to data analysis. Furthermore, by demanding that the pattern of inter-variable relations be specified *a priori*, SEM lends itself well to the analysis of data for inferential purposes. Secondly, although traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides precise estimates of these error variance parameters. Thirdly, SEM procedures can incorporate both unobserved (latent) and observed variables.

Cronbach alpha coefficients and inter-item correlations were used to assess the internal consistency of the ASSET (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. According to studies by Clark and Watson (1995) the average inter-item correlation coefficient (which is an understandable and usable measure of internal consistency) is a recommendable index to supplement information supplied by coefficient alpha. It should, however, be borne in mind that simply focusing on the mean inter-item correlation cannot ensure the unidimensionality of a scale – it is necessary to examine the range and distribution of these correlations as well.

Analysis of variance will be used to determine differences between the sub-groups in the sample. Tukey's Standardised Range tests were used to determine the statistical significance of differences obtained during ANOVAs. Practical significance of the differences in means between two groups was computed with the following formula (Cohen, 1988; Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{SD_{MAX}}$$

Where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

SD_{MAX} = Highest standard deviation of the two groups

The following formula was used to determine the practical significance of means of more than two groups (Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{Root \quad MSE}$$

Where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

Root MSE = Root Mean Square Error

According to Cohen (1988), $0{,}10 \leq d \leq 0{,}50$ indicates a small effect; $0{,}50 \leq d \leq 0{,}80$ indicates a medium effect and $d \geq 0{,}80$ indicates a large effect. In terms of the current research, a cut-off point of 0,50 (medium effect) was set for the practical significance of the differences between group means.

Spearman correlation coefficients will be used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) will be set for the practical significance of correlation coefficients.

1.4 DIVISION OF CHAPTERS

In Chapter 2 the occupational stress levels of support staff at a higher education institution are compared across different biographical groups, as well as testing the possible moderating effect of organisational commitment on the relationship of occupational stress and strain. In Chapter 3, conclusions, shortcomings and recommendations are made.

1.5 CHAPTER SUMMARY

This chapter discussed the problem statement and research objectives. The measuring instrument and research method that are used in this research were explained, followed by a brief discussion on the subsequent chapter outline in this mini-dissertation.
Next, the research article will be presented.

References

Abouserie, R. (1996). Stress, coping strategies and job satisfaction in university academic staff. *Educational Psychology, 16*, 49-56.

Allen, N.J. & Meyer, J.P. (1996). Affective continuance, and normative commitment to the organization. *Journal of Vocational Behaviour, 49*, 252-276.

Arbuckle, J.L. (1997). *Amos user's guide version 3.6.* Chicago, IL: Smallwaters.

Armour, R.A., Caffarella, R.S., Fuhrmann, B.S. & Wergin, J.F. (1987). Academic burnout: Faculty responsibility and institutional climate. In P. Seldin (Ed.), *Coping with Faculty Stress.* CA: Jossey-Bass.

Association of University Teachers. (1990). *Goodwill under stress: Morale in UK universities.* London: Association of University Teachers.

Association of University Teachers. (1996). Efficiency gains or quality losses? London: Association of University Teachers.

Bainbridge, C. (1996). *Designing for change: A practical guide to business transformation.* Chichester: Wiley.

Baron, R. & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Begely, T.M. & Cazjka, J.M., (1993). Panel analysis of the moderating effects of commitment on job satisfaction, intent to quit, and health following organisational change. *Journal of Applied Psychology, 78*(4), 552-556.

Bowen, H.R. & Schuster, J.H. (1985). Outlook for the academic profession. *Academe, 71*(5), 9-15.

Boyd, S. & Wylie, C. (1994). *Workload and stress in New Zealand universities.* Wellington: New Zealand Council for Educational Research .

Brill, P.L. & Worth, R. (1997). *The four levers of corporate change.* New York: Amacon.

Burns, N. & Grove, S.K. (1993). *The practice of nursing research, conduct, critique, and utilization* (2nd ed.). PA: W.B. Saunders.

Byrne, B.M. (2001). Structural equation modeling with AMOS: Basic concepts, applications and programming. Mahwah, NJ: Erlbaum.

Cartwright, S. & Cooper, C. (1997). *Managing workplace stress*. Thousand Oaks, CA: Sage.

Clark, L.A. & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment,* 7, 309-319.

Cleary, T.A. & Hilton, T.L. (1968). An investigation of item bias. *Educational and Psychological Measurement, 28*, 61-75.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Orlando, CA: Academic Press.

Cooper, C.L. & Cartwright, S. (2002). *Asset Management Guide*. United Kingdom: Robertson Cooper Ltd.

Cooper, C.L., Dewe, P.J. & O'Driscoll, M.P. (2001). *Organisational stress: A review and critique of theory, research, and applications*. CA: Sage.

Costa, P.T. & McCrae, R.R. (1992). *NHO PI-R (Professional Manual)*. Odessa, FL: Psychological Assessment Resources.

Court, S. (1994). *Long hours, little thanks: A survey of the use of time by full time-academic and related staff in traditional UK universities*. London: Association of University Teachers.

Davis, A.J. (1996). Employee assistance provision in higher education. *The Journal of Workplace Learning, 8*(5), 4-12.

Dollard, M.F., Winefield, H.R., Winefield, A.H. & de Jonge, J. (2000). Psychosocial job strain and the productivity of human service workers: A test of the demand-control-support model. *Journal of Occupational and Organizational Psychology, 73*, 501-510.

Doyle, C. & Hind, P. (1998). Occupational stress, burnout and job status in female academics. *Gender, Work and Organisations, 5*, 67-82.

Dua, J. (1994). Job stressors and their effects on physical health, emotional health, and job satisfaction in staff at the University on New England. *Journal of Educational Administration, 32*, 59-78.

Dua, J.K. (1996). The presence, nature and effects of job stress on physical and psychological health at a large Australian university. *Journal of Educational Administration, 34*, 73-86.

Early, P. (1994). *Lecturers' workload and factors affecting stress levels: A research report from the National Foundation for Educational Research.* Berkshire :NFER.

Franzsen, K. (2003). A critical overview of trends and practices in performance management in the South African higher educational environment. *South African Journal of Higher Education, 17*(2), 131-138.

French, J.R.P. Jr., Caplan, R.D. & Harrison, R.V. (1982). *The mechanisms of job stress and strain.* Chichester, UK: Wiley.

Gilbert, A.D. (2000). The idea of a university beyond 2000. *Policy, 16*, 31-36.

Gillespie, N.A., Walsh, M., Winefields, A.H., Dua, J. & Stough, C. (2001). Occupational stress in universities: staff perceptions of the cause, consequences and moderators of stress. *Work & Stress, 15,* 53-72.

Goldberg, D.P. & Williams, P. (1988). *A user's guide to the GHQ.* London: NFER, Nelson.

Hitman, J.A. (1993). TQM and CQI in post secondary education. *Quality Progress, 26* (10), 77-80.

House, J. (1981). *Work and stress and social support.* Reading, MA: Addison-Wesley.

Hrebeniak, L.G. & Alutto, J.A. (1982). Personal and role-related factors in the development of organisational commitment. *Administrative Science Quarterly, 15*, 555-573.

Hugo, P. (1998). Transformation: The changing context of academia in post-apartheid South Africa. *African Affairs, 97*, 5-27.

Johnson, J.V. & Hall, E.M. (1988). Job strain, work place social support, and cardiovascular disease: A cross-sectional study of random sample of the Swedish working population. *American Journal of PublicHealth, 78*, 1336-1342.

Johnson, S. & Cooper, S. (2003). *The construct validity of the ASSET stress measure.* Manuscript made available by authors.

Karasek, R.A. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*, 285-308.

Kinman, G. (1998). *Pressure points: A survey into the causes and consequences of occupational stress in the UK academic and related staff.* London: Association of University Teachers.

Kotecha, P. (2003). Challenges, constraints and possibilities: The South African meeting agenda. Retrieved on March 2, 2004 from http://www.sauvca.org.za

Lazarus, R.S. & Folkman, S. (1984). *Stress, appraisal and coping.* New York: Springer.

Lazarus, R.S. (1990). Theory-based stress measurement. *Psychological Inquiry, 1*(1). 3-13.

Lazarus, R.S. (1991). Psychological stress in the workplace. In P.L. Perrewe (Ed.), *Handbook on Job Stress* (pp.1-13). Corte Madera, CA: Select Press.

McHugh, M. & Brennan, S. (1994). Managing the stress of change in the public sector. *International Journal of Public Sector Management, 7,* 29-41.

Meyer, J.P. & Allen, N.J. (1991). A three-component conceptualisation of organisational commitment. *Human Resource Management Review, 1,* 61-89.

Mowday, R.T., Steers, R.M. & Porter, L.W. (1979). The measurement of organisational commitment. *Journal of Vocational Behaviour, 14,* 224-247.

Nixon, J., Marks, A., Rowland, S. & Walker, M. (2001). Towards a new academic professionalism: A manifesto of hope. *British Journal of Sociology of Education, 22,* 227-244.

Oliver, R.L. & Brief, A.P. (1988). Determinants and consequences of role conflict and ambiguity amongst retail sales managers. *Journal of Retailing, 53*(4), 47-58.

Parkes, K.R. (1994). Personality and coping as moderators of work stress processes: Models, methods and measures. *Work and Stress, 8,* 110-129.

Penny, R.P., Menec, V.H., Struthers, C.W., Hecter, F.J., Schonwetter, D.J. & Menges, F.J. (1997). Faculty in transition: A longitudinal analysis of the role of perceived control and type of institution in adjustment to postsecondary institutions. *Research in Higher Education, 38,* 519-556.

Pitman, T. (2000). Perceptions of academics and students as customers: A survey of administrative staff in higher education. *Journal of Higher Education Policy and Management, 22*(2), 165-175.

Shaughnessy, J.J. & Zechmeister, E.B. (1997). *Research methods in psychology* (4th ed.). New York: McGraw-Hill.

Siu, O. (2002) Occupational stressors and well-being among Chinese employees: The role of organisational commitment. *Applied Psychology: An international Review, 51(4),* 527-544.

Smewing, C. & Cox, T. (1998). Employee assistance programmes and their place within universities. *British Journal of Guidance and Counselling, 26*(2), 273-286.

Smith, M. (2002). Public perceptions of higher education: Phatlalatsa Newsletter. Retrieved on March 2, 2004 from http://www.s-and-t.co.za

Spector, P.E. (1986). Perceived control by employees: A meta-analysis of studies concerning autonomy and participation at work. *Human Relations, 39,* 1005-1016.

Spielberger, C.D. & Vagg, P.R. (1999). *Job Stress Survey: Professional manual.* Odessa, FL: Psychological Assessment Resources.

SPSS Inc. (2003). *SPSS 12.0 for Windows.* Chicago, IL: SPSS Incorporated.

Stahl, S., Grim, C., Donald, C. & Niekerk, A. (1975). A model for the social sciences and medicine: The case for hypertension. *Social Science and Medicine, 9,* 31-38.

Steers, R.M. (1977). Antecedents and outcomes of organisational commitment. *Administrative Science Quarterly, 22,* 46-56.

Strauss, M.A. (1973). A general systems theory approach to a theory of violence between family members. *Social Science Information, 12,* 105-125.

Tytherleigh, M. (2003). What employers may learn from English higher education institutions: A fortigenic approach to occupational stress. *Journal of Industrial Psychology, 29*(4), 101-106.

Van de Vijver, F. & Leung, K. (1997). Methods and data analysis for cross-cultural research. Thousand Oaks, CA: Sage.

Van der Hoef, M. & Maes, S. (1999). The Job Demand-Control-Support model and psychological well-being: A review of 20 years of empirical research. *Work and Stress, 13,* 87-114.

Viljoen, J.P. & Rothmann, S. (2002). Transformation in a tertiary-education institution: A case study. *Management Dynamics, 1,*. 2-9.

Winefield, A.H. (2000). *Stress in "academe". Some recent findings.* In Keeny, D.T., Carlson, J.G., McGuigan, F.J. & Sheppard, J.L. (Eds.), *Stress and Health: Research and Clinical Applications.* (pp 437- 446). Sydney: Harwood

Winefield, A.H., Gillespie, N., Stough, C., Dua, J. & Hapuararchchi, J. (2002). *Occupational stress in universities: A national survey.* Melbourne: National Tertiary Education Union.

Zastrow, C. (1984). Understanding and preventing burnout. *British Journal of Social Work, 14*, 141-155.

Zohar, D. (1980). Safety climate in organisations: Theoretical and applied implications. *Journal of Applied Psychology, 65*, 96-102.

