

OCCUPATIONAL STRESS IN A HIGHER EDUCATION INSTITUTION

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REMARKS

The reader is reminded that 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 dissertation.

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SUMMARY

Topic: Occupational stress in a higher education institution

Key terms: Occupational stress, physical ill health, psychological ill health, individual commitment, organisational commitment, absenteeism, presenteeism, turnover intention, support staff.

Higher educational institutions no longer provide the low-stress and highly satisfying working environment they once did. Higher educational institutions experience significant changes, which include restructuring, reduction of state subsidy and use of short-term contracts. Therefore, the changes in the higher educational environment can have costly implications for institutions in terms of staff morale, turnover and absenteeism rates and could also lead to reduced employee performance, poor quality control and a fall in production. It therefore becomes increasingly important for higher educational institutions to intervene to reduce the occupational stress of university staff.

The objectives of this study were to determine the occupational stressors for support staff at a higher education institution in the North West Province, to investigate the relationship between occupational stress, ill health, organisational commitment and important organisational outcomes (including absenteeism, productivity and turnover intention) and to assess the financial implications of these factors in a sample of support staff at a higher education institution in the North West Province. A cross-sectional survey design was used. The study population consisted of support staff at a higher education institution in the North West Province ($N = 292$). An Organisational Screening Tool (ASSET) and a biographical questionnaire were administered. Descriptive statistics, Pearson and Spearman correlations, multiple regression analyses and discriminant analysis were used to analyse the results.

The results showed that, compared to normative data, support staff overall demonstrated average levels of occupational stress. However, job control, resources, communication and work relationships were found to be problematic stressors which mainly influenced organisational commitment to the organisation. The prediction of losses suffered by the higher educational institution due to absenteeism, presenteeism and turnover intention indicate that occupational stress cost organisations greatly.

Recommendations were made for the organisation and for future research.

OPSOMMING

Onderwerp: Beroepstres in 'n hoëronderwysinstelling

Sleuteltermes: Beroepstres, swak fisiese gesondheid, swak sielkundige gesondheid, individuele verbintenis, organisatoriese verbintenis, afwesigheid, af-aanwesigheid, beoogde personeelomset, ondersteuningspersoneel.

Hoëronderwysinstellings bied nie meer die lae-stres- en hoogs bevredigende werksomgewing wat dit vroeër gebied het nie. Hoëronderwysinstellings ervaar beduidende veranderinge, soos herstrukturering, verlaging van staatsubsidie en die gebruik van korttermynkontrakte. Gevolglik kan die veranderinge in die hoëronderwysomgewing duur implikasies inhou vir instellings ten opsigte van die personeel se moraal, personeelomset, swak gehaltebeheer en 'n afname in produksie. Dit word daarom toenemend belangrik vir hoëronderwysinstellings om in te gryp om die beroepstres van universiteitspersoneel te verminder.

Die doelstellings van hierdie studie was om die beroepstressors vir ondersteuningspersoneel aan 'n hoëronderwysinstelling in die Noordwes-provinsie vas te stel, om die verhouding tussen beroepstres, swak gesondheid, organisatoriese verbintenis en belangrike organisatoriese uitkomste (waaronder afwesigheid, produktiwiteit en beoogde personeelomset) te ondersoek en om die finansiële implikasies van hierdie faktore te evalueer in 'n steekproef van ondersteuningspersoneel aan 'n hoëronderwysinstelling in die Noordwes-provinsie. 'n Dwarsdeursnit-opnameontwerp is gebruik. Die studiebevolking het bestaan uit ondersteuningspersoneel aan 'n hoëronderwysinstelling in die Noordwes-provinsie ($N = 292$). 'n Organisatoriese Evalueringsinstrument (ASSET) en 'n biografiese vraelys is afgeneem. Beskrywende statistiek, Pearson en Spearman se korrelasies, meervoudige regressie-analises en diskriminantanalises is gebruik om die resultate te ontleed.

Die resultate het getoon dat, in vergelyking met normatiewe data, ondersteuningspersoneel in die algemeen gemiddelde vlakke van beroepstres gehad het. Daar is egter bevind dat werksbeheer, hulpbronne, kommunikasie en werksverhoudinge problematiese stressors was wat hoofsaaklik organisatoriese verbintenis tot die organisasie beïnvloed het. Die voorspelling van verliese wat deur die hoëronderwysinstelling gely word as gevolg van

afwesigheid, af-aanwesigheid (aanwesigheid terwyl die werknemer siek is) en beoogde omset dui daarop dat beroepstres organisasies baie duur te staan kom.

Aanbevelings word gemaak vir die organisasie en vir verdere navorsing.

CHAPTER 1

INTRODUCTION

This mini-dissertation deals with the relationship between occupational stress, ill health, organisational commitment of support staff and the financial outcomes thereof in a higher education institution.

In this chapter the problem statement is discussed. The research objectives are set out, which include the general objective and specific objectives. The research method is explained and the division of chapters described.

1.1 PROBLEM STATEMENT

Companies increasingly realise that their most valuable asset is their employees. Employees produce the company's product, have contact with customers and ensure that the job is done within the organisation. As a result, companies are becoming aware that a healthy work environment can improve productivity, decrease turnover and absenteeism, and reduce health-care costs (Swanger, 2002). According to Johnson (2005), health-related problems of employees could severely impact on the bottom line of companies. Allen (2006) reports that Dow Chemical, which employs 43 000 people, estimates its annual employee health-related costs at \$635 million, more than half of which can be attributed to the indirect costs associated with worker 'presenteeism'. The Travelers Corporation claims a \$3,40 return for every dollar invested in health promotion, yielding total corporate savings of \$146 million in benefits costs (Hawkins, 2005). According to the European Foundation (2000), illness resulted in the loss of 29,8 million working days in 2003/2004 and a total of 22,2 days are lost per person suffering from illness, which represent a cost of £15 billion.

The correlation between occupational stress and ill health is well documented in literature (Cooper & Cartwright, 1997; Cooper, Dewe, & O'Driscoll, 2001; Lim & Teo, 1999; Winefield, Gillispie, Stough, Dua, & Hapuararchichi, 2003). Prolonged job stress may affect employees on a physiological, psychological and behavioural level (Goodspeed & DeLucia, 1990) and as a result they may suffer from various health complaints, including higher blood

and cholesterol levels, ulcers and heart disease, depressive symptoms, anxiety, malaise and burnout (Cooper et al., 2001). Quick, Nelson, and Quick (2001) identify depression and anxiety as the most common stress-related complaints, which are reported to affect 20 percent of the working population in the United Kingdom and one in every six Americans.

Occupational stress should not only be considered as a problem of the individual, but as a serious consideration for organisations. According to Levi (1996), symptoms of stress have a significant effect on absenteeism and productivity within organisations. During a survey in 2000, employers in the UK indicated that absenteeism costs UK businesses approximately 10,5 billion pounds and that stress was the second highest cause of absence among non-manual employees (CBI / PPP, 2000). Furthermore, the Health and Safety Executive (HSE) estimates that 13,4 million working days were lost in Britain in 2001/2002 due to stress, depression or anxiety ascribed to work-related stress (HSE, 2002). In the Netherlands, mental health disorders were the largest diagnostic group for work incapacitation (32%), followed by musculoskeletal disorders. Inspection revealed that 80% of these mental health cases suffered from job stress and burnout. In recent studies, it was estimated that two-thirds of sick leave may be attributed to job stress (Houtman et al., 1994; Stichting van de Arbeid, 2002).

Stress-related behaviours could result in occupational injuries and increasing accident rates. Siu, Phillips, and Leung (2004) showed that safety attitudes predict occupational injuries and that psychological distress predicts accident rates. It also seems that safety performance could be predicted by affect, anxiety and depression (Dunbar, 1993) and that perceptions of high job overload is associated with an increased tendency to engage in unsafe acts (Hoffmann & Stetzer, 1996). Siu (2002) and Winefield et al. (2003) suggest that high levels of occupational stress will lead to mental and physical ill health, job dissatisfaction, absenteeism, stress-related injuries, turnover and intention to quit.

Organisational commitment, defined as the psychological attachment of workers to their origination, continues to remain one of the most enduring topics in the organisational sciences (Bauer & Green, 1998) and is considered as an important consequence or moderator of occupational stress (Siu, 2002). The commitment of employees to the organisation seems to be related to work outcomes such as organisational citizenship, job satisfaction, job involvement and job performance and is negatively related to absenteeism and turnover (Finegan, 2000; Mathieu & Zajac, 1990; Organ & Ryan, 1995). According to Siu (2002),

organisational commitment interacts with sources of stress at work to determine its outcomes. Individuals are therefore protected from the negative effect of stress because it enables them to see direction in and attach meaning to their work. Various studies have shown that employees who experience little job satisfaction and organisational commitment are more frequently absent than those with great job satisfaction and commitment (e.g., Cohen, 1991; Farrell & Stamm, 1988; Mathieu & Kohler, 1990; Sagie, 1998).

Occupational stress is related to ill health and lower organisational commitment. Employees who suffer from ill health and who experience less organisational commitment are more absent from work and show higher turnover intention (Cooper & Cartwright, 1997; Cooper, Dewe, & O'Driscoll, 2001; Siu, 2002). Cooper and Cartwright (1996) estimate that almost 12% of the United States of America's (USA) Gross National Product (GNP) and 10% of the United Kingdom's (UK) GNP is lost because of stress-related absenteeism and turnover. In Hong Kong, 47 500 workdays were lost as a result of employee sick leave in 1998, and the average duration of sick leave per incident is 11,7 days, representing a considerable loss of resources (Population by census, 1998). If a healthy workforce is not maintained, it is projected that by 2010 the payment of sick leave will cost Americans \$2,6 trillion each year.

Occupational stress, ill health, organisational commitment, absenteeism and turnover intention also pose a serious threat to higher education institutions. Higher education institutions in South Africa have in the recent past been subjected to a series of mergers. In business firms, restructuring is reported to cause uncertainty, anxiety, loss of motivation, lower morale and higher levels of accidents and work errors (Clarke & Koonce, 1995; Hellriegel, Slocum, & Woodman, 2001). Uncertainty and anxiety often result in overt and covert resistance to the changes brought about by restructuring (Hellriegel et al., 2001). Overt resistance to change manifests in strikes, reduced productivity, inferior work and even sabotage, while covert resistance is often expressed by increased tardiness and absenteeism, requests for transfer, resignation, loss of motivation, lower morale and higher levels of accidents and work errors.

Job stress is becoming an increasingly common occurrence in South African organisations, although limited research has been done in South-Africa. The transformation that is taking place at universities the last two decades have resulted in significant changes in the nature of work at institutions and therefore increased pressure on staff (Dua, 1996; Fisher, 1994;

Winefield, 2000). Among the possible causes of this rise in job stress is transformation that include increased domestic and international competition, restructuring, downsizing, cuts in government funding, changes in management style and structure (Gillespie, Walsh, Winefield, Dua, & Stough, 2001). The competition has also been characterised by lay-offs, mergers, rapidly changing technology and ever increasing demands for higher quality products and services. Therefore, the higher levels of stress result in lower productivity, increased absenteeism and turnover and a variety of other employee problems including alcoholism, drug abuse, hypertension and cardiovascular problems.

Viljoen and Rothmann (2002) report that the staff members of a South African tertiary institution in the process of merging with another institution were very dissatisfied with how the restructuring process was managed by their management. During the longitudinal study of occupational stress in 17 Australian universities, Winefield et al. (2003) found that 43% of academic staff and 37% of general staff were classified as possible 'cases' of psychological illnesses. It can be expected that attitudes and feelings of employees about organisational restructuring in higher education institutions will contribute affect their stress and commitment at work.

In a recent study (Compensation & Benefits for Law Offices, 2006), it was found that employers recognise that a healthy and productive workforce directly impacts their bottom line and therefore the true cost of an unscheduled absence is the value of lost time plus the absence, health, disability, and workers' compensation costs associated with that absence. Cooper and Cartwright (1996) argued that the interdependence of work conditions and health has been recognised in almost all industrialised countries. Besides the undesirable health consequences, it has become clear that 'unhealthy' work can also create substantial financial costs for an organisation (Cooper & Williams, 1994; Maes, Verhoeven, Kittel, & Schiltens, 1997). Therefore, the organisation, employee and community should create a healthier work environment by improving job conditions.

Taken together, it seems important to investigate the occupational stressors experienced by support personnel in a higher education institution. Furthermore, it is important to investigate the influence of occupational stress on physical and psychological ill health as well as on the commitment levels of these employees and to determine the relationship between ill health and commitment with absenteeism, productivity and turnover intention. Finally, the financial

implications of unhealthy and less committed employees who are absent from work, unproductive and who show high turnover intention should also be determined. Based on this, the main objectives of this study are depicted in Figure 1.

