Model of work-related ill health of academic staff in a South African higher education institution

S. Rothmann
WorkWell Research Unit
University of the North-West
South Africa
e-mail: Ian.Rothmann@nwu.ac.za

N. Barkhuizen
University of the North-West
South Africa

M. Y. Tytherleigh
University of the West of England
United Kingdom
e-mail: Michelle.Tytherleigh@uwe.ac.uk

Abstract
The objective of this study is to investigate the relationships between burnout, ill health, job demands and resources, and dispositional optimism in a higher education institution in South Africa. A survey design was used. The study population (N = 279) consisted of academic staff working in a higher education institution. The Maslach Burnout Inventory – General Survey, The Life Orientation Test – Revised, Job Demands-Resources Scale and the Health subscale of the ASSET were used as measuring instruments. A good fit was found for a model in which burnout (exhaustion and cynicism) mediated the relationship between perceived high job demands and low availability of job resources, and ill health. Dispositional optimism had direct effects on burnout and ill health.

During the past two decades, higher education institutions from all over the globe have been confronted with a series of complex changes, challenging their mandates, traditional practices, authority and organisational structures (Doyle and Hind 1998; Hugo 1998; Nixon, Marks, Rowland and Walker 2001). In particular, higher education institutions in South Africa are currently undergoing a process of transformation in an attempt to move away from the ethos and struggles inherited from the apartheid educational era towards a democratic society (Dlamini 1995; Hugo 1998). At the same
time, the realities of globalisation are forcing structural changes and adjustments on higher education institutions to create a new organisational reality (Du Toit 2000).

For academic staff, the developments mentioned above present major complications. Not only is the plethora of roles (e.g., teacher, researcher, adviser, facilitator, colleague, marketer, tutor, writer, manager) increasing, but academics are also required to make paradigm shifts, adopt new policies and practices, and approach their professional endeavors in new and innovative ways (Fisher 1994; Fourie 1999; Fourie and Alt 2000). According to Fisher (1994), academics are frequently expected to perform a number of these roles simultaneously. On the one hand, such supplementary tasks may be considered a healthy diversification of one’s job. On the other hand, the toll on faculty from these added responsibilities, closer scrutiny and dwindling resources may well be an important cause of an extreme and specific job-related strain, commonly labeled as burnout (Cooper, Dewe and O’Driscoll 2001; Mintz 1999).

INTRODUCTION

Although it has been shown that employees in almost any type of job can develop burnout (Schaufeli and Enzmann 1998), according to Maslach, Schaufeli, and Leiter (2001), and Maslach and Jackson (1986), burnout is a long-term stress reaction that occurs particularly among professionals who do ‘people work’ of some kind. Academic staff members in higher education institutions are, thus, likely candidates for burnout because of their relationships with large numbers of students, staff and administration (Blix, Cruise, Mitchell and Blix 1994; Byrne 1991). The intense level of personal, emotional contact that characterises these kinds of relationships can be quite stressful, since it is expected of professionals to be selfless and put the needs of others first, and do whatever it takes to help the client or the learner (Maslach 1998).

The changing nature of academic work appears to have led to a considerable increase in job demands without corresponding increases in job resources. According to Schaufeli and Enzmann (1998), burnout develops in response to job demands and a lack of resources. The first stage of burnout is characterised by an imbalance between resources and demands that eventually leads to feelings of exhaustion (Maslach and Leiter 1997; Schaufeli and Enzmann 1998). Next, a set of negative, indifferent or overly detached attitudes develops (cynicism).

Several researchers have used the Conservation of Resources (COR) theory to determine the effects of job demands and resources on burnout (Hobfoll and Freedy 1993; Lee and Ashforth 1996). Based on the COR theory, burnout is likely to occur when valued resources are lost or threatened, or are inadequate to meet the demands. Major demands include role ambiguity, work pressure and workload, whereas major resources include control, participation in decision-making and job autonomy (Lee and Ashforth 1996). According to Leiter (1993), demands and resources are related
– work environments that are overly demanding usually offer insufficient resources as well.