CHAPTER 2

RESEARCH ARTICLE

OCCUPATIONAL STRESS AND STRAIN OF SUPPORT STAFF AT A HIGHER EDUCATION INSTITUTION IN THE NORTH -WEST PROVINCE

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ABSTRACT

The aim of this study was to determine the levels of occupational stress and strain of support staff at a higher education institution and to determine whether perceived organisational commitment moderates the effects of occupational stress and strain. A cross-sectional survey design was used. A stratified, random sample (N = 315) of support staff members at a university in the North-West Province was taken. The ASSET Organisational Stress Screening Tool and a biographical questionnaire were administered. The results of the study showed that, compared to international norms, support staff demonstrated significantly higher levels of psychological and physical ill health, commitment from the organisation and commitment from the individual. Analysis of variance showed occupational stress differences for language groups, gender and years of experience.

OPSOMMING

Die doelstellings van hierdie studie was om die vlakke van beroepstres en spanning van ondersteuningspersoneel by 'n hoër-onderwys instansie te bepaal, asook om die modererende invloed van waargenome organisasieverbondenheid op die effek van beroepstres en spanning te bepaal. 'n Dwarssnee-opnameontwerp (N = 315) van ondersteuningspersoneel by 'n universiteit in die Noordwes Provinsie is gebruik. Die ASSET en 'n biografiese vraelys is afgeneem. Die resultate het getoon dat, vergeleke met internasionale norme, ondersteuningspersoneel betekenisvolle hoër vlakke van fisiese- en psigologiese ongesondheid, gebondenheid vanaf die organisasie en gebondenheid vanaf die individu gerapporteer het. Variansie-analise het verskille in beroepstres ten opsigte van taalgroep, geslag en jare ervaring getoon.

Although universities have traditionally been regarded as low stress working environments, during the 1990s there have been significant transformations, particularly in countries such as Australia, New Zealand, and the United Kingdom. These have resulted in signficant changes in the nature of work and increased pressures on staff (Fisher, 1994; Dua, 1996; Kinman, 1998; Winefield, 2000). These transformations include restructuring, downsizing, government funding cuts, changes in management style and structure, and increased competitiveness (Gillespie, Walsh, Winefield, Dua & Stough, 2001). Other changes include mergers with other institutions, changes in working conditions, increasing student numbers in the context of decreased expenditure per student, higher student staff ratios, modularisation of courses, and the introduction of quality monitoring systems (Court, 1994). Tertiary institutions in South Africa are experiencing similar transformations due to changes in the political, economic, technological and social environments (Bainbridge, 1996; Brill & Worth, 1997).

It is believed that mergers and other transformations have influenced changes in the nature of work, and the individuals who work for these organisations will face highly demanding and rapidly changing work environments that challenge both competency and established behavioural repertoires (Kinman, 1998; Dua, 1996). Studies have concluded that the restructuring of higher education that is taking place will impact greatly on the scope and complexity of employees' jobs. These changes can be described as changes in the character of higher education, pressures arising from the (lack of) structure in academic life, faster pace of work, a general intensification of work effort and an increased rate of change. These are major contributory factors to the increase in occupational stress levels of staff at higher education institutions (Davis, 1996; Kinman, 1998; Franzsen, 2003).

Employees operating within transforming environments are likely to experience a sense of powerlessness, report feelings of anxiety and insecurity, a lack of confidence in their abilities and uncertainty about their future in their organisations resulting in occupational stress and strain (McHugh & Brennan, 1994; Dua, 1996; Kinman, 1998). The possible uncertainty that employees and organisations may be faced with, is lack of job security, decreased career prestige and professional recognition, scarcity of resources, difficulty in understanding the changing values of the organisation, increased centralisation of authority, increased bureaucracy and an increased

demand for accountability. Many employees in tertiary education institutions will now be involved in greater interaction with other people, either students or co-workers and therefore would again be more vulnerable to occupational stress and strain (Davis, 1996; Gillespie et al., 2001).

According to Davis (1996) and Franzsen (2003) the main features of higher education institution as a work organisation are two distinct social structures, namely academic staff engaged in teaching and research, and secondly, non-academic administrative and support staff. Although the work of academic and support staff is closely linked in terms of strategic objectives and delivery of products and services, the nature of work is totally different which means that the two constituencies rarely share similar supervisory structures. Furthermore, support staff are key performers in establishing service quality (Hitman, 1993). However, the support side of higher education has been largely overlooked in terms of quality of service and occupational stress. This is not surprising, as higher education institutions remain primarily focused on teaching and research, with the administration function existing to facilitate these aims (Pitman, 2000). Consequently, experiences and employee related wellbeing could differ for these two groups.

The literature suggests that support staff are required to take on more duties and one person is doing work for a greater number of people as compared to one support assistant for one superior/manager. They are also required to use new technology, sometimes without adequate training (Smewing & Cox, 1998). Recent studies by the Association of University Teachers (1990; 1996) in the United Kingdom have indicated that administrative and computer staff stress levels have increased. This could be attributed to the abolishing of job security due to the merging of institutions, as well as the changing nature of support staff work (Kinman, 1998; Gillepsie et al., 2001).

The South African higher education sector will have to adapt to similar challenges identified in the global arena. They will have to adapt to the changing circumstances and will have to maintain the desire for excellence amongst employees. In addition to education and training, tertiary education employees play a vital role in the creation and development of knowledge and innovation. It is well documented that high levels of occupational stress, if left unchecked and

unmanaged, undermine the quality, productivity and creativity of employees' health, wellbeing and morale (Hrebeniak & Alutto, 1982; Zohar, 1980). The question that presents itself is what are tertiary institutions doing to assist employees' to overcome the feeling of powerlessness, anxiety and stress in the face of the current transformations in the tertiary education sector. The evidence seems to suggest that transformation can be overwhelming to employees and since the effectiveness of a modern university as a human organisation depends fundamentally on the effectiveness of its individual staff members, the current study is much needed (Davis, 1996).

The objectives of the current study are to investigate the occupational stress and strain of support staff at a higher education institution in the North-West province, to investigate the relationship of organisational commitment in this regard and to determine whether employees with different biographical profiles experience significant differences in occupational stress.

Occupational stress and strain

Occupational stress is a complicated phenomenon, which has been defined and researched in a number of different ways. Occupational stress generally commences with a set of specific demands (Abouserie, 1996). Stress can be conceptualised as a complex, multivariate process, resulting from a broad system of variables involving inputs, outputs and the mediating activities of appraisal and coping (Lazarus, 1990; Lazarus, DeLongis, Folkman, & Gruen, 1985).

In the literature several theoretical models or approaches has been developed in order to understand the stress-response in occupational settings. The Person-Environment Fit Model (French, Kaplan & Harrison, 1982) states that stress results from demands (e.g. difficulty of the job) that the individual may not be able to meet, or insufficient resources (e.g. pay) to meet the individual's needs. The Job Demands-Control Model developed by Karasek (1979) is based on the proposition that the interaction between job demands and job control (referred to as job decision latitude, and defined in terms of decision, authority and skills level) is the key to explaining strain-related outcomes. In this model, strain occurs when high job demands (or pressure) are combined with low decision latitude (a perceived inability to influence tasks and procedures at work). In other words, jobs that combine high levels of demand with low levels of

autonomy, control or decision latitude are the most stressful (Winefield, Gillespie, Stough, Dua & Hapuarachchi, 2002). Although these models or approaches influenced a considerable body of research on stress, they focus on general demands of the job and the skills and abilities of the individual, not taking into account the specific pressures and the role of individual differences in personality and coping resources (Spielberger & Vagg, 1999).

This study focuses on the transactional approach developed by Lazarus (1991), which conceptualises stress as a complex, multivariate process, resulting from a broad system of variables involving inputs, outputs, and the mediating activities of appraisal and coping. According to this model the stress process is a dynamic cognitive state and is constantly changing as a result of the continual interplay between person and environment. A comprehensive understanding of stress from this approach involves assessing each important facet of the stress process (Lazarus, 1991). This includes the key environmental and personal antecedents (e.g. demands, resources, beliefs), the interviewing processes (e.g. coping, personality), indicators of the immediate stress response (i.e. subjective, behavioural and physiological evidence of emotion), and the long-term consequences of stress for individuals and the workplace (e.g. psychological wellbeing, health and social functioning). Occupational stress is therefore not a factor that resides in either the individual or the environment but is embedded in an ongoing relationship between the two. The current study, however, will focus only on personal antecedents, indicators of the immediate stress response, perceived commitment from and to the organisation, as well as the long-term consequences of stress, namely psychological and physical wellbeing (strain).

Strain refers to the individual's psychological, physical and behavioural response to stressors (Cooper, Dewe, O'Driscoll, 2001). Determinants of strain can generally be grouped into three major categories: job-specific sources, organisational sources and individual sources. This study will not focus on individual sources as the ASSET model measures potential exposure to stress in respect to a range of common workplace stressors (job- specific and organisational) and also provides important information on current levels of physical health, psychological well- being and organisational commitment. The role of commitment as a possible moderating variable will be investigated (Cartwright & Cooper, 2002).

The specific impact of occupational stress on the individual within the higher education sector is not well documented (Gillespie et al., 2001). Bowen and Schuster (1985) identified that the negative impact of stress on staff morale was reported feelings of anger, as well as feelings of devaluation and abandonment. Armour, Caffarella, Fuhrmann and Wergin (1987) further report that stress among support staff of higher education institutions significantly affects the quality of both teaching and research, resulting in feelings of detachment, low job satisfaction and low job commitment. Boyd and Wylie (1994) report that stress negatively impacted on the physical and emotional health, family relationships and leisure activities of both academic and support staff. Dua (1996) reported that higher levels of occupational stress are associated with dissatisfaction regarding work, psychological distress, negative affect and anxiety along with poor health.

Stress researchers have identified a number of moderating factors that can reduce or eliminate the negative effects of occupational stress. Few studies have investigated these potential moderators of stress specifically within the higher education sector (Gillespie et al., 2001). A moderator can be defined as a variable that "affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (Baron & Kenny, 1986, p. 1174). A moderator is therefore some third factor that exerts an influence on the zero-order correlation between two variables. The influence of so-called moderators in terms of demands placed on the individual can only be fully understood in a transactional framework where individuals transact with their environments, make appraisals of the interaction and consequently attempt to deal with it (Cooper et al., 2001).

The most consistently identified moderators of occupational stress include coping style (Lazarus and Folkman 1984), emotionality (Costa & McCrae, 1992), level of control (Spector, 1986), and social support (House, 1981). Recently, organisational commitment has been identified as a significant moderator of stress (Begley & Cazjka, 1993; Cohen, 1992, 1993; Mathieu & Zajac, 1990; Mowday, Porter & Steers, 1982; Somers, 1995). It represents the psychological link between the employee and the organisation, and is widely recognised as a multidimensional work attitude (Allen & Meyer, 1996). Organisational commitment is defined as "the relative strength of an individual's identification with and involvement in an organisation" (Mowday, Porter & Steers, 1982, p.26).

According to Meyer and Allen (1991) organisational commitment can take three distinct forms, namely affective commitment, which refers to identification with, involvement in and emotional attachment to the organisation. Normative commitment describes the phenomenon of employees remaining committed to the organisation based on a sense of obligation to the organisation because they feel they ought to do so. Finally, continuance commitment refers to commitment based on employees' recognition of the costs associated with leaving the organisation, because they have to do so, either because of low perceived alternatives or because of personal sacrifice associated with leaving the organisation.

Organisational commitment appears to have important implications for both employees and employers. Begley and Cazjka (1993) found that commitment might provide a buffer against the negative aspects of job stress for the employee (including job dissatisfaction, intent to quit, and irritation). However, with regards to organisational functioning it was found that commitment could be linked to financial outcomes, such as job performance, absenteeism, and employee turnover (Aryee & Heng, 1990; Jaros, 1997). According to Chow (1990) highly committed employees have higher productivity levels and are willing to assume more responsibility. Moreover, Mowday et al. (1982) explains that commitment can provide employees with stability and a feeling of belonging. That means that stress increased job displeasure, absenteeism and turnover only when commitment was low. On the other hand, employees who perceive higher levels of role conflict and role ambiguity would be less committed to the organisation (Fisher & Gitelson, 1983).

Consequently, the following hypotheses can be formulated:

H1: The ASSET is a suitable instrument for measuring occupational stress of support staff at a higher education institution in the North-West province.

H2: Organisational commitment moderates the relationship between occupational stress and experienced strain.

METHOD

Research Design

A survey design was used to reach the research objectives. The specific design is a cross-sectional design, whereby a sample is drawn from a population at one time (Shaughnessy & Zechmeister, 1997). Information collected was utilized to report the population at that time. Cross-sectional designs were used to examine groups of subjects in various stages of development simultaneously, whilst the survey describes a technique of data collection in which questionnaires were used to gather data about an identified population (Burns & Grove, 1993). The design was also used to assess interrelationships among variables in the populations. According to Shaughnessy and Zechmeister (1997) this design is ideal to address the descriptive functions associated with correlational research.

Study Population

A stratified, random sample ($N = 315$) of support staff at a university in the North-West Province of South Africa was taken. The characteristics of the participants are shown in Table 1.

