

BURNOUT, ENGAGEMENT AND STRESS OF MEDICAL PRACTITIONERS

Heleen de Jager, Hons. B.Com.

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Supervisor: Prof. S. Rothmann

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NOTE

The reader is reminded of the following:

- The publication style prescribed by the *Publication Manual (4th edition)* of the American Psychological Association (APA) was followed in this mini-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.
- The name of the supervisor of this study appears on the article (see Chapter 2).

**To my husband, Jaco,
for his motivation,
understanding and
unconditional love ...**

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SUMMARY

Topic: Burnout, engagement and stress of medical practitioners

Key terms: Burnout, engagement, stress, medical practitioners

The environment in which medical practitioners in South Africa and elsewhere in the world currently function demands more of them than did any previous period. Medical practitioners have to cope with the demands that arise from fulfilling various roles – often with limited resources. Tracking and addressing their effectiveness in coping with new demands and stimulating their growth in areas that could possibly impact on individual well-being and organisational efficiency and effectiveness are therefore crucial. Burnout and engagement of medical practitioners are specific focus areas for research and intervention in this regard. The objectives of this study were to conceptualise burnout and engagement from the literature and to determine the association between job stress, burnout and engagement.

A survey design was used to reach the research objectives. The specific design is the cross-sectional design, whereby a sample of medical practitioners was drawn from a population at one time. An accidental sample ($n = 68$) was taken from medical practitioners in South Africa. Three questionnaires were used in this study, namely the Maslach Burnout Inventory – Human Services Survey (MBI-HSS), the Utrecht Work Engagement Scale (UWES) and the Job Stress Indicator (JSS). Descriptive and multivariate statistics were used to analyse the data. Effect sizes were used to determine the significance of findings.

The results showed that there is a correlation between vigour and personal accomplishment. The medical practitioners tested proved to be absorbed in their work and have high levels of vigour. It shows that stress because of a lack of resources and high job demands leads to emotional exhaustion. Medical practitioners who do not have relevant resources seem to become negative, callous and cynical. It also concluded that if medical practitioners do not have relevant resources and high job demands, the results can be lower energy levels and a lack of enthusiasm, inspiration and pride in their work. There was a practically significant relationship between burnout and engagement.

Recommendations for future research are made.

OPSOMMING

Onderwerp: Uitbranding, stres en begeestering by mediese dokters

Sleuteltermes: Uitbranding, begeestering, werkstres, mediese dokters

Die veranderende omgewing waarin mediese dokters, plaaslik en in ander wêreldlande, hulself daaglik bevind, skep toenemende vereistes waaraan hulle moet voldoen. Mediese dokters moet hierdie groter uitdagings hanteer – dikwels met beperkte hulpbronne. Die monitering en hantering van hul effektiwiteit in die hantering van nuwe uitdagings, asook die stimulering van groei in hul persoonlike hoedanigheid wat 'n invloed kan hê op hul organisatoriese effektiwiteit en doeltreffendheid, is dus van kritieke belang. Uitbranding en begeestering van werknemers is spesifieke fokusareas in hierdie navorsing wat in hierdie spesifieke verband van groot waarde kan wees. Die doelwit van hierdie studie was om uitbranding en begeestering vanuit die literatuur te konseptualiseer en om die verband tussen werkstres, uitbranding en begeestering te bepaal.

'n Opname-ontwerp is gebruik om die navorsingsdoelwitte te bepaal. Die dwarsdeursnee opname-ontwerp is gebruik as metode waardeur 'n steekproef van mediese dokter eenmalig vanuit 'n populasie geneem is. 'n Toevallige steekproef ($n = 68$) is geneem van mediese dokters in ses gebiede in Suid-Afrika. Drie vraelyste is in die studie gebruik, naamlik die Maslach Uitbrandingsvraelys – Menslike Dienste Opname (MBI-HSS), die Utrecht Werksbegeesteringskaal (UWES) en die Werkstres-Indikator (JSI). Die data is geanaliseer deur gebruik te maak van beskrywende en meerveranderlike statistiek. Effekgroottes is gebruik om die omvang van die bevindings te bepaal.

Die uitslag van die navorsing dui aan dat daar by mediese dokters 'n korrelasie bestaan tussen passie en persoonlike sukses. Dit dui verder aan dat hoë werkseise en 'n gebrek aan hulpbronne in die werkplek lei tot emosionele uitputting en dat dit lei tot negatiwiteit, sinisme en gevoelloosheid onder mediese dokters. 'n Verdere gevolgtrekking was dat 'n tekort aan relevante hulpbronne in die werksplek of té hoë werkseise ook kan lei tot lae energievlakke en 'n gebrek aan entoesiasme, inspirasie en werkstrots. Daar is 'n praktiese beduidende interafhanklikheid tussen uitbranding en begeestering.

Aanbevelings vir toekomstige navorsing is aan die hand gedoen.

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CHAPTER 1

INTRODUCTION

This mini-dissertation deals with burnout, engagement and stress of medical practitioners.

Chapter 1 focuses on the problem statement, objectives, research method and division of chapters.

1.1 PROBLEM STATEMENT

Over the last 20 years many aspects of medical practice have changed: autonomy is declining, the status of physicians has diminished and work pressure is increasing (Schweitzer, 1994). Burnout is an unintended and adverse result of such changes. Burnout among physicians has been described in several countries and practice settings. In the Netherlands, physician disability insurance premiums have recently risen by 20% to 30% owing to an increasing incidence of burnout and stress-related complaints (Broffman, 2001).

Burned-out physicians are angry, irritable and impatient and may tend towards absenteeism and job turnover. Decreasing productivity and practice revenue are products of physician turnover (Broffman, 2001). Burnout has been associated with deterioration in the physician-patient relationship and a decrease in both the quantity and quality of care. In a recent survey of health maintenance organisation (HMO) physicians, burned-out physicians were less satisfied, more likely to want to reduce their time seeing patients, more likely to order tests or procedures, and more interested in early retirement than other physicians (Broffman, 2001).

It has been hypothesised that *people* are both the greatest source of stress and the greatest source of satisfaction in the practice of health care. Most of the interactions of health professionals are with patients in varying states of suffering and distress and with colleagues who may be in different states of their own distress. Given such conditions, it sometimes happens that the mental and emotional states of patients and colleagues 'rub off' onto an individual. One way of responding to this situation is to detach and distance oneself

emotionally, put on the professional armour and press forward – unaffected and in total ‘control’. This response is part of burnout (Muldary, 1983).

To perform duties in the face of forces that threaten to overwhelm individuals on an emotional level is a challenge. The implicit requirement seems to be that health professionals should control their emotions around other people. This necessity produces an emotional overload that cannot be confined to the hospital environment or limited to an eight-hour shift (Muldary, 1983).