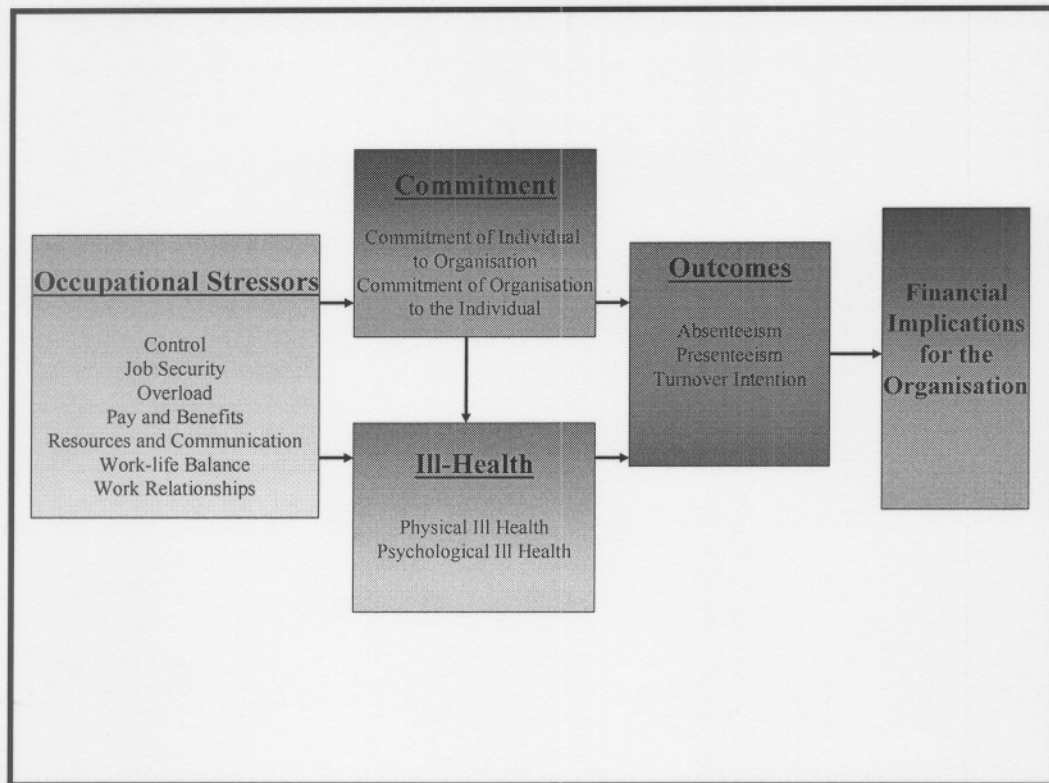


Figure 1. The ASSET model

Based on the problem explained above, the following research questions arise:

- How is occupational stress conceptualised in the literature and how does it relate to ill health and organisational commitment?
- What is the relationship between occupational stress, ill health, organisational commitment and organisational outcomes (including absenteeism, productivity and turnover)?
- What are the financial implications of occupational stress, ill health, organisational commitment, absenteeism, productivity and turnover intention for organisations according to the literature?

- What is the relationship between occupational stress, ill health, organisational commitment and organisational outcomes (including absenteeism, productivity and turnover) of support staff in a higher education institution?
- What are the financial implications of occupational stress, ill health, organisational commitment, absenteeism, productivity and turnover intention for support staff in a higher education institution?

1.2 RESEARCH OBJECTIVES

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

1.2.1 General objective

The general objective of this research is to investigate the relationship between occupational stress, ill health, organisational commitment and important organisational outcomes (including absenteeism, productivity and turnover intention) and to determine the financial implications of these factors in a sample of support staff at a higher education institution in the North West Province.

1.2.2 Specific objectives

The specific research objectives are as follows:

- To conceptualise occupational stress and to investigate its relationship to ill health and organisational commitment from the literature.
- To study the relationship between occupational stress, ill health, organisational commitment and organisational outcomes (including absenteeism, productivity and turnover) from literature.
- To determine the financial implications of occupational stress, ill health, organisational commitment, absenteeism, productivity and turnover intention for organisations from literature.

- To assess the correlation between occupational stress, ill health, organisational commitment and organisational outcomes (including absenteeism, productivity and turnover) of support staff in a higher education institution.
- To determine the financial implications of occupational stress, ill health, organisational commitment, absenteeism, productivity and turnover intention for support staff in a higher educational institution.

1.3 RESEARCH METHOD

The research method involves a literature review and an empirical study.

1.3.1 Literature review

The literature review focuses on previous research on occupational stress, ill health and organisational commitment. An overview is given on how occupational stress is conceptualised in literature as well as the relationship with organisational outcomes (including absenteeism, productivity and staff turnover).

1.3.2 Empirical study

The empirical study involves an explanation of the research design, a description of the participants, the measuring instruments that are used to obtain the data and the statistical techniques that are used to analyse the data.

1.3.2.1 Research design

A cross-sectional survey design is used to conduct this study. The cross-sectional design is a special case of the criterion-groups design. Thus, in a cross-sectional study, constructs are examined in terms of one or more variables that were measured at approximately the same time (Welman, Kruger, & Mitchell, 2005).

1.3.2.2 Participants and procedure

For the purposes of this study a stratified sample of the population is used ($n = 292$) from university support staff at a higher education institution in the North West Province in South Africa.

1.3.2.3 Measuring instrument

The following questionnaires are used in the empirical study:

- *The ASSET* (Cartwright & Cooper, 2002) is used to measure the levels of occupational stress, ill health and organisational commitment of support staff at a higher educational institution in the North West Province. Cartwright and Cooper (2002) developed 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. The ASSET measures potential exposure to stress in respect to a range of common workplace stressors and provides important information on current levels of physical health, psychological wellbeing and organisational commitment. Furthermore the ASSET provides data to which the organisation can be compared (standardised ten). 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, and includes questions relating to perceived levels of commitment both from and to the organisation. 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. The fourth questionnaire focuses on supplementary information and includes questions relating to factors that can affect stress. Reliability is based on 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).

- Absenteeism is measured with items such as ‘have you had any significant illnesses the last 6 months?’, ‘over the last 3 months, how would you rate your overall health?’, and ‘over the last 3 months, how many working days in total have you been off work through illness or injury?’ Presenteeism is measured with items such as ‘during the last 3 months, have you ever taken sick leave whilst ill and/or returned before you were well due to pressure from work?’ Productivity is measured with items such as ‘over the last 3 months, roughly how productive have you felt in your job?’ Turnover intention is measured with items such as ‘to what degree do you agree with the statement: “I consider quitting my job?”’ and ‘how frequently do you consider quitting your job?’. Absenteeism, resignations and the average total cost to company statistics were obtained from the human resources department for the support staff at a higher education institution for the 2003, 2004 and 2005 years.

1.3.2.4 Statistical analysis

The statistical analysis was carried out with the SPSS programme (SPSS Inc., 2003). Exploratory factor analyses and Cronbach alpha coefficients are used to assess the validity and reliability of the constructs that will be measured in this study. Descriptive statistics (e.g., means, standard deviations, skewness and kurtosis) and inferential statistics are used to analyse the data.

Pearson product-moment correlation coefficients are used to specify the correlation between the variables. In terms of statistical significance, it is decided to set the value at a 95% confidence interval level ($p \leq 0,05$). Effect sizes (Steyn, 1999) are used to decide on the practical significance of the findings. A cut-off point of 0,30 (medium effect, Cohen, 1988) is set for the practical significance of correlation coefficients.

Multiple regression analyses are used to determine the percentage of variance explained of ill health and organisational by occupational stressors. According to the most often used definition, multiple regressions are a technique that includes a set of statistical techniques that examine the relationship between multiple independent variables and one dependent variable. These techniques can also be used to determine the extent to which the independent variables predict a dependent variable (Struwig & Stead, 2001).

1.4 OVERVIEW OF CHAPTERS

In Chapter 2, occupational stress and its relationship with ill health and commitment are discussed. Chapter 3 deals with the empirical study. The results and discussion are discussed in Chapter 4, while the conclusions, limitations and recommendations will be presented in Chapter 5.

1.5 CHAPTER SUMMARY

This chapter discussed the problem statement and research objectives. The measuring instruments and research method that were used in this research were explained, followed by a brief overview of the chapters that follow. Chapter 2 focuses on occupational stress.

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CHAPTER 2

OCCUPATIONAL STRESS, STRAIN AND ORGANISATIONAL OUTCOMES

In this chapter, occupational stress, strain (including ill health and organisational commitment) and their correlation with organisational outcomes (including absenteeism, presenteeism, productivity and staff turnover) are discussed. Firstly, the background and concept of occupational stress are described, followed by a discussion of different theoretical models that can be used to investigate occupational stress. Thereafter, possible causes and consequences of occupational stress are analysed. Lastly, the relationship with important organisational outcomes is discussed.

2.1 BACKGROUND OF OCCUPATIONAL STRESS

The concept of stress has been the source of immense interest over the past six decades (Doublet, 2000) and has steadily evolved over a period of several hundred years, if not over centuries. According to Cassidy (1999), the ‘discovery’ of stress in the twentieth century was really more of a rediscovery (Cassidy, 1999), because it was investigated as early as the seventeenth century. In this century, the term *stress* had come to mean “hardship”, mainly because the work of Robert Hooke was concerned with how man-made structures could be made to withstand heavy loads without collapsing (Engel, 1985; Hinkle, 1973; Lazarus, 1999). He developed the Law of Elasticity that consists of *load* (i.e., the demand placed on the structure), *stress* (i.e., the area that is affected by the demand), and *strain* (i.e., the change in the form of the structure that results from the interaction between load and stress) (Cox, 1978; Engel, 1985; Lazarus, 1993).

During the eighteenth century, the belief returned that at least a third of all diseases were of nervous origin (Doublet, 2000). The scientists and social commentators pointed out that the quickening pace of life are advancing and also warned about the impact this has on the health and well-being of humans (Wozniak, 1992). George Beard (1839-83) suggests that the pressing demands of the nineteenth-century life may lead to a circuit overload of the nervous system. The idea that the stresses and strains of modern life could cause mental disease was

'an almost ritualistic belief' of the nineteenth century (Abbott, 2001) and the diagnosis of nervous exhaustion became part of the office furniture of most physicians (Rosenberg, 1962). The diagnosis of neurasthenia (a weakness of the nervous system), during the late eighteenth century, provided patients with a scientifically legitimate explanation of their inability to perform their expected roles (Maartensen, 1994). Therefore, the need to explain diseases through 'exact science' dominated the eighteenth and nineteenth century (Wittkower, 1977). The end of the nineteenth century was to see the emergence of the consciousness, unconscious and adaptation forms of psychology (Leahey, 1992).

During the nineteenth century, Selye (1936) described stress as the lowest common denominator in an organism's reaction to exposure to a stressor, challenge and demand. Furthermore, Selye introduced the notion of stress-related illness in terms of the general adaptation syndrome (GAS), suggesting that stress is a non-specific response from the body to any demand made upon it (Selye, 1956). Because Selye followed a more confused and circuitous route to define the term stress, many attempts have been made since 1936 to abandon the concept of stress due to the confusion surrounding it (Cooper, 2000). However, the concept of stress is still alive and flourishing all over the world while further research and discussion is conducted (Cooper & Dewe, 2004).

The twentieth century was to be the century of science and technology, with the excitement of new discoveries tempered by the ever increasing pace of life (Doublet, 2000). The word 'stress' came to be used as an analogue in the social and biological sciences to describe a possible cause of ill health and mental disease (Bartlett, 1998). Therefore, it was frequently coupled with 'strain', or with 'stress' resulting in 'strain' – a reflection of its engineering roots (Cooper & Dewe, 2004). According to Cooper and Dewe (2004), it was also closely associated with ideas of 'hardship' and different adverse circumstances.

2.2 DEFINITION OF OCCUPATIONAL STRESS

Almost all research on stress begins by pointing to the difficulties associated with defining stress and the confusion surrounding the way in which the term stress has been used. In a common dictionary, 'stress' is defined as a state of mental, emotional, or other strain. In general, stress is a term that refers to the sum of the physical, mental, and emotional strains or

tensions on a person. Feelings of stress in humans result from interactions between persons and their environment that are perceived as straining or exceeding their adaptive capacities and threatening their well-being (Frey, 2003).

Occupational stress has been defined by many researchers and the most common definitions of stress may be categorised into three types, namely stimulus-based, response-based and stressor-strain interaction (Beehr & Franz, 1987). The stimulus-based approach regards stress as external forces (situational or environmental) impinging on the organism (individual) in a disruptive way. The response-based approach defines stress as an individual's psychological or physiological response to the environment or situational forces. The stressor-strain interaction approach brings together the concepts, as explained in the first two definitions, in the sense that it defines stress as both a stimulus (sources of stress or stressor) and the response (outcomes or manifestation of stress and strain). Occupational stress has also been defined by many researchers as a negatively perceived quality which, as result of inadequate coping with sources of stress, has negative mental and physical health-related consequences (Cox, 1978; Cummings & Cooper, 1979). Theories based upon this definition are usually considered to be superior since they offer a more complete view of the dynamics of stress and can account for documented differential experiences within a single situation (Arnold, Cooper, & Robertson, 1998).

Stimulus-response (interactive) definitions conceive stress as resulting from interactions between environment stimuli (stressors) and individual responses (in the form of strain). Therefore, an interactive definition is more complex than either stimulus or response definitions because the stressor-response interaction can take a variety of forms, depending on both the nature of the stressor and the response (Sulsky & Smith, 2005). During the past decade, researchers have increasingly focused on the nature of person-environment interaction, and, more importantly, the psychological process through which it takes place (Dewe, 1992). As a result, contemporary views on how stress should be defined require researchers to think of stress as a result of a transaction between the individual and the environment (Lazarus, 1990). The term *transaction* implies that stress is neither in the person nor in the environment but in the relationship between the two (Lazarus, 1990). Stress arises when the demands of a particular encounter are appraised by the individual as about to tax or exceed the resources available, thereby threatening well-being and necessitating a change in individual functioning to 'manage' the encounter (Lazarus, 1991). Therefore, stress occurs

when the magnitude of the stressor exceeds the individual's capacity to resist. The transaction would be (1) identifying the processes that link the different components, (2) recognising that stress does not reside solely in the individual or solely in the environment but in the conjunction between the two, and (3) accepting that no one component can be said to be stress because each is part of, and must be understood within the context of a process. According to Cartwright and Cooper (2002), the stress arena has been entered when the individual perceives that the demands made upon them exceed their ability to cope with it.