Currently, there is an emerging shift towards positive psychology with the focus on human strengths and optimal functioning, rather than on weaknesses, malfunctioning and damage (Seligman and Csikszentmihalyi 2000). According to these authors, optimism is a human strength that acts as a buffer against mental illness. Optimism is regarded as the generalized expectation of positive outcomes. Optimism has been found to moderate the relationship between daily hassles and health outcomes (Fry 1995), hassles and psychological symptoms (Lai 1996), and perceived stress and depression (Sumi, Horie and Haykawa 1997). Dispositional optimism could affect how individuals perceive job demands and job resources.

Although studies in other countries have shown that academic staff in higher education institutions experience high levels of stress and burnout (Blix et al. 1994; Byrne 1991; Sheesley 2001), the concept of burnout has not been adequately researched in samples of academics. No study could be found regarding the burnout phenomenon in South African higher education institutions. The occurrence of burnout in the academic profession, however, should be considered seriously since it affects academics’ traditional roles of teaching, research and service (Armour, Caffarella, Fuhrmann and Wergin 1987).

**Burnout**

Burnout is a syndrome of exhaustion, cynicism and reduced professional efficacy (Maslach et al. 2001). In studies conducted with 400 tenure-track university teachers, Blix et al. (1994) found that exhaustion was the component of burnout that seemed to be the most critical in the sample studied. Increased exhaustion can lead to cynicism as workers develop emotional distance from their jobs in an attempt to cope with exhaustion. Schaufeli (2003) argues that exhaustion and mental distancing (cynicism) constitute the two key aspects of burnout. Exhaustion refers to the employee’s *incapability* of performing because all energy has been drained, whereas mental distancing involves the employee’s *unwillingness* to perform because of an increased intolerance of any effort.

Although Maslach et al. (2001) regard professional efficacy as a core component of burnout, Schaufeli (2003) pointed out that empirical evidence showed that it plays a less central role in burnout. Furthermore, professional efficacy is regarded as a personality characteristic, rather than a state.

**Job demands and resources**

Maslach et al. (2001) regard burnout as an individual experience that is specific to the work context. In developing the Job Demands-Resources (JD-R) model, Demerouti, Bakker, Nachreiner, and Schaufeli (2001) proposed that the individual’s working conditions consist of two broad elements, namely job demands and job resources. This model assumes that burnout develops irrespective of type of occupation, when
Job demands are high and resources limited. Peeters and Le Blanc (2001) confirmed that both exhaustion and cynicism were related to job demands and a lack of job resources.

Job demands refers to the ‘things that have to be done’ and include the aspects of the job that require sustained physical and mental effort (Demerouti et al. 2001; Schaufeli and Bakker 2004). Söderfeldt, Söderfeldt, Ohlsen, Theorell, and Jones (2000) proposed that demands in human services can be interpreted as quantitative and emotional job demands. Peeters and Le Blanc (2001) accordingly found that these demands, along with organisational job demands, were significantly related to burnout.

According to Maslach et al. (2001), burnout researchers have focused extensively on quantitative job demands and have found that burnout is a response to work overload. Several studies in higher education revealed that excessive workload is one of the main stressors reported by academic staff (Abouserie 1996; Blix et al. 1994; Doyle and Hind 1998; Gillespie, Walsch, Winefield, Dua and Stough 2001; Jackson and Hayday 1997). The continuous rises in student numbers, increases in the diversity of roles academic staff have to perform, and the growing demand to conduct and publish research are some of the main factors contributing to these dramatic increases in academic workloads. Earley (1994) noted that increased class sizes have been identified as a factor contributing to burnout in academics.

In surveying more than 1200 lecturers from 80 higher education institutions in the USA, Gmelch, Lovrich, and Wilke (1984) identified role conflict as a main stressor, and role ambiguity and role overload as additional stressors to academic staff. Strong associations have been found between role stressors (role ambiguity, conflict and overload) and performance at work (Sullivan and Bhagat 1992). According to Gillespie et al. (2001), academic staff reported that their current levels of stress prevent them from fulfilling their roles and responsibilities adequately, and are likely to reduce the effort they put into their roles.

Job resources refer to the job aspects that are necessary to achieve work goals, to reduce job demands, and to stimulate personal growth and development (Demerouti et al. 2001). There is plenty of evidence in the literature that resources in the academic profession have deteriorated significantly over the past two decades. These include declines in faculty salaries (Bowen and Schuster 1985), job autonomy (Kinman 2001), lack of decision-making (Gillespie et al. 2001) and job control (Fisher 1994). Van Emmerik (2002) found that coping assistance from a supervisor and colleagues, as well as a supportive departmental climate and practical assistance in the department, reduced both exhaustion and dissatisfaction.