In the year 2000 the Health Committee of the Health Professions Council dealt with an average caseload of 133 allegedly impaired doctors per month. Many of these cases had accumulated from previous years. The average monthly caseload for 1999 stood at 90. Alleged drug or alcohol dependency in the year 2000 accounted for 72 cases, schizophrenia for 10, depression for 8, bipolar for 5, eye disorder for 3, neurological problems for 2 and one each for Alzheimer’s, tuberculosis, diabetes, stroke and eating disorder. The committee found 12 of the 32 physicians reported to them the previous year to be impaired. Two of these doctors have since died (Bateman, 2001).

Records in the United States of America (USA) and the United Kingdom (UK) reveal that the suicide rate among their local physicians is approximately double the rate in the general population. South African statistics suggesting a similar pattern is that 72% of the doctors referred to the Health Professional Council of South Africa’s (HPCSA) Health Committee for suspected impairment are younger than 50. Factors for impairment include abuse of students by teachers who ‘teach by humiliating – it’s a kind of initiation that goes on in medicine that is not good.’ Interns also took on board the ‘macho ethic’ of working 90 straight hours ‘without falling apart’. The profession needs to examine itself and ask what it is doing to the people it is training. Working long hours without support is a recipe for burnout (Bateman, 2001).

According to Maslach (1981b, 1993) burnout is in general viewed as a syndrome consisting of three dimensions, namely:

- **Emotional Exhaustion** (i.e. the draining of emotional resources because of demanding interpersonal contacts with others).
- **Depersonalisation** (i.e. a negative, callous, and cynical attitude towards the recipients of one's care or services).
- **Lack of Personal Accomplishment** (i.e. the tendency to evaluate one's work with recipients negatively).

Burnout is related to negative outcomes for the individual, including decreased self-esteem, increased levels of irritability, depression and anxiety, as well as fatigue, insomnia, a sense of failure, loss of motivation and frequent headaches (Jackson & Maslach, 1981b; Kahill, 1988).

In the health literature burnout is sometimes equated with *job stress* (Bailey & Clark, 1989). Job stress is generally viewed in relation to factors in the work environment that interact with a worker's personality in such a way as to disrupt the worker's psychological or physical functioning. Various models exist that can be used to conceptualise job stress. The Job-Demand-Control Model (Karasek & Theorell, 1990) focuses on the interaction between the pressures of the work environment and the decision scope of the employee in meeting the requirements of a job. According to Schaufeli and Bakker (2002), any occupation can be viewed from a stress perspective in terms of two elements, namely job demands and job resources.

This study will focus on stress that consists of job demands and lack of job resources. *Job demands* are those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological (i.e. cognitive or emotional) effort and are therefore associated with certain physiological and/or psychological costs, e.g. work overload, personal conflicts and emotional demands, such as demanding clients. Although these demands are not necessarily negative, they can turn into stressors when trying to meet these high demands. Consequently they become associated with negative responses (such as depression, anxiety or burnout) in the long run. *Job resources*, on the other hand, are those physical, psychological, social or organisational aspects of the job that either/or reduce job demands and the associated physiological and psychological costs. Job resources refer to

those aspects of the job that may be functional in achieving work goals and stimulating personal growth, learning and development – e.g. through social support, autonomy, feedback and job security (Schaufeli & Bakker, 2002).

The environment in which medical practitioners in South Africa and elsewhere in the world currently function demands more of them than did any previous period. Medical practitioners have to cope with the demands that arise from fulfilling various roles, often with limited resources. Tracking and addressing their effectiveness in coping with new demands, and stimulating their growth in areas that could possibly impact on individual wellbeing and organisational efficiency and effectiveness are therefore crucial. Burnout and engagement of employees are specific focus areas for research and intervention in this regard (Maslach et al., 2001; Rothmann, 2002).

Medicine is one of the few professions that barrages the professional almost daily with *suffering and tragedy*. This is particularly true for the physician caring for the chronically and terminally ill. There may be situations, which are especially sensitive for a physician for some reason. These situations include: the first patient dying; the physician overidentifying with a particular patient for personal reasons, this being one of a series of similar and tragic cases; or the physician feeling that he/she has erred and compromised the patient's good care with the resulting guilt and self-blame and fear of a possible malpractice suit. Given the physician's wish to help patients and the physician's overwhelming *sense of responsibility*, such situations may take a tremendous psychological toll (Paradis, 1987).

In contrast to the pathological interest in "what can go wrong", attempts have been made to discover "what can go right" (Strümpfer, 2000). It is a radically different set of assumptions and attributions about health and potential (Rothmann, 2002). The recent development in burnout research is the shift towards a 'positive psychology' that focuses on human strengths and optimal functioning rather than on weaknesses and malfunctioning (Schaufeli et al., in press; Seligman & Csikszentmihalyi, 2000). According to Maslach (1997), **engagement** is characterised by energy, involvement and efficacy – which are the direct opposites of the three burnout dimensions: exhaustion, cynicism and lack of professional efficacy. Engaged individuals have a sense of energetic and effective connection with their work activities and they see themselves as able to deal with the demands of their job. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive

state that is not focused on any particular object, event, individual or behaviour (Schaufeli et al., in press). Although Schaufeli and Bakker (2001) also regarded burnout and engagement as opposites, they believe that the two concepts should be measured independently. This makes it possible to investigate the relationship between burnout and engagement empirically (Rothmann, 2002).

According to Schaufeli and Bakker (2001), two dimensions of engagement are logically related to burnout, namely vigour (exhaustion) and dedication (cynicism). Vigour refers to the activation dimension of wellbeing, while dedication refers to identification with work. Absorption and professional efficacy seem to be less related than the other dimensions, but both dimensions might also be regarded as components of engagement (Rothmann, 2002). Schaufeli and Bakker (2002) found that burnout and engagement are negatively related, sharing between 10% and 25% of their variance. Storm and Rothmann (2003) found a canonical correlation of 0,51 between burnout and engagement. A moderate negative correlation ($r = -0,42$) was found between cynicism and dedication. Vigour correlated negatively with exhaustion ($r = -0,28$) (Rothmann, 2002).

In summary, medical practitioners have to cope with many demands – often with limited resources. Although some of them may suffer from burnout, it is possible that others may feel engaged in their work. There are ways to deal with the problem of limited resources and job demands that could lead to burnout. In this study, however, the association between engagement, stress and burnout of medical practitioners is investigated.

1.2 RESEARCH OBJECTIVES

1.2.1 General aim

The general aim of this research is to critically investigate the association between burnout, stress and work engagement.

1.2.2 Specific aims

- To conceptualise burnout, stress and engagement in the literature.

- To determine the association between burnout, engagement and stress in the medical profession.
- To critically investigate the association between burnout, stress and engagement.

1.3 RESEARCH METHOD

The research method consists of an empirical study.