2.3 THEORETICAL MODELS OF OCCUPATIONAL STRESS

A large amount of research has been conducted on the causes and consequences of occupational stress. Various reviewers (e.g., Cummings & Cooper, 1979; Edwards & Cooper, 1988; Johnson & Cooper, 2003; Kahn & Byosiene, 1992) have identified specific models that they believe played an important role in developing the theoretical context for investigating work stress. For the purpose of this chapter the following four models will be discussed: the Spielberger State-Trait Model of Occupational Stress (STP model, Spielberger, Vagg, & Wasala, 2003), the Transactional Process Model (Lazarus, 1991), the Job Demands-Control (JD-C, Karasek, 1979) Model and the Organisational Stress Screening Tool (ASSET, Cartwright & Cooper, 2002) model.

2.3.1 The Spielberger State-Trait (STP) Model of Occupational Stress

The STP model of occupational stress conceptualises stress as a complex process that consists of three major components, namely (a) sources of stress that are encountered in the work environment, (b) perception and appraisal of a particular stressor by an employee and (c) the emotional reactions that are evoked when a stressor is appraised as threatening. This model focuses on the perceived severity and frequency of occurrence of two major categories of stressor events, namely job pressures and lack of support (Spielberger et al., 2003). The STP model also recognises the importance of individual differences in personality traits in determining how workplace stressors are perceived and appraised.

According to the STP model, occupational stress is defined as the mind-body arousal resulting from the physical and/or psychological demands associated with a job. The

appraisal as a stressor as threatening leads to the emotional arousal of anxiety and anger and the associated activation of the autonomic nervous system. According to Spielberger et al. (2003), the resulting effect of severe and persistent occurrence of the stressor as threatening may have adverse behavioural consequences as result of physical and psychological strain. Employees evaluate their work environment in terms of the severity and frequency of occurrence of specific demands, pressure and the level of support provided by supervisors, co-workers and organisational policies and procedures. Failure to take the frequency of occurrence of a particular stressor into account may contribute to overestimating the effects of highly stressful situations that rarely occur, while underestimating the effects of moderately stressful events that are frequently experienced.

2.3.2 The Transactional Process Model

Stress is not a factor that appears in the individual or the environment. It is imbedded in an ongoing process that involves individuals *transacting* with the environment, making appraisals of those encounters and attempting to cope with the issues that arise. According to the transactional model (Lazarus & Folkman, 1984), stress depends on an individual's cognitive appraisal of events and circumstances and on the ability to cope, these being the end result of a person's transaction with the environment. The term *transaction* implies that stress is neither in the person nor in the environment but will be the relationship between the two (Lazarus, 1990). The stress relationship is not static but is constantly changing as a result of the continual interplay between the person and the environment. Therefore, an individual's coping strategy is constantly changing to manage specific demands that are appraised as exceeding the person's resources (Lazarus & Folkman, 1984).

2.3.3 The Job Demands-Control Model (JD-C)

The *Job Demands-Control* (JD-C) model (Karasek, 1979) is based on the proposition that the interaction between job demands and job control is the key to explaining strain-related outcomes (e.g., negative health and psychological outcomes). According to this model, strain occurs when high job demands are combined with low decision control. The concept of control has been recognised as an important facet of the stress process. From the JD-C model it is clear that job demands and job control interact in such a way that it creates different

psychological work experiences for the individual, depending on the respective magnitudes of job demands and job control (Karasek, 1979). Karasek's model draws its framework from a large body of research in experimental psychology which has reliably demonstrated the importance of personal control for both animals and humans (Averill, 1973; Seligman, 1975). According to this model, job strain occurs when job demands are high and job decision control is low. In contrast, growth and development occur when job demands are high and job decision control is high.

This model has been criticised for being too simplistic because it fails to include other factors (e.g., social support and locus of control) that are presumably related to strain (Schaubroeck & Merritt, 1997). Therefore, the original model was elaborated and included social support (Karasek & Theorell, 1990). This model is now typically referred to as the demands-control-support (JD-C-S) model (Johnson, Hall, Steward, Fredlund, & Thoerell, 1991) and proposes that the moderating effects of control on the demand-strain relationship will be found only when support is high. Various research findings indicate that the inclusion of support was an important extension of the original demand-control model (Johnson & Hall, 1988; Winnubst & Schabracq, 1996).

2.3.4 The Organisational Stress Screening Tool (ASSET)

The Organisational Stress Screening Tool (ASSET), which is used in this study, was developed by Cartwright and Cooper (2002) as an initial screening tool to help organisations assess the risk of occupational stress in their workforce. The measuring instruments commonly used to examine workplace stressors are long, complex and developed primarily for white-collar and managerial workers. To overcome this limitation, the ASSET has been developed as a shorter test, applicable to all occupations. The ASSET is a two-stage risk assessment process whereby a short questionnaire is initially used to screen all employees. Thereafter, the conventional risk assessment tools are used to evaluate in detail those individuals identified as having a potential stress problem (Cartwright & Cooper, 2002). According to the authors, the ASSET is a very effective tool in diagnosing occupational stress, combining both the sources and the effects of stress. It measures potential exposure to stress in respect of a range of common workplace stressors. It also provides important

information on current levels of physical health, psychological well-being and organisational commitment, and provides data to which the organisation can be compared.

According to Cartwright and Cooper (2002), the measure is divided into four questionnaires, namely (1) perceptions of your job, (2) attitudes towards your organisation, (3) your health and (4) supplementary information. The first questionnaire (perceptions of your job) consists of seven subscales, namely Work Relationships, Work-Life Balance, Overload, Job Security, Control, Resources and Communication and Job Characteristics. The second questionnaire (attitudes towards your organisation) measures the individual's commitment toward his or her organisation. The third questionnaire (your health) focuses on the individual's physical health and psychological well-being. The fourth questionnaire focuses on supplementary information.

A high score in the 'perceptions of your job' subscales indicates an increased perception of the stressors associated with high stress levels. Simultaneously, it is recognised that occupational stress affects directly organisational commitment as well as physical health and psychological well-being. The latter are outcomes of occupational stress. The causes and outcomes of occupational stress will be discussed below.

2.4 CAUSES OF OCCUPATIONAL STRESS

As mentioned above, stress occurs when the magnitude of the stressor exceeds the individual's capacity to resist. An example would be where workload is a stressor or something that causes a person to feel stressed when he or she thinks that he or she is unable to cope with the large workload. Other stressors concern interpersonal relationships at work, such as conflicts with co-workers or abusive behaviour by supervisors. Finally, there are stressors in the organisational context, such as having insufficient resources to do the job, or unfair payment and reward systems. Research has demonstrated that all these job stressors are associated with employees' health and well-being (Spector, 2002). The ASSET model distinguishes between seven occupational stressors and for the purpose of this study, they will be discussed in detail below (Cartwright & Cooper, 2002).

2.4.1 Stressor 1 – Work relationships

To have good relationships with colleagues and supervisors at work is essential when one has to spend the entire day surrounded by these people. It is well documented that poor interpersonal relationships at work and the absence of support from colleagues and supervisors contribute greatly to the individual's experience of work-related stress (Motowidlo, Packard, & Manning, 1986; Narayanan, Menon, & Spector, 1999; Sutherland & Cooper, 1988). Typical characteristics of poor work relationships include poor relationships with colleagues, unsupportive relationships with colleagues and/or superiors, isolation and unfair treatment – all these factors are potential sources of stress (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964).

According to the Industrial Society (2001), good relationships can help individuals to cope with stress. Cooper and Cartwright (1994) suggest that relationships with people at work could be potentially stressful as a consequence of poor communication and mistrust, which in turn could result in poor psychological health. Other research findings indicated that work relationships were one of the major occupational stressors at higher educational institutions within South Africa (Coetzee & Rothmann, 2005) and the UK (Tytherleigh, Webb, Cooper, & Ricketts, 2005).

2.4.2 Stressor 2 – Work-life balance

Work-life balance can be seen as the cumulative demands of many work and non-work life roles that are incompatible in some respect so that participation in one role is made more difficult by participating in the other role (Duxbury & Higgins, 2001). Work-life conflict is often considered a potential source of stress which, in addition to other potential stressors, will have adverse effects on health and psychological well-being, resulting in, for example, poor physical health, depression, or anxiety (e.g., Burke, 1988; Frone, Russell, & Cooper, 1991, 1992, 1997; Kinnunen & Mauno, 1998). In a review by Allen, Herst, Bruck, and Sutton (2000), it is shown that work-life conflict is related to stress-related outcomes such as burnout, general psychological strain and somatic complaints, as well as physical consequences such as headache, backache, upset stomach, fatigue and sleep deprivation (insomnia).

2.4.3 Stressor 3 – Work overload

Workload refers to the sheer amount of work required and the time frame in which work must be completed (Cooper, Dewe, & O'Driscoll, 2001). Typical characteristics of overload include unmanageable work loads and time pressure that are experienced. Research findings have indicated that working under time pressure to meet deadlines is a major source of stress and has been related to high levels of strain, anxiety, depression and job performance (Cooper & Roden, 1985; Westman & Eden, 1992). According to Bateman (2001), stressful overload occurs when a person is held responsible for tasks which simply cannot be completed due to inadequate resources (e.g., time, manpower, equipment, etc.), or which is beyond his/her capabilities. Furthermore, the Industrial Society (2001) survey indicated that the second most influential causes of stress were unrealistic deadlines and constant time pressure, while the Trade Union Council (2000) survey identified that a high workload are the main cause of stress. Research has also shown that one of the most significant sources of stress for higher education staff in South Africa was job overload (Coetzee & Rothmann, 2005).

2.4.4 Stressor 4 – Job security

According to Greenhalgh and Rosenblatt (1984), employees assess the continuity of their own work situation when they observe an organisation's downsizing or change efforts. Therefore, they often respond to the experience of uncertainty with a sense of powerlessness and feelings of job insecurity. Typical characteristics of job insecurity include fear of job losses or obsolescence. Research has shown that the most significant source of stress for higher education staff in the UK was job insecurity (Tytherleigh et al., 2005). The Industrial Society (2001) survey also indicated that job insecurity is one of the six most common causes of occupational stress.

2.4.5 Stressor 5 – Job control

According to Ganster and Fusilier (1989), control is the ability of the individual to choose his/her own actions from two or more options. Control consists of the authority component that refers to the opportunity to make independent decisions (autonomy) and to have a say in what happens in the workplace. An individual should therefore feel that he/she could

influence in the way work is organised and performed. Evidence is showing that enhanced control at work can be an important element in employees' health and well-being (Spector, 2002). A large number of studies have also linked perceptions of control to both perceived stressors and strains (Spector, 2002). According to Sawatzky (1996), strong stressors occur when employees are not able to decide for themselves how to carry out their work or experience a lack of empowerment. A lack of control was one of the major occupational stressors at higher educational institutions within South Africa (Coetzee & Rothmann, 2005) and the UK (Tytherleigh et al., 2005).

2.4.6 Stressor 6 – Resources and communication

Job resources refer to those physical, psychological, social, or organisational aspects of the job that either/or: (a) reduce job demands and the associated physiological and psychological costs; (b) are functional in achieving work goals; and (c) stimulate personal growth, learning and development (Bakker, Demerouti, & Euwema, 2005). Typical characteristics of resources and communication would include having the appropriate training, equipment, resources (e.g., social support, and autonomy) and effective communication processes within the organisation.

For employees to perform their work efficiently and effectively, they would need to have the appropriate training, equipment and resources. They also need to feel that they are given adequate feedback about their work and that they are valued by the organisation (Cartwright, & Cooper, 2002). Research has shown that a deficiency in communication and a lack of resources is associated with increased levels of stress (HSE, 2001; Industrial Society, 2001). Furthermore, Bakker, Demerouti, and Schaufeli (2003) revealed that job resources were related to turnover intentions. They also reported that job resources had a negative relationship with health problems, while health problems are positively associated with turnover intentions. Finally, resources and communication were found to be major occupational stressors at higher education institutions within South Africa (Coetzee & Rothmann, 2005) and the UK (Tytherleigh et al., 2005).

2.4.7 Stressor 7 – Pay and benefits

Rewards can be distinguished as intrinsic and extrinsic rewards (O'Driscoll & Randall, 1999). Intrinsic rewards are those rewards that exist in the job, such as variety, challenge, and autonomy. Extrinsic rewards have elements such as pay and fringe benefits, promotions, social climate, and working conditions. Therefore, pay and benefits are seen as extrinsic rewards and include the financial rewards obtained from work.

According to Cartwright and Cooper (2002), financial rewards determine the type of lifestyle that an individual can lead and therefore often influence feelings of self worth, which is perceived to indicate the individual's value to the organisation. Research has shown that one of the most significant sources of stress for higher education staff in South Africa was pay and benefits (Coetzee & Rothmann, 2005).

2.5 OUTCOMES OF OCCUPATIONAL STRESS

Recently, stress has been seen as a contributing factor to the productivity and health costs of companies and countries, but, as studies of stress-related illnesses and deaths show, stress impose a high cost on individual health and well-being as well as organisational productivity (Cooper, Liukkonen, & Cartwright, 1996; Sutherland & Cooper, 1990). Research on stress among academic and support staff of universities indicated that the phenomenon of occupational stress in universities is alarmingly widespread and increasing (Winefield, 2000). Occupational stressors are aspects of the work environment that cause strains, poor psychological health or well-being of the individual (Beehr, 1995). Research has demonstrated that work-related stressors can have a wide range of negative effects on individuals. Occupational stress has been recognised as a major health issue for modern work organisations. High levels of occupational stress, if left unchecked and managed, undermine employees' productivity and creativity, as well as their health, wellbeing and morale (Hrebaniak & Alutto, 1982; Zohar, 1980). The conditions of the workplace have also been shown to lead to negative emotional reactions, physical health problems in both the short term and the long term and counterproductive behaviour at work (Spector, 2002).