In a study conducted by Gillespie et al. (2001) with 178 academic and general staff in Australian higher education institutions, half of the respondents expressed the view that decisions made by the management were based heavily on corporate and financial considerations, with little deliberation of teaching, research, and staff interests and needs. As a result of their limited inclusion in the decision-making
process, staff reported feeling that they no longer had any autonomy or control over their role, and felt ‘powerless’ and ‘helpless’.

**ILL HEALTH**

Maslach, Jackson, and Leiter (1996) hypothesised that burnout, as a result of the presence of particular demands and absence of particular resources, can lead to various negative outcomes such as physical illness, staff turnover and absenteeism. It is not surprising that the ‘burned out’ academic experiences stress-related health problems since burnout is frequently linked with illness. Research has linked burnout to a variety of mental and physical health problems (Lee and Ashforth 1990). Based on the findings of McEwan (1998) and Aronsson and Gustafsson (2005) it could be expected burnout (i.e. exhaustion and cynicism) mediates the relationship between stress (due to job demands and a lack of resources) and ill health.

**Optimism**

According to Nelson and Simmons (2003), there is benefit in identifying those individual differences that would promote wellness through their role in more positive appraisals of demands and resources. Characteristics such as dispositional optimism could work to arm individuals with the belief that they are equipped to handle a demand. As an individual difference variable, optimism has been associated with good mood, perseverance and health. Nelson and Simmons (2003) distinguish between two conceptualisations of optimism, namely dispositional optimism (Carver and Scheier 2003) and learned optimism (Seligman 2002). Learned optimism relates to an optimistic explanatory style. Dispositional optimism is defined as a global expectation that good things will be plentiful in the future and that bad things will be scarce.

Definitions of optimism and pessimism rest on people’s expectations for the future. This grounding in expectations links optimism and pessimism to expectancy-value models of motivation (Carver and Scheier 2003). The first element of expectancy-value theories is that behavior is aimed at the pursuit of goals, that is, actions, end states or values that people see as desirable or undesirable. The more important a goal is, the greater its value in a person’s motivation. The second element in expectancy-value theories is expectancy – that is, a sense of confidence or doubt about the attainability of the goal. If the person lacks confidence, there will be no action. When people are confident about an eventual outcome, effort continues even in the face of great adversity.

Optimism is regarded as a generalized sense of confidence (Carver and Scheier 2003). When confronting a challenge, optimists tend to approach it with confidence and persistence, while pessimists are doubtful and hesitant. When situations get difficult, optimists assume that adversity can be handled successfully, whereas pessimists are more likely to anticipate disaster. Optimists do not only believe that good things will happen, but also that they can make good things happen (Carver and
Scheier 2002). In particular, optimists are less likely to display signs of exhaustion (Fry 1995; Mäikikangas and Kinnunen 2003) and cynicism (Carver and Scheier 2003) than optimists. Studies provided evidence that optimists experience less distress than pessimists when dealing with difficulties in their lives (see Aspinwall and Taylor 1992; Long 1993; Sumi 1997).

**RESEARCH AIMS AND HYPOTHESES**

The aims of this study were as follows: a) to test a structural model of burnout and ill health for academics in a higher education institution in South Africa, and b) to investigate the effects of dispositional optimism on burnout and ill health.

The authors of this article were interested in the prediction of negative work outcomes (burnout, and ill health). The hypotheses of this study are therefore as follows:

*Hypothesis 1*: Job demands and (lack of) job resources predict burnout, which in turn predicts ill health.

*Hypothesis 2*: Dispositional optimism has both main and interaction effects on burnout and ill health.

**Method**

*Participants*

The participants were academic and research staff from a higher education institution in the North West Province of South Africa (N = 279). The characteristics of the participants are shown in Table 1.