1.3.1 Research design

A survey design is used to reach the research objectives. The specific design is the cross-sectional design whereby a sample will be drawn from a population. This design can be used to assess interrelationships among variables within a population. The cross-sectional design involves administering the survey repeatedly to the same group of participants. With this design the researcher can determine the impact that certain events will have on the person and on future behaviour. The cross-sectional method does, however, have its shortcomings. It is often difficult to assess developmental changes by comparing groups (Kerlinger & Lee, 2000).

1.3.2 Study population

An accidental sample ($n = 68$) is taken from medical practitioners in South Africa. A total of 500 Questionnaires were handed out in North West, Gauteng, Limpopo, the Free State, and the Western and Northern Cape.

1.3.3 Measuring instruments

Three questionnaires are used in this study, namely the Maslach Burnout Inventory (MBI-HSS), the Utrecht Work Engagement Scale (UWES) and the Job Stress Indicator (JSI).

- The *Maslach Burnout Inventory* (MBI-HSS) (Maslach & Jackson, 1986) is used to determine the level of burnout in the participants. The MBI-HSS consists of three sub-

scales, namely Emotional Exhaustion, Depersonalisation and Personal Accomplishment (Maslach & Jackson, 1981, 1986). The three sub-scales of the MBI will be dealt with separately in this study, based on considerable factor-analytical support for their separation (Maslach & Jackson, 1986). Maslach and Jackson (1994, 1996) as well as Lahoz and Mason (1989) reported Cronbach alpha coefficients varying from 0,71 to 0,90 for the three sub-scales of the MBI. Test-retest reliability varied from 0,60 to 0,82 and 0,54 to 0,60 (applied after one year). External validation of the MBI has been obtained from its convergence with peer ratings, job dimensions associated with burnout, and stress outcomes (Maslach & Jackson, 1984). Naudé and Rothmann (2003) found support for the factorial validity of a 17-item version of the MBI-HSS in a sample of emergency workers in South Africa. The MBI-HSS (Maslach & Leiter, 1986) has evidenced relatively high internal consistency in South Africa (Basson & Rothmann, 2002; Levert et al., 2000; Naudé & Rothmann, 2003) with alpha coefficients varying between 0,67 (Depersonalisation) and 0,89 (Emotional Exhaustion).

- The *Utrecht Work Engagement Scale (UWES)* (Schaufeli et al., in press) is used to measure the levels of engagement. Although engagement is conceptually seen as the positive antithesis of burnout, it is operationalised in its own right. Work engagement is a concept that includes three dimensions: vigour, dedication and absorption. Engaged workers are characterised by high levels of vigour and dedication and they are immersed in their jobs. It is an (empirical) question whether engagement and burnout are end results of the same continuum or two distinct (but related) concepts. The UWES is scored on a seven-point frequency rating scale, varying from 0 'never' to 6 'always'. The alpha coefficients for the three sub-scales varied between 0,68 and 0,91. The alpha coefficient could be improved (α varies between 0,78 and 0,89 for the three sub-scales) by eliminating a few items without substantially decreasing the scales' internal consistency. Storm and Rothmann (2003) obtained the following alpha coefficients for the UWES in a sample of 2396 members of the SAPS: Vigour: 0,78; Dedication: 0,89; Absorption: 0,78.
- The *Job Stress Indicator (JSS)* was used to measure participants' job stress. The JSS focuses on common work situations that often result in psychological strain. Each of the 27 items describes a job-related stressor event and assesses both the perceived severity and frequency occurred of 27 JSS stressor events. The Stress Index assesses the overall

level of stress based on the combined severity and frequency ratings of all 27 stressor events. Sub-scales measure occupational stress associated with the job itself (Job Pressure) and with lack of support from supervisors, co-workers, or the policies and procedures of the organisation (Lack of Organisational Support).

1.3.4 Statistical analysis

The statistical 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 and validity of the measuring instruments, descriptive statistics, t-tests, analysis of variance, correlation coefficients and multiple regression analyses.

Cronbach alpha coefficients, inter-item correlation coefficients and factor analysis are used to assess the reliability and validity of the measuring instruments (Clark & Watson, 1995). Principal components extraction is used prior to principal factors extraction to estimate the number of factors, presence of outliers and factorability of the correlation matrices. Oblique rotation is used to determine intercorrelations between factors. If factors are significantly related the oblique rotation (using Promax) is subsequently carried out. If the factors are not significantly related, principal factors extraction with varimax rotation is performed through SAS FACTOR on the measuring instruments.

Effect sizes (Cohen, 1988) is used to decide on the practical significance of the findings. Pearson product-moment correlation coefficients will be used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) is set for the practical significance of correlation coefficients.

1.4 DIVISION OF CHAPTERS

In this mini-dissertation the chapters are presented as follows:

Chapter 1: Introduction

Chapter 2: Research article

Chapter 3: Conclusions, shortcomings and recommendations

1.5 CHAPTER SUMMARY

In this chapter the problem statement and motivation were discussed. The specific objectives of the research were formulated and the method of research was indicated. It was also indicated how the statistical analysis was performed.

A research article on burnout, engagement and stress of medical practitioners is presented in Chapter 2.

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CHAPTER 2

RESEARCH ARTICLE

(Submitted to the South African Journal of Industrial Psychology)

BURNOUT, ENGAGEMENT AND STRESS OF MEDICAL PRACTITIONERS

H DE JAGER

S ROTHMANN

Work Well: Research Unit for People, Policy and Performance, Faculty of Economic and Management Sciences, PU for CHE

ABSTRACT

Little quantitative research has been published on burnout and engagement of medical practitioners. The objectives of this study were to determine the association between burnout, engagement and stress in the medical profession. A cross-sectional survey design was used. A sample of medical practitioners ($N = 68$) was taken. The results showed that Lack of Resources and Job Demands are associated with Emotional Exhaustion and Depersonalisation. Lack of Resources and Job Demands were associated with low levels of Vigour and Dedication. Burnout and engagement were significantly related. The results showed that low levels of Emotional Exhaustion and Depersonalisation and high levels of Personal Accomplishment are associated with Vigour, Dedication and Absorption.

OPSOMMING

Min kwantitatiewe navorsing is onderneem rakende uitbranding en begeestering by mediese dokters. Die doel van hierdie navorsing was om die verband tussen uitbranding, begeestering en stres te bepaal. 'n Dwarsdeursnee opname-ontwerp is gebruik. 'n Steekproef van mediese dokters ($N = 68$) is geneem. Die resultate het aangetoon dat 'n tekort aan hulpbronne in die werkplek en werkeise geassosieer word met Emosionele Uitputting en Depersonalisasie. Dit dui daarop dat 'n tekort aan hulpbronne in die werkplek en werkvereistes ook korreleer met lae vlakke van Passie en Absorpsie. Daar is 'n praktiese betekenisvolle verband tussen uitbranding en begeestering. Die studie dui ook daarop dat lae vlakke van Emosionele Uitputting en Depersonalisering en hoë vlakke van Persoonlike sukses behaal, geassosieer word met Passie, Toewyding en Absorpsie.

