BURNOUT OF SUPPORT STAFF IN UNIVERSITIES IN THE NORTH-WEST PROVINCE

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Mini-dissertation submitted in partial fulfilment of the requirements for the degree Magister Artium in Industrial Psychology at the Potchefstroomse Universiteit vir Christelike Hoër Onderwys

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November 2003

Potchefstroom

COMMENTS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the Publication Manual (4th edition) of the American Psychological Association (APA) were followed in this dissertation. This practice is in line with the policy of the Programme in Industrial Psychology of the PU for CHE to use APA style in all scientific documents as from January 1999.

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

ACKNOWLEDGEMENTS

I would like to acknowledge and sincerely thank the following key individuals and organizations that assisted and contributed to the completion of this mini-dissertation:

- My Lord and Saviour, for the ongoing miracles in my life.
- Prof. S. Rothmann, my study leader, for his tremendous inspiration, guidance, encouragement, patience and his contribution to this study.
- To the participants in the research project for the collection and capturing of the data.
- To my mom, uncle and aunt for their endless love and support and for never giving up on me.
- To Eben Kleyn, who was not only my mentor and coach, but also a dear friend and the largest contributor to this study.
- The personnel of the Potchefstroom University for CHE and the University of North-West for their participation and contributions in this study.
- To Nicolene Barkhuizen, my co-worker, for her friendship and inputs in this study.

The financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged. Opinions expressed and conclusions arrived at are those of the author and are not necessarily to be attributed to the National Research Foundation.

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ABSTRACT

Title: Burnout of support staff in universities in the North-West Province.

Key terms: Burnout, exhaustion, cynicism, professional efficacy, support personnel, tertiary institutions, occupational stress, dispositional optimism.

Tertiary institutions in South Africa are being called to account for the quality of education that they provide. Evidence suggests that staffs at all levels are working longer hours than in the past in order to adhere to the above-mentioned requirement. Non-academic personnel in universities are the key performers to establish service quality. They know that they have to support academic staff in their main roles of research and teaching at institutions of higher education. Different support personnel groups within a university experience distinct problems.

The nature of the support personnel's work is continuous and demanding. Support personnel must deal with the dilemmas inherent in simultaneously administering, supervising instruction, being accessible, delegating and accepting responsibility. Multiple personal and professional qualities seem to be needed to carry out the job successfully. Not surprisingly, then, support personnel in tertiary institutions can be extremely prone to experience burnout and occupational stress.

The objective of this research was to determine the relationship between burnout, strain and job characteristics and to determine whether dispositional optimism moderates the effect of job characteristics on burnout. A stratified random sample (N = 334) was taken of personnel working in universities in the North-West Province. The Maslach Burnout Inventory – General Survey, the Health subscales of ASSET and the Life Orientation test (revised edition) were used as measuring instruments. Descriptive and inferential statistics were used to analyse the results.

The results of the study showed that work overload and certain task characteristics (for example, no possibilities for independent thought and action) caused personnel to experience exhaustion as well as cynicism, which resulted in strain. On the other hand, certain task

characteristics (for example, variety in work, adequate management and job security) were all linked to higher professional efficacy, which, in turn, resulted in less experienced strain. Exhaustion and cynicism, both of which are dimensions of burnout, were also significantly correlated. Dispositional optimism, however, was related to lower exhaustion and professional efficacy, which resulted in less experienced strain and burnout. Therefore, it seems that optimism moderates the effects of job characteristics on exhaustion.

Recommendations were made for future research.

OPSOMMING

Titel: Uitbranding van ondersteuningspersoneel in universiteite in die Noordwes-provinsie.

Sleutelterme: Uitbranding, uitputting, sinisme, professionele doeltreffendheid, ondersteuningspersoneel, tertiêre institusies, stres, optimisme.

Tersiëre onderwysinstansies in Suid-Afrika moet kwaliteitopleiding voorsien. Dit is bewys dat personeel langer ure moet werk as in die verlede om aan bogenoemde vereiste te voldoen. Nie-akademiese personeel is die sleutelspelers om dienskwaliteit in universiteite te verseker. Hulle weet dat hul die akademiese personeel in hulle hoofrolle van navorsing en opleiding moet ondersteun. Verskillende ondersteuningspersoneel groepe in 'n universiteit ervaar verskillende probleme. Die aard van die ondersteuningspersoneel se werk is veeleisend. Ondersteuningspersoneel moet dikwels dilemmas hanteer wat gelyktydig administratiewe en toesighoudende take behels. Veelvoudige persoonlike en professionele kwaliteite is nodig om die werk suksesvol te voltooi. Dus kan ondersteuningspersoneel in universiteite moontlik uitbranding en werksverwante stres ervaar.

Die doel van hierdie navorsing was om die verband tussen uitbranding, werksverwante stress en die rol van optimisme as 'n moderator van die stresproses te bepaal. 'n Gestratifiseerde steekproef (N = 334) is geneem van die personeel van die universiteite van die Noordwes-provinsie. Die Maslach Uitbrandingsvraelys – Algemene Opname, 'n Gesondheidsvraelys, die Werkskenmerke-vraelys en die Lewensoriëntasietoets (Hersiene weergawe) is as meetinstrumente gebruik. Beskrywende en inferensiële statistiek is gebruik om die data te ontleeed.

Die resultate van die studie het getoon dat werksoorlading en sekere werkskenmerke, byvoorbeeld die beperking van gebruik van vrye denke en aksies binne die werksituasie tot uitputting en sinisme aanleiding gee en dus ook tot uitbranding lei. Sekere taakkenmerke, byvoorbeeld verskeidenheid van werk, duidelike rolle en werksekuriteit was gekoppel aan professionele doeltreffendheid, wat dan ook aanleiding gegee het tot die ervaring van minder stremming. Uitputting en sinisme, wat beide dimensies van uitbranding is, het betekenisvol gekorreleer. Disposisionele optimisme het gekorreleer met lae uitputting en die gevoel van

professionele effektiwiteit; wat resulteer in minder stremming vir die individu. Dit blyk dus dat invloed van werkskenmerke op uitbranding gemodereer word deur optimisme.

Aanbevelings vir toekomstige navorsing is aanbeveel.

CHAPTER 1

INTRODUCTION

This mini-dissertation determines the possible relationships between burnout, strain, job characteristics and dispositional optimism.

This chapter focuses on the problem statement, objectives and basic hypothesis, as well as the research method.

1.1 PROBLEM STATEMENT

Universities play a vital role in the economic and social life of a country (Diamini, 1995). For example, according to Winefield, Gillespie, Stough, Dua and Hapuararchchi (2002), universities train the Nations' scientists, engineers, lawyers, doctors and other professionals, and produce much of a country's cutting-edge research. There is also growing evidence that tertiary institutions no longer provide the low stress environment they once did (Gillespie, Walsh, Winefield, Dua & Stough, 2001; Winefield et al., 2002; Winefield & Jarrett, 2001). Tertiary institutions face an overload of demands but are equipped with an undersupply of response capabilities, especially concerning finances (Viljoen & Rothmann, 2002).

Clark (2000) identifies four trends that create turbulent environments for tertiary education institutions. Firstly, demands for participation change student entry from the elite to the mass to universal. Secondly, an increasing number of occupations are setting exact requirements with regard to knowledge and skills that are currently not provided by secondary education. Thirdly, government and the private sector increasingly urge tertiary education institutions to assist them in solving societal problems on a broad spectrum. Fourthly, the globalisation of knowledge propels its growth at an accelerating pace.

There is no doubt that South African society has experienced, and is experiencing, considerable socio-economic and political transformations (Roux, Schmidt & Scheepers,

1997). The apartheid policy had a pervasive influence on universities and the new dispensation implemented after the apartheid era will also have a profound effect. University personnel have to face many demands made in the name of freedom and equality (Roux et al., 1997). According to Viljoen and Rothmann (2002) organisational transformation in tertiary education institutions in South Africa includes: revolutionary change (in the sense that previous management practices and ways of doing things are discontinued), qualitative change (which is difficult to measure, but which changes the experiences of organizational members), and multidimensional change (which affects all structures, processes and procedures and requires changes in values, norms, attitudes, perceptions and behaviour).

At South African universities, the achievement of objectives is usually measured in terms of process criteria (pass rates), instead of performance criteria, which reflect the quality of personnel (Wissing, Du Toit & Rothmann, 2002). A question that can be raised is: What actions are employers currently taking to create a healthier and less stressful environment for personnel? Since the direct and indirect costs of occupational stress can be measured in both humanistic and financial terms (Cooper & Cartwright, 1994), healthy institutions are likely to be those that are successful in maintaining support personnel characterized by good physical, psychological and mental health. The effectiveness of the modern university as a human organisation depends fundamentally on the effectiveness of its individual staff members (Davis, 1996).

To adapt to the changing circumstances and to maintain the desire for excellence is a challenge for university staff. The main characteristic of the university as a work organisation is the two distinct social structures: (1) academic staff engaged in teaching and research, and (2) non-academic administrative and support staff. The two constituencies rarely share similar jobs and supervisory structures, and consequently give rise to significantly different employee problems and concerns (Davis, 1996). Support staff play an important role in the creation and development of knowledge and innovation – in addition to education and training – in a university (Gillespie et al., 2001) and they are the key performers in establishing service quality (Hittman, 1993). The term 'support staff' is used in this paper to refer to all the non-academic staff employed within the university sector, including staff in academic support, administrative support, library and technical areas.

The nature of the support personnel's work is continuous and demanding (Waugh, 2002). According to the researcher, support personnel must deal with the dilemmas inherent in simultaneously administering, supervising instruction, being accessible, delegating and accepting responsibility, etc. Multiple personal and professional qualities seem to be needed to carry out the job successfully.

Research from across the globe reports an alarming increase in the occupational stress experienced by university staff. According to Smewing and Cox (1998), different support staff groups within a university experience different problems. For example, it appears that many of the pressures on academic and senior support staff are passed on to secretarial and administrative employees, who are being asked to take on more duties and work for a greater number of people. This produces problems with regard to their control of workflow, deadlines, and conflicting pressures. In addition, they are required to use new technology, sometimes without adequate training, and often in circumstances where the people they work for do not understand the complexities of the tasks involved. For technical staff there appears to be an increasing workload, yet many feel that their knowledge and expertise are no longer recognized or utilized effectively. For managerial staff there is increasing pressure to stay at work beyond normal office hours. Not surprisingly, then, this suggests that support personnel in tertiary institutions can be extremely prone to burnout and strain.

In recent studies, several key factors were identified that are commonly associated with stress among support staff and academic staff. These are: work overload, time constraints, lack of promotion opportunities, inadequate recognition, inadequate salary, changing job role, inadequate management, inadequate resources and funding, and student interaction (Armour, Caffarella, Fuhrmann & Wergin, 1987; Blix, Cruise, Mitchell & Blix, 1994; Dua, 1994; Gillespie et al., 2001; Winefield & Jarett, 2001). Support staff strongly indicated that occupational stress impacted on them professionally as well as personally (Gillespie et al., 2001).

Stress is an integral part of the work environment and is most likely multidimensional in nature (Gmelch & Burns, 1994). It has become both an important feature and a major problem of everyday life, threatening individual, organisational and societal health. Stress is not a new phenomenon in tertiary institutions, nor is it avoidable in the strictest sense (Gmelch & Burns, 1994).