**Table 1**: Characteristics of the participants (N=279)

<table>
<thead>
<tr>
<th>Item</th>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus</td>
<td>Potchefstroom</td>
<td>92,81</td>
</tr>
<tr>
<td></td>
<td>Mafekeng</td>
<td>7,19</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>48,91</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>50,72</td>
</tr>
<tr>
<td>Education</td>
<td>Highest grade/standard</td>
<td>8,30</td>
</tr>
<tr>
<td></td>
<td>3 year degree</td>
<td>5,05</td>
</tr>
<tr>
<td></td>
<td>4 year degree or honors</td>
<td>14,08</td>
</tr>
<tr>
<td></td>
<td>5 to 7 year degree</td>
<td>28,16</td>
</tr>
<tr>
<td></td>
<td>Master’s degree</td>
<td>43,68</td>
</tr>
<tr>
<td></td>
<td>Doctoral degree</td>
<td>0,72</td>
</tr>
<tr>
<td>Item</td>
<td>Category</td>
<td>Percentage</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------</td>
<td>------------</td>
</tr>
<tr>
<td>Job Category</td>
<td>Academic</td>
<td>83.87</td>
</tr>
<tr>
<td></td>
<td>Researcher</td>
<td>16.13</td>
</tr>
<tr>
<td>Job Title</td>
<td>Junior lecturer</td>
<td>8.62</td>
</tr>
<tr>
<td></td>
<td>Lecturer</td>
<td>32.33</td>
</tr>
<tr>
<td></td>
<td>Senior lecturer</td>
<td>25.00</td>
</tr>
<tr>
<td></td>
<td>Associate professor</td>
<td>11.21</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>21.55</td>
</tr>
<tr>
<td>Main Educational Focus</td>
<td>Research</td>
<td>9.79</td>
</tr>
<tr>
<td></td>
<td>Lecturing</td>
<td>21.28</td>
</tr>
<tr>
<td></td>
<td>Research and lecturing</td>
<td>67.23</td>
</tr>
</tbody>
</table>

**Instruments**

The *Maslach Burnout Inventory – General Survey* (MBI-GS – Maslach et al. 1996) was used to measure burnout. Two scales of the MBI-GS were used in this study, namely Exhaustion and Cynicism. The third scale, namely Professional Efficacy was not considered in the analysis, because it is regarded as a personality trait (Schaufeli 2003). Exhaustion is measured by five items (e.g., ‘I feel used up at the end of the workday’). Cynicism is also measured by five items (e.g., ‘I have become less enthusiastic about my work’). All items are scored on a seven-point frequency rating scale ranging from 0 (*never*) to 6 (*always/daily*). Barkhuizen (2003) confirmed a three-factor model of the MBI-GS in a sample of academic staff in higher education institutions. Schaufeli, Van Diederendonck, and Van Gorp (1996) reported that internal consistencies (Cronbach coefficient alphas) varied from 0.87 to 0.89 for Exhaustion, and 0.73 to 0.84 for Cynicism. Test-retest reliabilities after one year were 0.65 (Exhaustion), and 0.60 (Cynicism).

The *Job Demands-Resources Scale* (JDRS) was developed by the authors to measure job demands and job resources for employees. The JDRS consists of 41 items. The questions are rated on a four-point scale ranging from 1 (*never*) to 4 (*always*). A principal component analysis that was carried out on the 41 items of the JDRS, showed five factors which explained 48.36 per cent of the total variance. Next, a principal axis factor analysis with a Varimax rotation was conducted on the 41 items. Five factors were extracted, namely Organisational Support (including relationship with supervisor and colleagues, participation, communication, information and participation), Growth Opportunities (including variety, learning opportunities and autonomy), Overload (including pace and amount for work, quantitative overload and emotional overload), Social Support (from colleagues), and Rewards.
The Health subscales of ASSET (an Organisational Stress Screening Tool) were developed by Cartwright and Cooper (2002) to assess the respondents’ level of health. The Health subscales consist of 19 items arranged on two subscales: Physical health and Psychological wellbeing. All items on the Physical health subscale relate to physical symptoms of stress. The items listed on the Psychological wellbeing subscale are symptoms of stress-induced mental ill health. A simple principal component analysis that was carried out on the 19 items of the Health subscales of the ASSET resulted in one factor, which explained 50.15 per cent of the variance. This one factor comprised both physical and psychological health-related outcomes. Johnson and Cooper (2003) found that the Psychological wellbeing subscale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (GHQ-12; Goldberg and Williams, 1988).