There is no doubt that medical practitioners have a very demanding and involving occupation. Over the last 20 years, many aspects of medical practice have changed: autonomy is declining, the status of physicians has diminished, and work pressures are increasing (Schweitzer, 1994). Burnout is an unintended and adverse result of such changes. Burnout has been described among physicians in several countries and practice settings. In the Netherlands, physician disability insurance premiums have recently risen by 20% to 30% owing to an increasing incidence of burnout and stress-related complaints (Broffman, 2001).

Burned-out physicians are angry, irritable and impatient and may tend towards absenteeism and job turnover. Decreasing productivity and practice revenue are products of physician turnover (Broffman, 2001). Burnout has been associated with deterioration in the physician-patient relationship and a decrease in both the quantity and quality of care. In a recent survey of health maintenance organisation (HMO) physicians, burned-out physicians were less satisfied, more likely to want to reduce their time seeing patients, more likely to order tests or procedures, and more interested in early retirement than other physicians (Broffman, 2001).

It has been hypothesised that *people* are both the greatest source of stress and the greatest source of satisfaction in the practice of health care. Most of the interactions of health professionals are with patients who are in varying states of suffering and distress and with colleagues who may be in different states of their own distress. Given such conditions, it sometimes happens that the mental and emotional states of patients and colleagues 'rub off' onto an individual. One way of responding to this situation is to detach and distance oneself emotionally, put on the professional armour and press forward – unaffected and in total 'control'. This response is part of burnout (Muldary, 1983).

To perform duties in the face of forces that threaten to overwhelm individuals on an emotional level is a challenge. The implicit requirement seems to be that health professionals should control their emotions around other people. This necessity produces an emotional overload that cannot be confined to the hospital environment or limited to an eight-hour shift (Muldary, 1983).

In the year 2000 the Health Committee of the Health Professions Council dealt with an average caseload of 133 allegedly impaired doctors per month. Many of these cases had accumulated from previous years. The average monthly caseload for 1999 stood at 90.

Alleged drug or alcohol dependency in the year 2000 accounted for 72 cases, schizophrenia for 10, depression for 8, bipolar for 5, eye disorder for 3, neurological problems for 2 and one each for Alzheimer's, tuberculosis, diabetes, stroke and eating disorder. The committee found 12 of the 32 physicians reported to them the previous year to be impaired. Two of these doctors died (Bateman, 2001).

An example of the complexity of this problem is the overlapping of symptoms of drug and alcohol use, suicide and depression in physicians. Records in the United States of America (USA) and the United Kingdom (UK) reveal that the suicide rate among their local physicians is approximately double the rate in the general population. South African statistics suggesting a similar pattern is that 72% of the doctors referred to the Health Professional Council of South Africa's (HPCSA) Health Committee for suspected impairment are younger than 50.

The relationship of inefficacy (reduced personal accomplishment) to the other two aspects of burnout is somewhat complex. In some instances it appears to be a function, to some degree, of exhaustion, cynicism, or a combination of the two (Byrne, 1994, Lee & Ashforth, 1996 & Maslach, Schaufeli & Leiter, 2001). A work situation with chronic, overwhelming demands that contribute to exhaustion or cynicism is likely to erode one's sense of effectiveness. Furthermore, exhaustion or depersonalization interferes with effectiveness: it is difficult to gain a sense of accomplishment when feeling exhausted or when helping people toward whom one is indifferent (Maslach, Schaufeli & Leiter, 2001).

Practitioners are also subjected to particular stresses inherent in the content of the jobs themselves – for instance, dealing with the death of a patient and the subsequent grief of their family and friends (Wykes & Whittington, 1991). The effects of job stress on general practitioners' work include reduced productivity, increased errors, job dissatisfaction, disloyalty, increased complaints, lack of creativity, poor decision making, poor time keeping, low morale and reluctance to change (Boland, 1995; Ellis, 1996). Stressful relationships with colleagues can lead to other stresses being compounded. A good team provides a source of support but a partnership that has not reached true community or is having interpersonal strife affects patient care and practice management (Ellis, 1996).

Job stress is the interaction of work conditions with worker traits that changes normal psychological and/or physiological functions. The definition also provides for stress that improves performance. This is important for both industry and employees. For the purpose of this research, *job stress* will be defined as work demands that exceed the worker's coping ability (Rice, 1992).

The environment in which medical practitioners in South Africa and elsewhere in the world currently function demands more of them than did any previous period. Medical practitioners have to cope with the demands that arise from fulfilling various roles, often with limited resources. Tracking and addressing their effectiveness in coping with new demands and stimulating their growth in areas that could possibly impact on individual wellbeing and organisational efficiency and effectiveness are therefore crucial. Burnout and engagement of employees are specific focus areas for research and intervention in this regard (Maslach et al., 2001; Rothmann, 2002).

In contrast to the pathological interest in "what can go wrong", attempts have been made to discover "what can go right" (Strümpfer, 2000). It is a radically different set of assumptions and attributions about health and potential (Rothmann, 2002). The recent development in burnout research is the shift towards a 'positive psychology' that focuses on human strengths and optimal functioning rather than on weaknesses and malfunctioning (Seligman & Csikszentmihalyi, 2000; Schaufeli et al., in press). Maslach and Leiter (1997) rephrased burnout as an erosion of engagement with the job. What started out as important, meaningful, and challenging work becomes unpleasant, unfulfilling, and meaningless. Energy turns into exhaustion, involvement turns into cynicism, and efficacy turns into ineffectiveness (Maslach, Schaufeli & Leiter, 2001). Engaged medical practitioners will have a sense of energetic and effective connection with their work activities and they will see themselves as able to deal with the demands of their job. Rather than a momentary and specific state, they will refer to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour (Schaufeli et al., in press).

Therefore, the objective of this study was to investigate the association between burnout, stress and engagement of medical practitioners.

Burnout

Burnout is in general viewed as a syndrome consisting of three dimensions, namely *emotional exhaustion* (i.e. the draining of emotional resources because of demanding interpersonal contacts with others), *depersonalisation* (i.e. a negative, callous and cynical attitude towards the recipients of one's care or services) and *lack of personal accomplishment* (i.e. the tendency to evaluate one's work with recipients negatively) (Maslach, 1981b, 1993). Burnout is related to negative outcomes for the individual, including decreased self-esteem, increased levels of irritability, depression and anxiety, as well as fatigue, insomnia, a sense of failure, loss of motivation and frequent headaches (Jackson & Maslach, 1981b; Kahill, 1988). In the third edition of the manual of the Maslach Burnout Inventory (Maslach, Jackson & Leiter, 1996), the concept of burnout is defined as a crisis in one's relationship with work in general and not necessarily as a crisis in one's relationship with people at work.