Table 1

Characteristics of the Study Population

Item	Category	Percentage
Campus	Potchefstroom	87,00
	Mmabatho	13,00
Gender	Male	29,20
	Female	69,20
Marital status	Single	14,00
	Engaged	6,00
	Married	65,10
	Divorced	12,70
	Separated	1,00
	Remarried	1,00
Home language	Afrikaans/English	72,70
	African	26,90
Age	19-29	14,90
	30-39	25,80
	40-49	26,40
	50-59	24,60
	60-67	4,70
Education	<Grade12	42,20
	Grade 12	17,10
	3-year degree	24,10
	4-year degree	1,00
	5- to 7-year degree	9,50
	Master's degree	3,80
	Doctoral degree	0,30

Table 1 shows that more than two-thirds of the sample were married (65,10%) females (69,20%) and spoke either Afrikaans or English (72.70%). Their average age is 42,32 years and the average length of service is 10,69 years. Nearly half (42.20%) of the sample had obtained a Grade 12 or less.

Measuring Instrument

The *ASSET Organisational Stress Screening Tool* (Cartwright & Cooper, 2002) was used to measure the levels of occupational stress of support staff in higher education institutions. Cartwright & Cooper (2002) designed the ASSET as an initial screening tool, based on a large body of academic and empirical research, to help organisations assess the risk of stress in their workforce. It measures potential exposure to stress with respect to a range of common workplace stressors. It also provides important information on current levels of physical health, psychological wellbeing and organisational commitment and provides data that the organisation can be compared with. The ASSET is divided into four questionnaires. The first questionnaire (37 items) measures the individual's perception of his or her job. The second questionnaire (9 items) measures the individual's attitude toward his or her organisation. The third questionnaire (19 items) focuses on the individual's health. The fourth questionnaire (24 items) focuses on supplementary information and includes questions on biographical information. These items are customised specifically for higher education institutions. The first three questionnaires of the ASSET are scored on a six-point scale with 1 (*strongly disagree*) to 6 (*strongly agree*). A biographical questionnaire was included to provide detail on cultural and language diversity. The questionnaire made reference to age, gender, race, marital status, home language, level of education, position in the company, office, area, province and years of service.

The ASSET has an established set of norms from a database of responses from 9188 workers in public and private sector organisations in the United Kingdom. The ASSET presents scores in sten (standardised ten) format. A sten is a standardised score based on a scale of 1-10, with a mean of 5,5 and a standard deviation of 2. The sten system enables meaningful comparison to the norm group. Most people (68%) score between sten 3 and sten 8. Scores that fall further from the mean (either in the high or the low direction) are considered more extreme. About 16% score at the low end, and another 16% score at the high end.

Validity is still to be completed (Cartwright & Cooper, 2002). Reliability is based on the Guttman split-half coefficient. All but two factors returned coefficients in excess of 0,70 ranging from 0,60 to 0,91 (Cartwright & Cooper, 2002). Johnson and Cooper (2003) found that the

Psychological Well-Being subscale has good convergent validity, with an existing measure of psychiatric disorders, the General Health Questionnaire (GHQ – 12; Goldberg & Williams, 1988). Tytherleigh (2003) used the ASSET as an outcome-measure of job satisfaction in a nationwide study of occupational stress levels in 14 English higher education institutions. A series of Cronbach alphas was carried out on each of the questions for the five ASSET subscales to identify the reliability of the ASSET questionnaire with these data. The results ranged from 0,64 – 0,94, showing good reliability.

Statistical Analysis

The data analysis was carried out with the help of the SPSS programme (SPSS Inc., 2003) in order to calculate the reliability, validity, construct equivalence and predictive bias of the measuring instruments, and correlation coefficients. Descriptive statistics (e.g. means, standard deviations, skewness, and kurtosis) and inferential statistics are used to analyse data.

Stuctural equation modelling (SEM) method as implemented by AMOS (Arbuckle, 1997) was used to test the factorial model for the ASSET, using the maximum likelihood method. SEM is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). Several aspects of SEM set it apart from the older generation of multivariate procedures (Byrne, 2001). Firstly, it takes a confirmatory rather than an exploratory approach to data analysis. Furthermore, by demanding that the pattern of inter-variable relations be specified *a priori*, SEM lends itself well to the analysis of data for inferential purposes. Secondly, although traditional multivariate procedures are incapable of either assessing or correcting for measurement error, SEM provides precise estimates of these error variance parameters. Thirdly, SEM procedures can incorporate both unobserved (latent) and observed variables.

Not all the indices of fit are commonly used, therefore those chosen for consideration in this study were the Goodness-of-Fit-Index (GFI), the Adjusted-Goodness-of-Fit-Index (AGFI), the Normed Fit Index (NFI), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the Root Means Square Error of Approximation (RMSEA).

The GFI indicates the relative amount of the variances or covariances in the sample predicted by the estimates of the population. The AGFI is a measure of the relative amount of variance accounted for by the model corrected for the degrees of freedom in the model relative to the number of variables. The values of these indices range from 0 (which indicates a poor fit) to 1 (indicating perfect fit) (Schumacker & Lomax, 1996; Sobolewski & Doran, 1996). The GFI is a relative measure of how well the data fit the model (Sobolewski & Doran, 1996). Recommended values should be greater then 0.90.

The NFI was used to assess global model fit and varies from 0 to 1, where 1 is a perfect fit. Marsh, Balla and Hau (1996) suggested that this index is relatively insensitive to sample size. The CFI is an incremental fit index which indicates the proportion of the improvement of the overall fit of the restricted model relative to the independence (null) model in the determination of goodness-of-fit (Kline, 1998). It also varies from 0 to 1. CFI values close to 1 indicate a very good fit, and values above 0.90 an acceptable fit. The TLI (Tucker & Lewis, 1973) is a relative measure of covariation explained by the model that is specifically developed to assess factor models. The TLI has values ranging from 0 to 1, respectively indicating lack of fit to perfect fit. Hu and Bentler (1999) recommend a TLI value of 0.95 or higher. However, Schumacker and Lomax (1996) contend that values close to 0.90 reflect a good model fit. For these fit indices, it is more or less generally accepted that a value of less than 0.90 indicates that the fit of the model can be improved (Hoyle, 1995).

The RMSEA, with its lower and upper confidence interval boundaries, is another valuable fit index that is commonly reported. RMSEA is one of the fit indexes less affected by sample size. By convention, there is a good model fit if RMSEA is less than or equal to 0.05. There is adequate fit if RMSEA is less than or equal to 0.08. MacCallum, Browne and Sugawara (1996) elaborated on these cut-off points and noted that RMSEA values ranging from 0.08 to 0.10 indicate medium fit, and those greater than 0.10 indicate poor fit. RMSEA is a popular measure of fit, partly because it does not require comparison with a null model.

Cronbach alpha coefficients and inter-item correlations were used to assess the internal consistency of the ASSET (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. According to studies by Clark and Watson (1995) the average inter-item correlation coefficient (which is an understandable and usable measure of internal consistency) is a recommendable index to supplement information supplied by coefficient alpha. By simply focusing on the mean inter-item correlation the unidimensionality of a scale cannot be ensured and it is necessary to examine the range and distribution of these correlations as well.

Spearman correlation coefficients were used to specify the relationships between the variables. In terms of statistical significance, it was decided to set the value at a 99% confidence interval level ($p \leq 0{,}01$). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

One-way analysis of variance (ANOVA) was used to determine the differences between the subgroups of the sample. Tukey's Standardised Range tests were used to determine the statistical significance of differences obtained during ANOVAs. Practical significance of the differences in means between two groups was computed with the following formula (Cohen, 1988; Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{SD_{MAX}}$$

Where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

SD_{MAX} = Highest standard deviation of the two groups

The following formula was used to determine the practical significance of means of more than two groups (Steyn, 1999):

$$d = \frac{Mean_A - Mean_B}{Root \quad MSE}$$

Where

$Mean_A$ = Mean of the first group

$Mean_B$ = Mean of the second group

Root MSE = Root Mean Square Error

According to Cohen (1988), $0{,}10 \leq d \leq 0{,}50$ indicates a small effect; $0{,}50 \leq d \leq 0{,}80$ indicates a medium effect and $d \geq 0{,}80$ indicates a large effect. In terms of the current research, a cut-off point of 0,50 (medium effect) was set for the practical significance of the differences between group means.

RESULTS

Table 2 presents the fit statistics of the theoretical model of the ASSET by means of structural equation modelling.

Table 2

The Goodness-of-Fit Indices for the Hypothesised Asset Model

Variables	χ^2	χ^2/df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Resources and Communication	0,12	0,12	0,99	0,98	0,99	0,99	0,99	0,03
Job Security	0,04	0,04	1,00	0,99	1,00	1,03	1,00	0,00
Work-Life Balance	2,70	1,35	0,99	0,98	0,98	0,99	0,99	0,03
Control	4,90	2,45	0,99	0,96	0,99	0,98	0,99	0,07
Overload	3,05	3,05	1,00	0,96	0,99	0,97	1,00	0,08
Job Characteristics	24,81	1,31	0,98	0,97	0,92	0,98	0,98	0,03
Work Relationships	45,40	2,67	0,97	0,93	0,94	0,93	0,96	0,07
Commitment	69,31	3,01	0,96	0,92	0,95	0,95	0,97	0,08
Health	317,54	2,46	0,91	0,88	0,87	0,90	0,92	0,07

According to Table 2, it can be concluded that the overall observed data fits the model reasonably well, with all the variables above the 0,90 level with the exception of Health. In terms of the Health dimension five error variances were allowed to correlate; namely Item 4 and Item 6; Item 8 and Item 9; Item 13 and Item 15; Item 14 and Item 15; and Item 17 and Item 18. Most of the CFI values with the exception of Health approach the 0,95 level. Finally, the RMSEA values are at the 0,80 level or lower, indicating a reasonable fit of the model to the data.

Next, the descriptive statistics, reliability coefficients and inter-item correlations of the ASSET are reported in Table 3. The sten scores reflect the mean scores of the participants relative to an international norm group ($N = 20\ 000$).

Table 3
Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the Asset

Dimension/Item	Sten	Mean	*SD*	Skewness	Kurtosis	*r*(Mean)	α
Work-Life Balance	1	9.43	3.93	0.57	-0.42	0,30	0,66
Work longer hours than choose/want to	3	2,85	1,52	0,48	-1,05	-	-
Work unsocial hours	3	2,40	1,59	0,87	-0,70	-	-
Too much time travelling	2	1,68	1,10	1,99	3,39	-	-
Work interferes with my home/personal life	1	2,51	1,38	0,69	-0,56	-	-
Resources and Communication	1	10,23	4,25	0,61	-0,00	0,43	0,75
Not informed about what goes on in organisation	2	2,75	1,50	0,62	-0,86	-	-
Never told I am doing a good job	4	2,92	1,56	0,50	-1,05	-	-
Not adequately trained for job	2	2,25	1,26	1,22	0,68	-	-
Do not have proper equipment/resources	3	2,31	1,27	1,27	0,82	-	-
Work Relationships	4	19,28	6,69	0,55	0,22	0,34	0,80
Boss intimidating/bullying	4	2,06	1,38	1,38	0,91	-	-
Lack of support from boss/colleagues	5	2,83	1,49	0,55	-0,89	-	-
Feel isolated at work	3	2,34	1,26	1,09	0,27	-	-
Not sure of expectations from boss	3	2,34	1,31	1,06	0,23	-	-
Colleagues are not pulling their weight	5	3,32	1,49	-0,08	-1,36	-	-
Boss is forever finding fault	4	1,98	1,12	1,61	2,73	-	-
Others take credit for what I have achieved	7	2,58	1,37	0,71	-0,49	-	-
Relationships with colleagues are poor	4	1,82	0,85	1,62	3,74	-	-
Overload	3	9,87	3,95	0,55	-0,24	0,48	0,79
Technology in job is overloading	4	2,25	1,13	1,03	0,42	-	-
Unrealistic deadlines	4	2,35	1,15	1,06	0,67	-	-
Unmanageable workloads	2	2,52	1,32	0,94	0,18	-	-
Not enough time to do job properly	4	2,74	1,42	0,59	-0,80	-	-
Job Security	2	10,19	3,98	0,70	0,34	0,31	0,64
Job is insecure	3	2,37	1,43	1,08	0,15	-	-
Job is not permanent	3	2,01	1,51	1,57	1,15	-	-
My job is likely to change in future	4	3,21	1,48	0,01	-1,25	-	-
My skills may become redundant	5	2,60	1,30	0,78	-0,37	-	-
Job Characteristics	3	22,67	5,98	0,29	0,37	0,18	0,62
Same job for next 5–10 years	6	3,91	1,56	-0,71	-0,89	-	-
Physical work conditions are unpleasant	4	2,43	1,50	0,94	-0,30	-	-
Job involves risk of physical violence	3	1,80	1,27	1,84	2,57	-	-
Work performance closely monitored	6	3,43	1,50	-0,14	-1,30	-	-
Organisation is constantly changing for sake of change	4	2,52	1,35	0,73	-0,59	-	-
Work is dull and repetitive	6	2,74	1,43	0,60	-0,75	-	-
Deal with difficult customers/clients	5	3,60	1,54	-0,26	-1,16	-	-
Do not enjoy job	3	2,23	1,24	1,20	0,88	-	-