Stress is a complicated phenomenon which has been defined and researched in a number of different ways, but stress generally commences with a set of specific demands (Abouserie, 1996). Whether a particular demand produces stress depends on the individual's perception of the demand. If the individual does not have the physical, mental or emotional resources to meet the demand, the demand is perceived as a potential stressor. In the present study, stress is seen as the result of an imbalance between demands and the adaptive capabilities of the individual's mind and body (Fontana, 1989). According to Nawe (1995), librarian, information and administration work are occupations that continuously suffer from tension-related problems, so it can be concluded that they do experience considerable stress.

Stress may be defined as a situation where factors interact with a person to change his/her psychological and/or physiological condition, to the extent that the person is forced to deviate from normal functioning (Sadri & Marcoulides, 1997). Stress is a dynamic cognitive state. It is a disruption in homeostasis or an imbalance that gives rise to a requirement for resolution of that imbalance or restoration of homeostasis (Cooper, Dewe & O'Driscoll, 2001).

Zastraw (1984, p. 143) defines stress as "the emotional and physiological reactions to stressors. In other words: stress is likely when there exists an inadequate fit – a discrepancy – between the person and the work environment (Perlman & Hartman, 1982; Blix et al., 1994). According to Maslach, Schaufeli and Leiter (2001) perceived stressors lead to emotional reactions, which, in turn, lead to job strains. It is important to differentiate between stressors, stress and strain. Stressors are the stress-producing events or conditions in the work environment, while strains refer to the individuals' responses to such stressor stimuli that are deemed harmful to themselves (causing poor mental or physical health or well-being), and stress is a more general term describing situations in which stressors and strains are present (Beehr, 1976). Virtually any negative reaction to stressors may be an indicator of strain (Cooper et al., 2001). Much research in tertiary institutions has been devoted to stress management but not to stressor reduction. Stressors that support personnel experience within the workplace thus need to be identified.

Similar to the case of stress, several different conceptualisations of burnout have been offered. Cordes and Dougherty (1993) have argued that burnout is, in fact, a type of stress – specifically a chronic, affective response pattern to stressful work conditions that feature high levels of interpersonal contact. Research on burnout has gone through distinct phases of

development (Maslach et al., 2001). It began as a result of work conducted on emotion, arousal and the way in which people cope with, or manage, the arousal (Maslach & Jackson, 1981). In order to understand the development of burnout, attention has to be paid to the way individuals perceive, interpret, and construct the emotionally demanding behaviours of others (Bakker, Shaufeli, Sixma, Bosveld & Van Dierendonck, 2000).

The concept of burnout has been expanded toward all types of professions and occupational groups (Cordes & Dougherty, 1993; Demerouti, Nachreiner, Bakker, Schaufeli, 2001; Lee & Ashforth, 1996; Maslach & Jackson, 1981; Schaufeli, Martinez, Pinto, Salanova & Bakker, 2002). Burnout develops over time, hence it is a process (Burke, 1989). Maslach and Jackson (1981) implicitly write about burnout as a developmental phenomenon. The job-demands-resources model of Karasek (1979) assumes that burnout develops irrespective of the type of occupation when job demands are high and when job resources are limited because such negative working conditions lead to energy depletion and undermine employees' motivation (Demerouti et al., 2001).

According to Cordes and Dougherty (1993) definitions of burnout include: (a) to fail, wear out, become exhausted; (b) a loss of creativity; (c) a loss of commitment to work; (d) an estrangement from clients, co-workers and the job; (e) a response to the chronic stress of making it to the top; and, finally, (f) a syndrome of inappropriate attitudes towards clients and towards the self, often associated with uncomfortable physical and emotional symptoms. Most authors describe burnout as a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment (Jackson, Schuler & Schwab, 1986; Jansen, Schaufeli & Houkes, 1999) Maslach and Jackson (1981) posit that empirical evidence provides more support for this multidimensional conception of burnout than it does for a single unitary one.

According to Maslach and Jackson (1981), emotional exhaustion refers to feelings of being overextended and depleted of one's emotional resources. Since the term "emotional exhaustion" has a strong connotation for people working in human professions, in this study we will refer to emotional exhaustion only as exhaustion. This includes people working in non-human professions, for example technical university staff (Schaufeli & Enzmann, 1998) Depersonalisation refers to a negative, callous or excessively detached response to other people. Excessive detachment with too little concern is assumed to exist when a staff member reports feelings of callousness and cynicism (Bakker et al., 2000; So-kum-tang, Au,

Schwarzer & Schmidt, 2001). Reduced personal accomplishment refers to a decline in one's feeling of competence and successful achievement in one's work (Maslach & Jackson, 1981).

When people describe themselves or others as experiencing burnout, they are most often referring to the experience of exhaustion (Maslach et al., 2001). Exhaustion is the most widely reported and the most thoroughly analysed (Cordes & Dougherty, 1993). Distancing is such an immediate reaction to exhaustion that a strong relationship from exhaustion to depersonalisation is found consistently in burnout research, across a wide range of organizational and occupational settings. Since depersonalisation refers to distancing yourself from people, we use the term cynicism in this study, which refers to distancing from from work in general (Schaufeli & Enzmann, 1998). A work situation with chronic, overwhelming demands that contribute to exhaustion or cynicism is likely to erode one's sense of effectiveness (Cordes & Dougherty, 1993).

According to Cooper et al. (2001) the search for moderators of stressor-strain relationships is important and can yield significant information about the stress and burnout process overall. Moderation refers to specific situational factors or personal characteristics which determine whether stress/strain situations will be experienced positively or negatively (Moyle & Parkes, 1999). A moderator is defined as a variable that affects the direction and/or strength of the relation between an independent or predictor variable, and a dependent or criterion variable (Cooper et al., 2001). Variables, such as dispositional optimism will, therefore, be considered as a moderator of the stress process in this research.

One potential explanation for the lack of significant moderator effects in recent literature is that the demonstration of moderation requires the inclusion of respondents who exhibit more than just average scores on the criterion variable(s) – that is, people who are experiencing reasonably high levels of strain, given that individuals with high strain are likely to withdraw from the environment or may be too stressed to contemplate involvement in a research project on job-related strain (Cooper et al., 2001).

A disposition is defined as "any hypothesized organization of mental and physical aspects of a person that is expressed as a stable, consistent tendency to exhibit particular patterns of behaviour in a broad range of circumstances" (Reber, 1995, p. 218). House, Shane and Herold (1996) describe dispositions as the psychological rather than physical dimensions, namely

personality characteristics, needs, preferences, attitudes and motives that results in an inclination to react on a certain situation in a predetermined way.

Dispositional causes/moderators of burnout are researched from a fortigenic paradigm (Strumpfer, 1995). The fortigenic paradigm focuses on the strengths/psychological resources within people. Psychological resources are defined as the personality characteristics that people draw upon to help them withstand threats posed by events and objects in the environment (Fleishman, 1984). Peterson (2000) considers optimism to involve cognitive, emotional and motivational components. People high in optimism tend to have better moods, to be more persevering and successful, and to experience better physical health. It has also been shown that building optimism prevents depression (Peterson, 2000; Scheier & Carver, 1985).

It can be concluded that support staff in tertiary institutions are particularly vulnerable to the adverse effects of stress. This is largely because of the recent dramatic increase in workloads, job insecurity, poor management, certain task characteristics, lack of resources and the increased job demands placed on personnel. Moreover, the past decade has been one of rapid change, in the form of amalgamations and consequent reformulations of goals and activities which accompany those changes. Thus, the assessment of burnout, strain and specific job characteristics assumes high priority when considering the welfare and health of support staff, as well as the effectiveness of universities to deliver the teaching and research programmes by which they are increasingly evaluated.

The following research questions arise, based on the above-mentioned description of the research problem:

- How are the relationships between burnout, strain, job characteristics and dispositional optimism conceptualised in the literature?
- What are the relationships between burnout, strain and job characteristics in support staff working in universities of the North-West Province?
- Does optimism moderate the relationship between job characteristics, burnout and strain in support staff working in universities of the North-West Province?

1.2 AIM OF THE RESEARCH

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

1.2.1 General aim

The general objective of this research is to determine the relationships between burnout, strain, job characteristics and dispositional optimism for support staff in universities in the North-West Province.

1.2.2 Specific aims

- To conceptualise the relationships between burnout, strain, job characteristics and dispositional optimism from the literature.
- To determine the relationships between burnout, strain, job characteristics and dispositional optimism of support staff in universities of the North-West Province.
- To determine whether dispositional optimism moderates the effects of job characteristics on the burnout and strain of support staff in universities of the North-West Province.

1.3 RESEARCH METHOD

The research consists of a literature review and an empirical study.

1.3.1 Literature review

The literature review focuses on the relationship between occupational stress and burnout, and the role of optimism as a moderator on the stress-strain relationship.

1.3.2 Empirical study

1.3.2.1 Research design

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

1.3.2.2 Study population

A stratified, random sample (n= 344) is taken from university personnel within the North-West Province, South Africa.

1.3.2.3 Measuring batteries

The *Maslach Burnout Inventory – General Survey* (MBI-GS) (Maslach et al., 1996) will be used to measure burnout. The MBI-GS has three subscales: Exhaustion (Ex; five items, e.g., "I feel used up at the end of my workday"); Cynicism (Cy; five items, e.g., "I have become less enthusiastic about my work"); and Professional Efficacy (PE; six items, e.g., "In my opinion, I am good at my job"). Together the subscales of the MBI-GS provide a three-dimensional perspective on burnout. Internal consistencies (Cronbach coefficient alphas) reported by Schaufeli et al. (1996) varied from: 0,87 to 0,89 for Exhaustion; 0,73 to 0,84 for Cynicism; and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy; Schaufeli et al., 1996). All items are scored on a 7-point frequency scale ranging from "0" (never) to "6" (daily). High scores on Exhaustion and Cynicism, and low scores on Professional Efficacy are indicative of burnout. Maslach and Jackson (1981) reported both convergent and discriminant validity evidence for the MBI. Studies have shown that item 13 does not load on the intended

factors and, thus, creates problems with factorial validity (Byrne, 1993; Schaufeli, Van Dierendonck & Gorp, 1996; Storm & Rothmann, 2003).

The *Health subscales of the ASSET,* which refers to an Organisational Stress Screening Tool (Cartwright & Cooper, 2002), is used to measure physical and psychological health. The questionnaire assesses the respondent's level of health. It consists of 19 items arranged on two subscales: Physical health and Psychological well-being. According to the ASSET model and the large body of research on which it is based, poor employee health can be indicative of excessive workplace pressure and experienced stress. Thus, poor health is an outcome of stress which can be used to ascertain if workplace pressures have positive and motivating, or negative and damaging, effects. However, it must be noted that poor health may not necessarily be indicative of workplace stress. Individuals may, for example, be unwell because they choose to not lead a healthy lifestyle or may be unaware of how to do so. Stressors outside the work place may also impact upon a person's health. Although validity for the ASSET still needs to be completed, Johnson and Cooper (2003) reported good convergent validity for the scale.

The Life Orientation Test – Revised (LOT-R; Scheier, Carver & Bridges, 1994), a 10-item measure, is used to measure dispositional optimism and to assess generalized outcome expectancies. Six items contribute to the optimism score and four items provide fillers. The items, half phrased optimistically and half phrased pessimistically, are high in face validity and simply inquire about the person's general expectations regarding the favourability of future outcomes (e.g., "I hardly ever expect things to go my way," and "I'm always optimistic about my future"). The original Life Orientation Test (Scheier & Carver, 1985) was revised to create the LOT-R after a two-factor structure (optimism and pessimism) was questioned. Follow-up analyses have demonstrated a one-factor structure, indicating that the LOT-R is measuring a continuum of high, average and low optimism/pessimism (Scheier et al., 1994). The LOT-R is measured on a five-point Likert Scale, ranging from 5 strongly agree to 1 strongly disagree. The LOT-R was found to have adequate internal consistency and excellent convergent and discriminant validity (Scheier et al., 1994).