2.5.1 The relationship between occupational stress and ill health

The appraisal of a stressor as threatening leads to the emotional arousal of anxiety and anger and the associated activation of the autonomic nervous system (Spielberger et al., 2003). In this study, the term 'strain' will be used to describe any response of the individual to the stressors, to minimise semantic difficulties as well as theoretical confusion. Strain refers to the individuals' psychological, physical and behavioural response to stressors (Cooper et al., 2001).

Physical strain is a physiological reaction of the stress process, which can be divided into long-term and short-term strain (Frese & Zapf, 1999). A long-term strain is a physical illness, such as heart disease, which has been suggested as an outcome of stress (Burke, Greenglass, & Schwarzer, 1996). Short-term strains are physiological reactions, such as high blood pressure or suppression of the immune responses. Psychological ill health includes anxiety/panic attacks, irritability, difficulty in decision-making, loss of sense of humour, becoming easily angered, constant tiredness, feeling unable to cope, avoiding contact with other people, mood swings and inability to listen to others (Jackson & Rothmann, 2006).

Research has shown that occupational stress has a negative impact on the physical and psychological ill health of both academic and support staff (Boyd & Wylie, 1994; Barkhuizen, 2005; Mahomed & Naude, 2006). However, poor health may not necessarily be indicative of occupational stress. Individuals may, for example, be unwell because they choose not to lead a healthy lifestyle or may be unaware of how to do so (Cartwright & Cooper, 2002). According to a study by Stacciarini and Tróccoli (2004), occupational stress was directly associated with the state of health, and inversely associated with global constructive thinking and job satisfaction. Higher levels of occupational stress are associated with dissatisfaction regarding work, psychological distress, negative affect and anxiety, and poor health (Dua, 1996). Coetzee and Rothmann (2005) reported that participants in a study at a higher education institution in South Africa reported higher levels of physical and psychological ill health and perceived lack of commitment by the organisation than the international norm. Mahomed and Naudè (2006) conducted a study of support staff at a higher education institution in the North West Province and found that employees were

reasonably poor physical and psychological health, suggesting that support staff experience stress-related ill health.

2.5.2 The relationship between occupational stress and organisational commitment

Organisational commitment is often considered as one of the most researched employee attitudes in the organisational environment (Meyer, 1997). Organisational commitment is defined as the relative strength of an individual's identification with and involvement in an organisation and the desire to stay with the organisation (Porter, Steers, Mowday, & Boulian, 1974; Mowday, Porter, & Steers, 1982). Thus, an intention to remain with the organisation may be seen as a consequence of commitment rather than as a defining characteristic.

Various researches indicated that occupational stress has a negative influence on organisational commitment. Greenhalgh and Rosenblatt (1984) found that higher levels of job insecurity resulted in employees' having less organisational commitment and therefore a greater tendency to leave the organisation. Coetzee and Rothmann (2005) reported that employees perceived characteristics of their jobs and control as a big source of stress and as a result perceive the organisation as less committed to them, and therefore also less committed to the organisation. Jackson and Rothmann (2006) reported that secondary school educators generally experienced more stress because of workload and job characteristics, and have therefore lower organisational commitment and more symptoms of ill health. According to Bakker, Demerouti, De Boer, and Schaufeli (2003), poor and lacking resources preclude actual goal accomplishment, which is likely to cause failure and frustration and therefore may lead to withdrawal from work, and reduced motivation and commitment.

During the study conducted by Siu (2002), organisational commitment was related to most of the physical and psychological outcomes among workers. Furthermore, the study has shown that organisational commitment has moderating effects on the stressor-health relationships. Siu argued that the moderating effect of commitment protects individuals from the negative effect of stress. A study conducted by Jackson and Rothmann (2006) on educators in the North West Province also found that commitment from the individual to the organisation moderate the effects of occupational stress on physical and psychological health. Therefore,

organisational commitment interacts with sources of stress at work to determine its outcomes (e.g., better job satisfaction and physical well-being), which in turn create better performance and productivity and mitigate the turnover rate. According to Mayer and Schoorman (1992), organisational commitment is a well-established indicator of motivation at work.

2.6 THE RELATIONSHIP BETWEEN OCCUPATIONAL STRESS AND ORGANISATIONAL OUTCOMES

The negative effects of occupational stress on the health and psychological well-being of individual employees and the businesses of their employing organisations are well documented. Job-related stress has come to the particular attention of medical specialists, behavioural scientists, and organisation managers (Ivancevich & Matteson, 1980). The devastating effects on the health and productivity of an individual have led to international concern regarding the need to minimise occupational stress (Kyriacou, 1987).

Studies show that stress can be as disruptive as any accident to an employee. It can be the root cause of poor attendance, excessive drinking, poor performance, irritability, increased turnover rate, poor health and even boredom (Ivancevich & Matteson, 1980). The changes in the work environment can have costly factors for organisations such as staff morale, turnover and absenteeism rates and could also lead to reduced employee performance, poor quality control and a fall in production (Siu, Donald, & Cooper, 1997).

The negative effects of occupational stress include impaired performance or a reduction in productivity, diminishing levels of customer service, health problems, absenteeism, turnover, industrial accidents, alcohol and drug use and purposefully destructive behaviours (Quick, Quick, Nelson, & Hurrell, 1997; Wright & Smye, 1996).

2.7 THE RELATIONSHIP BETWEEN ILL HEALTH (STRAIN) AND ORGANISATIONAL OUTCOMES

The relationship between stress and health has received considerable interest in both scientific research and the media (Verhaeghe, Mak, Van Maele, Kornitzer, & De Backer, 2003). Organisations suffer business loss through lost working days (due to work-related illness or accidents), absenteeism, staff turnover, lowered performance, and the associated

costs of training replacement staff (Clarke & Cooper, 2000). It is further estimated that two-thirds of sick leave may be attributed to job stress (Houtman, Bongers, Smulders, & Kompier, 1994; Stichting van de Arbeid, 2002). According to Cooper et al. (2001), employees may suffer from various health complaints, such as depression symptoms, anxiety, physical symptoms and distress, malaise or burnout as result of prolonged job stress.

Tytherleigh et al. (2005) reported that organisations suffer financially because of increased absenteeism and sickness resulting from lowered employee well-being. Bakker et al. (2003) reported that job demands were the most important predictor of health problems, which in turn were related to sickness absence. Furthermore, absenteeism is generally considered as an important consequence of burnout at the organisational level (Bakker, Demerouti, De Boer, & Schaufeli, 2003). High absenteeism is also associated with higher intention to leave and subsequent resigning, which has further financial implications for the organisation (Firth & Britton, 1989; Hackett, 1989; Price & Mueller, 1986). Thus, an explanation for absenteeism is that absence behaviour is a reaction to job stress, where stress is conceived as a failure to cope with job demands (Bakker et al., 2003). This explanation stipulates that absenteeism may be used as a coping mechanism to deal with job strain and that it is not simply a behavioural reaction to dissatisfaction (Johns, 1997).

Recently, research indicated that presenteeism is one of the biggest drains of productivity due to people 'working sick' (Hemp, 2004; Miodonski, 2004; Ruez, 2004). Presenteeism is defined as the time lost by persons who are at work, but unable to perform duties due to health conditions (Hemp, 2004; Miodonski, 2004; Ruez, 2004). Presenteeism appears to be a much costlier problem than absenteeism. Hemp (2004) reported that two studies from the *Journal of the American Medical Association* found that employees who showed up for work while suffering from pain or depression were three times less productive than people with the same conditions who were absent. According to Ruez (2004), the key drivers of presenteeism are workplace stress, employee health and work-life balance. Two articles in the *Journal of the American Medical Association* reported that depression cost US employers approximately \$35 billion a year in reduced performance at work and that pain conditions (such as arthritis, headaches and back problems) cost nearly \$47 billion (Hemp, 2004).

In a study commissioned by the Health and Safety Executive (HSE) (2002), it has been estimated that stress-related illness is responsible for the loss of 13,4 million working days in

Britain during the 2001/2002 year (HSE, 2002). A recent survey of employers in the UK revealed that absenteeism costs the UK around £10,5 billion and that stress was the second highest cause of absence amongst non-manual employees (CBI / PPP, 2000). Furthermore, Winslow (1998) reported that people with high occupational stress and depression had health costs that were 2,5 times higher than those who did not experience high occupational stress and depression.

Econometric analyses show that the healthcare expenditure in the United States has increased nearly 50 percent for workers who perceive their jobs as stressful and nearly 200 percent of those reporting high levels of stress and depression (Sauter & Hurrell, 1999). Experts claim that stress-related disorders cost U.S. industry in excess of \$150 billion per year and that stress related claims account for more than 14 percent of all insurance compensation claims (Pelletier & Lutz, 1991). Stress-related outcomes, including physical injuries at work and absenteeism, cost organisations as much as \$75 billion per year and have been shown to be directly related to high staff turnover, decreased productivity and decreased job satisfaction (Sauter, Hurrell, Fox, Tetrick, & Barling, 1999). Furthermore, it is also estimated that the US industry loses approximately 550 million working days annually due to stress-related absenteeism (Danna & Griffin, 1999). Rothmann (2006) reported that a variance of 14% for physical ill health and 25% for psychological ill health were explained by occupational stress through studies conducted at various organisations.

2.8 THE RELATIONSHIP BETWEEN COMMITMENT AND ORGANISATIONAL OUTCOMES

Linkages between organisational commitment and other organisationally relevant variables, such as absenteeism and turnover intentions, have been consistently demonstrated (Blau & Boal, 1987; Mathieu & Zajac, 1990; Shore, Barksdale, & Shore, 1995). Low organisational commitment levels harbour negative implications for job performance and intent to resign of staff (Arnolds, 2005). Furthermore, Pierce and Dunham (1987) reported significant negative relationships between organisational commitment and three measures of turnover, namely thinking of quitting, intent to search for new employment, and intent to quit. Research has consistently shown a strong negative relationship between organisational commitment and employee turnover (Miner, 1992; Shore, Newton, & Thornton, 1990).

A study conducted by Pearson (1995) revealed that excessive turnover can have significant direct and indirect costs for organisations. The direct and indirect costs are normally related to the recruitment and training process of personnel to replace employees that left the organisation. Furthermore, research has also shown a constantly strong negative relationship between organisational commitment and employee turnover (Miner, 1992). According to a study conducted by Pierce and Dunham (1987), significant negative relationships between organisational commitment and turnover (thinking of quitting, intent to seek new employment and intent to quit) existed.

Chow (1990) reported that employees that are highly committed also have higher productivity and are willing to assume responsibility. A study conducted by Arnolds and Boshoff (2004) revealed that organisational commitment is positively related to performance intentions and negatively related to intent to resign. Lincoln and Kalleberg (1990) have argued that the rewards offered by an organisation may have a powerful effect on employees' attitudes towards their job and the company for which they work. Research has constantly shown that those individuals who are highly committed to their organisations will be less likely to think about leaving their jobs (Mathieu & Zajac, 1990; Mowday, Porter, & Steers 1979).

According to the study conducted by Jackson and Rothmann (2006), occupational stress and low commitment explained 15 percent of the variance in physical ill health and 30 percent of the variance in psychological ill health. Furthermore, they found that although organisational commitment had a major effect on physical and psychological ill health, it only moderated the effect of one occupational stressor, namely job insecurity, on the physical and psychological health of educators. Rothmann (2006) reported that the variance of 11% for affective commitment and 21% for normative commitment were explained by occupational stress through studies conducted at various organisations. Coetzee and Rothmann (2005) found that employees felt that the institution is not committed to them and therefore can result in reduced levels of productivity and unwillingness to assume responsibility (Chow, 1990).

2.9 CHAPTER SUMMARY

This chapter discussed occupational stress and its outcomes. Firstly, the background and definition of occupational stress were discussed. Furthermore the theoretical models of occupational stress were discussed and the model used for the purpose of this study was discussed in detail. The definitions of other constructs like ill health (strain) and commitment were discussed, followed by a discussion of the symptoms, consequences and antecedents or possible causes of occupational stress.

Thus, the first objective, namely to conceptualise occupational stress from the literature, has been accomplished and the first research question answered.

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CHAPTER 3

EMPIRICAL STUDY

In this chapter, the method used for the empirical study is discussed. The focus will be on the choice and compilation of the study population, the measuring instruments used, administration and scoring of the measuring instruments, as well as a discussion of the statistical methods used to analyse the data. Research hypotheses are also formulated in terms of the present study.

3.1 PARTICIPANTS

A cross-sectional survey design was used to reach the objectives of this study. Cross-sectional designs are appropriate where groups of subjects at various stages of development are studied simultaneously, whereas the survey technique of data collection gathers information from the target population by means of questionnaires (Burns & Grove, 1993). The study population consisted of administrative staff at a tertiary institution in South Africa. A total of 967 questionnaires were sent out and a total of 292 were received back, giving a total response rate of 30,2%.

The characteristics of the participants are shown in Table 1.