The Life Orientation Test – Revised (LOT-R), a 10-item measure, was developed by Scheier, Carver, and Bridges (1994) to measure dispositional optimism. Six items contribute to the optimism score and four items are fillers. The original Life Orientation Test, which hypothesized a two-factor structure of optimism (i.e., optimism and pessimism), was questioned (Harju and Bolen 1998). Follow-up analysis has 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). A simple principal component analysis that was carried out on the six items of the LOT-R resulted in one factor, which explained 45.81 per cent of the variance. This factor was labeled Optimism, with component loadings varying between 0.56 and 0.75. The LOT-R measures optimism/pessimism on a five-point Likert Scale, ranging from 1 (I strongly disagree) to 5 (I strongly agree). The LOT-R was found to have adequate internal consistency (α = 0.78), and excellent convergent and discriminant validity (Scheier et al. 1994). Based on a sample of 204 college students, Harju and Bolen (1998) obtained a Cronbach alpha coefficient of 0.75.

Statistical analysis
First, descriptive statistics were used to explore the data. Exploratory factor analyses were carried out to prepare a test of our theoretical model in a path analysis, following a two-step procedure. Firstly, a simple principal components analysis was conducted on the constructs that form part of the measurement model, including burnout, job demands and job resources and ill health. The eigenvalues and scree plot were studied to determine the number of factors. In the second step, either a principal axis factor analysis with a direct Oblimin rotation was conducted if factors were related, or a Varimax rotation was used if the obtained factors were not related (Tabachnick and Fidell 2001). Cronbach’s alpha coefficients were used to assess the internal consistency of the constructs which were measured in this study.

Structural equation modeling, as implemented in AMOS (Arbuckle 1997) was used to test the structural model of work-related well-being using the maximum likelihood method. Hypothesized relationships were tested empirically for goodness of fit with the sample data. Among the fit indices produced by the AMOS program is
the Chi-square statistic ($\chi^2$), which is the test of absolute fit of the model. However, the $\chi^2$ value is sensitive to sample size. Therefore, additional goodness-of-fit indices, such as the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Normed Fit Index (NFI), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI) and the Root Means Square Error of Approximation (RMSEA), were used in this study.

The significance of differences in burnout and ill health between low and high optimism groups was established by means of MANOVA. Structural equation modeling (SEM) methods, as implemented by AMOS (Arbuckle 1999), were used. In the first step, multi-group structural models, which distinguish between individuals scoring high and low on optimism, were constructed. In the second step, the structural paths between job demands and resources on the one hand and burnout and ill health on the other hand were constrained-equal across groups. The $\chi^2$ statistic and degrees of freedom provide the basis for comparison with the initial multi-group model in which no equality constraints were imposed.

**Procedure**

Considerations regarding ethical issues were addressed by means of active inclusion and consultation with the relevant stakeholders at the higher education institution, as well as with the participants in the study. Participation was voluntary. Objectives of the study were explained to, and written consent obtained from, the participants at their place of work where the data collection also took place. Both individual and group feedback was provided for in the design of the study. Confidentiality and anonymity were assured. Questionnaires were administered in English.

**RESULTS**

**Descriptive statistics**

The descriptive statistics, alpha coefficients and product moment correlation coefficients of the measuring instruments, namely the MBI-GS, JD-RS, the Health subscale of the ASSET and LOT-R, are given in Table 2.

Table 2 shows that acceptable Cronbach alpha coefficients varying from 0.64 to 0.92 were obtained for the scales (see Nunnally and Bernstein 1994). Inspection of Table 2 indicates that exhaustion is positively related to: cynicism (large effect) and ill health (large effect). Exhaustion is negatively related to overload, growth opportunities, social support, and optimism (all medium effects). Cynicism is negatively related to: organisational support, growth opportunities, social support, and optimism (all medium effects). Cynicism is positively related to ill health (medium effect).
Table 2: Descriptive statistics, Alpha coefficients and Product-moment correlation coefficients between the MBI-GS, JDRS, Health subscales of the ASSET and the LOT-R