The *Job Characteristics Inventory* (JCI) was developed by the authors to measure job demands and job resources for teachers. The JCI consists of 48 items. The questions are rated on a 4-point scale ranging from 1=never to 4=always. The dimensions of the JCI include pace

and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with immediate supervisor, ambiguities about work, information, communications, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities.

1.3.2.4 Data analysis

The data analysis is carried out with the help of the SAS programme (SAS Institute, 2000). The SAS programme is used to carry out statistical analysis regarding reliability, validity, of the measuring instruments, descriptive statistics, correlation coefficients, and moderated multiple regression analysis (Clark & Watson, 1995). Descriptive statistics (e.g. means, standard deviations, skewness, and kurtosis) and inferential statistics are used to analyze data. Effect sizes are used to decide on the significance of the findings. Principal factor extraction with varimax rotation was performed through SAS FACTOR on the items of the JCI. Principal components extraction was used prior to principal factors extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. Furthermore, the oblique method with a promax rotation is used to determine the inter-factor correlations of each measuring instrument. If correlations higher than 0,30 are found, this method was used to extract the factor structure.

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

1.4. DIVISION OF CHAPTERS

Chapter 1 Introduction

Chapter 2 Article

Chapter 3 Conclusions, limitations and recommendations

1.5 CHAPTER SUMMARY

In this chapter the problem statement, the aims of the study and the research method were discussed. A prospective chapter division was also indicated.

Chapter 2 contains the research article.

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CHAPTER 2

RESEARCH ARTICLE

BURNOUT OF SUPPORT STAFF IN UNIVERSITIES IN THE NORTH-WEST PROVINCE*

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ABSTRACT

The aim of this study was to determine the relationships between burnout, strain and job characteristics and to determine whether dispositional optimism moderates the effects of job characteristics on burnout. A cross-sectional survey design was used. The sample consisted of 342 support staff members of universities in the North-West Province. The Maslach Burnout Inventory – General Survey, the Health subscales of the ASSET, the Job Characteristics Inventory and the Life Orientation Test – Revised were administered. The results of the study showed that work overload and task characteristics led to exhaustion as well as cynicism. Role clarity and job security were linked to higher professional efficacy. Taken together, our results suggest that optimism moderates the effects of task characteristics on burnout.

OPSOMMING

Die doel van hierdie studie was om die verband tussen uitbranding, stremming en werks-kenmerke te bepaal en om vas te stel of disposisionele optimisme die effek van taakkenmerke op uitbranding modereer. 'n Dwarssnee opname-ontwerp is gebruik. Die steekproef het bestaan uit 342 ondersteuningspersoneellede van universiteite in die Noordwes-provinsie. Die Maslach Uitbrandingsvraelys – Algemene Opname, 'n Gesondheidsvraelys, die Werkskenmerkevraelys en die Lewensoriëntasietoets – Hersiene Weergawe is as meetinstrumente gebruik. Die resultate het aangetoon dat werksoorlading en taakkenmerke tot uitputting en sinisme lei. Rolduidelikheid en werksekuriteit was gekoppel aan professionele doeltreffendheid. Dit wil voorkom asof optimisme die effek van taakkenmerke op uitbranding modereer.

* The financial assistance of the National Research Foundation (NRF) towards this research is hereby acknowledged. Opinions expressed and conclusions arrived at are those of the authors and are not necessarily to be attributed to the NRF.

In recent years greater priority is given to improving health in the workplace and throughout the workforce. The increased awareness of, and investment in, employee well-being in commercial organisations is, however, not extended to South Africa's higher education institutions (Davis 1996). When viewed in the light of the changing and increasing pressures placed on this sector in recent years, the increasing insecurity and instability that arises from this, and the vital role that universities play in the development and well-being of South Africa (Diamini, 1995), appears to be an important oversight. According to Winefield, Gillespie, Stough, Dua and Hapuararchchi (2002) universities train the nation's scientists, engineers, lawyers, doctors and other professionals and produce much of a country's cutting-edge research. Since universities are primarily "people organizations", success fundamentally depends on the abilities and performance of its individual staff members (Davis, 1996).

There is growing evidence that tertiary institutions no longer provide the low stress environment they once did (Gillespie, Walsh, Winefield, Dua & Stough, 2001; Winefield et al., 2002; Winefield & Jarrett, 2001). Tertiary institutions face an overload of demands but are equipped with an undersupply of response capabilities, especially concerning finances (Viljoen & Rothmann, 2002). Clark (2000) identifies four trends that create turbulent environments for tertiary education institutions. Firstly, demands for participation change student entry from the elite to the mass to universal. Secondly, an increasing number of occupations set exact requirements with regard to knowledge and skills that are currently not provided by secondary education. Thirdly, government and the private sector increasingly urge tertiary education institutions to assist them in solving societal problems on a broad spectrum. Fourthly, the globalisation of knowledge propels its growth at an accelerating pace.

There is no doubt that South African society has experienced and is experiencing considerable socio-economic and political transformations. The apartheid policy had a pervasive influence on universities and the new dispensation has a profound effect as well. University personnel have to face many demands made in the name of freedom and equality. According to Viljoen and Rothmann (2002), organisational transformation in tertiary education institutions in South Africa includes: revolutionary change (in the sense that previous management practices and ways of doing things are discontinued), qualitative change (which is difficult to measure, but which changes the experiences of organizational members), and multidimensional change (which affects all structures, processes and procedures and requires changes in values, norms, attitudes, perceptions and behaviour).

At South African universities, the achievement of objectives is usually measured in terms of process criteria (pass rates), instead of performance criteria, which reflect the quality of personnel (Wissing, Du Toit & Rothmann, 2002). Since the direct and indirect costs of occupational stress can be measured in both humanistic and financial terms (Cooper & Cartwright, 1994), healthy institutions are likely to be those that are successful in maintaining support personnel characterised by good physical, psychological and mental health. According to Davis (1996) the main characteristic of the university as a work organisation is the two distinct social structures: (1) academic staff engaged in teaching and research, and (2) non-academic administrative and support staff. The two constituencies rarely share similar jobs and supervisory structures, and this gives rise to significantly different employee problems and concerns.

Gould (1972) suggests that support personnel in tertiary institutions are the same people who are working in the industry – they have the same concerns. Thus, while performance criteria for non-academic staff might vary considerably, management and supervisory structures, at least, tend to be comparable with those found in the general working population. To adapt to the changing circumstances and to maintain the desire for excellence are challenges for university personnel. Support staff plays an important role in the creation and development of knowledge and innovation – in addition to education and training – in a university (Gillespie et al., 2001). The term 'support staff' is used in this paper to refer to all the non-academic staff employed within the university sector, including staff in academic support, administrative support, library and technical areas.

It appears that different support personnel groups within a university experience different problems (Smewing & Cox, 1998). For example, it appears that many of the pressures on academic and senior support staff are passed onto secretarial and administrative employees, who are being asked to take on more duties and work for a greater number of people. This produces problems with regard to their control of workflow, deadlines, and conflicting pressures. In addition, they are required to use new technology, sometimes without adequate training, and often in circumstances where the people they work for do not understand the complexities of the tasks involved. For technical staff, there appears to be an increasing workload, yet many feel that their knowledge and expertise are no longer recognized or utilized effectively. For managerial staff there is increasing pressure to stay at work beyond normal office hours.

The administrative side (including all support personnel of a university) of higher education has been largely overlooked in recent literature when the issues of quality service, stress and burnout have come under scrutiny (Pitman, 2000). For two reasons this is not surprising. Firstly, universities – naturally – remain focused on teaching and research, with the administrative tasks existing to facilitate these aims. Secondly, most of what has been written was done so by academics that focuses on the areas that concern them most. This has meant that the role of university support personnel (in tertiary organizational culture), and their stress and burnout levels have largely been ignored. Banata and Kuh (1998, p. 41) have drawn attention to this oversight and state: "A faculty cannot by itself accomplish the university's objectives for a student's intellectual and personal development; it needs the cooperation of others who work with students where students spend the majority of their time."

In recent studies, several key factors were identified that are commonly associated with stress among support staff and academic staff. These are: work overload, time constraints, lack of promotion opportunities, inadequate recognition, inadequate salary, changing job role, inadequate management, inadequate resources and funding, and student interaction (Armour, Caffarella, Fuhrmann & Wergin, 1987; Blix, Cruise, Mitchell & Blix, 1994; Dua, 1994; Winefield & Jarett, 2001; Gillespie et al., 2001). Support staff strongly indicated that occupational stress impacted on them both professionally and personally (Gillespie et al., 2001).

Since the effectiveness and health of university personnel are of the utmost importance in order to deliver quality service (by which the university is evaluated), the assessment of burnout, strain and causes thereof should be investigated. It is essential to determine the stressors that the personnel are experiencing and to search for variables that lessen the impact of such stressors.

Burnout, strain, job characteristics and dispositional optimism

Burnout, a negative work-related psychological state that is primarily characterised by mental exhaustion, has been intensively studied during the past 25 years (Schaufeli & Buunk, in press; Schirom, 1993). Despite rather extensive research on job stress experienced by university academic personnel, burnout of university support personnel has rarely been investigated (Kop, Euwema & Schaufeli, 1999). Burnout in individuals is a result of long-

term involvement pertaining to situations that are emotionally demanding. This is evident, particularly in individuals in the human service professions. Burnout is conceptualised as a psychological syndrome in response to chronic interpersonal stressors on the job.

Schaufeli and Enzmann (1998, p. 36) define burnout as "a persistent, negative, work-related state of mind in 'normal' individuals that is primarily characterized by exhaustion". Recently, Schaufeli, Leiter, Maslach and Jackson (1996) developed the Maslach Burnout Inventory – General Survey (MBI-GS), an adapted version of the original MBI, for use outside the human services. The Maslach Burnout Inventory – General Survey (MBI-GS) measures burnout. According to Schaufeli et al. (1996), burnout incorporates the following three dimensions:

- Exhaustion – This refers to the depletion or draining of emotional resources and the feelings of being overextended. It is accompanied by distress, a sense of reduced effectiveness, decreased motivation, and the development of dysfunctional attitudes and behaviours at work

- Cynicism – This refers to interpersonal dimensions of burnout and results in a negative, callous or excessively detached response to various aspects of the job.

- Professional Efficacy – This refers to the self-evaluation dimension of burnout and is a feeling of competence, productivity and achievement at work.

Burnout is a multidimensional syndrome consisting of the above-mentioned dimensions. All three dimensions of the syndrome are essential and pertinent for defining the presence of burnout (Leiter, 1988a). Burnout and the causes thereof can be attributed to organisational factors, work-related attitudes and personality characteristics. Burnout reflects negatively on both the individual and the organisation. According to Schaufeli and Enzmann (1998), symptoms experienced by the individual include increased tension, anxiety, aggression, difficulty with complex tasks, restlessness, chronic fatigue, headaches, insomnia and loss of motivation, thus negatively reflecting on the organisation in terms of poor productivity, increased absenteeism and turnover.