Table 3 (Continued)
Descriptive Statistics, Alpha Coefficients and Inter-Item Correlations of the Asset

Dimension/Item	Sten	Mean	*SD*	Skewness	Kurtosis	*r*(Mean)	α
Control	2	11,21	5,55	0,43	-0,59	0,51	0,80
Little control over many aspects of job	2	3,00	1,53	0,30	-1,19	-	-
Not involved in decisions affecting my job	4	2,89	1,52	0,46	-1,10	-	-
My ideas/suggestions are not taken into account	4	2,66	1,35	0,77	-0,50	-	-
Little/no influence over performance targets	3	2,66	1,33	0,78	-0,34	-	-
Pay and Benefits	-	-	-	-	-	-	-
Pay & benefits not as good as those of others in similar jobs	6	3,50	1,65	-0,05	-1,33	-	-
Commitment from Organisation	9	22,22	4,41	-0,99	0,79	0,45	0,79
Valued and trusted by organisation	6	4,19	1,32	-1,00	0,00	-	-
Not seeking work elsewhere	8	4,42	1,26	-1,16	0,49	-	-
Proud of organisation	10	4,72	1,01	-1,68	3,22	-	-
Interested in aspect of organisation outside my job	7	4,32	1,28	-1,14	0,42	-	-
Overall happy with organisation	9	4,57	1,07	-1,42	1,77	-	-
Commitment from Individual	8	18,62	2,99	-1,02	1,53	0,38	0,69
Willing to put myself out for organisation	6	4,46	1,27	-1,37	1,07	-	-
Prepared to take more responsibility	7	4,69	1,05	-1,69	3,11	-	-
Worthwhile working hard for organisation	8	4,63	0,99	-1,34	1,89	-	-
Committed to organisation	8	4,84	0,811	-1,46	3,18	-	-
Physical Health	5	13,67	3,99	-0,04	-0,52	0,34	0,75
Lack of appetite/over-eating	5	2,30	1,01	0,11	-1,13	-	-
Indigestion/heartburn	3	2,02	1,00	0,55	-0,87	-	-
Insomnia/sleep loss	6	2,25	1,07	0,17	-1,29	-	-
Headaches	6	2,61	1,02	-0,19	-1,06	-	-
Muscular tension/aches/pains	7	2,60	1,03	-0,19	-1,09	-	-
Feeling nauseous/sick	6	1,89	0,86	0,56	-0,65	-	-
Psychological Health	10	21,22	6,26	0,21	-0,50	0,35	0,87
Panic/anxiety attacks	7	1,81	0,92	0,82	-0,40	-	-
Constant irritability	1	1,26	0,56	2,04	3,07	-	-
Difficulty in making decisions	1	1,20	0,55	2,61	5,41	-	-
Loss of sense of humour	4	2,10	0,91	0,14	-1,18	-	-
Feeling/becoming angry easily	3	2,04	0,88	0,23	-1,04	-	-
Constant tiredness	3	1,96	0,89	0,43	-0,89	-	-
Feeling unable to cope	7	2,20	0,91	0,22	-0,85	-	-
Avoiding contact with other people	10	2,55	1,03	-0,21	-1,09	-	-
Mood swings	4	2,10	0,91	0,33	-0,8 3	-	-
Unable to listen to other people	7	2,00	0,93	0,34	-1,11	-	-

Table 3 shows the twelve factors of the ASSET, with average to high skewness and kurtosis levels. With regards to internal consistency of the factors, the Cronbach alpha coefficients vary from 0,62-0,87, which compares reasonably well with the guideline of 0,70 (Nunnally & Bernstein, 1994). Pay and Benefits consists of one item and therefore internal consistency could not be calculated for this dimension. The mean inter-item correlations of the dimensions are, with the exception of Control, within the guideline of $0,15<r<0,50$ suggested by Clark & Watson (1995). Consequently, hypothesis 1 is supported.

Psychological Health proves to be a major source of stress, as reflected by sten scores higher than 8. In this regard, it seems as though three items are perceived as high levels of concern among the population, namely "Feeling unable to cope", "Avoiding contact with other people" and "Unable to listen to other people". The fact that the population indicated that they do not find themselves constantly irritable and do not find it difficult to make decisions when confronted with stress is reassuring, as these employees work with clients on a constant one-on-one basis. On the physical level it seems as though four items were perceived as moderately high concern amongst the population, namely insomnia, headaches, muscular tension, feelings of nauseousness or sickness.

The sten of 9 on Commitment from Organisation indicates that the participants feel trusted and respected by the organisation. Furthermore, the sten of 8 on Commitment from the Individual indicates that participants are loyal and dedicated to the organisation. Participants in this study therefore seem to demonstrate high levels of individualistic commitment.

The dimensions of Work-Life Balance, Job Security, Resources and Communication and Control of the ASSET obtained sten scores lower than 3, which indicate that these four dimensions are perceived as low sources of stress among the population. In spite of the low score of the Job Security dimension, recipients seem to experience an average level of stress with regards to the item "My skills may become redundant".

Next, the Spearman correlation coefficients for the ASSET dimensions are given in Table 4.

Table 4

Spearman Correlation Coefficients of the Asset Dimensions

Dimensions	1	2	3	4	5	6	7	8	9	10
1. Work-Life Balance	-	-	-	-	-	-	-	-	-	-
2. Resources and Communication	0,20	-	-	-	-	-	-	-	-	-
3. Work Relationships	0,32*+	0,61*++	-	-	-	-	-	-	-	-
4. Overload	0,57*++	0,39*+	0,51*++	-	-	-	-	-	-	-
5. Job Security	0,30*+	0,46*+	0,48*+	0,34*+	-	-	-	-	-	-
6. Job Characteristics	0,30*+	0,53*++	0,60*++	0,43*+	0,42*+	-	-	-	-	-
7. Control	0,24	0,75*++	0,70*++	0,45*+	0,51*++	0,61*++	-	-	-	-
8. Commitment from Individual	0,03*	-0,36*+	-0,32+	-0,12	-0,17	-0,32*+	-0,30*+	-	-	-
9. Commitment from Organisation	-0,01*	-0,04*	-0,39*	-0,15	-0,26	-0,37*+	-0,45*+	0,64*++	-	-
10. Physical Health	0,09	0,21*	0,24	0,21	0,21	0,24	0,29	-0,18	-0,25	-
11. Psychological Health	0,25	0,35*+	0,30	0,29	0,19	0,33*+	0,34*+	-0,23	-0,32*+	0,64*++

* $p \leq 0,01$ – statistically significant

+ $r > 0,30$ – practically significant (Medium effect)

++ $r > 0,50$ – practically significant (Large effect)

Inspection of Table 4 indicates that Work-Life Balance is significantly positively related (large effect) to Overload. Significant positive relationships of large effect are also found for Resources and Communication with Work Relationships, Job Characteristics and Control. Work Relationships is significantly positively related (large effect) to Overload, Job Characteristics and Control, while Job Security is significantly positively related (large effect) to Control. Job Characteristics is also significantly positively related (large effect) to Control, Commitment from Individual is significantly positively related (large effect) to Commitment from Organisation, and Physical Health and Psychological Health are significantly positively related (large effect).

A significant relationship of medium effect was found for Work-Life Balance and Work Relationships, as well as Resources and Communication with Overload, Job Security, and Commitment from Individual and Psychological Health. Work Relationships is significantly related (medium effect) to Job Security, while Overload is significantly positively related to Job Security, Job Characteristics and Control. Job Security is significantly positively related to Job Characteristics and Work-Life Balance. Job Characteristics is significantly related (medium effect) to Work-Life Balance and to Commitment from Individual (inverse), Commitment from

Organisation (inverse) and Psychological Health. Significant medium effect relationships are found for Control with Commitment from Organisation (inverse), and Psychological Health. Finally, Commitment from Organisation and Psychological Health is significantly inversely related (medium effect).

Analysis of Variance for different language groups is given in Table 5.

Table 5

Analysis of Variance (Anovas) – Differences in Stress Levels (as measured by the ASSET) for Different Language Groups

Dimension	Afrikaans/ English	African	*p*	SD
Work-Life Balance	9,29	9,72	0,39	3,98
Resources and Communication	9,61	11,80 [b]	0,00*	5,08
Work Relationships	18,47	21,34 [a]	0,00*	7,92
Overload	9,73	10,11	0,45	3,93
Job Security	10,09	10,41	0,52	3,98
Job Characteristics	22,20	23,82	0,03	7,04
Control	11,02	11,62	0,29	4,68
Commitment from Individual	18,70	18,44	0,49	3,01
Commitment from Organisation	22,45	21,72	0,19	4,62
Physical Health	14,02 [a]	12,75	0,01*	3,98
Psychological Health	22,20 [b]	18,48	0,00*	6,21

* Statistically significant difference: $p \leq 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated

According to Table 5 Resources and Communication, Work Relationships, Physical Health and Psychological Health are statistically significant at $p \leq 0,01$ for both language groups. The African language group scored practically significantly higher than the Afrikaans/English group on Resources and Communication (medium effect) and Work Relationships (small effect). The African language group scored practically significantly lower than the Afrikaans/English language group in terms of Physical Health (small effect) and Psychological Health (medium effect).

Next, the differences in occupational stress for gender are given in Table 6.

Table 6

Analysis of Variance (Anovas) – Differences in Stress Levels (as measured by the ASSET) of Gender Groups

Dimension	Male	Female	*p*	SD
Work-Life Balance	11,07 [b]	8,72	0,00*	4,19
Resources and Communication	11,82 [a]	9,62	0,00*	4,74
Work Relationships	21,07	18,62	0,03	6,94
Overload	11,01 [a]	9,39	0,00*	4,07
Job Security	11,29 [a]	9,77	0,00*	3,99
Job Characteristics	24,76 [a]	21,77	0,00*	6,27
Control	11,83	10,99	0,14	4,62
Commitment from Individual	18,86	18,51	0,35	3,14
Commitment from Organisation	22,14	22,22	0,88	4,68
Physical Health	12,32	14,22 [a]	0,00*	3,99
Psychological Health	19,50	21,97 [a]	0,00*	6,45

* Statistically significant difference: $p \leq 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated

According to Table 6 Work-life Balance, Resources and Communication, Overload, Job Security, Job Characteristics, Physical Health and Psychological Health are statistically significantly different at $p \leq 0,01$ for both gender groups. Males scored practically significantly higher than females on Work-Life Balance (medium effect), Resources and Communication (medium effect), Resources and Communication (small effect), Overload (small effect), Overload (small effect), Job Insecurity (small effect), and Job Characteristics (small effect).

Females however scored significantly higher (practically significant, medium effect) on Physical Health and Psychological Health (small effect) relative to men.

The differences in stress levels of different years of experience at the university are in Table 7.

Table 7

Analysis of Variance (Anovas) – Differences in Stress Levels (as measured by the ASSET) of Years of Experience Categories

Dimension	0-2,5 years (1)	3-8,5 years (2)	9-14 years (3)	15-37 years (4)	*p*	Root MSE
Work-Life Balance	8,84	8,32	10,54 [b]	10,26	0,00*	3,95
Resources and Communication	9,36	10,34	11,70 [b]	9.60	0,01*	4,20
Work Relationships	18,07	19,81	20,46	18,74	0,20	6,55
Overload	9,47	9,14	10,70	10,68	0,04	3,91
Job Security	11,00	9,80	10,29	9,80	0,30	4,02
Job Characteristics	21,98	23,44	23,84	21,83	0,13	5,93
Control	10,67	11,19	12,14	10,96	0,35	4,57
Commitment from Individual	18,33	18,42	17,88	19,41	0,02	2,94
Commitment from Organisation	22,13	21,93	21,30	22,91	0,20	4,40
Physical Health	14,76	13,77	14,05	13,14	0,12	3,90
Psychological Health	22,91	21,67	21,34	21,08	0,39	6,27

* Statistically significant difference: $p \leq 0,01$

a Practically significant differences from group (in row) where b (medium effect, $d \geq 0,5$) or c (large effect, $d \geq 0,8$) are indicated

According to Table 7 Work-Life Balance and Resources and Communication showed practical significant differences at p< 0,01 in terms of years of experience. Group 3 (9-14 years experience) scored significantly higher (practically significant, medium effect) than group 2 (3 – 8,5 years experience) in terms of Work-Life Balance. In terms of Resources and Communication group 3 (9-14 years experience) scored significantly higher (practically significant, medium effect) than group 1 (0-2,5 years experience) and group 4 (15-37 years experience).