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Exhaustion</td>
<td>13.19</td>
<td>7.15</td>
<td>0.86</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Cynicism</td>
<td>7.24</td>
<td>5.12</td>
<td>0.76</td>
<td>0.55</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Overload</td>
<td>20.94</td>
<td>3.28</td>
<td>0.76</td>
<td>0.41</td>
<td>0.26</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. Organizational</td>
<td>42.75</td>
<td>8.39</td>
<td>0.91</td>
<td>0.30</td>
<td>-0.39</td>
<td>0.13</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Growth Opportunities</td>
<td>26.34</td>
<td>5.00</td>
<td>0.84</td>
<td>0.30</td>
<td>0.48</td>
<td>0.14</td>
<td>0.26</td>
<td>0.53</td>
<td>0.33</td>
<td>-</td>
</tr>
<tr>
<td>6. Social Support</td>
<td>18.60</td>
<td>3.35</td>
<td>0.79</td>
<td>0.31</td>
<td>0.48</td>
<td>0.13</td>
<td>0.26</td>
<td>0.42</td>
<td>0.33</td>
<td>0.32</td>
</tr>
<tr>
<td>7. Rewards</td>
<td>7.26</td>
<td>2.66</td>
<td>0.81</td>
<td>0.22</td>
<td>0.27</td>
<td>-0.20</td>
<td>0.35</td>
<td>0.35</td>
<td>0.27</td>
<td>0.19</td>
</tr>
<tr>
<td>8. Ill health</td>
<td>35.61</td>
<td>4.04</td>
<td>0.92</td>
<td>0.60</td>
<td>0.42</td>
<td>0.28</td>
<td>0.02</td>
<td>0.53</td>
<td>0.33</td>
<td>0.32</td>
</tr>
<tr>
<td>9. Optimism</td>
<td>21.95</td>
<td>10.47</td>
<td>0.76</td>
<td>0.32</td>
<td>-0.39</td>
<td>-0.14</td>
<td>0.26</td>
<td>0.33</td>
<td>0.08</td>
<td>-0.39</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed)
+ r > 0.30 – practically significant (medium effect)
++ r > 0.50 – practically significant (large effect)
STRUCTURAL MODEL OF ILL HEALTH

Next, the main and interaction effects of dispositional optimism on burnout and ill health were tested. In order to prepare the data for the analyses of main and interaction effects, the sample was divided into two groups; these consisted of dispositional optimism scores lower than the 50th percentile and scores higher than the 50th percentile. The results showed a moderately significant effect of dispositional optimism (explaining 15% of the variance) on the combined dependent variable consisting of burnout and ill health ($F_{(3, 275)} = 16.01, p < 0.01; \text{Wilks' Lambda} = 0.85; \text{partial } \eta^2 = 0.15$).

Table 3: MANOVA of burnout and ill health with dispositional optimism as independent variable

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaustion</td>
<td>1</td>
<td>809.59</td>
<td>16.75*</td>
<td>0.06</td>
</tr>
<tr>
<td>Mental distance</td>
<td>1</td>
<td>820.05</td>
<td>35.11*</td>
<td>0.11</td>
</tr>
<tr>
<td>Ill health</td>
<td>1</td>
<td>2943.96</td>
<td>29.62*</td>
<td>0.10</td>
</tr>
</tbody>
</table>

* $p < .01$

Analysis of each individual dependent variable showed that the low and high dispositional optimism-pessimism groups differed statistically significantly in terms of the levels of all the dependent variables (see Table 3). However, the effect sizes (partial $\eta^2$ values) indicate that dispositional optimism-pessimism had moderate effects on cynicism (11.2% of the variance explained), and ill health (10% of the variance explained). Furthermore, it had a small effect on exhaustion (6% of the variance explained).

Table 4: Descriptive statistics of the independent variables for the optimism-pessimism groups

<table>
<thead>
<tr>
<th>Scale</th>
<th>High pessimism</th>
<th>High optimism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>15.02</td>
<td>7.28</td>
</tr>
<tr>
<td>Mental distance</td>
<td>9.09</td>
<td>5.18</td>
</tr>
<tr>
<td>Ill health</td>
<td>39.11</td>
<td>10.49</td>
</tr>
</tbody>
</table>
Table 4 shows that academics who scored high on pessimism (compared with those who scored high on optimism) obtained higher scores on exhaustion, mental distance, and ill health. Therefore, a main effect of dispositional optimism on all variables was confirmed.