Job burnout, a specific type of job stress, includes alterations in perceptions of humans and altered perceptions of personal competence (Savicki & Cooley, 1983). Events related to the workplace that contribute to burnout are occupational stressors. An increase in occupational stressors leads to burnout in the form of exhaustion and exhaustion, in turn, results in additional occupational stress (Mills & Heubner, 1998). Stress is defined as any transactional process in which the organism experiences an alteration of psychological homeostasis (Burchfield, 1985). Lazarus and Folkman (1984) define stress as a particular relationship between an individual and the environment, which is appraised by the individual as taxing or exceeding his or her resources and, therefore, endangering his or her well-being.

Burnout is an individual experience that is specific to the work context (Maslach, Schaufeli & Leiter, 2001). Various possible causes of burnout have been investigated, such as individual characteristics, which include demographic characteristics, personality characteristics and job attitudes (Maslach et al., 2001). Other situational factors, such as occupational characteristics and organisational characteristics, have also been researched as possible causes of burnout . However, job characteristics are the most important causes of burnout (Maslach et al., 2001).

Job characteristics are the specific tasks that make up an individual's job and are also referred to as "task content factors" (Cooper, Dewe & O'Driscoll, 2001). According to Maslach et al. (2001), job characteristics can be divided into job demands and lack of resources. The JD-R model (Demerouti, Nachreiner, Bakker & Schaufeli, 2001) proposes that burnout follows two processes. In the first process job demands lead to exhaustion and in the second process a lack of resources leads to withdrawal, and eventually disengagement. Job demands refer to those physical, social, or organizational aspects of the job that require sustained physical or mental energy (Demerouti, et al., 2001).

Workload is a main stressor for many workers. Overload, as well as underload, of work can cause strain (both psychological and physical strain). Workload can be divided into quantitative and qualitative, where quantitative workload is the amount of work required and the time frame in which the work must be done, while qualitative workload refers to the sources of psychological strain and is associated with workers' affective reactions to their jobs (Cooper, et al., 2001). Job resources refer to those physical, psychological, social or organisational aspects of the job that may be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, and stimulate personal

growth and development (Demerouti et al., 2001). According to Maslach (2000), perceived stressors lead to emotional reactions which, in turn, lead to job strains.

It is important to differentiate between stressors, stress and strain. Stressors are the stress-producing events or conditions in the work environment, while strains refer to the individuals' responses to such stressor stimuli that are deemed harmful to themselves (such as poor mental or physical health or well-being), and stress is a more general term describing situations in which stressors and strains are present. (Beehr, 1976). Virtually any negative reaction to stressors may be an indicator of strain (Cooper et al., 2001).

Stress is defined in terms of a disruption of the equilibrium of the cognitive-emotional-environmental system by external factors (Lazarus & Folkman, 1984; McGrath, 1976). These external factors, traditionally called stressors, may also lead to equilibrium of the cognitive and environmental system or a state of well-being, depending on the performance capacities. For example, the available coping resources within the individual at a given time (Demerouti et al., 2001). Stress may be studied in terms of an organism's response to challenges and upsets in the environment.

In this study, stress is treated as an independent variable, or as a stimulus that is a possible cause of burnout. Burnout can be considered as a particular kind of prolonged job stress (Brill, 1984), or the outgrowth of chronic, ongoing stress. A misfit between the person and the job can lead to stress and, after time with a chronic misfit, even burnout (Maslach, 2000). The greater the misfit, the more likely it is that burnout will occur. When the nature of the job is not in harmony with the nature of the person, an increase in exhaustion, cynicism and inefficacy will occur. Maslach (2000) identified six areas where these misfits are most likely to occur: 1) workload, 2) control, 3) reward, 4) community, 5) fairness, and 6) values. These areas can also be interrelated with one another. The reaction to these job stressors is identified as job strain (Maslach, 2000).

According to Bolger and Zuckerman (1995) there may also be moderating linkages between personality variables and strains. The effects of stressors on individuals will, therefore, depend on whether the individual possesses high or low levels of a specific personality attribute (Cooper, et al., 2001). Various personality variables exist that may have a moderating effect on the stressor-strain relationship. The type A behaviour pattern, negative

Optimism is defined as one's overall expectancy judgment and is the subjective probability that desired outcomes, in general, will occur (Lee, Ashford & Jamieson, 1993). Optimism has been found to be positively associated with physical and mental health outcomes (Scheier & Carver 1985; 1992). Scheier and Carver (1992) also found that optimists experience greater job satisfaction from relationships and from their jobs. Scheier and Carver (1992) have conducted various studies on the optimism disposition, but, other than that, very little research has been done to date regarding the optimism personality disposition and the effect thereof on stress and burnout. Dispositional optimism has been found to exert a positive effect on personal adjustment, life satisfaction, and overall well-being (Cooper et al., 2001).

METHOD

Research design

A survey was utilized to attain the research objectives. The specific design is a cross-sectional design, whereby a sample is drawn from a population at the same time (Shaughnessy & Zechmeister, 1997). Information collected is utilized to report the population at that time. The design can also be used to assess interrelationships among variables within the populations. According to Shaughnessy and Zechmeister (1997), this design is ideal to address the descriptive functions affiliated with correlational research.

Study population

Random samples (N = 344) were taken from the support personnel of the Universities of the North-West Province. The characteristics of the participants are shown in Table 1.

Table 1

Characteristics of the Study Population (N = 334)

Item	Category	Percentage
University	Potchefstroom	88
	Uniwest	13
Gender	Male	30
	Female	70
Marital status	Single	15
	Engaged	6
	Married	64
	Divorced	13
	Separated	1
	Remarried	1
Home language	Afrikaans	69
	English	3
	Sepedi	1
	Sesotho	5
	Setswana	19
	isiZulu	0
	isiNdebele	1
	isiXhosa	2
Age	19-29	16
	30-39	27
	40-49	28
	50-59	24
	60-67	5
Education	Highest grade/standard	43
	3-year degree	19
	4-year degree	24
	5- to 7-year degree	1
	Master's degree	10
	Doctoral degree	4

Table 1 shows that more than two-thirds of the sample were females (70%). Most of the participants were married (64%). The home language that most of the participants spoke was Afrikaans (69%). Roughly equal amounts of personnel between the ages of 30 and 59 were included. Nearly half (43%) of the sample only studied until the maximum of grade 12.

Measuring instruments

The following measuring instruments were used in this study:

The *Maslach Burnout Inventory – General Survey* (MBI-GS; Maslach et al., 1996) was used to measure burnout. The MBI-GS has three subscales: Exhaustion (Ex; five items, e.g., "I feel used up at the end of the workday"); Cynicism (Cy; five items, e.g., "I have become less enthusiastic about my work"); and Professional Efficacy (PE; six items, e.g., "In my opinion, I am good at my job"). Together the subscales of the MBI-GS provide a three-dimensional perspective on burnout. Internal consistencies (Cronbach coefficient alphas) reported by Schaufeli et al. (1996) varied from: 0,87 to 0,89 for Exhaustion; 0,73 to 0,84 for Cynicism; and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy; Schaufeli et al., 1996). All items are scored on a 7-point frequency rating scale ranging from "O(never) to "6"(daily). High scores on Exhaustion and cynicism, and low scores on Professional Efficacy are indicative of burnout.

The *Health subscales of the ASSET* an Organisational Stress Screening Tool (Cooper & Cartwright, 1994) was used to measure physical and psychological health. The questionnaire assesses the respondent's level of health. It consists of 19 items arranged on two subscales: Physical health and Psychological well-being. According to the ASSET model and the large body of research on which it is based, poor employee health can be indicative of excessive workplace pressure and experienced stress. Thus, poor health is an outcome of stress, which can be used to ascertain if workplace pressures have positive and motivating or negative and damaging, effects. However, it must be noted that poor health may not necessarily be indicative of workplace stress. Individuals may, for example, be unwell because they choose to not lead a healthy lifestyle or may be unaware of how to do so. Stressors outside the work place may also impact upon a person's health. Although discriminant validity for the ASSET still needs to be completed, Johnson and Cooper (2003) reported good convergent validity for the scale.

The Life Orientation Test – Revised (LOT-R; Scheier, Carver & Bridges, 1994), a 10-item measure, was used to measure dispositional optimism and to assess generalized outcome expectancies. Six items contribute to the optimism score and four items provide fillers. Half of

the items of the LOT-R are phrased positively, while the other half are phrased negatively. The items enquire about the person's general expectations regarding the favourability of future outcomes (e.g., "I hardly ever expect things to go my way," and "I'm always optimistic about my future"). The original Life Orientation Test (Scheier & Carver, 1985) was revised to create the LOT-R after a two-factor structure (optimism and pessimism) was questioned. Follow-up analyses have demonstrated a one-factor structure, indicating that the LOT-R is measuring a continuum of high, average and low optimism/pessimism (Scheier et al., 1994). The LOT-R is measured on a five-point Likert Scale, ranging from 5 = I strongly agree to 1 = I strongly disagree. The LOT-R was found to have adequate internal consistency and excellent convergent and discriminant validity (Scheier et al., 1994).

The *Job Characteristics Inventory* (JCI) was developed by the authors to measure job demands and job resources for teachers. The JCI consists of 48 items. The questions are rated on a 4-point scale ranging from 1=never to 4=always. The dimensions of the JCI include pace and amount of work, mental load, emotional load, variety in work, opportunities to learn, independence in work, relationships with colleagues, relationship with immediate supervisor, ambiguities about work, information, communications, participation, contact possibilities, uncertainty about the future, remuneration and career possibilities.

Statistical analysis

The statistical analysis was carried out with the help of the SAS programme (SAS Institute, 2000). Principal factor extraction with varimax rotation was performed through SAS FACTOR on the items of the JCI. Principal components extraction was used prior to principal factors extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. Furthermore, the oblique method with a promax rotation was used to determine the inter-factor correlations of each measuring instrument. If correlations higher than 0,30 were found, this method was used to extract the factor structure.

Cronbach alpha coefficients and inter-item correlations were used to assess the internal consistency of the MBI - GS (Clark & Watson, 1995). Coefficient alpha conveys important information regarding the proportion of error variance contained in a scale. According to studies by Clark and Watson (1995), the average inter-item correlation coefficient (which is an understandable and usable measure of internal consistency) is a recommendable index to

supplement information supplied by coefficient alpha. It must be borne in mind, though, that simply focusing on the mean inter-item correlation cannot ensure the unidimensionality of a scale – it is necessary to examine the range and distribution of these correlations as well.

Pearson product moment correlation coefficients were used to specify the relationships between the variables. In the case where the distribution of scores was skew, Spearman correlation coefficients were computed. A cut-off point of 0,30 was set for the practical significance of correlation coefficients.

Standard multiple regression analysis was carried out to assess the contribution of the independent variables to burnout. According to Tabachnick and Fidell (2001), the correlation between an independent variable and a dependent variable reflects variance shared with the dependent variable, but some of the variance may be predictable from other independent variables. The unique contribution of an independent variable to predicting a dependent variable can be assessed by semi-partial correlation. Squared semi-partial correlation (sr_i^2) expresses the unique contribution of the independent variable to the total variance of the dependent variable. In standard multiple regression sr_i^2 for an independent variable is the amount by which R^2 is reduced if that independent variable is deleted from the regression equation. The difference between R^2 and the sum of sr_i^2 for all independent variables represent shared variance, variance that is contributed to R^2 by two or more independent variables. Effect sizes were calculated with the following formula (Steyn, 1999):

$$f^2 = \frac{sr_i^2}{1-R^2}$$

Steyn (1999) suggested the following guidelines in terms of effect size, namely $f^2 = 0,01$ (small effect), $f^2 = 0,15$ (medium effect) and $f^2 = 0,35$ (large effect). In the present study a cut-off point of 0,15 (medium effect) was set for the practical significance of f^2.