Next, structural equation modelling was used to test whether occupational stress leads to ill-health (strain) and to determine whether organisational commitment moderates the effects of occupational stress on health. Firstly, the nine items of the attitudes toward the organisation scale were subjected to a principal component analysis. The eigenvalues and the scree plot showed that two factors could be extracted. Next, principal component extraction with a direct oblimin rotation was used to extract the two factors. Six items indicating Organisational Commitment were used. Secondly, the 18 items of the Health subscale were subjected to principal component analysis as well, which yielded two factors. Principal component extraction with a direct oblimin rotation was used to extract the two factors, namely Physical Ill-Health (6 items) and

Psychological Ill-Health (9 items). Thirdly, the scales of Perceptions of your Job (ASSET) were subjected to a second-order factor analysis. The eigenvalues suggested that the seven scales of the Perceptions of your Job subscales load on two separate factors, subsequently called Work-Home Interface (15,81% of the variance) and Inherent Aspects of the Job (54,75% of the variance). The final model is given in Figure 1.

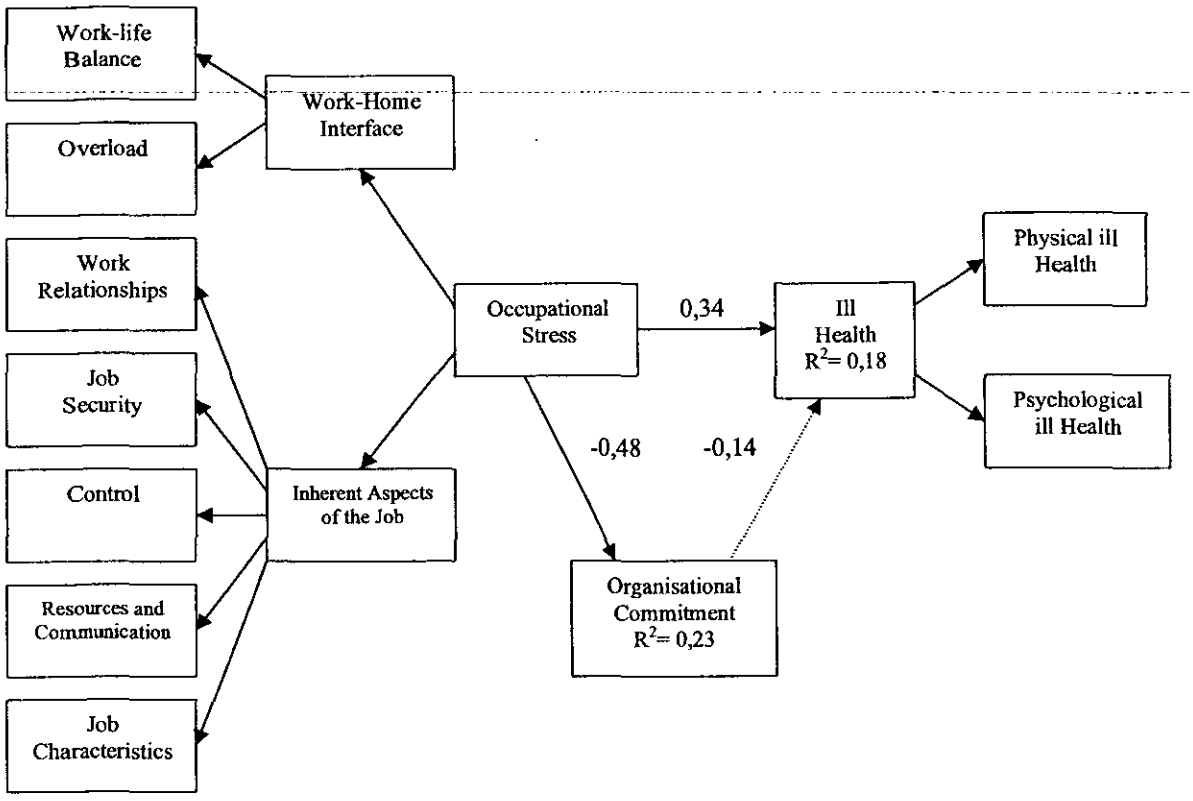

Figure 1. Commitment from the individual as a moderator of the effect of occupational stress on (ill) health

The results indicated that the model did not fit the data adequately. Upon further inspection of the modification indices (MI's) it became clear that the fit could be improved if measurement errors of the occupational stress dimensions could be allowed to correlate. In this regard it is important to note that measurement errors of items with identical rating scales often correlate (Byrne, 1989), which means that the fit of the model could be improved if Work-Life Balance and Overload (MI= 82,45) were allowed to correlate. This revised model, inclusive of the

covariation between the error variances of the occupational stress dimensions, shows a good fit (χ^2 = 82,10; GFI = 0,95; AGFI = 0,91; NFI = 0,94; IFI = 0,96; TLI = 0,95; CFI = 0,96 and RMSEA = 0,07).

Figure 1 shows that the path from Occupational Stress to Ill-Health (strain) to be significant, which means that support staff with high levels of occupational stress are prone to experience high levels of physical or psychological health problems, or both. However, the path from individual commitment to the organisation was not significant and therefore the moderating effect of individual commitment from the individual to the organisation in terms of the effect of occupational stress on ill-health, is not confirmed. This means that individual commitment to the organisational commitment does not lessen the potential effect of occupational stress on the ill health of support staff. According to Figure 1 the relationship between occupational stress and individual commitment to the organisation is significant. This means that high levels of occupational stress of support staff could result in lowered levels of individual commitment to the organisation and vice versa. Figure 1 further indicates that 18% of the variance in ill health is explained by occupational stress and 23% of the variance in individual commitment to the organisation could be explained by occupational stress.

Accordingly, hypothesis 2 is not supported.

DISCUSSION

The aim of this study was to determine the suitability of the ASSET to measure the occupational stress and strain of support staff at a higher education institution in the North-West province, to determine the levels of occupational stress and strain and to investigate whether employees with different biographical profiles experience significant differences in occupational stress. Furthermore, the possible moderating relationship of organisational commitment in this regard was also investigated.

Structural equation modelling showed that the overall observed data fits the model reasonably well, with all the variables above the 0,90 level with the exception of Health. In terms of the Health dimension five error variances were allowed to correlate; namely Item 4 and Item 6; Item 8 and Item 9; Item 13 and Item 15; Item 14 and Item 15; and Item 17 and Item 18.

The results further reveal that employees have reasonably poor physical and psychological health indicating that support staff experience stress-related strain. Employees felt panic and anxiety attacks, they were unable to cope, unable to listen to other people and avoided contact with other people. It has been argued that employees involved in high levels of personal interaction were more vulnerable to occupational stress and professional 'burnout' than those in product-orientated organisations (Kinman, 1998). Support staff are expected to express appropriate emotional control during face-to-face or voice-to-voice interactions, which can act as a job demand for many employees in the service industry, e.g. academic and support staff of a tertiary education institution, nurses and flight attendants (Hochschild, 1983). The finding is further supported by studies in the United Kingdom where it was found that employees working in education institutions reported high levels of stress and increased levels of stress-related illness (Travers & Coopers, 1991; Trade Union Congress, 1996). Therefore, the finding that support staff avoided contact with other people could have detrimental effect on their work performance due to the large component of interpersonal contact required to do their jobs effectively.

High levels of physical symptoms (insomnia, headaches and muscular tension, feelings of nauseousness or sickness) were also reported. These findings confirm the results of previous

studies in Australia (Boyd & Wylie, 1994; Daniels & Guppy, 1994; Sharpely, Reynolds, Acosta & Dua, 1996) where it was found that support staff reported higher levels of anxiety, ill health and lower self-reported physical and emotional health due to stress. This is clearly a cause for concern, not only in individual employees, but also for managers within the organisation, since this level of ill-health, if sustained, is likely to be detrimental to the organisational performance (Daniels & Guppy, 1994).

Compared to the normative data support staff reported high levels of stress due to work relationships (in particular, to others taking credit for what they have achieved, colleagues not pulling their weight, lack of support from boss/ colleagues). Job characteristics (possibility of doing same job for the next 5-10 years, work performance closely monitored and work being dull and repetitive) also contributed to elevated stress levels. Cooper and Cartwright (1994) suggest that relationships with others at work (superiors and colleagues) would be potentially stressful due to poor communication and mistrust of colleagues. This could result in poor psychological health.

Research indicated that relationships with others, e.g. superiors and colleagues could result in poor psychological health because employees' perceptions of job characteristics give rise to job-related affective wellbeing and perceptions of competence at work (Fried & Ferris, 1987; Warr, 1987). In other words, job characteristics such as autonomy, task variety, skill variety, support and feedback from superiors and colleagues will enhance personal accomplishments and in turn have a positive influence on psychological health (Barling, 1990). This was confirmed in studies conducted at Australian universities where employees who experienced high levels of autonomy, skill variety and job challenges displayed a healthy psychological state associated with important outcomes such as job satisfaction, intrinsic motivation and work effectiveness (Winter, Taylor & Sarros, 2000; Noblet, 2003). With specific reference to the item "doing the same job for the next 5-10 years" it was found that a United Kingdom university support staff were also dissatisfied with perceived opportunities for personal and career development (Bradley & Euchus, 1995).

Evaluation of the Spearman correlations of the ASSET showed that physical and psychological health is negatively related to organisational commitment. These findings are supported by other

research (Siu, 2002), suggesting that organisational commitment was negatively related to most of the physical and psychological outcomes among employees. Kobasa, Maddi, and Khan (1982) argued that commitment protects individuals from the negative effects of stress because it enables them to attach direction and meaning to their work that may then in turn interact with stressors to determine better job satisfaction and physical wellbeing.

Job security and job characteristics were both positively related to control. This means that in order for employees to feel secure about their jobs, they need to have perceived control over their jobs. This finding is consistent with the literature (Wall, Corbett, Martin, Clegg & Jackson, 1990; Cartwright & Cooper, 1997; Cooper & Quick, 1999) who argued that stress and ill health increased when there was a lack of perceived control of one's working life, which diminished control even further. Frese & Zapf (1988) suggested that control could play an important role in determining the manner in which employees respond to stress.

Work relationship is related to job characteristics, overload and control. In other words, support staff's relationships with others seem to depend to a large extent on the element of control that they have over their jobs and the amount of work that they have. Work-life balance and overload is also positively related to each other indicating that employees who have too much to do will find it difficult to manage the interface between work and home. Research suggests this to be a frequent source of stress, particularly for dual-career couples (e.g. Cooper & Lewis, 1993).

Analyses of variance showed that the Afrikaans and English-speaking language group experienced higher physical and psychological stress and strain than the African-speaking language group. This finding was supported in a previous study (Coetzee & Rothmann, in press). A possible reason for this could be because of the transformation process at the institution when employees feel that their jobs could become redundant in the future. Furthermore, it was found that the African language group experienced higher perceived stress with regards to Resources and Communication and Work Relationships. A possible explanation for this could be the fact that the organisation is a traditionally Afrikaans institution and that members of other language groups might experience relationships at work, as well as access to resources and communication networks, as problematic as a result of this.

The results showed that males did not manage their work and home life better than their female counterparts. This finding was contrary to the results of a previous study. Kinman (1998) found that women expressed difficulty in maintaining an appropriate balance between demands of the workplace and the home in the United Kingdom. The males also experienced higher perceived stress with regards to communication and resources within the institution, higher levels of task load, characteristics of their jobs, as well as job security, than females. A possible explanation for this could be that there are proportionately more females in the support staff sample that could encourage men to work harder to prove themselves. Moreover, legislation requires the organisation to give more opportunities to women that could have contributed to higher levels of job insecurity in males. Interestingly, female support staff in the present study reported poorer physical health and greater overall levels of psychological distress than the males. This was confirmed in previous studies conducted in the United Kingdom and Australia where males reported better overall physical and mental health compared to the females (Bradley & Eachus, 1995; Sharpley et al., 1996).

Furthermore, perceived stress was found to be lowest in the most senior and most junior levels than in the intermediate levels. In this study the support staff with between 9-14 years of experience seemed to have experienced higher perceived stress with regards to balancing work and home-life, as well as resources and communication in comparison with those less than 9 years and more than 14 years. Consequently, it would seem that those support staff with intermediate length of service find coping with work and home life more difficult and require better resources and improved communication. This finding was supported by a study of Winefield and Jarrett (2001) in Australia where lower levels of stress in the most senior and most junior levels were found in comparison with the intermediate levels. A possible explanation for this could be the fact that those with intermediate length of service find adapting to the present transformational process the most challenging in terms of resources, communication networks and managing the balance between home and work. In this institution, employees with more than 14 years of experience might feel that they will be retiring soon (average length of service is quite high at 10,69 years), whilst employees with less than 9 years of experience might feel energised by adjusting to the challenges of a changing environment. Furthermore, longer tenure has been shown to engender more effective management of occupational stress (Abouserie,

1996; Gmelch, Wilke & Lovrich, 1996). It is possible that, in comparison with younger staff, older support staff feel that their developmental needs and access to resources and information are limited. Considering the strong relationship between overload and work-life balance, it is possible that older support staff experience balancing their work and family life as more challenging due to high task demands.