Table 1

Characteristics of the Participants

Item	Category	Frequency	Percentage (%)
Gender	Male	77	26,40
	Female	210	71,90
	Missing values	5	1,70
Language	Afrikaans	228	78,10
	English	2	0,70
	Pedi	2	0,70
	Sotho	17	5,80
	Tswana	34	11,60
	Zulu	1	0,30
	Ndebele	2	0,70
	Xhosa	6	2,10
Age	18-30 years	55	18,80
	31-40 years	75	25,70
	41-50 years	71	24,30
	51-60 years	71	24,30
	61-70 years	9	3,10
	Missing values	11	3,80
Marital status	Single/widow/widower	41	14,00
	Engaged/in a relationship	20	6,80
	Married	187	64,00
	Divorced	37	12,90
	Separate	3	1,00
	Remarried	3	1,00
	Missing values	1	0,30
Qualification	School education	176	60,30
	3 year degree	70	24,00
	4 year degree of honours	3	1,00
	5 to 7 year degree	24	8,20
	Master's degree	13	4,50
	Doctoral degree	1	0,30
	Missing values	5	1,70

Table 1 shows that approximately 72% of the total population were females; 64% of the population were married; the majority of respondents spoke Afrikaans (78,10%); and 21,2% spoke an African language. The participants were equally distributed between the age of 21 and 60 years. A total of 176 (60,30%) of the participants had a school education, while 116 (39,7%) had a postgraduate degree.

3.2 MEASURING INSTRUMENTS

In this section, the rationale and development, description, administration and scoring, interpretation and the reliability and validation of the measuring instruments are discussed.

3.2.1 The Organisational Stress Screening Tool (ASSET)

The Organisational Stress Screening Tool (ASSET, Cartwright & Cooper, 2002) was used to measure occupational stress, ill health and organisational commitment of support staff at a higher educational institution. The development and rationale, description, administration and scoring, interpretation, reliability and validity as well as the motivation for the choice of the ASSET are discussed.

3.2.1.1 Development and rationale of the ASSET

The ASSET was introduced in 2002 to measure the extent to which employees are exposed to a range of common workplace stressors. The ASSET has been developed in order to introduce a shorter and applicable stress measurement tool to all occupations (Cartwright & Cooper, 2002) and was influenced primarily by the Cooper and Marshall (1978) model of occupational stress. Also, more contemporary stressors pertinent to the modern workplace were included within this screening tool.

The most popular accepted stress model considers stress as an interactive 'stressor-strain' process. The authors of the ASSET define stress as being a combination of a stimulus (stressor) and a response (outcome or manifestation of stress or strain). According to Cartwright and Cooper (2002), individuals suffer from stress when they perceive that the demands made upon them exceed their capability to cope. In order to measure this

experience, Cartwright and Cooper have done extensive research on occupational stress and identified a minimum set of scale items. The ASSET was also designed to recognise additional factors, such as job satisfaction and organisational commitment, which serve to either exacerbate or moderate the stress levels experienced at work (Cartwright & Cooper, 2002). A small group of items were added measuring important signs and symptoms of both physical health and psychological well-being.

The ASSET questionnaire is a short but psychometrically sound instrument for screening stress within a risk assessment exercise. It is easy to administer and can be completed quickly by most respondents.

3.2.1.2 Description of the ASSET

The ASSET is designed as a screening tool to help organisations assess the risk of occupational stress in the workforce. It is a two-stage risk assessment process in which a short questionnaire is initially used to screen all employees.

The ASSET is divided into four questionnaires, namely (1) perceptions of your job, (2) attitudes towards your organisation, (3) your health and (4) supplementary information. The first questionnaire (*perceptions of your job*) consists of 37 items (seven subscales) evaluating possible sources of workplace stress and job pressure, and include Work Relationships (eight items, e.g. 'My relationships with my colleagues are poor'), Work-Life Balance (four items, e.g. 'I work longer hours than I choose or want to'), Overload (four items, e.g. 'I do not have enough time to do my job as well as I would like'), Job Security (four items, e.g. 'My job is insecure'), Control (four items, e.g. 'I am not involved in decisions affecting my job'), Resources and Communication (four items, e.g. 'I do not have the proper equipment or resources to do my job') and Job Characteristics (seven items, e.g. 'My physical working conditions are unpleasant'). All items are scored on a six-point Likert-type scale, ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). High scores are indicative of high levels of stress/pressure.

The second questionnaire (*attitudes towards your organisation*) consists of nine items concerned with the measurement of commitment and measures the individual's commitment toward his or her organisation (four items, e.g. 'I feel that it is worthwhile to work hard for

this organisation') and the perceived commitment from the organisation to the employee (five items, e.g. 'I feel valued and trusted by the organisation'). Each of the items are scored on a six-point Likert-type scale with 1 (*strongly disagree*) to 6 (*strongly agree*). Therefore, high scores will indicate high levels of commitment.

The third questionnaire (*your health*) focuses on the individual's physical health and psychological well-being. This section consists of 18 items concerned with clinical signs and symptoms for physical health (six items, e.g. 'insomnia – sleep loss') and psychological well-being (twelve items, e.g. 'constant irritability'). Each of the items are scored on a four-point Likert-type scale with 1 (*never*) to 4 (*often*). In addition, this part of the questionnaire measures absenteeism, presenteeism and productivity. Absenteeism is measured with items such as 'over the last 3 months, how many working days in total have you been off work through illness injury?' Presenteeism is measured with items such as 'during the last 3 months, have you ever taken sick leave whilst ill and/or returned before you were well due to pressure from work?' Productivity is measured with items such as 'over the last 3 months, roughly how productive have you felt in your job?'

The fourth questionnaire focuses on supplementary information. This section consists of 24 items that focus on the demographic/biographical information (e.g. 'Marital status') and important stress-related data (e.g. 'Do you drink alcohol').

The ASSET also has an established set of norms from an international database of 20 000 respondents. Furthermore, the ASSET provides data in sten (standardised ten) format to which the organisation can be compared. The 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 makes a meaningful comparison to the norm group possible. The majority of individuals (68%) score between sten 3 and 8. Scores that fall further from the mean are considered more extreme.

3.2.1.3 Administration and scoring of the ASSET

The ASSET takes about 10 to 15 minutes to complete, is self-administered and complete instructions are provided for the respondent. The testing session should be characterised by respondent privacy and respondent confidentiality.

Respondents could complete the ASSET individually or in a group session in which privacy is insured. Respondents must feel comfortable about expressing their true feelings. Ideally, they should be able to complete the ASSET anonymously. If this is not possible because identification is required, efforts should be made to use a form of identification that is not personally revealing, such as a code number or a label.

Using a scoring key that contains directions for scoring each subscale, each respondent's test form is scored. If desired, each score can be coded, for example as strongly disagree, disagree, slightly disagree, slightly agree, agree or strongly agree by using the numerical cut-off points listed on the scoring key. The ASSET scores for a group of respondents may be treated as aggregate data. Means and standard deviations for each subscale are computed for the entire group.

3.2.1.4 Interpretation of the ASSET

Whatever statistical analyses are performed with the ASSET, it is strongly recommended that the original numerical scores be used rather than the categorisations of strongly disagree, disagree, slightly disagree, slightly agree, agree or strongly agree: the power of statistical analysis is greatly enhanced by using the full range of scores. The coding itself is intended primarily as feedback for individual respondents. It enables each respondent to compare him/herself to the overall norm and to obtain various aspects of occupational stress.

3.2.1.5 Validity and reliability of the ASSET

According to Johnson and Cooper (2003), the ASSET has a good convergent validity with an existing measure of minor psychiatric disorders, the General Health Questionnaire (GHQ12; Goldberg & Williams, 1988). However, in spite of the good convergent validity, Johnson and Cooper indicated that further research is still needed to establish its discriminant validity to provide additional support for this premise. Good convergent validity of the '*Perceptions of your job*' subscale was also found with Warr's *Job satisfaction scale* (Tytherleigh, Webb, Cooper, & Ricketts, 2005). The reliability of the ASSET 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). In South African studies, acceptable reliable internal consistencies were reported by Barkhuizen (2005), where Cronbach alpha coefficients varied

between 0,64 and 0,94, and Coetzee and Rothmann (2005), where Cronbach alpha coefficients varied between 0,64 and 0,94.

3.2.1.6 Motivation for using the ASSET

The ASSET measures an employee's possible exposure to stress with reference to a number of workplace stressors and has already been used in a variety of occupations, including health care, transportation, higher educational institutions and education. The ASSET is quick and easy to complete and generates a high response rate. Furthermore, the ASSET is inexpensive, enabling managers to more efficiently concentrate their efforts and costs into those sections of the organisation with the most acute stress-related problems. It is therefore concluded that the ASSET is a comprehensive stress measuring tool with clear benefits for both research, clinical and organisational practices surrounding the experience of work-related stress.

3.2.2 Biographical Questionnaire

A biographical questionnaire was developed to gather information about the demographic characteristics of the participants. Information that was gathered included the following: gender, marital status, satisfaction rate with current relationship/marriage/single status, language, age, highest level of education, job category, job title, years in the institution, years in the current job, chances of job promotion, basis of employment, working hours (typical week and overtime), amount of travel time to and from the workplace and annual leave. Turnover intention was measured with items such as 'to what degree do you agree with the statement: 'I consider quitting my job?' and 'How frequently do you consider quitting your job?' Absenteeism and resignation statistics for support staff were obtained from the human resources department of the higher educational institution for 2003, 2004 and 2005.

3.3 RESEARCH PROCEDURE

The following research procedure was used:

3.3.1 Negotiations with management

Before starting the research, the researcher scheduled a meeting with the management of the higher educational institution for approval to conduct this research. The research proposal was discussed with management and commitment was obtained from them for the study. It was also decided that feedback would be given to management in the form of a general, anonymous report. Dates were set to administer the measuring instruments.

3.3.2 Administration of the measuring instruments

The researcher explained the purpose and objectives of the research to the respondents. The respondents were assured that all results would be treated with the strictest confidentiality. The researcher stipulated that the process was voluntary and if someone was uncomfortable with the process they would not be pressured to participate. To ensure that all respondents understood the process, presentations and communication were made in English and Afrikaans. No time limits were set for answering the questionnaires. The researcher present at all times in case any of the respondents were unsure of what were expected of them. The procedure for administering and scoring the measuring instrument was followed strictly. After the questionnaires had been completed the data was statistically analysed.

3.4 STATISTICAL ANALYSIS

The statistical analysis was carried out with the SAS programme (SAS Institute, 2000) and SPSS programme (SPSS Inc., 2003). Exploratory factor analyses and Cronbach alpha coefficients were used to assess the validity and reliability of the constructs measured in this study. Cronbach's coefficient alpha is computed to assess the internal consistency reliability of the measuring instruments that have different scoring and response scales (Kerlinger & Lee, 2000). This index is indicative of the extent to which all the items in the questionnaire are measuring the same characteristics (Huysamen, 1993). High internal consistency implies a high generalisation of items in the test as well as items in parallel tests.

Descriptive statistics were used to analyse the data. Means, standard deviations, skewness and kurtosis are used to describe and compare results. Three main measures of central

tendency are the mean, median, and mode. They are epitomes of the sets of measures from which they are calculated. They tell what sets of measures “are like” on average, but are also compared to test relations. Moreover, individual scores can be usefully compared to them to assess the status of the individual (Kerlinger & Lee, 2000). In this study, the mean is used as measure of central tendency. The standard deviation approximates the average distance of the individual scores from the mean. The higher the standard deviation, the greater the distances are, on average, from the mean (Steyn, Smit, Du Toit, & Strasheim, 1995). There are two main ways in which a distribution can deviate from normal namely skewness and kurtosis. Skewed distributions are not symmetric and instead the most frequent scores are clustered at one end of the scale. A skewed distribution can be either positively skewed or negatively skewed. Kurtosis refers to the degree to which scores cluster in the tails of the distribution. This characteristic is usually shown up by how flat or pointy a distribution is (Field, 2005).

Pearson and Spearman correlation coefficients were used to specify the relationship between the variables. The Pearson coefficient of correlation is used to calculate indices of relation between sets of ordered pairs in order to obtain more precise estimates of the direction and degree of relations. The Pearson coefficient of correlation is based on the concomitant variation of the members of sets of ordered pairs. If they covary – vary together high values with high values, low values with low values, or high values with low values, and so on – it is said that there is a positive or negative relation as the case may be. If they do not covary, it is said there is “no” relation (Kerlinger & Lee, 2000). Thus, if a relationship exists between the variables, it can be termed a positive relationship. A negative relationship occurs when a decrease in the measurement of one variable leads to an increase in the other variable (Ferguson, 1981).

In terms of statistical significance, it was decided to set the value at a 95% confidence interval level ($p \leq 0,05$). Steyn (1999) reports that there is an increasing need for researchers to interpret results according to effect sizes and practical significance rather than statistical significance. Statistical significant tests and p-values are used to determine whether results are significant. Small p-values (smaller than 0,05) are frequently used as sufficient evidence that results are of significant importance. However, this is not always a reliable method. Often statistical significant results are of little practical importance. To determine whether results are of practical significance, the researcher would compute effect sizes.

According to Cohen (1988), the following are the cut-off points for practical significance of the correlation coefficient between variables:

- $r = 0,10$ – small effect
- $r = 0,30$ – medium effect
- $r = 0,50$ – large effect

In this study, r -values larger than 0,30 (medium effect) are considered as practically significant.

The multiple correlation coefficient (R) is used to determine the correlations between the variables. The multiple correlation coefficient is one of the links that bind together the various aspects of multiple regression and analysis of variance. R is the highest possible correlation between a least-squares linear composite of the independent variables and the observed dependent variable (Kerlinger & Lee, 2000).

A stepwise multiple regression analysis was conducted to determine the proportion of variance in the dependent variable that is predicted by the independent variables. The effect size (which indicates practical significance) in the case of multiple regression is given by following formula (Steyn, 1999):

$$f^2 = R^2 / (1 - R^2)$$

A cut-off point of 0,35 (large effect, Steyn, 1999) was set for the practical significance of f^2 .