Structural equation modelling (SEM) methods as implemented by AMOS (Arbuckle, 1997) were used to test the factorial model for the MBI-GS using the maximum likelihood method (Byrne, 2001). Hypothesized relationships are tested empirically for goodness of fit with the sample data. Goodness-of-fit tests determine if the model being tested should be accepted or

rejected. It is imperative to examine several fit indices when evaluating a model and never to rely solely on a single index. Jaccard and Wan (1996, p. 87) recommend use of at least three fit tests, while Kline (1998, p. 130) recommends at least four.

Among the fit indices produced by the AMOS programme is the Chi-square statistic (χ^2) which is the test of absolute fit of the model. The χ^2 tests the hypothesis that an unconstrained model fits the covariance/correlation matrix as well as the given model. The χ^2 should not be significant if there is a good model fit, while a significant χ^2 indicates lack of satisfactory model fit. Jöreskog and Sörbom (1968) suggest that the χ^2 value may be considered as a badness-of-fit rather than a goodness-of-fit measure in the sense that a small χ^2 value is indicative of good fit.

The χ^2 statistic and the degrees of freedom (the difference between the number of distinct parameters to be estimated) are usually used as tests of absolute fit. However, Kline (1998) and have cautioned that the χ^2 statistic is too sensitive to the size of the sample for it to be interpreted as a significant test. They have argued that the χ^2 statistic usually becomes significant, even though the difference between observed and model-implied covariance is slight. A large χ^2 relative to the degrees of freedom indicates a need to modify the mode to fit the data better.

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

The GFI indicates the relative amount of the variances/covariances in the sample predicted by the estimates of the population. The AGFI is a measure of the relative amount of variance accounted for by the model corrected for the degrees of freedom in the model relative to the number of variables. The values of these indices range from 0 (which indicates a poor fit) to 1 (indicating perfect fit; Schumacker & Lomax, 1996; Sobolewski & Doran, 1996). The GFI is analogous to a squared correlation in so far as it indicates the proportion of the observed covariance explained by the model-implied covariances, while the AGFI, which is calculated

from the GFI, includes an adjustment for model complexity (Sobolewski & Doran, 1996; Kline, 1998). The GFI is a relative measure of how well the data fit the model (Sobolewski & Doran, 1996). Recommended values should be greater then 0,90.

PGFI addressed the issue of parsimony in SEM (Mulaik, James, Van Altine, Bennett, Lind & Stillwell, 1989). The PGFI is a variant of GFI and takes into account the complexity (i.e. number of estimated parameters) of the hypothesized model in the assessment of overall model fit and provides a more realistic evaluation of the hypothesized model. Mulaik et al. (1989) suggested that indices in the 0,90s accompanied by PGFI's in the 0,50s are not unexpected, but that values greater than 0,80 are considered to be more appropriate (Byrne, 2001).

The next set of goodness-of-fit measures compares the set model to the fit of the independence (null) model. The NFI is used to assess global model fit and varies from 0 to 1, where 1 is a perfect fit. Marsh, Balla and Hau (1996) suggest that this index is relatively insensitive to sample size. The CFI is an incremental fit index which indicates the proportion of the improvement of the overall fit of the restricted model relative to the independence (null) model in the determination of goodness of fit (Kline, 1998). It also varies from 0 to 1. CFI values close to 1 indicate a very good fit, and values above 0,90 an acceptable fit. The TLI (Tucker & Lewis, 1973) is a relative measure of covariation explained by the model that is specifically developed to assess factor models. The TLI has values ranging from 0 to 1, respectively, indicating lack of fit to perfect fit. Hu and Bentler (1999) recommend a TLI value of 0,95 or higher. However, Schumacker and Lomax (1996) contend that values close to 0,90 reflect a good model fit. For these fit indices, it is more or less generally accepted that a value of less than 0,90 indicates that the fit of the model can be improved (Hoyle, 1995). The RMSEA, with its lower and upper confidence interval boundaries, is another valuable fit index that is commonly reported. (The RMSEA estimates the overall amount of error; it is a function of the fitting function value relative to the degrees of freedom.) RMSEA is one of the fit indexes less affected by sample size. By convention, there is a good model fit if RMSEA is less than or equal to 0,05. There is adequate fit if RMSEA is less than or equal to 0,08. More recently, Hu and Bentler (1999) and have suggested a value of 0,06 to be indicative of a good fit between the hypothesized model and the observed data.

MacCallum, Browne and Sugawara (1996) elaborated on these cut-off points and noted that RMSEA values ranging from 0,08 to 0,10 indicate medium fit, and those greater than 0,10 indicate poor fit. RMSEA is a popular measure of fit – partly because it does not require comparison with a null model.

RESULTS

Structural equation modelling (SEM) methods, as implemented by AMOS (Arbuckle, 1997), were used to set the factorial model for the MBI-GS, the Strain model and the LOT-R. Before performing SEM, we checked the frequency distribution of the items of the MBI-GS and the LOT-R in order to assess deviations from normality, and multivariate outliers were removed. It was assumed that the χ^2goodness-of-fit statistics are not likely to be inflated if the skewness and kurtosis for individual items do not exceed the critical values of 2,00 and 7,00 respectively (West, Finch & Curran, 1995).

Data analysis proceeded as follows: firstly, a quick overview of model fit was done by looking at the overall χ^2 value, together with its degrees of freedom and probability value. Global assessments of model fit were based on several goodness-of-fit statistics (GFI, AGFI, PGFI, NFI, TLI, CFI and RMSEI). Secondly, given findings of an ill-fitting initially hypothesized model, analysis proceeded in an exploratory mode. Possible misspecifications as suggested by the so-called modification indices were looked for, and an eventually revised, respecified model was fitted to the data.

The default model (Model 1) in Table 2 reveals a poor fit between the theoretical and empirical model (χ^2= 300,21; *df* = 101; *p* = 0,00). Model 1 consisted of all 16 items of the MBI-GS. Factor 13 is removed in Model 2 because of its low estimated regression weight and high cross-loading, producing a χ^2 value of 256,80 (*df*=87; *p*=0,00). This still reveals a poor overall fit. In Model 3, items 12 and 7 were correlated in order to lower the discrepancy value. The χ^2 value is now 126,12 (*df*=61; p=0.00). The fit statistics of Model 3 indicate a reasonably good fit because, from a practical perspective, the PGFI value is nearly 0,80, NFI, TLI and CFI values are all above 0,90 (NFI, TLI and CFI values should be 0,95) and the RMSEA value is 0,06.

Table 2

Goodness-of-fit Statistics for the Hypothesized MBI-GS Model

Model	χ^2	χ^2/df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
Model 1	300,21	2,97	0,89	0,85	0,66	0,84	0,86	0,88	0,08
Model 2	256,8	2,95	0,90	0,86	0,65	0,86	0,88	0,90	0,08
Model 3	126,12	2,07	0,94	0,92	0,63	0,91	0,94	0,95	0,06

Table 3 represents the goodness-of-fit statistics for the hypothesized strain model.

Table 3

Goodness-of-fit Statistics for the Hypothesized Strain Model

Model	χ^2	χ^2/df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
Model 1	169,2	2,68	0,93	0,89	0,64	0,89	0,91	0,93	0,07
Model 2	154,86	2,50	0,93	0,90	0,63	0,90	0,92	0,94	0,07
Model 3	140,73	2,31	0,94	0,91	0,63	0,91	0,93	0,95	0,06

From a practical perspective, the hypothesized model (default model 1) in Table 3 is not particularly good (χ^2=169,10; *df*=63; *p*=0,00). A PGFI value lower than 0,80, NFI, TLI and CFI values lower than 0,95, and RMSEA value higher than 0,05 are an indication of failure to confirm the hypothesized model. In Model 2, item 18 and 16 are correlated (χ^2=154,86; *df*=62; *p*=0,00) because the modification indices are 13,74. This model still doesn't yield significant results, so in Model 3, item 4 and 1 are correlated (χ^2=140,73; *df*=61; *p*=0,00). Therefore, Model 3, represents a reasonably good fit.

Table 4 represents the goodness-of-fit statistics for the hypothesized LOT-R model.

Table 4

Goodness-of-fit Statistics for the Hypothesized LOT-R Model

Model	χ^2	χ^2/df	GFI	AGFI	PGFI	NFI	TLI	CFI	RMSEA
Default model 1	21,10	2,64	0,98	0,95	0,37	0,94	0,93	0,96	0,07
Default model 2	13,9	1,99	0,99	0,96	0,33	0,96	0,96	0,98	0,05

In Model 1, the empirical model does not significantly fit the original 10-item model of the LOT-R (χ^2=21,10; *df*=8; *p*=0,01). Error 3 and 6 are correlated in default Model 2, resulting in a more significant model (χ^2=13,90; *df*=7; *p*=0,05). The RMSEA is now 0,05 (statistically significant).

The results of the factor analysis of the JCI are shown in Table 5. Loadings of variables on factors, communalities and percent of variance and covariance are shown. Variables are ordered and grouped by size of loading to facilitate interpretation. Zeros represent loadings that were under 0,45 (20% of variance). Labels for each factor are suggested in a footnote. Oblique rotation shows no significant inter-factor correlations ($r > 0,30$).

Table 5

Factor loadings, Communalities (h^2), Percentage Variance and Covariance for Principal Factor Extraction and Varimax Rotation on the JCI

Item	F_1	F_2	F_3	F_4	F_5	F_6	F_7	F_8	h^2
27. Know exactly what direct supervisor thinks of performance	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
30. Receive information on work performance from direct supervisor	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65
29. Receive information on work results	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
24. Feel appreciated by supervisor	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.63
28. Receive sufficient information on the purpose of work	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
35. Participate in decisions about nature of work	0.65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
34. Discuss work problems with direct supervisor	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48
32. Clear decision-making processes	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
31. Kept adequately up-to-date about important issues	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46
25. Know exactly what other people expect of work	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32
23. Get on well with supervisor	0.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.54
36. Direct influence on decisions	0.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
33. Clearness about whom to address about specific problems	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.34
26. Know exact responsibilities	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33
2. Time pressure	0.00	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.59
4. Attention to many things at the same time	0.00	0.67	0.00	0.00	0.00	0.00	0.00	0.00	0.46
6. Have to remember many things in work	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.55
5. Have to give continued attention to work	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.00	0.49
1. Too much work to do	0.00	0.57	0.00	0.00	0.00	0.00	0.00	0.00	6.22
9. Emotionally upsetting work situations	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.42
7. Confronted with things that affect personality	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.34
11. Work makes sufficient demands on all skills and capabilities	0.00	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.36
8. Contact with difficult learners/students or parents in work	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.24
14. Feeling of work achievement	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.71
13. Opportunities for personal growth and development	0.00	0.00	0.62	0.00	0.00	0.00	0.00	0.00	0.56
15. Possibility of independent thought and action	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00	0.58
12. Enough variety in work	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.52
10. Do repeatedly the same things	0.00	0.00	-0.50	0.00	0.00	0.00	0.00	0.00	0.31
44. Live comfortably on pay	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.00	0.68
45. Enough pay	0.00	0.00	0.00	0.75	0.00	0.00	0.00	0.00	0.60
46. Possibility to progress financially	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.42
43. University pays good salaries	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.39
48. Opportunity to be promoted	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.31
41. Secure of keeping current job in the next year	0.00	0.00	0.00	0.00	0.96	0.00	0.00	0.00	0.93
42. Secure of keeping the current level of functioning	0.00	0.00	0.00	0.00	0.89	0.00	0.00	0.00	0.79
40. Secure about work in a year's time	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.00	0.66
19. Rely on colleagues when facing difficulties in work	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.49
20. Ask colleagues for help	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.44
22. Rely on supervisor when facing difficulties in work	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.52
21. Get on well with colleagues	0.00	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.33
17. Influence in the planning of your work activities	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.55
16. Freedom in carrying out work activities	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	0.40
18. Participation in decision-making in piece work	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.00	0.45
39. Enough contact with colleagues during working hours	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.46
38. Chat with colleagues during working hours	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62	0.40
37. Contact with colleagues as part of your work	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.25