The results indicated that employees felt trusted and respected by the institution and in turn showed their loyalty and dedication. This finding is in line with Mowday et al. (1982) where it was found that commitment provided employees with stability and a feeling of belonging. Support staff in the present study felt that it was worthwhile working for the organisation and that they were prepared to take on more responsibility. According to Chow (1990) highly committed employees are willing to assume more responsibility.

In spite of the low score of the Job Security dimension, recipients did seem to experience a fairly average level of stress with regards to the item "My skills may become redundant". Cartwright and Cooper (1992) state that job insecurity and career development have increasingly become sources of stress in modern society and redundancy or job loss looks set to remain a feature of organisational life. Furthermore, Gillespie et al (2001) reported that two-thirds of the population sample in Australia described feelings of anxiety and stress about the security of their jobs as a consequence of redundancy cycles. Despite the organisational changes in this organisation, the relatively low levels of stress experienced by support staff with regards to possible redundancy could be as a result of high levels of commitment to the organisation.

A surprising finding is the fact that the moderating effect of commitment in terms of the effect of occupational stress on ill health (strain) was not confirmed in the present study. This finding is not supported in the literature (Coetzee & Rothmann, in press; Siu, 2002). In the current study the levels of occupational stress are relatively low while support staff demonstrate high levels of both individual commitment to the organisation and perceived commitment from the organisation. The findings suggest that these high levels of commitment do not protect support staff from the potential harmful effects of occupational stress in terms of ill-health. Also, those employees who are experiencing high levels of occupational stress are more likely to develop

high levels of ill-health (physical and/or psychological health problems) and are likely to demonstrate lowered perceived commitment on an individual and organisational level.

A possible explanation for this could be attributed to the transformation process that this tertiary institution was subjected to at the time of the study. At the time of the study, the merging process was in its initial stages. The process is driven by legislation and it is possible that this could have been viewed in a more positive light had it been a management directive only. Futhermore, the process was communicated thoroughly throughout the organisation, which is an important component in managing any kind of transformation effectively (Quirke, 1997; Kekana, 1999). This could explain why support staff seemed to have maintained high levels of commitment to the organisation, as well as perceived commitment from the organisation despite the potentially stressful challenges that need to be faced in the new merged institution. Research indicates that employees who hold negative views about the organisation are less likely to identify with an officially sanctioned attempt at organisational transformation (Kelly & Kelly, 1991). More committed employees, however, are more supportive of the transformation process because they identify more strongly with and feel more loyal to the organisation (Mowday, Porter & Steers, 1982). Regarding the high levels of psychological and physical ill-health, international norms had been used and it is possible that the levels of reported ill-health could be indicative of the higher South African norm relative to the international norm.

A limitation of the present study was that a cross-sectional design was utilized and therefore it was not possible to determine the causality of relationships. Longitudinal designs could help to clarify the relationships between the variables in this study, especially with regards to the findings regarding organisational commitment. Furthermore, the sample size could have been larger. A further limitation of this study is its reliance solely on self-reporting measures.

RECOMMENDATIONS

Even though the occupational stress levels of support staff is relatively low in this institution, the employees displayed high psychological strain (avoiding contact with other people, feeling unable to cope, unable to listen to other people). The further changes inherent in the new merged entity could pose potential stressors for support staff (e.g. new superior to report to, different type of student to deliver service to, etc.). Since the university is an institution where personal interactions with students, colleagues and superiors form part of the everyday working environment, it is suggested that primary interventions may be directed at either the work situation or the coping capacity of the employee (Kompier & Kristensen, 2001). If the psychological stressors are allowed to continue unattended, the institution can expect to find increased levels of stress-related illness, resulting in lowered levels of service (Travers & Coopers, 1991; Trade Union Congress, 1996). Possible interventions could include the provision of a supportive climate; more flexible working conditions; improving personal relationships in the workplace; career and personal development programs (Gillespie et al., 2001).

A pro-active process is suggested where problems are identified and recognised and where action steps are put in place to deal with possible stressors of support staff. Occupational stress-audits across occupational levels in the new merged institution could also be beneficial (Cooper & Cartwright, 1994). Employees could for instance be asked to keep some form of stress diary or self-report as a diagnostic measure in increasing the awareness and identifying individual occupational stressor patterns (Cooper, Cooper & Eaker, 1988).

At the workplace level the results reveal key areas for possible interventions. The results suggest that improved social support in terms of work relationships and also improved communication with colleagues and supervisors could be extremely useful in dealing with stress and strain of support staff. Furthermore, job redesign initiatives such as task enrichment and enlargement, as well as less supervision over the work process itself could assist in reducing stress and making the job more challenging and providing more autonomy. The introduction of regular appraisals, the provision of retraining opportunities and career counselling are ways in which career stress may be reduced (Cooper & Cartwright, 1994; Gillespie et al.2001).

In terms of the measurement of occupational stress by the ASSET, it is recommended that future research should focus on standardising the ASSET for South African conditions. Future studies regarding the occupational stress levels of support staff could include a qualitative research component, which could shed more light on the findings regarding organisational commitment in the present study. Furthermore, future studies regarding occupational stress of support staff should be expanded and compared to other institutions in South Africa.

References

Abouserie, R. (1996). Stress, coping strategies and job satisfaction in university academic staff. *Educational Psychology, 16*, 49-56.

Allen, N.J. & Meyer, J.P. (1991). Affective continuance, and normative commitment to the organization . *Journal of Vocational Behaviour, 49*, 252-276.

Arbuckle, J.L. (1997). *Amos user's guide version 3.6*. Chicago: Smallwaters.

Armour, R.A., Caffarella, R.S., Fuhrmann, B.S., & Wergin, J.F. (1987). Academic burnout: Faculty responsibility and institutional climate. In P.Seldin (Ed), *Coping with Faculty Stress*. CA: Jossey-Bass.

Aryee, S & Heng, L.J. (1990). A note on the applicability of an organizational model. *Work and Occupations 17*, 229-239.

Association of University Teachers (1990). *Goodwill under stress: Morale in UK universities*. London: AUT.

Association of University Teachers (1996). *Efficiency gains or quality losses*? London: AUT.

Bainbridge, C. (1996). Designing for change: A practical guide to business transformation. Chichester, West Sussex: Wiley.

Barling, J. (1990). *Employment, stress and family functioning*. Chichester: Wiley

Baron, R., & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Begely, T.M., & Cazjka, J.M., (1993). Panel analysis of the moderating effects of commitment on job satisfaction, intent to quit, and health following organisational change. *Journal of Applied Psychology, 78(4),* 552-556.

Bowen, H.R., Schuster, J.H. (1985). Outlook for the academic profession. *Academe, 71 (5)*, 9-15.

Boyd, S., & Wylie, C. (1994). *Workload and stress in New Zealand Universities*. Wellington: New Zealand Council for Educational Research.

Bradley, J. & Eachus, P. (1995). Occupational stress within a U.K. higher education institution. *International Journal of Stress Management, 2*(3), 145- 158.

Brill, P.L. & Worth, R. (1997). *The four levers of corporate change*. New York: Amacon.

Burns, N. & Grove, S.K. (1993). *The practice of nursing research, conduct, critique, and utilization* (2nd ed.). Philadelphia: W.B. Saunders.

Byrne, B.M. (1989). *A primer of LISREL: Basic applications and programming for confirmatory factor analytic models*. New York: Springer-Verlag.

Byrne, B.M. (2001). *Structural equation modeling with AMOS : Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.

Cartwright, S. & Cooper, (1997). *Managing workplace stress*. Newbury Park, CA: Sage Publications.

Cartwright, S. & Cooper, C.L. (1992). *Mergers and acquisitions: The human factor*. Oxford: Butterworth Heinemann.

Cartwright, S. & Cooper, C.L. (2002). *ASSET: An Organizational Stress Screening Tool – The Management Guide*. Manchester: RCL Ltd.

Chow, I.H.S. (1990). An empirical assessment of organizational commitment among local employees. *Human Resources Journal, 6* (1), 583-592.

Clark, L.A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.

Coetzee, S.E & Rothmann, S. (in press). *Occupational stress of employees at a higher education institution in South Africa*. Manuscript submitted for publication.

Cohen, A. (1992). Antecedents of organisational commitment across occupational groups: A meta-analysis. *Journal of Organizational Behaviour, 13*, 539-558.

Cohen, A. (1993). Organisational commitment and turnover: A meta-analysis. *Academy of Management Journal, 36(5)*, 1140-1157.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. (2nd ed.). Hillside, NJ: Erlbaum.

Cooper, C.L. & Cartwright, S. (1994). Health mind; Healthy organisation- A proactive approach to occupational stress. *Human Relations, 47*(4). 455-471.

Cooper, C.L. & Lewis, S. (1993). *The workplace revolution*. London: Kogan Page.

Cooper, C.L. & Quick, J. (1999). *Stress and Strain*. Oxford: Health Press.

Cooper, C.L., & Cartwright, S. (2002). *ASSET Management Guide*. United Kingdom: Robertson Cooper Ltd.

Cooper, C.L., Cooper, R.D., & Eaker, L. (1988). *Living with stress*. London: Penguin Health.

Cooper, C.L., Dewe, P.J. & O'Driscoll, M.P. (2001). *Organisational stress: A review and critique of theory, research, and applications*. California: Sage.

Cooper, C.L., Dewe, P.J. & O'Driscoll, M.P. (2001). *Organisational stress: A review and critique of theory, research, and applications*. California: Sage.

Costa, P.T. & McCrae, R.R. (1992). *NHO PI-R (Professional Manual)*. Odessa, Florida: Psycological Assessment Resources.

Court, S. (1994). *Long hours, little thanks: A survey of the use of time by full time-academic and related staff in traditional UK universities*. London: Association of University Teachers.

Daniels, K. & Guppy, A. (1994). An exploratory study of stress in a British University. *Higher Education Quarterly, 48*(2), 134-144.

Davis, A.J. (1996). Employee assistance provision in higher education. *The Journal of Workplace Learning, 8(5),* 4-12.

Dua, J.K. (1996). The presence, nature and effects of job stress on physical and psychological health at a large Australian university. *Journal of Educational Administration, 34*, 73-86.

Fisher, C.D. & Gitelson, R. (1983). A meta-analysis of the correlates of role conflict and role ambiguity. Journal of Applied Psychology, *68*(2), 320-333.

Fisher, S. (1994). *Stress in academic life: The mental assembly line. Buckingham:* Open University Press.

Franzsen, K. (2003). A critical overview of trends and practices in performance management in the South African higher educational environment. *South African Journal of Higher Education, 17*(2), 131-138.

French, J.R.P., Jr., Caplan, R.D. & Harrison, R.V. (1982). *The mechanisms of job stress and strain*. Chichester, UK: Wiley

Frese, M. & Zapf, D. (1988). Methodological issues in the study of work stress: Objective vs subjective measurement of work stress and the question of longitudinal studies. In C.L. Cooper and R.Payne (Eds.), *Causes, coping and consequences of stress at work.* Chichester & New York: John Wiley.

Fried, Y. & Ferris, G.R. (1987). The valididity of the Job Characteristics model. A review and meta-analysis. *Personnel Psychology, 40*, 287-322.

Gillespie, N.A., Walsh, M., Winefield, A.H., Dua, J., & Stough, C. (2001). Occupational stress in universities: Staff perceptions of the causes, consequences and moderators of stress. *Work & Stress, 15*, 53-72.

Gmelch, W.H., Wilke, P.K. & Lovrich, N.P. (1986). Dimensions of stress among university faculty: Factor analytic results from a national study. *Research in Higher Education, 24*, 266-286.

Goldberg, D.P. & Williams, P. (1988). *A user's guide to the GHQ.* London: NFER, Nelson.

Hitman, J.A. (1993). TQM and CQI in post-secondary education. *Quality Progress*, 26(10), 77-80.

Hochschild, A.R. (1983). *The managed heart.* Berkely: University of California Press.

House. J. (1981). *Work and stress and social support.* Reading, MA: Addison-Wesley.

Hoyle, S.G. (1995). Long-term treatment of emotionally disturbed adoptees and their families. *Clinical Social Work, 23*(4), 429-440.

Hrebeniak, L.G. & Alutto, J.A. (1982). Personal and role-related factors in the development of organisational commitment, *Administrative Science Quarlerly, 15*, 555-573.

Hu, L.T., & Bentler, P.M. (1999). Cut-off criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6,* 1-55.

Jaros, S.J. (1997). An assessment of Meyer and Allen's (1991) Three-component model of organizational commitment and turnover intentions. *Journal of Vocational Behavior, 51*, 319-337.