According to Schaufeli and Enzmann (1998), burnout can be considered as a particular kind of prolonged job stress. An individual experiences job stress when the demands of the workplace exceed his or her adaptive responses. Burnout is a particular, multidimensional, chronic stress reaction that goes beyond the experience of mere exhaustion. Burnout is seen as the final step in progression of unsuccessful attempts to cope with a variety of negative stress conditions. Burnout also differs from depression. Burnout occurs in a context of anger rather than guilt and is situation-specific rather than pervasive. Individuals who are burned out at work may function normally in respect of their private life (Rothmann, 2002; Schaufeli & Enzmann, 1998).

The burnout syndrome appears as a highly variable combination of symptoms, behaviours and attitudes. Table 1 lists a range of manifestations cited throughout the literature. Although this is an exhaustive list, certain features of burnout are manifested more frequently than others, with patterns made unique by each person. Some signs of burnout are apparent to others, while some are covert and part of the individual's private, subjective experience. For example, certain kinds of thoughts and feelings tend to occur with some regularity in the burnout syndrome, yet they are not observable by others until the individual expresses them through words and actions. Physical symptoms may or may not be noticeable to others (Muldary, 1983).

In the health literature burnout is also equated with job stress (Bailey, 1980). Job stress is generally viewed in relation to factors in the work environment that interact with a worker's personality in such a way as to disrupt the worker's psychological or physical functioning. Although intrinsically related, burnout and job stress are not synonymous. Burnout is typically considered as one consequence of job stress. Job stress appears to be a necessary condition for burnout to occur. Many workers experience job stress and do not burn out, yet nobody burns out without job stress (Muldary, 1983).

Table 1

Signs and Symptoms of Burnout Identified in the Literature

PHYSICAL	PSYCHOLOGICAL	BEHAVIOURAL
• Fatigue • Sleeping disturbances: • Difficulty sleeping • Difficulty getting up • Stomach ailments • Tension headaches • Migraine headaches • Gastrointestinal problems • Frequent colds • Lingering colds • Frequent bouts of flu • Backaches • Nausea • Muscle tension • Shortness of breath • Malaise • Frequent injuries • Weight loss • Weight gain • Stooped shoulders • Weakness • Change of eating habits	Feelings of: • Anger • Boredom • Frustration • Depression • Discourage • Disillusionment • Despair • Apathy • Guilt • Anxiety • Suspicion/Paranoia • Helplessness • Pessimism • Irritability • Resentment • Hopelessness Attitudes: • Cynicism • Indifference • Resignation • Self-doubt Other: • Loss of empathy • Difficulty concentrating • Difficulty attending • Low morale • Moodiness • Decreased sense of self-worth	• Dehumanisation of patients • Victimisation of patients • Fault finding • Blaming others • Defensiveness • Impersonal, stereotyped communication • Applying derogatory labels to patients • Physical distancing for patients • Withdrawal • Isolation • Stereotyping patients • Postponing patients contracts • Going increasingly by the book • Clock watching • Living for breaks • Absenteeism • Making little mistakes • Unnecessary risk taking • Use of drugs and alcohol • Marital and family conflict • Conflict with co-workers • Workaholism and obsessiveness • Use of humour as a buffer from emotions • Decreased job efficiency • Suicide • Overcommitment or undercommitment

One definition suggests that job stress results from job features that pose a threat to the individual. Threat may be due to either excessive job demands or insufficient supplies

(resources) to meet employees' needs. When the job requires too much work in too short a time, job overload exists (Rice, 1992).

Job stress is generally viewed in relation to factors in the work environment that interact with a worker's personality in such a way as to disrupt the worker's psychological or physical functioning. Various models exist that can be used to conceptualise job stress. The Job-Demand-Control Model (Karasek & Theorell, 1990) focuses on the interaction between the pressures of the work environment and the decision scope of the employee in meeting the requirements of a job. According to Schaufeli and Bakker (2002), any occupation can be viewed from a stress perspective in terms of two elements, namely job demands and lacking job resources.

Job demands are those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological (i.e. cognitive or emotional) effort and are therefore associated with certain physiological and/or psychological costs. *Job resources* refer to those physical, psychological, social or organisational aspects of the job that either/or reduce job demands and the associated physiological and psychological costs, are functional in achieving work goals, stimulate personal growth, learning and development (Schaufeli, in press).

Results of a study on medical doctors in the United Kingdom (see McManus et al., 2002) showed a reciprocal causation between exhaustion and stress. The largest causal effects in the model showed a causal cycle in which high levels of emotional exhaustion caused stress and high levels of stress caused emotional exhaustion. Doctors who become emotionally exhausted become stressed. This then leads to them becoming more emotionally exhausted and even more stressed. High levels of personal accomplishment increased stress levels. In contrast, depersonalisation – treating patients as objects rather than as people – lowered stress levels. The authors suggested that this might have occurred through a Freudian type of “ego defence” mechanism.

Mayor (2002) said that it is suggested that the current emphasis on encouraging doctors to care more about patients as individuals and to reach higher personal achievements, without adequate time and support, was adding to stress and burnout in doctors.

Stress and all its related problems come both from the workplace and from the individual. Individual causes may involve personality or ways of thinking, such as being particularly self-critical or having certain types of unsupportive early family relationships; or they may come from job-related factors such as lack of sleep, poor communication and poor teamwork. Making mistakes is a major stressor. The misery that can follow – unless such errors are turned into genuine learning opportunities – can stay with doctors throughout their lives. Handling errors sensibly and sensitively (for patients and doctors alike) has become a critical requirement for management (Firth-Cozens, 2003).

Engagement

To date, relatively little attention has been paid to concepts that might be considered antipodes of burnout. An exception is ‘psychological presence’ or ‘to be fully there’, a concept that emerged from role theory and is defined as an experiential state that accompanies ‘personally engaging behaviours that involve the channelling of personal energies into physical, cognitive and emotional labours (Kahn, 1992).

Maslach and Leiter (1997) assumed that ‘engagement’ is characterised by energy, involvement and efficacy – which are considered the direct opposites of the three burnout dimensions: exhaustion, cynicism and lack of professional efficacy. Engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal completely with the demands of their job. By implication, engagement in the view of Maslach and Leiter (1997) is assessed by the opposite pattern of scores on the three MBI dimensions: that is, according to these authors, low scores on exhaustion and cynicism and high scores on efficacy are indicative for engagement (Schaufeli et al., in press).

Based on a theoretical analysis (Bakker & Schaufeli, in press), two underlying dimensions have been identified of work-related wellbeing: (1) activation, ranging from exhaustion to vigour, and (2) identification, ranging from cynicism to dedication. Burnout is characterised by a combination of exhaustion (low activation) and cynicism (low identification), whereas engagement is characterised by vigour (high activation) and dedication (high identification). Furthermore, burnout includes reduced professional efficacy and engagement includes absorption. In contrast to the other elements of burnout and engagement that are direct

opposites (exhaustion vs. vigour and cynicism vs. dedication), reduced efficacy and absorption are not direct opposites – they are conceptually distinct aspects that are not the end points of some underlying continuum (Schaufeli et al., in press).