Table 5 (continued)

Factor loadings, Communalities (h^2), Percentage Variance and Covariance for Principal Factor Extraction and Varimax Rotation on the JCI (continue)

Item	F_1	F_2	F_3	F_4	F_5	F_6	F_7	F_8	h^2
Squared multiple correlations (SMC)	0.88	0.85	0.80	0.83	0.95	0.76	0.68	0,70	-
Percentage variance	13.62	7.53	7.48	5.28	5.26	5.25.	3.21	3,10	-
Percentage covariance	26.85	14.84	14.74	10.41	10.37	10.35	6.33	6.11	-

a Factor labels: F_1 Role clarity F_2 Overload F_3 Task characteristics F_4 Rewards F_5 Job security F_6 Social support F_7 Autonomy

The seven extracted factors accounted for 47,63% of the total variance in the data. With a cut-off of 0,45 for inclusion of a variable in interpretation of a factor, 7 of 48 variables did not load on the eight factors. This included one item dealing with knowing exact responsibilities, one dealing with whether work makes sufficient demands on all skills and capabilities, the third dealing with contact with difficult learners/students in work, the fourth dealing with opportunity to be promoted, the fifth dealing with contact with colleagues as part of your work, the sixth dealing with if you find that you do not have enough work, and the last one dealing with whether your university gives you opportunities to follow training courses.

The first factor was labelled *Role clarity.* Items that loaded on this factor relate to Role clarity in tertiary institutions. It deals with, amongst other things, clear decision-making, relationship with supervisor, participation and the receiving of sufficient information. The second factor was labelled *Overload*, and deals with time pressure, continued attention and dealing with emotionally demanding situations. The third factor, *Task characteristics*, deals with the feeling of work achievement, enough variety in work and independent thought and action. The fourth factor was labelled *Rewards*, and deals with financial compensation for work. The fifth factor, *Job security* deals with whether respondents feel secure in maintaining their current work status. *Social support* is the sixth factor and it deals with whether respondents can relate to colleagues in the work situation. The last factor, *Autonomy*, deals with independence and freedom to carry out work activities.

The descriptive statistics, alpha coefficients and inter-item correlations of the measuring instruments, namely MBI-GS and JCI, are given in Table 6.

Table 6

Descriptive Statistics, Alpha Coefficients and Inter-item Correlations of the Measuring Instruments

Item	Mean	*SD*	Skewness	Kurtosis	*r*(Mean)	α
Exhaustion	0,52	7,41	0,33	-0,57	12,01	0,84
Cynicism	0,42	5,38	0,48	-0,42	7,20	0,74
Professional Efficacy	0,35	4,76	-1,12	1,76	24,26	0,69
Physical health	0,35	4,10	0,01	-0,44	13,78	0,76
Psychological health	0,46	4,77	0,21	-0,46	14,75	0,86
Role clarity	0,44	8,42	-0,31	-0,63	37,46	0,91
Overload	0,36	4,08	-0,37	-0,05	19,19	0,80
Job Characteristics	0,44	3,55	-0,07	-0,76	12,54	0,80
Rewards	0,50	2,69	0,96	0,60	7,14	0,80
Job security	0,78	3,11	0,16	-1,29	7,62	0,91
Social support	0,44	2,51	-0,51	-0,45	12,98	0,76
Autonomy	0,38	1,53	-0,33	-0,47	5,78	0,55
Optimism	0,37	2,16	-0,39	-0,26	11,56	0,63
Pessimism	0,45	2,59	-0,28	-0,24	9,94	0,71

Table 6 shows that the alpha coefficients of the factors are highly acceptable compared to the guideline of 0,70 (Nunnally & Bernstein, 1994). These values can be considered high and, thus, explain a large proportion of the variance in the different scales (Clark & Watson, 1995). The mean inter-item correlation coefficients are more or less in the recommended range ($0,15 < r < 0,50$) and, thus, confirm the internal consistency of the factors.

It is evident from Table 6 that most of the scales of the measuring instruments have relatively normal distributions, with low skewness and kurtosis. It is only scores on Professional Efficacy that are relatively skew.

The Spearman and Pearson correlation coefficients between burnout, stressors and optimism are given in Table 7.

Table 7
Spearman and Pearson Correlations

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Exhaustion	-													
2.Cynicism	0.50*++													
3.Professional Efficacy	-0.34*	-0.41*	-											
4.Role clarity	-0.31*	-0.38*+	0.39*+	-										
5.Overload	0.38*+	0.11	0.05	-0.14	-									
6.Task characteristics	-0.23*	-0.51*	0.42*+	0.52*++	0.06	-								
7.Rewards	-0.15*	-0.17*	0.22*	0.27*	-0.05	0.28*	-							
8.Job security	-0.04	0.08	0.10	-0.12	0.02	-0.08	-0.06	-						
9.Social support	-0.26*	-0.24*	0.24*	0.56*++	-0.17*	0.27*	0.09	-0.08	-					
10.Autonomy	-0.26*	-0.38*	0.41*+	0.51*++	-0.01	0.56*++	0.18*	-0.12	0.27*	-				
11.Pessimism	-0.09	-0.20*	0.13	0.12	0.02	0.17*	0.11	-0.34*+	0.12	0.24*	-		-	
12.Optimism	-0.27*	-0.20*	0.33*+	0.23*	-0.07	0.22*	0.17*	0.09	0.21*	0.15*	0.07	-		-
13.Health physical	0.49*+	0.28*	-0.20*	-0.27*	0.23*	-0.14	-0.19*	0.06	-0.21*	-0.16*	-0.08	-0.27*	-	
14Health psychological	0.58*++	0.37*+	-0.27*	-0.32*	0.23*	-0.20*	-0.18*	-0.00	-0.24*	-0.14	0.01	-0.44*	0.62*++	-

* Statistically significant – $p < 0,01$
+ Practically significant – $r > 0,30$ (medium effect)
++Practically significant – $r > 0,50$ (large effect)

Inspection of Table 7 indicates that Exhaustion is positively related to Cynicism (practically significant, large effect). Exhaustion is also related to overload and psychological ill-health. Cynicism is inversely related to psychological health (medium effect). Professional efficacy is related to role clarity, task characteristics, autonomy and optimism. Role clarity is related to task characteristics, social support and autonomy.

Table 8 shows the result of multiple regression analysis with emotional exhaustion and depersonalisation (as measured by the MBI-GS) as dependent variables, and role clarity, overload, task characteristics, rewards, job security and social support (as measured by the JCI) and pessimism and optimism (as measured by the LOT-R), as independent variables.

Table 8

Standard Multiple Regression with Exhaustion and Cynicism as Dependent Variables (DV) and Role Clarity, Overload, Task characteristics, Rewards, Job Security, Social Support, Optimism, Pessimism and Exhaustion as Independent variables (IV)

Variable	Parameter	SE	t	p	sr^2_i
DV = Exhaustion; IV = Role clarity, Overload, Task characteristics, Rewards, Job security, Social support, Optimism and Pessimism F = 15,40 R^2 = 0,2748 sr^2_i = 0,17383709					
Intercept	20.05	3.59	5.59	0.0001	-
Role clarity	-0.10	0.06	-1.69	0.0929	0.00634
Overload	0.64	0.09	7.23	0.0001	0.11656
Task characteristics	-0.27	0.12	-2.28	0.0231	0.01162
Rewards	-0.09	0.14	-0.63	0.5288	0.0009
Job security	-0.22	0.12	-1.83	0.0681	0.00748
Social support	-0.18	0.17	-1.07	0.2872	0.00254
Pessimism	-0.20	0.15	-1.38	0.1692	0.00424
Optimism	-0.56	0.17	-3.29	0.0011	0.02417
DV = Cynicism; IV = Exhaustion, Role clarity, Overload, Task characteristics, Rewards, Job security, Social support, Pessimism and Optimism F = 27.05 R^2 = 0.4290 Σsr^2_i = 4.92288368					
Intercept	13.42	2.42	5.54	0.0001	-
Exhaustion	0.30	0.04	8.29	0.0001	0.1211
Role clarity	-0.04	0.04	-1.08	0.2795	0.0021
Overload	-0.03	0.06	-0.54	0.5871	0.0005
Task characteristics	-0.56	0.08	-7.20	0.0001	0.0915
Rewards	0.05	0.09	0.59	0.5544	0.0006
Job security	0.06	0.08	0.80	0.4269	0.0011
Social support	0.02	0.11	0.20	0.8433	0.0001
Pessimism	-0.17	0.09	-1.83	0.0677	0.0059
Optimism	0.00	0.11	0.02	0.9870	4.700017
DV = Personal Efficacy; IV = Role clarity, Overload, Task characteristics, Rewards, Job security, Social support, Pessimism and Optimism F = 17.50 R^2 = 0.3011 Σsr^2_i = 0.13699524					
Intercept	3.72	2.26	1.64	0.1012	-
Role clarity	0.12	0.04	3.20	0.0015	0.02205
Overload	0.10	0.06	1.73	0.0843	0.00645
Task characteristics	0.31	0.08	4.12	0.0001	0.03655
Rewards	0.12	0.09	1.33	0.1854	0.00379
Job security	0.26	0.08	3.37	0.0009	0.02437
Social support	0.06	0.11	0.51	0.6085	0.00056524
Pessimism	0.18	0.09	1.98	0.0485	0.00843
Optimism	0.44	0.11	4.02	0.0001	0.03479

Table 8 shows that role clarity, overload, task characteristics, rewards, job security and social support (as measured by the JCI) and pessimism and optimism (as measured by the LOT-R) predict 27,48% of the variance in emotional exhaustion (as measured by the MBI-GS). Stress due to overload contributed 11,66% (Σsr^2_i = 0,11656) to the variance in emotional exhaustion. The unique variances explained by the independent variables were not practically significant except for role clarity. Given that 27,48% of the variance in emotional exhaustion was explained in total by these independent variables (R^2 = 0,2748), and that sr^2_i adds up to

0,1738 (17,38%), it is clear that the remaining 10,1% of the variance can be attributed to interaction between the independent variables.

According to Table 8, exhaustion (as measured by the MBI-GS), role clarity, overload, task characteristics, rewards, job security and social support (as measured by the JCI), and pessimism and optimism (as measured by the LOT-R) predict 42,90% of the variance in cynicism (as measured by the MBI-GS). Exhaustion, as well as task characteristics, contributed 12,11% ($\Sigma sr^2_i = 0,1211$) and 9,15 % ($\Sigma sr^2_i = 0,0915$) respectively to the variance in cynicism. The unique variances explained by the independent variables were not practically significant except for the variances explained by exhaustion and task characteristics. Given that 42,90% of the variance in cynicism was explained in total by these independent variables ($R^2 = 0,4290$), and that Σsr^2_i adds up to 0,2258 (22,58%), it is clear that the remaining 16,24% of the variance can be attributed to interaction between the independent variables.