Johnson, S. & Cooper, C. (2003). *The construct validity of the ASSET stress measure.* Manuscript made available by authors.

Karasek, R.A. (1979). Job demands, job decision latitude and mental strain: implications for job redesign. *Administrative Science Quarterly, 24*, 285-308.

Kekana, N.S. (1999). The role of communication in the transformation process: A view from the University of Vista. *Journal of Practice in Education for Development, 4*(1), 47-50.

Kelly, J.E. & Kelly, C. (1991). Them and us; Social psychology and the new industrial relations. *British Journal of Industrial Relations, 29*, 25-48.

Kinman, G. (1998). *Pressure points: A survey into the causes and consequences of occupational stress in the UK academic and related staff.* London: Association of University Teachers.

Kline, R.B. (1998). *Software programs for structural equation modeling with the SIMPLIS command language.* Hillside, NJ: Lawrence Erlbaum Associates.

Kobasa, S.C., Maddi, S.R., & Khan, S. (1982). Hardiness and health: A prospective study. *Journal of Personality and Social Psychology, 42,* 168-177.

Kompier, A.J. & Kristensen, T.S. (2001). Organisational work stress interventions in a theoretical, methodogical and practical context. In J. Dunhu, (Ed.), *Stress in the workplace: Past, presence and future* (pp.19-33). London: Whurr Publishers.

Lazarus, R.S. & Folkman, S. (1984). *Stress, appraisal and coping.* New York: Springer.

Lazarus, R.S. (1990). Theory-based stress measurement. *Psychological Inquiry, 1* (1). 3-13.

Lazarus, R.S. (1991). Psychological stress in the workplace. In P.L. Perrewe (Ed.), *Handbook on job stress* (pp.1-13). Corte Madera, CA: Select Press.

Lazarus, R.S., DeLongis, A., Folkman, S., & Gruen, R. (1985). Stress and adaptational outcomes: The problem of confounded measures. *American Psychologist, 40,* 770—779.

MacCallum, R.C., Browne, M.W., & Sugawara, H.M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1,* 130-149.

Marsh, H.W., Balla, J.R., & Hau, K.T. (1996). An evaluation of incremental fit indices. A clarification of mathematical and empirical properties. In G.A. Marcoulides and R.E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp. 315-353). Mahwah, NJ.: Erlbaum.

Mathieu, J.E., & Zajac, D.M. (1990). A review and meta-analysis of the antecendents, correlates, and consequences of organizational commitment. *Psychological Bulletin, 108,* 171-194.

McHugh, M., & Brennan, S. (1994). Managing the Stress of Change in the Public Sector. *International Journal of Public Sector Management, 7,* 29-41.

Meyer, J.P., & Allen, N.J. (1991). A three component conceptualisation of organisational commitment. *Human Resource Management Review, 1,* 61-89.

Mowday, R., Porter, L.T., Steers, R. (1982). *Employee-organisation linkages: The psychology of commitment, absenteeism and turnover.* New York: Academic Press.

Mowday, R.T., Steers, R.M. & Porter, L.W. (1982). *Employee-organisation linkages.* San Diego, CA: Academic Press.

Noblet, A. (2003). Building health-promoting work settings: identifying the relationship between work characteristics and occupational stress in Australia. *Health Promotion International, 18* (4), 351-359.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Pitman, T. (2000). Perceptions of Academics and Students as Customers: A survey of administrative staff in higher education, *22*(2), 165-175.

Quirke, B. (1997). *Communicating corporate change. A practical guide to communication and corporate strategy*. Berkshire: McGraw-Hill.

Schumaker, R.E. & Lomax, R.G. (1996). *A beginner's guide to structural equation modeling.* Hillside, NJ: Erlbaum.

Sharpely, C.F., Reynolds, R., Acosta, A. & Dua, J.K. (1996). The presence, nature and effects of job stress on physical and psychological health at a large Australian University. *Journal of Educational Administration, 34,* 73-86.

Shaughnessy, J.J. & Zechmeister, E.B. (1997). *Research methods in psychology* (4th ed.). New York: McGraw-Hill.

Siu, O. (2002) Occupational stressors and well-being among Chinese employees: The role of organisational commitment. *Applied Psychology: An International Review, 51 (4),*527-544.

Smewing, C. & Cox, T. (1998). Employee assistance programmes and their place within universities. *British Journal of Guidance & Counselling, 26*(2), 273-286.

Sobolewski, S.J., & Doran, R.L. (1996). Replication of a path analysis model of secondary physical enrolment: 20 years later. *Journal of Research in Science Teaching,* 33(15), 501-512.

Somers, M.J. (1995). Organizational commitment, turnover and absenteeism: An examination of direct and indirect effects. *Journal of Organizational Behaviour, 16,* 49-58.

Spector, P.E. (1986). Perceived control by employees: A meta-analysis of studies concerning autonomy and participation at work. *Human Relations, 39,* 1005-1016.

Spielberger, C.D. & Vagg, P.R. (1999). *Job stress survey: Professional manual.* Odessa, FL: Psychological Assessment Resources.

SPSS Inc. (2003). *SPSS 12.0 for Windows.* Chicago, IL: Author.

Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes* [Practical significance: Use of effect sizes]. (Scientific contributions, Series B, Natural Sciences, No.

117). Potchefstroom, South Africa: Potchefstroom University for Christian Higher Education, Statistical Consultation Services.

Trade Union Congress (1996). *National survey of health and safety representatives*. London: TUC.

Travers, C. & Cooper, C. (1991). Psychophysiological responses to teacher stress. *European Review of Applied Psychology, 44*, 137-148.

Tucker, L.R. & Lewis, C. (1973). A reliability of coefficient for maximum likelihood factor analysis. *Psychology, 41,* 218-225.

Tytherleigh, M.Y. (2003). What employers may learn from English higher education institutions: A fortigenic approach to occupational stress. *South African Journal of Industrial Psychology, 29*(4), 101–106.

Wall, T.D., Corbett, M., Martin, R., Clegg, C.W. & Jackson, P.R (1990). Advanced manufacturing technology, work design, and performance. A change study. *Journal of Applied Psychology, 75,* 691-697.

Warr, P. (1987). *Work, unemployment and mental health.* New York: Oxford University Press.

Winefield, A.H. (2000). Stress in academe. Some recent findings. In D.T. Keeny, J.G. Carlson, F.J. McGuigan, & J.L. Sheppard (Eds.), *Stress and health: research and clinical applications* (pp. 437-446). Sydney: Harwood.

Winefield, A.H., Gillespie, N., Stough, C., Dua., J. & Hapuararchchi, J. (2002). *Occupational stress in Australian universities: A national survey.* Adelaide, Australia: University of South Australia.

Winefield, A.H., Jarrett, R. (2001). Occupational Stress in University Staff. *International Journal of Stress Management, 8*(4), 285-298.

Winter, R., Taylor, T. & Sarros, J. (2000). Trouble at Mill: quality of academic work life within a comprehensive Australian university. *Studies in Higher Education, 25*(3), 279-294.

Zohar, D. (1980). Safety climate in organisations: Theoretical and applied implications. *Journal of Applied Psychology, 65*, 96-102.

CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to make conclusions based on the objectives of the study. The limitations of the research are also discussed and recommendations with regard to this research, as well as future research are made.

3.1 CONCLUSIONS

The objectives of the current study are to investigate the occupational stress and strain of support staff at a higher education institution in the North-West province, to investigate the relationship of organisational commitment in this regard and to determine whether employees with different biographical profiles experience significant differences in occupational stress.

The first research objective was to determine the psychometric suitability of using the ASSET Organisational Stress Screening Tool for the measurement of occupational stress and strain of support staff at a higher education institution in the North-West province.

The structural equation modelling (SEM) method as implemented by AMOS (Arbuckle, 1997) was used to test the factorial model for the ASSET, using the maximum likelihood method. The theoretical model of the ASSET was fit to the data and all the variables were found to be above the 0,90 level with the exception of Health. In terms of the Health dimension five error variances were allowed to correlate; namely Item 4 and Item 6; Item 8 and Item 9; Item 13 and Item 15; Item 14 and Item 15; and Item 17 and Item 18. After respecification, most of the fit-indices, with the exception of Health, seemed to approach the 0,95 level. The RMSEA value indicated a reasonable fit of the model to the data.

With regards to internal consistency of the factors, the Cronbach alpha coefficients varied from 0,62 - 0,87, which compares reasonably well with the guideline of 0,70 (Nunnally & Bernstein, 1994). Pay and Benefits consists of one item and therefore internal consistency could not be

calculated for this dimension. The mean inter-item correlations of the dimensions are, with the exception of Control, within the guideline of $0,15<r<0,50$ as suggested by Clark & Watson (1995). Consequently, the ASSET can be viewed as a suitable instrument to measure occupational stress and strain of support staff at a higher education institution.

The second research objective was to determine the levels of occupational stress and strain of support staff at a higher education institution in the North-West province, and to compare the levels of occupational stress and strain of different demographic groups.

The results showed that support staff have reasonably poor physical and psychological health indicating that support staff experience stress-related strain which could be mainly attributed to their work relationships and job characteristics respectively. The following stress-inducing factors were reported by support staff in the present study and could be described as high average.

- Monotonous and simple activities, allowing for little skills variation;
- Strict supervision and management of performance;
- Other employees taking credit for own achievements;
- Doing same job for the next 5-10 years.

It was concluded that relationships with others at work was a source of stress due to the fact that colleagues took credit for workers own achievements. A possible explanation for this could be that support services are regarded as only contributing to the core business of teaching. The ineffective management of the appraisal system could have contributed to this finding as well. The results further indicated a positive relationship between job characteristics and psychological health. In other words, low autonomy and task variety and doing the same job for the next 5-10 years could contribute to support staff developing poor psychological health.

Elevated levels of physical symptoms (insomnia, headaches and muscular tension, feeling nauseous/sick) were also reported. This is a cause for concern, not only in individual employees, but also for managers within the organisation, since high levels of ill-health are likely to be

detrimental to organisational performance. Furthermore, employees reported panic and anxiety attacks, felt that they were unable to cope or listen to other people and avoided contact with other people. Since support staff are required to interact with students, colleagues and superiors on an ongoing basis, these high levels of ill-health (strain) could have a detrimental effect on support staff to do their jobs effectively.

Regarding the differences between groups, the results showed practically significant differences in terms of occupational stress and strain for language and for gender groups, as well as the length of service of support staff. It was found that the Afrikaans and English language group experienced practically significant higher physical and psychological stress than the African language-speaking group. This finding was supported in a previous study (Coetzee & Rothmann, in press). Furthermore, the African language group experienced higher perceived stress with regards to Resources and Communication and Work Relationships. This could be attributed to the fact that this institution is a traditionally Afrikaans speaking institution and that employees from different cultural and language backgrounds could find it more difficult to have meaningful work relationships and access to resources and communication networks in comparison with their Afrikaans/English counterparts.

Males expressed difficulty in maintaining an appropriate balance between the demands of the workplace and home. This is contrary to findings in previous research. Kinman (1998) reported that females in the United Kingdom found it more difficult to manage the balance of demands between the workplace and home. Cooper & Lewis (1993) reported that managing the interface between work and home is a potential source of stress, especially for dual career couples. A possible explanation for males not managing their work and home-life successfully could be the fact that both husband and wife have to work, which could be difficult for the traditionally minded male to come to grips with. However, males reported better physical and psychological health than females. This was confirmed in previous studies in the United Kingdom and Australia where males reported higher overall physical and mental health compared to females (Bradley & Eachus, 1995; Sharpely, Reynolds, Acosta & Dua, 1996). Males further experienced more stress with regards to communication and resources within the institution than females. A possible explanation for this could be that there are proportionately more females in the support

staff sample that could motivate males to work harder in a female-dominated working environment. Males could also be frustrated by the preference for females due to legislative requirements and could drive themselves harder as a result of this. This finding seems to be supported by the higher levels of job insecurity for males.

Support staff with between 9-14 years of experience seemed to have experienced higher perceived stress with regards to balancing work and home-life, as well as resources and communication in comparison with those less than 9 years and more than 14 years. Consequently, it would seem that those support staff with intermediate length of service find coping with work and home life more difficult and require better resources and improved communication. This finding was supported by a study of Winefield and Jarrett (2001) in Australia where lower levels of stress in the most senior and most junior levels were found in comparison with the intermediate levels. A possible explanation for this could be the fact that those with intermediate length of service find adapting to the present transformational process the most challenging in terms of resources, communication networks and managing the balance between home and work. In this institution, employees with more than 14 years of experience might feel that they will be retiring soon (average length of service is quite high at 10,69 years), whilst employees with less than 9 years of experience might feel energised by adjusting to the challenges of a changing environment. Furthermore, longer tenure has been shown to engender more effective management of occupational stress (Abouserie, 1996; Gmelch, Wilke & Lovrich, 1996).