According to Maslach (1997), engagement is characterised by energy, involvement and efficacy – which are the direct opposites of the three burnout dimensions: exhaustion, cynicism and lack of professional efficacy. Although Schaufeli and Bakker (2001) also regarded burnout and engagement as opposites, they believe that the two concepts should be measured independently. This makes it possible to investigate the relationship between burnout and engagement empirically (Rothmann, 2002).

Based on this theoretical reasoning and after in-depth interviews were carried out with engaged employees, Schaufeli and his colleagues have defined engagement as follows: Engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal with the demands of their job. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour (Schaufeli et al., in press).

Vigour is characterised by high levels of energy and mental resilience while working, and the willingness and ability to invest effort in one's work. Dedication is characterised by a sense of significance, enthusiasm, inspiration, pride and challenge. Instead of involvement the term dedication is used because the former is usually used in terms of psychological identification with one's work or one's job (Kanungo, 1982; Lawler & Hall, 1970), whereas dedication goes one step beyond, both quantitatively and qualitatively. In a quantitative sense, dedication refers to a particularly strong involvement that goes one step further than the usual level of identification. In a qualitative sense, dedication has a wider scope by not only referring to a particularly cognitive or belief-state but by including the affective dimension as well. Absorption is characterised by being fully concentrated and happily engrossed in one's work – time passes quickly and one feels carried away by one's job. Being fully absorbed in one's work goes beyond merely feeling efficacious and comes close to what has been called 'flow', a state of optimal experience that is characterised by focused attention, a clear mind, mind and body unison, effortless concentration, complete control, loss of self-consciousness, distortion of time, and intrinsic enjoyment (Csikszentmihalyi, 1990). However, flow typically

refers to rather particular, short-term ‘peak’ experiences instead of a more pervasive and persistent state of mind, as is the case with engagement (Schaufeli et al., in press).

According to Schaufeli and Bakker (2001), research on burnout showed that some employees, notwithstanding high job demands and long working hours (stress), were not burned out. Instead, it seemed that they found pleasure in working hard and dealing with job demands. They may be seen as workaholics – that is if the perspective is one of focusing on human deficiencies rather than on strengths. The question therefore arises whether there might be engaged employees (in this case medical practitioners) who show energy, dedication and absorption in their work (Rothmann, 2002).

METHOD

Research design

A survey design was used to reach the research objectives. The specific design is the cross-sectional design whereby a sample is drawn from a population. This design can be used to assess interrelationships among variables within a population. The cross-sectional design involves administering the survey repeatedly to the same group of participants. With this design the researcher can determine the impact that certain events will have on the person and on future behaviour. The cross-sectional method does, however, have its shortcomings. It is often difficult to assess developmental changes by comparing groups (Kerlinger & Lee, 2000).

Sample

The target population consisted of practitioners in registered practices in South Africa. A total of 68 completed questionnaires (49 male and 17 female) were received. The ages of participants varied between 26 and 65 years. The practitioners rated their performance on an average of 4,42 (88,4%).

Table 2

The Characteristics of the Study Population

Variables	Mean
Age	45
Working hours per week	51
Emergency working hours per week	13
Leave per year (in days)	22
The last time leave was taken (in months)	6
Period of leave last taken (in days)	10

Measuring Instruments

The following measuring instruments were used: the Maslach Burnout Inventory (MBI-HSS), the Utrecht Work Engagement Scale (UWES) and the Job Stress Indicator (JSI).

- The *Maslach Burnout Inventory* (MBI-HSS) (Maslach & Jackson, 1986) was used to determine the level of burnout in the participants. The MBI-HSS consists of three sub-scales, namely Emotional Exhaustion, Depersonalisation and Personal Accomplishment (Maslach & Jackson, 1981, 1986). The three sub-scales of the MBI will be dealt with separately in this study, based on considerable factor-analytical support for their separation (Maslach & Jackson, 1986). Maslach and Jackson (1994, 1996) as well as Lahoz and Mason (1989) reported Cronbach alpha coefficients varying from 0,71 to 0,90 for the three sub-scales of the MBI. Test-retest reliability varied from 0,60 to 0,82 and 0,54 to 0,60 (applied after one year). External validation of the MBI has been obtained from its convergence with peer ratings, job dimensions associated with burnout, and stress outcomes (Maslach & Jackson, 1984). Naudé and Rothmann (2003) found support for the factorial validity of a 17-item version of the MBI-HSS in a sample of emergency workers in South Africa. The MBI-HSS (Maslach & Leiter, 1986) has evidenced relatively high internal consistency in South Africa (Basson & Rothmann, 2002; Levert et al., 2000; Naudé & Rothmann, 2003) with alpha coefficients varying between 0,67 (Depersonalisation) and 0,89 (Emotional Exhaustion).

- The *Utrecht Work Engagement Scale (UWES)* (Schaufeli et al., in press) was used to measure the levels of engagement. Although engagement is conceptually seen as the positive antithesis of burnout, it is operationalised in its own right. Work engagement is a concept that includes three dimensions: vigour, dedication and absorption. Engaged workers are characterised by high levels of vigour and dedication and they are immersed in their jobs. It is an (empirical) question whether engagement and burnout are end results of the same continuum or two distinct but related concepts. The UWES is scored on a seven-point frequency rating scale, varying from 0 'never' to 6 'always'. The alpha coefficients for the three sub-scales varied between 0,68 and 0,91. The alpha coefficient could be improved (α varies between 0,78 and 0,89 for the three sub-scales) by eliminating a few items without substantially decreasing the scales' internal consistency. Storm and Rothmann (in press) obtained the following alpha coefficients for the UWES in a sample of 2396 members of the SAPS: Vigour: 0,78; Dedication: 0,89; Absorption: 0,78.
- The *Job Stress Indicator (JSS)* was used to measure participants' job stress. The JSS focuses on common work situations that often result in psychological strain. Each of the 27 items describes a job-related stressor event and assesses both the perceived severity and frequency occurred of 27 JSS stressor events. The Stress Index assesses the overall level of stress based on the combined severity and frequency ratings of all 27 stressor events. Sub-scales measure occupational stress associated with the job itself (Job Pressure) and with lack of support from supervisors, co-workers, or the policies and procedures of the organisation (Lack of Organisational Support).

Statistical analysis

The statistical analysis was carried out with the help of the SAS programme (SAS Institute, 2000). The SAS programme was used to carry out statistical analysis regarding reliability and validity of the measuring instruments, descriptive statistics, correlation coefficients and canonical analyses.