A model was constructed based upon the results of the correlations and the consensus of findings from a review of the burnout literature as it relates to the academic profession. To prepare the results for use in a structural model or work-related well-being, exploratory factor analyses were conducted on the scales. A simple principal components analysis was conducted on two dimensions of burnout (i.e., Exhaustion and Cynicism). These factors represent two aspects of work-related well-being, namely the energy dimension (Exhaustion) and the identification dimension (Cynicism). One factor was extracted, which explained 77.43 per cent of the variance. The factor (labeled Burnout) consisted of Exhaustion (loading = 0.88) and Cynicism (0.88). The five factors of the JD-RS were subjected to a second-order principal component analysis. Two factors, which explained 63.11 per cent of the variance, were extracted. Because an oblique rotation showed that the factors were related ($r = -0.19$), it was decided to use principal axis factor analysis with a direct oblimin rotation. Overload (loading = 0.95) formed the first factor (labeled Job Demands), while Organisational Support (0.83), Growth Opportunities (0.85), Social Support (0.65) and Rewards (0.46) formed the second factor (labeled Job Resources).

Two of the five dimensions (namely burnout and job resources) were covered by at least two scales. For each of these two dimensions a latent variable was specified on which the corresponding scales loaded, separating random measurement error from true score variance. For job demands (overload) and ill health there was only one indicator, meaning that in these cases there was a one-to-one correspondence between the manifested variables (scales) and the underlying latent dimensions. Correlations among these one-indicator latent variables and other latent variables may be biased (Little, Cunningham, Shahar and Widaman 2002). A procedure proposed by Bagozzi and Heatherton (1994) was used to overcome this problem. First, a one-factor model was fitted for all items belonging to the four scales. Second, separate indicators for each scale were formed by selecting items on the basis of their loadings, alternating items with high and low loadings. Thus one parcel of two items was created for job demands, while one parcel of three items was created for ill health. The proposed model, including the hypothesized relationships, was tested with SEM analysis. Results indicated that the model did fit adequately to the data $\chi^2 (82) = 172.47$, $\chi^2 / df = 2.10$, GFI = 0.90, CFI = 0.93, IFI = 0.94, TLI = 0.91, and RMSEA = 0.06. The final model is given in Figure 1.
As can be seen in Figure 1, the path from job demands (overload) to burnout (exhaustion and cynicism) is significant and positive, while the path from job resources to burnout is significant and negative. Burnout mediates the relationship between job demands and job resources on the one hand, and ill health on the other hand. This means that overload, as well as a lack of resources (including resources to attain the goals of the organisation, growth opportunities, social support and rewards) lead to burnout. In addition, the path coefficient from job resources to burnout is significant, as is the path from burnout to ill health. This shows that a high level of burnout can lead to negative physical and psychological health outcomes. Academics with low job demands and high job resources were least likely to display burnout symptoms.

To test for possible interaction effects between job demands, job resources and optimism, the paths between job demands and burnout, job resources and burnout, and burnout and ill health were constrained equal for the low and high optimism groups. The constrained model was not statistically significantly different from the unconstrained model ($\Delta \chi^2 = 7.62; \Delta df = 7; p > 0.05$). This result suggests that job demands and job resources did not interact with optimism in their impact impacting on burnout. Furthermore, burnout did not interact with optimism in impacting on ill health.

Based on the above-mentioned findings, therefore, Hypotheses 1 is accepted. Hypothesis 2 is also accepted, but only as far as the main effect of optimism on work-related well-being is concerned; optimism did not show any interaction effects.
DISCUSSION

The aim of this study was to investigate the relationships between burnout, ill health, job demands and resources and dispositional optimism of academic staff in a higher education institution in the North West Province of South Africa. A good fit was found for a model in which job demands and a lack of job resources predicted burnout (exhaustion and cynicism) of academics, which leads to physical and psychological ill health. Dispositional optimism had a main effect on burnout and ill health.

The results of this study showed that a lack of resources, including resources needed for learning and growth, resources needed to attain the goals of the organisation, social support (i.e. opportunities for interaction with and support by colleagues) and rewards, increased academics’ levels of exhaustion and cynicism. In line with the COR theory (Hobfoll and Freedy 1993) and the JD-R model (Demerouti et al. 2001), it can be argued that academic staff in higher education institutions are likely to become victims of burnout when there is an increase in job demands and when they lack job resources. Social support seems to be an important resource since it can promote better well-being when combined with other job resources. In this regard, Van Emmerik (2002) found that coping assistance from both the supervisor and colleagues, together with a supportive departmental climate and practical assistance in the department reduced exhaustion.