The value of R^2 is used to determine the proportion of the total variance of the dependent variable that is explained by the independent variables. The F-test is used to test if a significant regression exists between the independent and dependent variables. Steyn (1999) suggested that effect size is used together with multiple regression especially when working with a total population (Steyn, 1999). Cohen suggested the following guidelines for effect size:

- $f^2 = 0,01$ – small effect
- $f^2 = 0,10$ – medium effect (Cohen suggested 0,15)
- $f^2 = 0,35$ – large effect

The risk factor analysis was conducted following the procedure as suggested by Clarke and Cooper (2000). Clarke and Cooper proposed that the level of risk (or risk factor) associated with the likely negative effects of a given stressor may be calculated by weighting the sample mean (perceived level of a stressor) by the sample correlation (between the stressor and a stress outcome):

$$\text{Risk factor} = \text{Exposure (E)} \times \text{Consequences (C)}$$

Thus, E is the perceived level of the stressor (exposure) and C is the correlation between the stressor and stress outcome (consequences).

A stress audit instrument, which measures the level of perceived stress, can be used to obtain E for a particular sample. It is necessary that the standardised scale scores, rather than raw scores be used. Values of C (consequences) are obtained by calculating the correlation between the stressors and stress outcomes, and converting r into r^2 . The Asset includes measures of outcome variables (physical and psychological ill health and organisational commitment), allowing the calculation of correlations between the stressor and some stress outcomes. The weighting of the stress level (E) by its correlation with a stress outcome (C) gives an estimate of the risk associated with exposure to that stressor.

3.5 FORMULATION OF HYPOTHESIS

The following research hypotheses are formulated:

- H1: Occupational stressors predict physical ill health of support staff in a higher educational institution.
- H2: Occupational stressors predict psychological ill health of support staff in a higher educational institution.

- H3: Occupational stressors lead to low individual commitment to the organisation in a higher educational institution.
- H4: Occupational stressors lead to organisational commitment to the individual in a higher educational institution.
- H5: Ill health leads to absenteeism and presenteeism of support staff in a higher educational institution.
- H6: Low organisational commitment leads to turnover intention of support staff in a higher educational institution.

3.6 CHAPTER SUMMARY

This chapter dealt with the method used for the empirical study. The choice and compilation of the study population, measuring instruments, and the administration and scoring of the measuring instruments was discussed as well as relevant statistical methods used to analyse the data. Research hypotheses were formulated in terms of the present study.

Chapter 4 deals with the report and discussion of results of the empirical study.

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CHAPTER 4

RESULTS AND DISCUSSION

In this chapter the results of the empirical study are reported and discussed. First, the results are reported. The construct validity, descriptive statistics (mean, standard deviation, skewness, kurtosis), mean inter-item correlation coefficients, and Cronbach's coefficient alpha of the measuring instruments are reported. Product-moment correlation coefficients between the various measuring instruments are given, followed by the results of multiple regression analyses. The risk factor analysis was also included to give an estimate of the risk associated with exposure to specific stressors. Furthermore, the impact of absenteeism, presenteeism and turnover intention on the organisation were also reported. Secondly, the discussion and interpretation of the results will follow.

4.1 RESULTS OF THE EMPIRICAL STUDY

The results of the empirical study are reported in this paragraph. Firstly, the results of the factor analysis (percentage of variance explained by each factor), descriptive statistics, Cronbach's alpha coefficients and mean inter-item correlation of the measuring instruments are reported. Secondly, the correlation coefficients between the scales of the three measuring instruments are given. Thirdly, the results of the multiple regression analyses, risk factor analysis and the impact of absenteeism, presenteeism and turnover intention on the organisation are reported.

4.1.1 Factor analyses, descriptive statistics and reliability of the measuring instruments

The percentage of variance explained by each factor, the descriptive statistics (mean (*M*), standard deviation (*SD*), skewness and kurtosis) of the measuring instruments and their sub-scales were computed. The internal consistency of the questionnaires was determined by computing the mean inter-item correlation (*r*-Mean) and Cronbach's coefficient alpha (α). The norm of each scale was also determined and reported. The results are reported in Table 2.

Table 2

Descriptive Statistics and Cronbach Alpha Coefficients of the ASSET

	Variable	Sten (Norm)	Mean	SD	Skewness	Kurtosis	% Variance explained	α	$r(\text{mean})$
1.	Work-Life Balance	5	9,42	4,02	0,61	-0,39	49,47	0,66	0,31
2.	Resources and Communication	5	9,86	4,04	0,67	0,24	56,58	0,74	0,42
3.	Work Relationships	6	19,12	6,88	0,69	0,45	43,26	0,80	0,34
4.	Overload	5	9,81	3,96	0,55	-0,28	60,48	0,78	0,47
5.	Job Insecurity	5	10,10	3,98	0,70	0,24	47,72	0,62	0,29
6.	Job Characteristics	3	18,57	5,67	0,57	0,60	33,18	0,65	0,21
7.	Pay and Benefits*	5	3,48	1,64	-0,01	-1,33	-	-	-
8.	Job Control	5	11,11	4,63	0,57	-0,31	58,41	0,75	0,44
9.	Physical Ill Health	6	13,96	4,21	0,02	-0,50	44,42	0,74	0,33
10.	Psychological Ill Health	5	21,90	6,90	0,36	-0,28	45,50	0,89	0,39
11.	Commitment (Individual→Organisation)	6	22,08	4,78	-1,33	1,88	60,80	0,83	0,50
12.	Commitment (Organisation→Individual)	6	18,42	3,42	-1,37	2,45	57,16	0,73	0,42

* The Pay and Benefits scale consists of only one item and therefore no alpha coefficient is reported for this scale.

Note: Low sten scores for variable 1-10 indicate low stress and/or ill health. Low sten scores for variable 11 and 12 indicate low commitment.

The results in Table 2 show that all the scores of the measuring instruments were normally distributed, except for the scores of Pay and Benefits and both scales of Commitment. Overall, the Cronbach alpha coefficients of the scales are acceptable compared to the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994), although the Work-life Balance, Job Insecurity and Job Characteristics ranged from 0,62 to 0,66 (which is still acceptable according to Kline (1999)). The inter-item correlations of all the scales were also acceptable compared to the guideline of $0,15 \leq r \leq 0,50$ (Clark & Watson, 1995).

Table 2 also shows that individuals experienced Job Characteristics as a low source of stress (sten = 3). Sten scores between 4 and 7 indicate average sources of stress. Individuals experience average levels of stress with regards to Work-Life Balance (sten of 5), Resources and Communication (sten = 5), Work Relationships (sten = 6), Overload (sten = 5), Job Insecurity (sten = 5), Physical Ill Health (sten = 6) and Psychological Ill Health (sten = 5). Furthermore, individuals also experienced average levels of Commitment to the Organisation (sten = 6) and Commitment from the Organisation (sten = 6).

4.1.2 The relationship between occupational stress, strain and occupational outcomes

Pearson product-momentum correlation coefficients were used to specify the relationships between the variables. In cases where the distribution of scores was skew, Spearman correlation coefficients were computed. The level of statistical significance was set at $p < 0,05$. The correlation coefficients between the variables are given in Table 3.

Table 3

Correlation Coefficients between the Measuring Instruments

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Work-Life Balance	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Resources & Communication	0,18*	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3. Work Relationships	0,28*	0,71***	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Overload	0,54***	0,44**	0,51***	-	-	-	-	-	-	-	-	-	-	-	-
5. Job Insecurity	0,22*	0,43**	0,45**	0,33**	-	-	-	-	-	-	-	-	-	-	-
6. Job Control	0,20*	0,73***	0,68***	0,45**	0,47**	-	-	-	-	-	-	-	-	-	-
7. Job Characteristics	0,26*	0,56***	0,66***	0,45**	0,46**	0,57***	-	-	-	-	-	-	-	-	-
8. Individual Commitment	-0,02	-0,44**	-0,38**	-0,12*	-0,23*	-0,45**	-0,41**	-	-	-	-	-	-	-	-
9. Organisational Commitment	0,02	-0,37**	-0,28*	-0,07	-0,18*	-0,32**	-0,32**	0,79***	-	-	-	-	-	-	-
10. Physical Ill Health	0,06	0,25*	0,27*	0,23*	0,23*	0,29*	0,26*	-0,24*	-0,20*	-	-	-	-	-	-
11. Psychological Ill Health	0,09	0,34**	0,34**	0,32**	0,23*	0,36**	0,34**	-0,28*	-0,22*	0,62***	-	-	-	-	-
12. Intention – Quit	0,07	0,29*	0,38**	0,22*	0,24*	0,38**	0,41**	-0,48**	-0,29*	0,25*	0,32**	-	-	-	-
13. Frequency – Quit	0,02	0,29*	0,37**	0,22*	0,20*	0,35**	0,35**	-0,44**	-0,26*	0,25*	0,33**	0,94***	-	-	-
14. Productivity	0,01	-0,08	-0,04	-0,02	-0,04	-0,15*	-0,06	0,08	0,05	-0,10	-0,14*	-0,12*	-0,12	-	-
15. Presenteeism	0,16*	0,18*	0,23*	0,30**	0,17*	0,23*	0,17*	-0,15*	-0,13*	0,30**	0,22*	0,21*	0,17*	0,03	-
16. Absenteeism	-0,07	0,16*	0,11	-0,01	0,14*	0,17*	0,16*	-0,18*	-0,17*	0,31**	0,13*	0,09	0,09	0,01	-0,26*

* Statistically significant: $p \leq 0,05$ + Practically significant correlation (medium effect): $0,30 \leq r \leq 0,49$ ** Practically significant correlation (large effect): $r \geq 0,50$

Table 3 provides the correlation coefficients of the study variables. Physical Ill Health was statistically significantly related to all the stressors, except for Work-Life Balance. However, the effects were small. Physical Ill health was also significantly related to both Presenteeism and Absenteeism ($p < 0,05$; $r > 0,30$). Psychological Ill Health was statistically and practically significantly related to the following stressors (all medium effects): Resources and Communication, Work Relationships, Overload, Job Control, Job Characteristics. Psychological Ill Health was also significantly related to Frequency and Intensity of Quit Intentions ($p < 0,05$; $r > 0,30$)

Individual Commitment to the Organisation was statistically and practically significantly related to the following stressors (all medium effects): Resources and Communications, Work Relationships, Job Control and Job Characteristics. Individual Commitment to the Organisation was significantly related to Frequency and Intensity of Quit Intentions ($p < 0,05$; $r > 0,30$). Perceived Commitment of the Organisation to the Individual was statistically and practically significantly related to the following stressors (all medium effects): Resources and Communications, Job Control and Job Characteristics.

4.1.3 Multiple regression analyses

To determine which occupational stressors predict ill health (physical and psychological) and commitment (individual→ Organisation and Organisation→ Individual), four standard multiple regression analyses, using the enter method, were performed. In these four regressions, the contribution of occupational stressors to 1) Physical Ill Health; 2) Psychological Ill Health 3) Commitment from the Individual and 4) Commitment from the Organisation were assessed. The results are reported in Table 4.

Table 4

Standard Multiple Regression Analyses

Variable	Unstandardised Coefficient		Standardised Coefficient	t	p	F	R ²	R
	B	SE	Beta					
Physical Ill Health						5,44*	0,12	0,34
(Constant)	9,60	0,92		10,44	0,00			
Work/life Balance	-0,10	0,07	-0,97	-1,45	0,15			
Job Resources	0,00	0,10	0,00	0,04	0,97			
Job Overload	0,14	0,08	0,14	1,80	0,07			
Job Security	0,10	0,07	0,10	1,38	0,17			
Job Control	0,13	0,08	0,14	1,54	0,13			
Work Relationships	0,02	0,06	0,04	0,41	0,68			
Psychological Ill Health						9,35*	0,19	0,43
(Constant)	14,23	1,55		9,20	0,00			
Work/life Balance	-0,22	0,12	-0,12	-1,86	0,06			
Job Resources	0,12	0,16	0,07	0,75	0,45			
Job Overload	0,42	0,14	0,22	3,10	0,00*			
Job Security	0,02	0,12	0,00	0,13	0,90			
Job Control	0,20	0,14	0,13	1,47	0,14			
Work Relationships	0,06	0,10	0,05	0,60	0,55			
Commitment (Individual→ Organisation)						15,67*	0,28	0,53
(Constant)	28,63	0,95		30,31	0,00			
Work/life Balance	0,05	0,07	0,04	0,65	0,52			
Job Resources	-0,23	0,10	-0,19	-2,35	0,02*			
Job Overload	0,20	0,08	0,16	2,40	0,02*			
Job Security	0,03	0,07	0,03	0,44	0,66			
Job Control	-0,25	0,08	-0,24	-3,00	0,00*			
Work Relationships	-0,02	0,06	-0,03	-0,34	0,73			
Commitment (Organisation→ Individual)						9,19*	0,19	0,43
(Constant)	21,89	0,72		30,52	0,00			
Work/life Balance	0,04	0,06	0,05	0,76	0,45			
Job Resources	-0,25	0,07	-0,30	-3,38	0,00*			
Job Overload	0,13	0,06	0,15	2,08	0,04*			
Job Security	0,00	0,06	0,00	0,07	0,94			
Job Control	-0,07	0,06	-0,09	-1,01	0,31			
Work Relationships	0,02	0,04	0,04	0,40	0,70			

* $p < 0,05$ statistically significant

In Table 4, the regression of occupational stressors upon Physical Ill Health produced a statistically significant model ($F = 5,44_{(7,290)}$; $p < 0,01$), accounting for 12% of the variance. However, none of the individual predictors were statistically significant. The entry of occupational stressors in the regression analysis for Psychological Ill Health also produced a statistically significant model ($F = 9,35_{(7,290)}$; $p < 0,01$), accounting for 19% of the variance. Table 3 shows that Job Overload ($\beta = 0,22$; $p < 0,01$) was the only significant predictor of Psychological Ill Health.