The Cronbach alpha coefficients, inter-item correlation coefficients and factor analysis were used to assess the reliability and validity of the measuring instruments (Clark & Watson,

1995). 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. Oblique rotation was used to determine intercorrelations between factors. If factors are significantly related the oblique rotation (using Promax) will subsequently be carried out on the factors. If the factors are not significantly related, principal factors extraction with varimax rotation will be performed through SAS FACTOR on the measuring instruments.

Descriptive statistics (e.g. means, standard deviations, range, skewness and kurtosis) and inferential statistics were used to analyse the data. A cut-off point of $p = 0,05$ was set for the statistical significance of the results. Effect sizes (Cohen, 1988) was used to decide on the practical significance of the findings. Pearson product-moment correlation coefficients were used to specify the relationships between the variables. A cut-off point of 0,30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients. T-tests and analysis of variance were used to determine the differences between groups. A stepwise multiple regression analysis was conducted to determine the percentage of the variance in the dependent variables (burnout) that is predicted by the independent variables.

Canonical correlation was used to determine the relationships between the dimensions of burnout, job satisfaction, sense of coherence and stress. The goal of canonical correlation is to analyse the relationship between two sets of variables (Tabachnick & Fidell, 2001). Canonical correlation is considered a descriptive technique rather than a hypothesis-testing procedure.

RESULTS

Descriptive statistics, Cronbach alpha coefficients and the inter-item correlation coefficients of the MBI-HSS, UWES and JSI for medical practitioners ($N = 68$) are reported in Table 3.

Table 3

Descriptive Statistics, Cronbach Alpha Coefficients and Inter-Item Correlation Coefficients of the Measuring Instruments for Medical Practitioners (N=68)

Test and items	Mean	SD	Skewness	Kurtosis	Inter-item <i>r</i>	α
MBI-HSS						
EE	21,84	10,73	0,09	-1,25	0,46	0,89
DEP	8,97	6,10	0,78	-0,12	0,46	0,80
PA	37,54	5,95	-0,32	-0,45	0,28	0,74
UWES						
Vigour	25,41	4,69	0,03	-0,12	0,36	0,77
Dedication	22,65	4,41	-0,46	-0,15	0,54	0,85
Absorption	24,01	5,28	-0,07	-0,47	0,42	0,79
JSI						
Lack of resources	36,69	10,12	-0,06	-0,56	0,36	0,81
Job demands	38,59	10,12	-0,52	0,02	0,48	0,87

Table 3 shows that acceptable Cronbach alpha coefficients were obtained on all the dimensions of the MBI-HSS, UWES and JSI, varying from 0,67 to 0,97 (see Nunnally & Bernstein, 1994). Most of the inter-item correlation coefficients were acceptable, although values higher than the cut-off point of 0,50 (Clark & Watson, 1995) were obtained for some of the scales. Based on the results of Table 3 it can be inferred that the internal consistency of the MBI-HSS, UWES and JSI are acceptable.

The descriptive statistics of stressor amount of the JSI items of medical practitioners are reported in table 4.

Table 4

Descriptive Statistics of Stressor Amount of JSI Items of Medical Practitioners (N=68)

Item Description	Amount	
	Mean	SD
JOB DEMANDS		
Assignment of disagreeable duties (e.g. unethical tasks)	6,33	1,85
Working overtime and emergency hours	5,09	2,03
Covering work for another employee	4,40	1,70
Dealing with crisis situations	5,60	2,14,
Assignment of increased responsibility	4,53	2,00
Insufficient personnel to handle workload	5,87	2,23
Making critical on-the-spot decisions	5,00	2,05
Insufficient personal time (e.g. coffee breaks, lunch)	4,51	2,20
Frequent interruptions	6,20	1,83
Frequent changes from boring to demanding activities	4,21	1,80
Excessive paperwork e.g. administrative duties	6,03	2,00
Meeting deadlines	4,72	1,84
The management of staff	3,95	2,00
Negotiations with reps	3,05	1,80
LACK OF ORGANISATIONAL SUPPORT		
Fellow workers not doing their job	6,21	2,01
Inadequate or poor quality equipment	6,15	2,25
Personal insult from patient/colleague	6,60	2,00
Lack of recognition for good work	4,93	2,27
Experiencing negative attitudes toward the organisation/hospital	5,43	2,35
Poorly motivated co-workers	5,23	1,20
Conflicts with other departments/divisions e.g. front shop	5,00	1,80
Dealing with difficult patients	5,80	1,71
Dealing with other health care professionals e.g. pharmacy	3,80	2,00
Leaving the business in the hands of others (e.g. locums or employees) when sick or on leave	4,60	2,24
Slow payment from debtors – including medical aids	6,40	2,23
Reconciling of medical aid claims	5,56	2,25
Irrational demands and expectations of clients/patients	6,00	1,70

Table 4 shows that personal insults from patients/colleague, slow payment of debtors (including medical aids), assignment of disagreeable duties, fellow workers not doing their job, frequent interruptions, poor or inadequate equipment and excessive paperwork were regarded as causing the greatest amount of stress.

The factor analyses of the MBI-HSS, UWES and JSI for medical practitioners are reported in Table 5.

Table 5

Factor analysis of the MBI-HSS, UWES and the JSI for Medical Practitioners (N=68)

	No. of factors extracted	Total % proportion variance explained
MBI-HSS		
EE	1	65%
DEP	1	56%
PA	1	52%
UWES		
Vigour	2	67%
Dedication	1	63%
Absorption	2	70%
JSI		
Lack of Resources	1	56%
Job Demands	1	56%

Table 5 shows the numbers of factors that were extracted for each measuring instrument. One factor was extracted for Depersonalisation, explaining 56% of the total variance. For both Vigour and Absorption 2 factors were extracted, explaining the total variance of 67% and 70% respectively. For Dedication, Lack of Resources and Job Demands 1 factor was extracted and the total variance declared for these factors were 63%, 56% and 56%. For all the individual variables a high proportion of their variance were declared.

The correlation coefficients between the MSI-HSS, UWES and JSI ($N = 68$) are reported in Table 6. Pearson correlation coefficients were used for the different variables.

Table 6

Correlation Coefficients between the MBI-HSS, UWES and JSI (N = 68)

Items	EE	DEP	PA	Vigour	Dedication	Absorption	Lack of Resources
DEP	0,63 ⁺⁺	-	-	-	-	-	-
PA	-0,22	-0,46 ⁺	-	-	-	-	-
Vigour	-0,43 ⁺	-0,46 ⁺	0,61 ⁺⁺	-	-	-	-
Dedication	-0,47 ⁺	-0,55 ⁺⁺	0,54 ⁺⁺	0,75 ⁺⁺	-	-	-
Absorption	-0,22	-0,42 ⁺	0,42 ⁺	0,63 ⁺⁺	0,71 ⁺⁺	-	-
Lack of Resources	0,37 ⁺	0,35 ⁺	-0,09	-0,17	-0,13	0,00	-
Job demands	0,30 ⁺	0,24	-0,14	-0,33 ⁺	-0,29	-0,07	0,38 ⁺

+ Correlation is significant $r \geq 0,30$ (medium effect)

++ Correlation is practically significant $r \geq 0,50$ (large effect)

Table 6 shows a practically significant correlation coefficient between Depersonalisation and Exhaustion (large effect). Vigour is practically significant related to Personal Accomplishment (large effect). It shows a practically significant correlation coefficient between Dedication and Depersonalisation and between Dedication and Vigour (large effect). It shows that for medical practitioners a practical significance relationship between Absorption and Vigour and Absorption and Dedication exists (large effect).