Job demands (overload) of academics lead to higher levels of burnout. According to Cordes and Dougherty (1993), exhaustion is primarily a response to demand stressors placed upon individuals, especially work overload. Research in higher education has found excessive workload to be an ever-present stressor in academic work life (Abouserie 1996; Cross and Caroll 1990; Daniels and Guppy 1994; Doyle and Hind 1998; Earley 1994). Regarding health, the structural model showed that burnout was related to ill health. This indicates that academics suffering high levels of burnout develop physical and psychological health problems (see Kahill 1988; Lee and Ashforth 1990).

Considering the abovementioned findings, academic staff in higher education institutions in South Africa might be vulnerable to develop burnout and eventually ill health. Academic staff in higher education institutions in South Africa are faced with high teaching and research demands. Although such demands are also evident in other countries (see Abouserie 1996; Blix et al. 1994; Doyle and Hind 1998; Gillespie et al. 2001; Tytherleigh, Webb et al. 2005), the South African context is characterised by unique factors, which result in high demands. The South African higher education system has been subjected to transformation since 1994 (after the first democratically elected government came to power). More specifically, mergers of higher education institutions were initiated and the student profile changed to reflect the multicultural nature of the South African society. However, many learners are products of a poor quality primary and secondary education. Furthermore, because of international isolation (prior to 1994), many academics at higher education institutions lack the competencies and institutional support that are required to produce the high quality
research outputs that are expected. Work overload results because academics have to manage their lecturing duties, put additional effort into assisting students from disadvantaged educational backgrounds, attend to their own skills development, and produce research outputs which are nationally and internationally acceptable. Emotional distress of academics in this study was probably not associated with uncertainty that was created by the mergers of universities (as reported by Idel et al. 2003), but rather with additional job demands, because of administrative work and synchronizing curriculums, policies and procedures (see Barkhuizen 2003). Job demands result in exhaustion and cynicism, especially if academics lack job resources and when they are pessimistic (i.e. when they expect bad things rather than good things to happen to them).

For pessimists, a lack of organisational support (e.g. managerial support, information, communication, role clarity and participation), had the strongest effect on burnout, followed by a lack of growth opportunities (e.g. variety, learning opportunities and autonomy). For optimists, both a lack growth opportunities and a lack organisational support contributed strongly to burnout. In both groups a lack of social support from colleagues and a lack of advancement opportunities had moderate effects on burnout. It seems that optimism plays a significant role in affecting burnout and ill health. Academics who have a generalized expectation that good things will happen in the future, showed lower levels of burnout and ill health.

The present study has certain limitations. The research design was a cross-sectional survey design, which makes it difficult to prove causal relationships even when, as done here, advanced analytical procedures such as structural equation modeling techniques are employed. The use of other designs, such as longitudinal designs, can aid in establishing causality. Another limitation is that the processes underlying optimism were not studied. Identifying the cognitive, behavioral and social processes that support optimism will provide ways of understanding flexible problem solving and suggest ways of teaching specific skills to increase human strengths, rather than just yielding a general injunction to be more optimistic (Aspinwall and Staudinger 2003). Lastly, particulars of the study context and methodological aspects, such as the sample size, could challenge the external validity of the current findings.

**RECOMMENDATIONS**

Given the pervasive nature of burnout, higher education institutions should implement interventions to prevent burnout within the academic profession. Interventions may be aimed at eliminating, reducing or altering stressors (Kompier and Kristensen 2001). Possible interventions include: changes in decision-making processes; redesign of job tasks; provision of a more supportive climate, including more constructive feedback on job performance; and establishment of a more equitable system of reward distribution. Secondary level interventions can be implemented to prevent employees who are already showing signs of stress from getting sick and to increase their coping capacity. Typical examples of this strategy would include...
cognitive restructuring, time management, conflict resolution techniques and coping strategies. The tertiary level of stress management interventions is concerned with the rehabilitation of individuals who have suffered ill health or reduced well-being as a result of strain in the workplace.

Based on the results obtained in this study, future studies should make use of larger and more representative samples. More research is also needed to identify the cognitive, behavioral, and social processes that underlie dispositional optimism.

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