Support staff felt trusted and respected by the institution and in turn showed their loyalty and dedication. They felt it was worthwhile working for this organisation and were always prepared to take more responsibility. The results further showed practically significant positive relationships between job security, job characteristics and control. This means that in order for employees to feel secure about their jobs, they need to have perceived control over the aspects of their jobs. This was confirmed in previous studies where it was found that there is a high potential for job characteristics to influence psychological outcomes and that stress and ill-health increased when there was a lack of perceived control of one's working life, which diminished control even further (Wall, Corbett, Martin, Clegg & Jackson, 1990; Fried & Ferris, 1987).

In other words, job characteristics such as autonomy, task variety, skill variety, support and feedback from superiors and colleagues will enhance personal accomplishments and in turn have a positive influence on psychological health (Barling, 1990).

Furthermore, work relationships were significantly related to job characteristics, overload and control which means that employees' relationships with others depended to a large extent on the element of control that they have over their jobs and the amount of work they have. Work-life balance and overload was also positively related, indicating that employees who have too much to do will find it difficult to manage the interface between work and home. This has been recognised in previous studies where it was found that tertiary education employees in United Kingdom and Australia reported difficulty in trying to complete any one task properly, due to increasing workloads and responsibilities that they were expected to perform. This high task overload encroached more into their home lives than in the past (Kinman, 1998; Gillespie, Walsh, Winefields, Dua, Stough, 2001).

A surprising finding is the fact that the moderating effect of commitment in terms of the effect of occupational stress on ill-health (strain) was not confirmed. This finding is not supported in the literature (e.g. Coetzee & Rothmann, in press; Siu, 2002). However in the current study the levels of occupational stress is relatively low while support staff demonstrated high levels of both individual commitment to the organisation and perceived commitment from the organisation. The findings suggest that the high levels of commitment of support staff did not protect them from the potential harmful effects of occupational stress in terms of ill-health. A possible explanation for this finding is the fact that this could be attributed to the transformation process that this tertiary institution was subjected to at the time of the study. At the time of the study, the merging process was in its initial stages. The process is driven by legislation and it is possible that this could have been viewed in a more positive light had it been a management directive only.

Furthermore, the process was communicated thoroughly throughout the organisation, which is an important component in managing any kind of transformation effectively (Quirke, 1997; Kekana, 1999). This could explain why support staff seemed to have maintained high levels of

commitment to the organisation, as well as perceived commitment from the organisation despite the potentially stressful challenges that need to be faced in the new merged institution. Research indicates that employees who hold negative views about the organisation are less likely to identify with an officially sanctioned attempt at organisational transformation (Kelly & Kelly, 1991). More committed employees, however, are more supportive of the transformation process because they identify more strongly with and feel more loyal to the organisation (Mowday, Porter & Steers, 1982). Regarding the high levels of psychological and physical ill-health, international norms had been used and it is possible that the levels of reported ill-health could be indicative of the higher South African norm relative to the international norm.

3.2 LIMITATIONS

One limitation of the present study is the fact that a cross-sectional design was used, which implies that the causality of relationships cannot be proved. Longitudinal designs could have aided in clarifying the relationships between the variables in this study, especially with regards to the findings regarding organisational commitment (Coetzee & Rothmann, in press).

Another limitation is the sample size, which could have been bigger and more representative of the support staff of different tertiary institutions in South Africa. A further limitation of this study is its reliance solely on self-report measures. Problems with this aspect are often associated with so-called "method variance" where the shared variance between measures could at least partly be attributed to the use of self-report measures (Schaufeli, Enzmann & Girault, 1993). However, a review of self-report measures regarding perceptions and affective reactions to jobs and work environments revealed little evidence of common method variance (Spector, 1987). Similarly, other researchers have demonstrated that even if interactions between the constructs are found, it poses no real threat with regards to the findings obtained (Dollard & Winefield, 1998; Wall, Jackson, Mullarkey & Parker, 1996).

Finally, questionnaires were only available in English, which could have influenced the responses significantly. Future studies could focus on adapting and validating the ASSET for different language groups in South Africa.

3.3 RECOMMENDATIONS

Recommendations for the organisation and future research are made in this section.

3.3.1 Recommendations for the organisation

According to the literature, individual health problems associated with stress range from minor ailments, such as colds, nausea, to life-threatening illnesses including coronary heart disease (Sutherland & Cooper, 1990). At an organisational level, stress can lead to increased absenteeism, higher turnover, low morale, and reduced effectiveness, and is therefore of direct concern to employers as well as to individual employees (Bradley & Euchus, 1995). Consequently, a combined management and educational approach, building interventions aimed at creating a work environment for the promotion of employee health, is of vital importance.

It is suggested that occupational stress-audits across the new merged institution could be beneficial. Employees could for instance be asked to keep some form of stress diary or self-report as a diagnostic measure in increasing the awareness and identifying individual occupational stressor patterns (Cooper & Cartwright, 1994). Systematic analyses of the key issues raised by this audit could be used to better understand the individual and organisational factors that contribute to occupational stress. Awareness activities and skills-training programs could be designed to improve coping skills and the work situation whereby the impact of common stressors can be obtained (Kompier & Kristensen, 2001).

Interventions may be directed at either the work situation or the capacity of the employee. Furthermore, it should be aimed at eliminating, reducing or altering stressors in the working situation (primary prevention), or preventing employees who are already showing signs of stress from getting sick and to increase their coping capacity (secondary prevention), or treating those employees who show serious stress consequences and rehabilitation after sickness absenteeism (tertiary prevention) (Kompier & Kristensen, 2001). In the current study, support staff could benefit from primary and secondary intervention in order to prevent and support coping skills in the new merged institution with regards to occupational stress.

With specific reference to this study the tertiary education institution could aim to improve communication, so that the trust levels among colleagues and supervisors could be improved in light of the fact that support staff found work relationships (e.g. others taking credit for their achievements) a potential source of stress. Furthermore, some form of job redesign (primary intervention), preferably in an individualised way, e.g. task enrichment and enlargement specifically increasing control, could result in increased psychological wellbeing (Wall, Corbett, Martin, Clegg & Jackson, 1990). Less supervision over the work process itself could assist in reducing stress (Cooper & Cartwright, 1994). The introduction of regular appraisals and proper management thereof, the provision of retraining opportunities, and career counselling are ways in which career stress may be reduced (Gillespie, Walsh, Winefields, Dua & Stough, 2001). Finally, more flexible working arrangements could be introduced so that the dual career couples could manage their home and work-life better (Cooper & Cartwright, 1994).

In conclusion, it is suggested that the organisation should invest to improve employees' skills to manage, resist or reduce stress. From a social responsibility perspective it is the organisations' responsibility to ensure that its support staff are working in a healthy environment.

3.3.2 Recommendations for future research

Despite the various limitations mentioned, important implications for future research and practice can be identified. The following recommendations regarding future research are evident from the present study:

- More research on occupational stress and strain of support staff at higher education institutions.
- Standardisation of the ASSET for South African higher education institutions in order to establish norms for the measurement of occupational stress and strain within a culturally diverse context.
- Future studies regarding the occupational stress levels of support staff could include a qualitative research component, which could shed more light on the findings regarding organisational commitment in the present study.

- Identification of other moderating variables in the occupational stress-strain relationship of support staff at higher education institutions.
- Future studies regarding occupational stress of support staff should be expanded and compared to other higher education institutions in South Africa.
- Research could identify the unique stressors of specific job categories of support staff at tertiary higher education institutions (e.g. computer technicians, librarians, secretaries, etc.).
- Intervention research should be undertaken to identify the most suitable interventions to address the needs of support staff at higher education institutions (e.g. Kompier & Kristensen, 2001).

References

Abouserie, R. (1996). Stress, coping strategies and job satisfaction in university academic staff. *Educational Psychology, 16*, 49-56.

Arbuckle, J.L. (1997). *Amos user's guide version 3.6*. Chicago: Smallwaters.

Barling, J. (1990). *Employment, stress and family functioning*. Chichester: Wiley

Bradley, J. & Eachus, P. (1995). Occupational stress within a U.K. higher education institution. *International Journal of Stress Management, 2*(3), 145- 158.

Clark, L.A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*, 309-319.

Coetzee, S.E & Rothmann, S. (in press). Occupational stress of employees at a higher education institution in South Africa. Manuscript submitted for publication.

Cooper, C.L. & Cartwright, S. (1994). Health mind; Healthy organisation - A proactive approach to occupational stress. *Human Relations, 47*(4). 455-471.

Cooper, C.L. & Lewis, S. (1993). *The workplace revolution*. London: Kegan Page.

Dollard, M.F. & Winefield, A.H. (1998). A test of the demand-control/support model of work stress in correctional officers. *Journal of Occupational Health Psychology, 3*, 243-264.

Fried, Y. & Ferris, G.R. (1987). The valididity of the Job Characteristics model. A review and meta-analysis. *Personnel Psychology, 40*, 287-322.

Gillespie, N.A., Walsh, M., Winefield, A.H., Dua, J., & Stough, C. (2001). Occupational stress in universities: Staff perceptions of the causes, consequences and moderators of stress. *Work & Stress, 15*, 53-72.

Gmelch, W.H., Wilke, P.K. & Lovrich, N.P. (1986). Dimensions of stress among university faculty: Factor analytic results from a national study. *Research in Higher Education, 24,* 266-286.

Hoyle, S.G. (1995). Long-term treatment of emotionally disturbed adoptees and their families. *Clinical Social Work, 23*(4), 429-440.

Hu, L.T., & Bentler, P.M. (1999). Cut-off criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling: A Multidisciplinary Journal, 6,* 1-55.

Kekana, N.S. (1999). The role of communication in the transformation process: A view from the University of Vista. *Journal of Practice in Education for Development, 4*(1), 47-50.

Kelly, J.E. & Kelly, C. (1991). Them and us: Social psychology and the new industrial relations. *British Journal of Industrial Relations, 29*, 25-48.

Kinman, G. (1998). *Pressure points: A survey into the causes and consequences of occupational stress in the UK academic and related staff.* London: Association of University Teachers.

Kline, R.B. (1998). *Software programs for structural equation modelling with the SIMPLIS command language.* Hillside, NJ: Erlbaum.

Kompier, A.J. & Kristensen, T.S. (2001). Organisational work stress interventions in a theoretical, methodological and practical context. In J. Dunham (Ed.), *Stress in the workplace: Past, present and future* (pp. 19-33). London: Whurr Publishers.

MacCallum, R.C., Browne, M.W., & Sugawara, H.M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130-149.

Marsh, H.W., Balla, J.R., & Hau, K.T. (1996). An evaluation of incremental fit indices. A clarification of mathematical and empirical properties. In G.A. Marcoulides and R.E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques* (pp. 315-353). Mahwah, NJ.: Erlbaum.

Mowday, R., Porter, L.T., Steers, R. (1982). *Employee-organisation linkages: The psychology of commitment, absenteeism and turnover.* New York: Academic Press.

Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Quirke, B. (1997). *Communicating corporate change. A practical guide to communication and corporate strategy.* Berkshire: McGraw-Hill.

Schaufeli, W.B., Enzmann, D. & Girault, N. (1993). Measurement of burnout: A review. In W.B. Schaufeli, C. Maslach and T. Marek (Eds.), *Professional burnout: Recent developments in theory and research* (pp. 199-215). Washington, DC: Taylor & Francis.

Schumaker, R.E. & Lomax, R.G. (1996). *A beginners guide to structural equation modeling.* Hillside, NJ: Erlbaum.

Sharpely, C.F., Reynolds, R., Acosta, A., & Dua, J.K. (1996). The presence, nature and effects of job stress on physical and psychological health at a large Australian University. *Journal of Educational Administration, 34*, 73-86.

Siu, O. (2002) Occupational stressors and well-being among Chinese employees: The role of organisational commitment. *Applied Psychology: An International Review, 51 (4),*527-544.

Sobolewski, S.J., & Doran, R.L. (1996). Replication of a Path Analysis model of secondary physica enrolment: 20 years later. *Journal of Research in Science Teaching,* 33(15), 501-512.

Spector, P.E. (1987). Method variance as an artifact in self-reported affect and perceptions at work: Myth or significant problem? *Journal of Applied Psychology, 72,* 438-443.

Sutherland, V.J. & Cooper, C.L. (1990). *Understanding stress: A psychological perspective for health professionals, psychology and health series 5.* London: Chapman and Hall.

Tucker, L.R. & Lewis, C. (1973). A reliability of coefficient for maximum likelihood factor analysis. *Psychology, 41,* 218-225.

Wall, T.D., Jackson, P.J., Mullarkey, S. & Parker, S.K. (1996). The demands-control model of job strain: A more specific test. *Journal of Occupational and Organisational Psychology, 69,* 153-166.

Winefield, A.H., Jarrett, R. (2001). Occupational Stress in University Staff. *International Journal of Stress Management, 8*(4), 285-298.