Regarding professional efficacy (as measured by the MBI-GS), role clarity, overload, task characteristics, rewards, job security and social support (as measured by the JCI) and pessimism and optimism (as measured by the LOT-R), Table 8 indicates that these independent variables predict 30,11% of the variance in Professional Efficacy (as measured by the MBI-GS). Optimism and task characteristics contributed 3,48% ($\Sigma sr^2_i = 0,0348$), and 3,66% ($\Sigma sr^2_i = 0,0366$) respectively to the variance in cynicism. The unique variances explained by the independent variables were not statistically significant except for optimism and task characteristics. Given that 30,11% of the variance in Cynicism was explained in total by these independent variables ($R^2 = 0,3011$) and that Σsr^2_i adds up to 0,13699 (13,70%), it is clear that the remaining 16,41% of the variance can be attributed to interaction between the independent variables.

Table 9 shows the regression analysis of physical health (as measured by the Health subscales of the ASSET).

Table 9

Regression Analysis of Burnout and Physical Health

		Analysis of Variance		
$R = 0,50$	Source of variance	Degrees of freedom	Sum of squares	Mean square
$R^2 = 0,2448$	Regression	1	1371,677	1371,677
	Residual	332	4230,8025	12,7434
	$F = 107,64$	$f^2 = 0,32$		
		Variables in the equation		
Independent variables	Parameter estimate	Standard Error	*F*	*P*
Intercept				
Exhaustion	0,27	0,03	107,64	0,0001

* Practically significant – medium effect: $f^2 > 0,10$

Table 9 shows that 24% of the variance in physical health (as measured by the Health subscales of the ASSET) of support staff is predicted by exhaustion. The multiple correlation of 0,50 is practically significant (medium effect) $f^2 = 0,32$). It can also be concluded from Table 9 that exhaustion is the best predictor of physical health.

In Table 10 the regression analysis of psychological health (as measured by the Health subscales of the ASSET) is shown.

Table 10

Regression Analysis of Burnout and Psychological Health

		Analysis of Variance		
$R = 0,60$	Source of variance	Degrees of freedom	Sum of squares	Mean square
$R^2 = 0,35$	Regression	2	2684,9659	1342,4829
	Residual	331	4895,4084	14,7898
	$F = 90,77$	$f^2 = 0,54$		
		Variables in the equation		
Independent variables	Parameter estimate	Standard Error	*F*	*P*
Intercept	13,276	1,28	106,94	0,0001
Exhaustion	0,356	0,03	144,01	0,0001
Professional Efficacy	-0,12	0,05	6,25	0,0129

*Practically significant: $f^2 > 0,35$ (large effect)

Table 10 shows that 35% of the variance of psychological health (as measured by the Health subscales of the ASSET) is predicted by high exhaustion and low professional efficacy. The multiple regression of 0,60 is practically significant (large effect). Table 9 further suggests that high exhaustion and low professional efficacy are the best predictors of low psychological health.

Table 11 shows the regression analysis of exhaustion (as measured by the MBI-GS) as the dependent variable, and job characteristics (as measured by the JCI) and optimism/pessimism (as measured by the LOT-R) as independent variables.

Table 11

Regression Analysis of Job Characteristics, Optimism/Pessimism and Exhaustion

Analysis of Variance				
$R = 0,51$	Source of variance	Degrees of freedom	Sum of squares	Mean square
$R^2 = 0,26$	Regression	4	4791,9355	1197,9839
	Residual	329	13474	40,95305
	F=29,25	$f^2 = 0,35$		
Variables in the equation				
Independent variables	Parameter estimate	Standard Error	F	p
Intercept	15,34	2,95	26,98	0,0001
Role clarity	-0,12	0,05	6,06	0,0144
Overload	0,65	0,09	53,94	0,0001
Task characteristics	-0,30	0,12	6,28	0,0127
Optimism	-0,64	0,17	14,41	0,0002

*Practical significant : f^2>0,35 (large effect)

Table 11 shows that 26% of the variance in exhaustion (as measured by the MBI-GS) is predicted by poor role clarity, overload, poor task characteristics and lack of optimism. The multiple correlation of 0,51 is practically significant (large effect) $f^2 = 0,35$).

Table 12 shows the regression analysis of cynicism (as measured by the MBI-GS) as the dependent variable, and job characteristics (as measured by the JCI) and optimism/pessimism (as measured by the LOT-R) as independent variables.

Table 12

Regression Analysis of Job Characteristics, Optimism/Pessimism and Cynicism

Analysis of Variance				
$R = 0,65$	Source of variance	Degrees of freedom	Sum of squares	Mean square
$R^2 = 0,42$	Regression	3	4086,91	1362,30
	Residual	330	5537,25	16,78
	F=81,19	$f^2 = 0,72$		
Variables in the equation				
Independent variables	Parameter estimate	Standard Error	F	p
Intercept	13,23	1,26	110,22	0,0001
Task characteristics	-0,60	0,07	83,91	0,0001
Pessimism	-0,20	0,09	5,13	0,0241
Exhaustion	0,29	0,03	87,70	0,0001

*Practical significant : $f^2 > 0,35$ (large effect)

Table 12 shows that 42% of the variance in cynicism (as measured by the MBI-GS) is predicted by the task characteristics, pessimism and exhaustion. The multiple correlation of 0,65 is practically significant (large effect).

Table 13 shows the regression analysis of Professional efficacy (as measured by the MBI-GS) as the dependent variable, and job characteristics (as measured by the JCI), and optimism/pessimism (as measured by the LOT-R) as independent variables.

Table 13

Regression Analysis of Job Characteristics, Optimism/Pessimism and Professional Efficacy

Analysis of Variance				
$R = 0,55$	Source of variance	Degrees of freedom	Sum of squares	Mean square
$R^2 = 0,31$	Regression	6	2308,4437	384,741
	Residual	327	5237,4126	16,017
	F=24,02	$f^2 = 0,44$		
		Variables in the equation		
Independent variables	Parameter estimate	Standard Error	F	p
Intercept	7,90	2,01	15,49	0,0001
Role clarity	0,12	0,03	13,77	0,0002
Overload	0,16	0,06	7,25	0,0074
Task characteristics	0,31	0,08	17,65	0,0001
Job security	0,19	0,07	6,73	0,0099
Optimism	0,41	0,11	14,18	0,0002
Exhaustion	-0,10	0,04	8,66	0,0035

*Practically significant : f^2>0,35 (large effect)

Table 13 shows that 31% of the variance in professional efficacy (as measured by the MBI-GS) is predicted by role clarity, overload, task characteristics, job security, optimism and the lack of exhaustion. The multiple correlation of 0,55 is practically significant (large effect) f^2 = 0,44).

DISCUSSION

The results of this study showed that exhaustion, which encompasses a feeling of being overextended and the depletion of one's emotional and physical resources, is positively related to cynicism, which is associated with having negative, callous or detached responses to various aspects of the job. This might be because exhaustion predicts cynicism (Maslach et al., 2001).

Specific job characteristics were identified as stressors that can lead to burnout in staff members. Exhaustion is related to work overload (time pressure, attention to many things at the same time, too much work to do and emotionally upsetting work situations) and high levels of ill-health, both physical and psychological. Thus, it can be concluded that the lack of

role clarity (unclear about who to address about specific problems and inability to get along with the supervisor), overload, the lack of task characteristics and the lack of optimism are the best predictors of exhaustion.

Cynicism is also related to poor psychological health, implying that staff members who have a detached attitude towards various aspects of work tend towards ill health. High professional efficacy, which are feelings of competence, productivity and achievement at work, is related to role clarity (e.g. participation in work, feeling appreciated by the supervisor, clear decision-making processes, kept up-to-date with important issues), certain task characteristics (the feeling of work achievement, opportunities for personal growth and development, and enough variety in work), a sense of autonomy (freedom in doing your work and influencing the planning of your work activities), job security (security of keeping current job in the next year and security about keeping the current level of functioning) and optimism, which relates to one's overall expectancy judgement and is the subjective probability that desired outcomes, in general, will occur. The significant correlation of optimism with the dimension of burnout: professional efficacy implies the moderating effect of optimism on burnout. Role clarity was related in the study to certain task characteristics, social support, which focuses on good relationships with colleagues and autonomy.

Seeking social support (although only moderately related) was negatively related to exhaustion and cynicism – probably because social support might act as a buffer against exhaustion. In line with the model developed by Storm (2002), it is possible that seeking social support helps to reduce exhaustion, which leads to lower cynicism.

The findings of this study confirm the results of previous studies. Cooper, et al. (2001) found that work overload is a main stressor for many workers. Workload can be divided into quantitative and qualitative, where quantitative workload is the amount of work required and the time frame in which the work must be done, while qualitative workload refers to the sources of psychological strain and is associated with workers' affective reactions to their jobs. Job resources refer to those physical, psychological, social, or organizational aspects of the job that may be functional in achieving work goals, reduce job demands at the associated physiological and psychological costs, and stimulate personal growth and development (Demerouti et al., 2001). When individuals lack these job resources, it causes strain and

eventually leads to burnout. According to Maslach (2000), perceived stressors (job characteristics) lead to emotional reactions, which, in turn leads to job strains.

The results of the multiple regression analyses showed relationships between burnout, strain and job characteristics, such as work overload, role ambiguity, task characteristics, low social support and decreased autonomy cause strain and lead to exhaustion, cynicism and low professional efficacy. Work overload reflected the highest factor loading; the second highest factor loading was inadequate role clarity and the absence of optimism seemed to have a high correlation as well. Therefore these stressors and personality dimensions result in the depletion of emotional resources, feeling of being overextended, and eventually in negative, callous or excessively detached response to various aspects of the job. This results also confirm the findings of Maslach et al. (2001) and Cooper et al. (2001) that exhaustion is related to job demands and job characteristics.

The moderating role of optimism on the relationship between burnout, strain and job characteristics is confirmed in this study. The absence of optimism had a significant effect on the experience of exhaustion, while the presence of optimism as a disposition caused higher professional efficacy. In line with Fleishman (1984), the results imply that people who hold more positive expectations and psychological resources can draw upon it to help them withstand threats posed by events and objects in the environment.

A limitation of this study was that a cross-sectional design was utilized. Accordingly, it is not possible to determine the causality of relationships between the variables. Furthermore, this study did not focus on differences between demographic groups. This project is just a small part of a larger research project in South African universities. Therefore, it is acknowledged that the findings might vary somewhat in different demographic groups.

RECOMMENDATIONS

The Universities of the North-West Province should attend to the stressors of their support staff. The following recommendations are made in this regard: In a combined management and educational approach that builds interventions, fostering engagement should be adopted in the Universities of the North-West Province in this regard. The engagement intervention enhances work life and should successfully promote the well-being of employees.

Secondly, pre-service and during-service training programmes addressing aspects of stress, emotional strain and burnout are needed. Current support personnel within the university should offer stress management techniques and receive education identifying the symptoms and initial signs of burnout and how to manage the situation in this regard. The ongoing knowledge and supervision of effective stress management techniques could lead to the reduction of burnout.

Thirdly, as most stressors are at work, the approach is twofold in improving the organisational well-being of the individual employees. Team-based interventions, consisting of colleagues working on the same level, will assist employees in dealing with stress and reducing burnout. As burnout should be managed and dealt with effectively throughout an individual's life, personnel should be offered the alternative of psychological treatment if it is their preference to encourage the prevention of burnout or to enhance the recovery process of burnout.