When occupational stressors were regressed upon Individual Commitment a statistically significant model ($F = 15,67_{(7,290)}$; $p < 0,01$), accounting for 28% of the variance was produced. In this model, it seems the main predictors of (low) Individual Commitment were Job Resources ($\beta = -0,19$; $p < 0,05$), Overload ($\beta = 0,16$; $p < 0,05$) and Job Control ($\beta = -0,24$; $p < 0,01$). Finally, a statistically significant model ($F = 9,19_{(7,290)}$; $p < 0,01$) was produced when occupational stressors were regressed upon Organisational Commitment, explaining 19% of the variance. In this model, it seems that Job Resources ($\beta = -0,30$; $p < 0,01$) and Overload ($\beta = 0,15$; $p < 0,05$) were the main predictors of (low) Organisational Commitment.

4.1.4 Risk factor analysis

The level of risk (or risk factor) associated with the likely negative effects of a given stressor were calculated by weighting the sample mean (perceived level of a given stressor) by the sample correlation (between the stressor and a stress outcome). Therefore the weighting of the stress level by its correlation with a stress outcome gives an estimate of the risk associated with exposure to that stressor. The results are reported in Table 5.

Table 5

Risk Factor Analysis

Stressor	Physical ill health	Psychological ill health	Commitment (Individual→ Organisation)	Commitment (Organisation→ Individual)
Work-Life Balance	1,67	3,76	0,19	0,19
Resources and Communication	29,39	54,36	91,03	67,90
Work Relationships	43,91	69,64	86,99	47,23
Overload	26,88	52,04	7,32	2,49
Job Insecurity	25,54	25,54	25,54	15,64
Job Characteristics	21,46	36,70	53,37	32,51
Job Control	44,19	68,10	106,40	53,80

Table 5 shows that Individual Commitment to the Organisation (compared to Physical and Psychological Ill Health as well as Commitment from the Organisation to the Individual) was affected more strongly by occupational stressors. Specific stressors which obtained relatively high scores on the risk factor index of Individual Commitment to the Organisation, include Job Control, Resources and Communication, and Work Relationships. These stressors also seem to impact moderately on the perceived Commitment of the Organisation to the individual. Therefore, stressors such as job control (autonomy), resources and communication, and work relationships might result in lower commitment towards the university, which in turn could result in employee turnover and withholding of discretionary effort.

Two occupational stressors, namely Work Relationships and Job Control seem to contribute the strongest to a risk for Physical and Psychological Ill Health. Overload and Resources and Communication also contributed moderately to a risk for Psychological Ill Health.

4.1.5 Impact of absenteeism, presenteeism and turnover intention on the organisation

A regression analysis was conducted to determine the proportion of variance in sickness absence (over a three month period as reported by participants) that is predicted by the Physical Ill Health (as measured by the ASSET). Physical ill health because of stress statistically significantly predicted sickness absenteeism ($F = 26,06$; $p < 0,01$; $R^2 = 0,09$). The

R^2 did not change statistically significantly when Psychological Ill Health was entered into the regression equation. Psychological Ill Health (as measured by the ASSET) explained 38% of the variance in Physical Ill Health (as measured by the ASSET) ($F = 154,11$; $p < 0,01$).

Tytherleigh et al. (2005) reported that organisations suffer financially because of increased absenteeism and sickness resulting from employee illness. Absenteeism statistics and the average total cost to company statistics were obtained from the human resources department for the support staff at a higher educational institution for the 2003, 2004 and 2005 years. The results are reported in Table 6.

Table 6

Absenteeism – Loss to the University

Item	2003	2004	2005
Total Days Sick	4,975	3,125	6,175
Percentage variance	9%	9%	9%
Days Absent due to Stress	448	282	556
Average Cost to the University (day)	R769.46	R985.26	R896.92
Total Loss (stress related)	R344,525.72	R277,104.38	R498,463.29

Table 6 indicates that 4 975 days were lost due to sickness during the 2003 year, 3 125 days were lost due to sickness in 2004 and 6175 days were lost due to sickness during the 2005 year. Therefore, the total days absent (prediction) as result of stress were 448 during 2003, 282 during 2004 and 556 during 2005. Thus, the total estimated loss for the university during the three years adds up to R1 120 093,39. Given the fact that we assume that 9% of the variance in sickness absenteeism could be explained by physical ill health, it can be deduced that R31 007,32 of the cost of sickness absenteeism can be attributed to physical symptoms of ill health.

Please note: The above-mentioned calculation is only given for illustration purposes and has various limitations. Firstly, the sickness absenteeism that was measured by self-reports might be less reliable than the objective sickness absenteeism statistics gathered by the organisation.

Indeed, an analysis showed that the objective sickness absenteeism statistics that were gathered by the organisation (over one year) seem to be much higher than the self-report statistics over three months. Secondly, the period of the self-report sickness absenteeism was only three months, which will result in less reliable data compared with data which was gathered over a one year period. Thirdly, the calculations only include the average cost to the university (employee salary) and not costs such as staff replacements, and loss of productivity because of sickness absenteeism.

Another problem area in trying to predict sickness absenteeism from physical and psychological ill health is that employees often return to work before they have recovered from ill health (which is referred to in the literature as "presenteeism"). A total of 89 employees (33,2%) reported that they returned to work while they were ill. Although it is clear that presenteeism will result in lower productivity, it is difficult to estimate the costs thereof. According to Hemp (2004), the possible loss through productivity ranges from less than 20% to more than 60% of a company's total health-related costs. A total of 37% of employees who returned to work while they were still ill indicated that they were less than 80% productive in their jobs.

According to Pierce and Dunham (1987), significant negative relationships exist between organisational commitment and three measures of turnover, namely thinking of quitting, intent to search for new employment, and intent to quit. Arnolds (2005) reported that low organisational commitment levels harbour negative implications for job performance and intent to resign of staff. During this study the intention to quit was measured by self-reports. A total of 75 employees (27,6%) reported that they considered quitting their job from which 51 employees (18,8%) indicated that they consider quitting their job as result of stress. The statistics obtained from the human resources department revealed that 92 support employees resigned during the 2003 year, 35 employees resigned during 2004 and 63 employees resigned during 2005. Cascio (2006) reported that the cost of turnover in a chain of restaurants in Singapore was more than 75% of an employee's annual salary. Among managers the salary multiple is 1.5 to 2.5, excluding the cost of lost customer contracts and productivity. Therefore turnover intention can be costly to the organisation.

Next, the relationship between occupational stress, organisational commitment and turnover intention were analysed. For the purposes of this analysis turnover intention was calculated as the product of the frequency and intensity of employees' thoughts about quitting their jobs. The intensity of turnover intention was measured by the question 'To what degree do you agree with the statement: "I consider quitting my job?"' The frequency of turnover intention was measured by the question 'How frequent do you consider quitting your job?' A total of 43 employees (14,73%) in the sample showed high turnover intention. Discriminant analysis was used to investigate whether occupational stress and organisational commitment would predict turnover intention. The results showed that occupational stress and organisational commitment significantly predicted turnover intention (Wilks' Lambda = 0,90; $\chi^2 = 31,65$, $df = 9$; $p < 0,01$). The standardised canonical discriminant function coefficients are reported in Table 7.

Table 7

Standardised Canonical Discriminant Function Coefficients

Item	Coefficient
Work-Life Balance	-0,25
Resources and Communication	-0,15
Work Relationships	0,42
Overload	0,04
Job Insecurity	0,13
Job Characteristics	0,44
Job Control	0,08
Individual Commitment	-0,45
Organisational Commitment	0,07

Based on the results in Table 7 it can be deduced that two occupational stressors, namely Work Relationships and Job Characteristics and Individual Commitment (inverse), predicted turnover intention. The classification results showed that 70% of the low turnover intention group (174 cases) and 65% of the high turnover intention group (28 cases) were predicted correctly.

Table 8

Turnover Intention – Loss to the University

Item	2003	2004	2005
Actual resignation	92	35	63
Percentage variance	65%	65%	65%
Resignation due to Stress	60	23	41
Average Cost to the University (75% of annual salary)	R150,069	R192,866	R174,926
Total Loss (stress related)	R9,004,140	R4,435,918	R7,171,966

Table 8 indicates that 92 (8,5% of total support staff) support staff actually resigned during the 2003 year, 35 resigned in 2004 and 63 resigned during the 2005 year. Thus, 8,5% of the total support staff resigned during the 2003 year, in comparison with the 14,73% that were determined through the sample. It was calculated above that 65% of the high turnover intention group was predicted correctly and therefore the total actual resignations, as result of stress and low commitment, were predicted as 60 employees during 2003, 23 employees during 2004 and 41 employees during 2005. Thus, the total estimated loss for the university during the three years adds up to R20 612,024.

Please note: The above-mentioned calculation is only given for illustration purposes and has various limitations. Firstly, the turnover intention of employees was measured by self-reports that might be less reliable than the actual resignation statistics gathered by the organisation. Indeed, an analysis showed that the actual resignation statistics that were gathered by the organisation (over one year) seem to be higher than the self-report statistics over three months. Secondly, the calculations were made upon the assumption that the cost of resignations can be set at 75% of the average annual salary of support staff (cost to company) as suggested by Cascio (2006). The real costs of resignations depend on the job levels of employees who resigned. It is very difficult to estimate the total costs lost due to resignation of employees because of various cost elements, such as lost of expertise, productivity, recruitment and training.

4.2 DISCUSSION

The objective of this study was to identify the occupational stressors for support staff in a higher education institution; to assess the relationship between occupational stress, physical and psychological ill health and organisational commitment (commitment from the individual and commitment from the organisation), and to determine the predicted financial implications of absenteeism, presenteeism and turnover intention.

The findings of this study, which include all categories of support staff, were compared to established normative data. Although literature indicates (Barkhuizen, 2005; Coetzee & Rothmann, 2005; Mahomed & Naudé, 2006; Tytherleigh et al., 2005) that support and academic staff in higher education institutes experience high levels of stress (for example job security, work relationships, and a lack of control), compared to the normative data, support staff in this study overall experienced average levels of occupational stress. Furthermore, support staff also experienced average levels of commitment both from and towards the organisation.

The results of the product-moment correlation coefficients showed that statistically significant relationships exist between most of the stressors and outcomes. However, Work-life Balance was the only stressor that was not associated with any of the outcome variables (except for the relationship with presenteeism). In order to determine the best predictors of ill health and commitment, four multiple regression analyses were conducted, with the occupational stressors included as predictors and ill health and commitment as dependent variables. Although a statistically significant model was produced when occupational stressors were regressed upon physical ill health, showed that none of the individual occupational stressors were significant predictors. However, it should be mentioned that job overload almost reached statistical significance ($p = 0,07$) and could therefore, if not attended to, result in physical ill health in the longer run. Therefore, Hypothesis 1, which stated that that occupational stressors would predict physical ill health is rejected.

As far as the relationship of occupational stressors and psychological ill health is concerned, a statistically significant model was produced, where the main predictor was Overload. It therefore seems that when support staff felt particularly stressed with unmanageable

workloads and with time constraints placed upon them, they will be more inclined to show symptoms of psychological ill health. Therefore, individuals who suffer from an extreme overload will show symptoms of anxiety, depression and poor job performance. These results are similar to those of Coetzee and Rothmann (2005) who reported that job overload is a significant source of stress for higher education staff in South Africa. The findings of a survey from the Industrial Society (2001) also indicated that the second most influential cause of stress was unrealistic deadlines and constant time pressure. As a result, job overload should be considered as a major contributor to high levels of strain, anxiety, depression and job performance (Cooper & Roden, 1985; Westman & Eden, 1992). Based on these results, Hypothesis 2, which stated that occupational stressors would predict psychological ill health is accepted (but only for job overload).

For the relationship between the occupational stressors and individual commitment towards the organisation, a statistically significant model was also produced, where the main predictors were resources and communication, job overload and job control. With regard to resources and communication it seems that stress because of communication processes within the organisation, a lack of adequate feedback, and a lack of the appropriate training and equipment result in reduced commitment to the organisation. These results are in line with research findings that resources and communication were found to be one of the major occupational stressors at higher educational institutions (Coetzee & Rothmann, 2005; Tytherleigh et al., 2005).

Furthermore, the results support the findings of Bakker, Demerouti, De Boer, and Schaufeli (2003) that poor and lacking resources preclude actual goal accomplishment, which is likely to cause failure and frustration and therefore may lead to withdrawal from work, and reduced motivation and commitment. With regard to job overload it seems that support staff would also experience increased levels of stress, ill health (as already discussed) and reduced commitment to the organisation. This confirms the findings of Jackson and Rothmann (2006), who reported that secondary school educators generally experienced more stress because of workload and therefore experience lower organisational commitment and more symptoms of ill health. Lastly, with regard to job control, it seems that support staff feel that they have little control over many aspects of their job (autonomy) and have little or no influence over their performance targets. Therefore, individuals who experience little control would therefore experience stress and be less committed to the organisation. This finding is

supported by Coetzee and Rothmann (2005), who found that employees perceived control as a big source of stress and as a result perceive the organisation as less committed to them, and therefore also less committed to the organisation. Based on these results, Hypothesis 3, which stated that occupational stressors lead to lower individual commitment to the organisation is accepted.

The relationship between the occupational stressors and commitment from the organisation also produced a statistically significant model, where the main predictors were job overload and job resources and communication. In this research it became evident that support staff felt particularly stressed because they experience job overload and a lack of resources and communication. Consequently, individuals will perceive the organisation as less committed to them and in response they would consider resigning. This supports the findings of Arnolds (2005), who reported that low organisational commitment levels harbour negative implications for job performance and intent to resign of staff. Likewise, Jackson and Rothmann (2006) reported that employees experiencing more stress because of workload will indicate lower organisational commitment and more symptoms of ill health. Based on these results, Hypothesis 4, which stated that occupational stressors lead to perceptions of reduced organisational commitment towards the individual is accepted.

The results of the risk factor analysis indicated that individual commitment to the organisation was affected more strongly by occupational stressors. Specific stressors which obtained relatively high scores on the risk factor index of individual commitment to the organisation, include job control, resources and communication and work relationships. This finding is in agreement with the results as indicated in the multiple regression analysis except for work relationships. Cooper and Cartwright (1994) reported that relationships with people at work could be potentially stressful as a consequence of poor communication and mistrust, which in turn could result in poor psychological health. This has also been supported by recent research findings indicated that work relationships were one of the major occupational stressors at higher educational institutions (Coetzee & Rothmann, 2005; Tytherleigh et al., 2005). Furthermore, these stressors also seem to impact moderately on the perceived commitment of the organisation to the individual. Thus, the stressors such as job control (autonomy), resources and communication, and work relationships might result in lower commitment towards the university, which in turn could result in employee turnover and withholding of discretionary effort. Similar findings were made by Arnolds (2005), who

reported that low organisational commitment levels harbour negative implications for job performance and intent to resign of staff. This is supported by Pierce and Dunham (1987) as well, who describe significant negative relationships between organisational commitment and turnover intention (thinking of quitting, intent to search for new employment and intent to quit).

Evaluation of the Spearman correlations of the ASSET dimensions showed that physical ill health was significantly related to both presenteeism and absenteeism. Furthermore, physical ill health because of stress statistically significantly predicted sickness absenteeism. Therefore, the total predicted days absent as result of stress were 448 during 2003 (282 during 2004 and 556 during 2005). The total estimated loss for the university during the three years adds up to R1 120 093,39. This corresponds with findings by Clarke and Cooper (2000) that organisations suffer business loss through lost working days and absenteeism.

Furthermore, the Spearman correlations also showed that psychological ill health was significantly related to frequency and intensity of quit intentions. A total of 75 employees (27,6%) reported that they considered quitting their job from which 51 employees (18,8%) indicated that they consider quitting their job as result of stress. Actual statistics obtained from the human resources department revealed that 92 support employees resigned during the 2003 year (35 in 2004 and 63 in 2005). Thus, the total estimated loss for the university during the three years adds up to R20 612 024. These findings can therefore be supported and are in line with Clarke and Cooper's (2000) conclusion that organisations also suffer business loss, staff turnover, lowered performance, and the associated costs of training replacement staff. Moreover, research indicates that presenteeism is one of the biggest drains of productivity due to people "working sick" (Hemp, 2004; Miodonski, 2004; Ruez, 2004). This phenomenon was also found in this study, with a total of 37% of employees indicating that they returned to work while they were still ill and that they were less than 80% productive in their jobs because of that. Based on the above-mentioned results, the hypotheses regarding the relationship between occupational stress and organisational outcomes; the relationship between ill health and organisational outcomes and the relationship between organisational commitment and organisational outcomes are accepted (i.e., *Hypotheses 5 and 6*).

4.3 CHAPTER SUMMARY

In this chapter the results of the empirical study were reported and discussed. The construct validity of the measuring instrument was presented, followed by the descriptive statistics and the product-momentum correlation coefficients between the various measuring instruments. The results of the standard multiple regression analysis were reported and discussed. The results of the risk factor analysis were reported and discussed as well. Finally, the impact of absenteeism, presenteeism and turnover intention was calculated and discussed. The chapter was concluded with a discussion of the results obtained.

Thus, the following specific objective have been accomplished, namely to determine the relationship between occupational stress, ill health (physical and psychological), commitment (from the organisation and individual), absenteeism, presenteeism and turnover intention.

In Chapter 5 conclusions and limitations are discussed and recommendations are made.

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CHAPTER 5

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter, the conclusions regarding the literature review and the results of the empirical study are made. The limitations of the research are discussed, followed by recommendations for the organisation and further research.

5.1 CONCLUSIONS

The first objective of this study was to determine how occupational stress and its relationship to ill health and organisational commitment is conceptualised in the literature. Occupational stress has been defined by many researchers. According to the developers of the ASSET, the stress arena has been entered when the individual perceives that the demands made upon them exceed their ability to cope with it (Cartwright & Cooper, 2002). Research has also shown that occupational stress has a negative impact on the physical and psychological ill health of both academic and support staff (Boyd & Wylie, 1994; Barkhuizen, 2005; Mahomed & Naude, 2006). Furthermore, Coetzee and Rothmann (2005) reported that employees perceived characteristics of their jobs and a lack of control as a big source of stress and as a result, perceive the organisation as less committed to them, and are therefore also less committed to the organisation.

The second objective of this study was to determine how the relationship between occupational stress, ill health, organisational commitment and organisational outcomes (including absenteeism, productivity and turnover) is conceptualised in the literature. According to the literature occupational stress have devastating negative effects and include impaired performance or a reduction in productivity, diminishing levels of customer service, health problems, absenteeism, turnover, industrial accidents, alcohol and drug use and purposefully destructive behaviours (Quick, Quick, Nelson, & Hurrell, 1997; Wright & Smye, 1996). Therefore, occupational stress can cost the organisation and individuals dearly. Tytherleigh, Webb, Cooper, and Ricketts (2005) reported that organisations suffer financially because of increased absenteeism and sickness resulting from lowered employee well-being. Furthermore, high absenteeism is also associated with higher intention to leave and

subsequent resigning, which has further financial implications for the organisation (Firth & Britton, 1989; Hackett, 1989; Price & Mueller, 1986). Research has also consistently shown a strong negative relationship between organisational commitment and employee turnover (Miner, 1992; Shore, Newton, & Thornton, 1990).

The third objective of this study was to determine how the financial implications of occupational stress, ill health, organisational commitment, absenteeism, productivity and turnover intention for organisations was conceptualised in the literature. In a study commissioned by the Health and Safety Executive (HSE) (2002), it has been estimated that stress-related illness is responsible for the loss of 13,4 million working days in Britain during the 2001/2002 year. A recent survey of employers in the UK revealed that absenteeism costs the UK around £10,5 billion and that stress was the second highest cause of absence amongst non-manual employees (CBI / PPP, 2000). Furthermore, stress-related outcomes, including physical injuries at work and absenteeism, cost organisations as much as \$75 billion per year and have been shown to be directly related to high staff turnover, decreased productivity and decreased job satisfaction (Sauter, Hurrell, Fox, Tetrick, & Barling, 1999). Presenteeism has been seen as one of the biggest drains of productivity due to people 'working sick' (Hemp, 2004). Therefore, various studies have been conducted and reported that presenteeism cost the US employers approximately \$35 billion a year in reduced performance at work and that pain conditions (such as arthritis, headaches and back problems) cost nearly \$47 billion (Hemp, 2004). In a study conducted by Cascio (2006), he reported that the cost of turnover in a chain of restaurants in Singapore was more than 75% of an employee's annual salary. Thus, the literature indicates that organisations can suffer major losses in terms of lower productivity, absenteeism, presenteeism and turnover intention as result of occupational stress.

The fourth and fifth objective of this study was to determine the relationship between occupational stress, ill health, organisational commitment and organisational outcomes (including absenteeism, presenteeism, productivity and turnover) and furthermore to determine the financial implications of occupational stress, ill health, organisational commitment, absenteeism, productivity and turnover intention of support staff in a higher education institution. The results of the product-moment correlation coefficients showed that statistically significant relationships exist between most of the stressors and outcomes. However, Work-life Balance was the only stressor that was not associated with any of the outcome variables (except for the relationship with presenteeism). Evaluation of the

Spearman correlations of the ASSET dimensions showed that physical ill health was significantly related to both presenteeism and absenteeism. Furthermore, physical ill health because of stress statistically significantly predicted sickness absenteeism. The total estimated loss for the university during the three years adds up to R1 120 093,39.

The Spearman correlations also showed that psychological ill health was significantly related to frequency and intensity of quit intentions. The total estimated loss for the university during the three years, due to turnover intention, adds up to R20 612 024. As discussed earlier, presenteeism is one of the biggest drains of productivity. During this study a total of 37% of employees indicated that they returned to work while they were still ill and also indicated that they were less than 80% productive in their jobs because of that.

5.2 LIMITATIONS OF THIS STUDY

This study had several limitations, which are outlined below:

The first limitation of this study was that a cross-sectional design was used, which implies that causal inferences cannot be made. The causality of relationships can, therefore, not be determined. Longitudinal designs could help to clarify the relationships between variables in this study with regard to the findings on ill health (physical and psychological) and organisational commitment (both from and towards the organisation). Another limitation was that certain data was collected through self-report questionnaires and thus have the potential to inflate the observed relationships spuriously; introducing what is termed 'method variance' or 'nuisance'.

The third limitation of the present study also include the sample size which was relatively small ($N = 292$) and therefore implies that the findings cannot be generalised to all higher educational institutions, and neither to other industries. Furthermore, only one higher educational institution was involved, and as a result the responses could have been influenced by the specific organisational culture. The results could also not be generalised to other contexts.

Another limitation of this study was that the questionnaires were only distributed in English, while English was a second or even third language for the majority of the respondents. This could have influenced the way in which the respondents answered the questionnaires, as a result of misunderstandings and incorrect interpretations. It is also possible that some support staff did not trust the confidentiality clause included in the questionnaire and could have partially or totally answered the questions inaccurately for fear that they would be personally identified. Accordingly, this could have influenced the results.

The technique for deriving the risk factors associated with sources of pressure in an organisation that is based on sample means and correlations could also be seen as a limitation because the use of these statistics has a number of disadvantages, such as that the sample correlation will be affected by particularly high or low mean levels where there is little variation. Thus, the values of r do not reflect non-linear relationships, nor more complex combination effects (Clarke & Cooper, 2000). Finally, limited questions regarding presenteeism were included within the questionnaire, and limited data and statistics were available to accurately determine the impact that absenteeism, presenteeism and intention to quit had on the organisation.

5.3 RECOMMENDATIONS

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

5.3.1 Recommendations for the organisation

Research on stress among academic and support staff of universities indicated that the phenomenon of occupational stress in universities is alarmingly widespread and increasing (Winefield, 2000). Occupational stressors are aspects of the work environment that cause strains, poor psychological health or well-being of the individual (Beehr, 1995) and therefore the human and financial costs of job-related strain can be substantial (De Frank & Ivancevich, 1998; Murphy, 1995). Consequently, higher education institutions should intervene to reduce the occupational stress to support staff. According to Cooper, Dewe and

O'Driscoll (2001), efforts to combat job-related strain have been conceptualised as primary interventions, secondary interventions and tertiary interventions.

According to the authors, primary interventions are based on the assumption that the most effective way to combat strain is to eliminate or at least reduce the source of strain in the work environment, therefore alleviating the pressure placed upon individual employees. With regard to support staff, changes in the decision making processes could be made to increase employee participation in relevant decisions to reduce the stress level concerning job control. Furthermore, employees' job tasks could be redesigned (task enrichment and enlargement) to increase employee autonomy and control over job functions and work schedules. Since work relationships also play a role in the process that might lead to stress and health problems, the provision of a more supportive climate (including more constructive feedback on job performance) may reduce stress regarding work relationships. In addition, overload also play a central role regarding occupational stress and strain and therefore reducing overload seems warranted. The key component to these strategies is the provision of greater individual control over the work environment and therefore substantial evidence that increased personal control is directly linked with higher levels of employee satisfaction and well-being (Cooper, Dewe & O'Driscoll, 2001).

Secondary-level interventions focus on stress management training to alleviate the impact that environmental stressors exert on workers, rather making changes to work conditions. Therefore, secondary-level interventions can be implemented for support staff that are already showing symptoms of stress from getting sick and in order to increase individuals' awareness of their levels of strain and to enhance their personal coping strategies. The organisation may find it useful to give support staffs stress management training to introduce them to more appropriate ways of managing stress. Techniques which ought to be considered include relaxation training, biofeedback, cognitive restructuring, time management and conflict resolution strategies. These have been found to be useful for some forms of stressors (Dewe, 1994), although their long-term effectiveness and impact on organisational outcomes have not been constantly demonstrated (Ganster, 1995). The tertiary level of stress management intervention is concerned with the rehabilitation of individuals who have suffered ill health or reduced well-being as a result of strain in the workplace. In this study, support staff experienced average levels of stress compared to the national norm, but

problematic stressors were identified as physical and psychological health (sten = 6). Therefore it seems that tertiary level interventions are warrant.

5.3.2 Recommendations for future research

Future research in South Africa needs to focus on the relative occurrence of occupational stress in various occupations. The differences in levels of occupational stress found between occupational groups may help identify occupations that are most at risk of the negative outcomes of occupational stress.

In terms of the measurement of occupational stress with the ASSET, it is recommended that future research must focus on standardising the ASSET for South African conditions. Because English is a second or even as a third language for the majority of the respondents, future research regarding occupational stress must use questionnaires which are translated into languages other than English (for example Afrikaans, Sotho or Tswana).

Future studies regarding occupational stress and its outcomes for support staff should also be expanded to other higher education institutions in South Africa for future comparisons. It is recommended that future studies of occupational stress and its outcomes should adhere to the multi-cultural context of the South African workforce.

Further research is required in the area of occupational risk assessment, particularly field studies in organisations, to produce a validated and thoroughly tested risk assessment tool for evaluating the risks associated with occupational stress.

Finally, it is recommended that further research should be conducted to develop a human resources costing and accounting model for the South African environment, to effectively determine the financial implication that absenteeism, presenteeism and turnover intentions have on the organisation due to occupational stress.

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