Fourthly, the strengths of personnel who encompass higher levels of professional efficacy and optimism while dealing with work demands, work overloads and other stressors should be identified. Through this identification of strengths, training programmes can be developed in this regard. These training programmes can enhance the levels of professional efficacy of personnel who experience lower levels of professional efficacy and, thus, enhance the reduction of burnout. Interventions can be held to help personnel become more optimistic, since optimism is not only dispositional but also a mindset.

At the workplace level the results suggest key areas for intervention. Firstly, the results suggest that interventions aimed at decreasing the workload of support staff should cause a decrease in experienced exhaustion and cynicism of the personnel. The results also suggest that social support in terms of each individual's relationship with his or her co-worker and communication with colleagues and supervisors is extremely useful in dealing with burnout and stressors. At the university level the findings indicate that interventions aimed at increasing the financial and staffing resources of the universities of the North-West Province will enhance the overall levels of well-being and reduce overall levels of strain within the universities.

Interventions are expensive and cost much time, attention and effort. The short-term costs are great, but the longer term costs even greater. Inadequate use of human potential is probably

the most expensive form of human waste. Moreover, stress-related complaints do not merely cause individual misery. The potential cost of stress to organizations is also enormous (for example: poor morale, poor internal communication, high turnover).

In conclusion, the findings of the study offer an important challenge for the South African Higher Education sector, since it is evident that university support staff are experiencing stressors, strain and burnout. Further study on the specific stressors, burnout and strain reduction is needed. Universities and the Government should use the information provided in this report as a basis for developing and implementing interventions aimed at addressing the causes of occupational stress and enhancing staff well-being. As many of these interventions can only be achieved at the level of individual universities, each university must accept responsibility in order to ensure that its support personnel work in a healthy environment.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this study conclusions are presented based on the specific research objectives in Chapter 1. The limitations of the research are also discussed. Lastly, recommendations to solve the research problem and suggestions for future research are presented.

3.1 CONCLUSIONS

The general aim of this research was to investigate the relationships between burnout, strain and job characteristics, and to determine whether dispositional optimism moderates the effects of job characteristics on burnout of support staff at universities in the North-West Province.

The first specific research objective was to conceptualise the relationships between burnout, strain, job characteristics and dispositional optimism from the literature. The following conclusions are made regarding the first research objective:

- Burnout is conceptualised as a psychological syndrome in response to chronic stressors on the job. Burnout comprises three dimensions, namely exhaustion, cynicism and professional efficacy. Exhaustion refers to the depletion or draining of emotional resources and feelings of being overextended. Cynicism relates to the interpersonal dimension of burnout and results in a negative, callous or excessively detached responses to various aspects of the job, and professional efficacy refers to the self-evaluation dimension of burnout and is a feeling of competence, productivity and achievement at work.

- Stress is a particular relationship between an individual and the environment, which is appraised by the individual as exceeding or taxing his or her resources and consequently endangering his or her well-being. It is a transactional process in which an organism experiences an alteration of psychological homeostasis. When the nature of a job is not in harmony with the nature of the person, an increase in exhaustion, cynicism, inefficacy, low physical health and low psychological health occurs. In this study we identified areas where these misfits are occurring namely: work overload, certain task

characteristics, inadequate management, job insecurity, low autonomy, and the absence of social support. These areas can also be interrelated. The reaction to these job stressors is identified as job strain.

- Job characteristics are the specific tasks that make up an individual's job. Job characteristics can be divided into job demands and job resources. In this study, we focused on job demands, which refer to those physical, social, or organisational aspects of the job that require sustained physical or mental energy. These demands lead to exhaustion and also cynicism. Work overload was a huge stressor in this study, since it causes strain (both physically and psychologically), and exhaustion.

- It is important to note the distinction between stressors, stress and strain. Stressors are the stress-producing events or conditions in the work environment, while strains refer to the individuals' responses to such stressor stimuli that are deemed harmful to themselves (causing poor mental or physical health), and stress is a general term describing situations in which stressors and strains are present.

- Optimism is defined as one's overall expectancy judgment and is the subjective probability that desired outcomes, in general, will occur. Optimists are those individuals who have a goal that matters and who have a sense of confidence about the attainability of the goal value. In our search to determine whether optimism had a moderating effect on perceived strain and experienced burnout, it was evident from the multiple regression analysis that optimism had a negative correlation with exhaustion – implying that optimistic individuals experienced less exhaustion. It was also evident that optimism and professional efficacy were positively correlated – implying that an optimistic attitude adds to an individuals feeling of competence and effectiveness in the workplace.

- From the literature it can be concluded that certain job characteristics do cause strain and lead to burnout and that optimism helps in lessening the perceived strain and burnout by moderating the relationship.

The second specific research objective was to determine the relationships between burnout, strain, job characteristics and dispositional optimism of support staff at universities in the

North-West Province. The following conclusions are made regarding the second specific research objective:

- Exhaustion was positively related to cynicism, work overload, job insecurity and certain task characteristics (e.g., do repeatedly the same things), and negatively related to professional efficacy, role clarity, social support and optimism. Cynicism was negatively related to professional efficacy, role clarity and certain task characteristics (e.g. opportunities for growth and development) and positively related to exhaustion. Professional efficacy was positively related to role clarity, certain task characteristics, job security, social support and optimism.

- Work overload was the most prominent stressor impacting on exhaustion. Overload reflects items such as time pressure, attention to many things at the same time, having to remember many things at work, having to give continued attention to work, too much work to do, emotionally upsetting work situations and being confronted with things that affect you personally.

- Exhaustion and task characteristics shared the largest percentage of variance with cynicism. Task characteristics reflect items such as a feeling of work achievement, opportunities for personal growth and development, possibility of independent thought and action, and variety in work. Job security and role clarity contributed to lessening burnout by showing a positive relationship with professional efficacy. Job security reflects items such as security of keeping the current job in the next year and security about work in a year's time. Role clarity refers to feeling appreciated by the supervisor, receiving information on work results, clear decision-making processes, and having a direct influence on decisions.

- From the results it can be concluded that certain job characteristics, namely role clarity, task characteristics, job security, social support and workload significantly impacted on the burnout dimensions and strain experienced by support staff. High levels of workload, unclear roles, task characteristics, job insecurity, insufficient social support and the absence of optimism contributed to exhaustion and cynicism and lower professional efficacy.

- The results of the multiple regression analysis on burnout and physical health showed that exhaustion leads to physical strain. Exhaustion also leads to psychological strain. Low professional efficacy, although not as significant as exhaustion, leads to psychological strain as well. In the regression analysis of job characteristics, pessimism/optimism and exhaustion, task characteristics and work overload, clearly lead to exhaustion. From this analysis it is also evident that the absence of optimism also leads to exhaustion. In the regression analysis with job characteristics, pessimism/optimism and cynicism, task characteristics lead to cynicism and exhaustion leads to cynicism. The expected relationship between the two burnout dimensions was once again evident. In the regression analysis of job characteristics, pessimism/optimism and professional efficacy, it was evident that role clarity and certain task characteristics lead to professional efficacy. Optimism also seems to have a positive effect on professional efficacy.

The third specific research objective was to determine whether dispositional optimism moderates the effects of job characteristics on the burnout and strain of support staff in universities of the North-West Province. To determine whether dispositional optimism moderates the effects of job characteristics on burnout, a series of standard multiple regression analyses were conducted and semi-partial correlations were studied. It was clear that optimism had a negative correlation with exhaustion. A low score on optimism contributed to higher exhaustion. Optimism was also related to professional efficacy. Optimism contributed 2% to the variance in exhaustion, while overload contributed 11%. Therefore, it seems that optimism moderates the effects of overload on exhaustion (considering the unique variance explained by all the variables together, compared with the total percentage of variance explained). Optimism also moderates the effects of task characteristics on professional efficacy.

3.2 LIMITATIONS

A cross-sectional design was used in this study, which implies that the causality of relationships cannot be identified.

Another limitation is that the response rate for one of the universities was low. However, this may be attributed to the fact that this research project is still continuing. Also, the two

universities involved in this study are currently merging – therefore there might have been suspicions and fears regarding the research project.

The first language of most of the respondents was not English, but questionnaires were available only in English. Although the various constructs were validated before analyses were done, respondents might have had problems with some of the items in the questionnaire.

3.3 RECOMMENDATIONS

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

3.3.1 Recommendations for the organisation

A combined management and educational approach that builds interventions encouraging engagement should be utilized. The engagement intervention would enhance work life and successfully promote employees' well-being.

Pre-service training programmes addressing issues regarding how to cope with emotional strain and burnout (with ongoing supervision and knowledge of effective stress management techniques) could reduce burnout. Support personnel in tertiary institutions should be offered stress management techniques and receive education on identifying the signs and symptoms of burnout and how to reverse the situation.

In addition, improving organisational and individual employees' well-being by offering teambuilding workshops and team-based interventions – thus improving communication and support amongst co-workers – could assist personnel in dealing with stress and reduce burnout.

The findings of this study suggest that interventions at the individual, departmental, university and government policy levels are required to reduce occupational stressors and enhance the well-being within South African universities. At the individual level, the results suggest that employee assistance programmes (EAP) aimed at enhancing stressor management and coping abilities of staff through education, training, personal counselling and personal coaching, may be effective. Increased staff awareness of the existence of a university's EAP is required.

To produce change that is maintained over time, such individual interventions need to be supported and not contradicted, by workplace procedures, processes, the organizational climate and management directives. According to the results of the study, the lack of optimism causes an increase in experienced stress and strain. It can thus be said that optimistic individuals are less likely to become stressed or exhausted. But more research is needed on the effect of optimism on the stress-strain relationship of support staff in tertiary institutions in order to establish whether this is a moderating or a mediating effect. The continual development of one's awareness is one of the most important general stress-management strategies regarding the type and mix of resources one needs for coping with one's source of stressors.

At the workplace level the results suggest key areas for intervention. Firstly, the results suggest that interventions aimed at decreasing the workload of support staff should cause a decrease in experienced exhaustion and cynicism. The results also suggest that social support in terms of each individual's relationship with his or her co-workers and communication with colleagues and supervisors is extremely useful in dealing with burnout and stressors. At the university level, the findings indicate that interventions aimed at increasing the financial and staffing resources of the universities of the North-West Province will enhance the overall levels of well-being and reduce overall levels of strain within the universities.

Interventions are expensive and cost much time, attention and effort. The short-term costs are great, but the longer term costs even greater. Inadequate use of human potential is probably the most expensive form of human waste. Moreover, stress-related complaints do not merely cause individual misery. The potential cost of stress to organisations is also enormous (for example, poor morale, poor internal communication, high turnover).

In conclusion, the findings of the study offer an important challenge for the South African Higher Education sector, since it is evident that university support staffs are experiencing stressors, strain and burnout. Further study on the specific stressors, burnout and strain reduction is needed. I urge universities and the Government to use the information provided in this report as a basis for developing and implementing interventions aimed at addressing the causes of occupational stress within universities and enhancing staff well-being. As many of these interventions can only be achieved at the level of individual universities, each

university must take on a high level of responsibility in order to ensure that its support staff work in a healthy environment.

3.3.2 Recommendations for future research

- Research is needed on engagement of support staff at universities.

- More research, with the inclusion of personality dimensions, should be undertaken to establish the effects of personality dimensions on burnout and strain.

- Research should be conducted before and after a stress management intervention to determine the results on burnout dimensions. To conclude the effectiveness of the intervention in terms of the reduction of burnout, burnout dimensions should be measured prior to, as well as after; the stress intervention.

- Extensive research should be conducted to determine the unique stressors to each main job of the support staff of a university. For example, the experienced stressors between secretarial and technical staff differ, and solutions must be found for these.