Table 6 also shows that Lack of Resources and Job Demands are significantly related to Emotional Exhaustion (both medium effects). Lack of Resources is also related to Depersonalisation (medium effect). Personal Accomplishment (PA) is not related to Lack of Resources and Job Demands. Job Demands relate negatively to Vigour (medium effect).

Canonical correlation was performed between a set of stressors and burnout, stressors and work engagement as well as burnout and engagement using SAS CANCELL. Shown in Tables 7, 8 and 9 are correlations between the variables and canonical variates, standardised canonical variate coefficients, within-set variance accounted for by the canonical variates (percent of variance), redundancies and canonical correlations. The results of the canonical analysis of job stressors and burnout are shown in Table 7. The relationships between stressors and work engagement are shown in Table 8, while the results of burnout and engagement are shown in Table 9.

Table 7

Results of the Canonical Analysis: Stress and Burnout of Medical Practitioners (N=68)

Set	First Canonical Variate	
	Correlation	Coefficient
Set 1 – Stress		
Lack of Resources	0,93	0,78
Job demands	0,70	0,40
Proportion of variance	0,67	
Redundancy	0,13	
Set 2 – Burnout		
Emotional Exhaustion	0,95	0,68
Depersonalisation	0,84	0,45
Personal Accomplishment	-0,28	0,07
Proportion of variance	0,70	
Redundancy	0,13	
Canonical Correlation	0,43	

The first canonical correlation was 0,43 (19% overlapping variance). The other canonical correlation was 0,11. Only the first canonical correlation was statistically significant $F(6, 126) = 2.47, p = 0,0269$. The first canonical variate therefore, accounted for the significant relationship between the two sets of variables.

With a cut-off correlation of 0,30 the variables in the Stress set that were correlated with their first canonical variable were Lack of Resources (0,93) and Job Demands (0,70). Variables of Burnout that were correlated with their first canonical variable were Emotional Exhaustion (0,95) and Depersonalisation (0,84). The first pair of canonical variates indicates that a lack of resources and job demands are associated with high emotional exhaustion and depersonalisation.

Table 8 indicates the canonical correlations for a stress set and an engagement set.

Table 8

Results of the Canonical Analysis: Stress and Engagement of Medical Practitioners (N = 68)

Set	First Canonical Variate	
	Correlation	Coefficient
Set 1 – Stress		
Lack of resources	0,56	0,21
Job demands	0,98	0,90
Proportion of variance	0,63	
Redundancy	0,11	
Set 2 – Engagement		
Vigour	-0,81	-0,85
Dedication	-0,69	-0,66
Absorption	-0,17	0,84
Proportion of variance	0,39	
Redundancy	0,07	
Canonical Correlation	0,42	

The first canonical correlation was 0,42 (17% overlapping variance). The other canonical correlation was 0,18. The first canonical correlation was significant on a 10% level, $F(6,126) = 2,14$, $p = 0,0538$. The first pair of canonical variates, therefore, accounted for the significant relationship between the two sets of variables.

With a cut-off correlation of 0,30 the variables in the Stress set that were correlated with the first canonical variate were Lack of Resources (0,56) and Job demands (0,98). Among the engagement variables, Vigour (-0,81) and Dedication (-0,69) correlated with the first canonical variate. The first pair of canonical variates indicates that lack of resources and job demands are associated with low vigour and low dedication.

Table 9 shows the results of canonical analysis of a burnout set and an engagement set.

Table 9

Results of the Canonical Analysis: Burnout and Engagement of Medical Practitioners (N =68)

Set	First Canonical Variate	
	Correlation	Coefficient
Set 1 – Burnout		
EE	-0,70	-0,47
DEP	-0,73	-0,12
PA	0,85	0,69
Proportion of variance	0,58	
Redundancy	0,31	
Set 2 – Engagement		
Vigour	0,93	0,61
Dedication	0,91	0,61
Absorption	0,61	-0,21
Proportion of variance	0,69	
Redundancy	0,36	
Canonical Correlation	0,73	

The first canonical correlation was 0,73 (53% overlapping variance). The second and third canonical correlations were 0,28 and 0,05 respectively. Only the first canonical correlation was statistically significant $F(9, 151,04) = 7,18, p < 0,0001$. Subsequent F-tests were not statistically significant. The first pair of canonical variates, therefore, accounted for the significant relationship between the two sets of variables. Total percent of variance and total redundancy indicate that the first pair of canonical variates was moderately related.

The first pair of the canonical variates indicates that low levels of Emotional Exhaustion and Depersonalisation and high level of Personal Accomplishment are associated with Vigour, Dedication and Absorption. With a cut-off correlation of 0,30 the variables in the first set (burnout) that correlated with the first canonical variate were Emotional Exhaustion (-0,70), Depersonalisation (-0,73) and Personal Accomplishment (0,85). Among the Engagement variables, Vigour (0,93), Dedication (0,91) and Absorption (0,61), correlated with the first canonical variate of Burnout.

DISCUSSION

Regarding job stress, the two extracted factors (job demands and lack of resources) support previous research regarding stressors in organisational environments (Spielberger & Vagg, 1999). Item scores on the JSI indicated that assignment of disagreeable duties, frequent interruptions and excessive paperwork were the most severe stressors associated with job demands. Examples of disagreeable duties can be certain medical procedures such as an abortion, as well as to provide prescriptions for patients that have a continuous need for specific drugs. Interruptions that might influence medical practitioners are most often telephone calls from people while consulting a patient and even scheduled interruptions such as seeing a representative of a pharmaceutical company. It has become more important for medical practitioners to make notes of all recommendations made to patients to ensure that, in the case of a possible civil suit against the medical practitioner or medical institution, all related information are recorded. This often results in lengthy files with detailed information about each patient as well as a detailed report on all procedures administrated. Stress because of a lack of organisational support was attributed to personal insults from patients or colleagues, slow payment of debtors, including medical aids, inadequate or poor equipment and fellow workers not doing their job. Combined with stressful job demands, stress related to a lack of organisational support (which included the most severe stressors) could result in reciprocity, which will contribute to burnout (Schaufeli & Enzmann, 1998).

A positive correlation between burnout and stress was found, as was expected from previous research by Wiese et al. (2002). High levels of stress because of job demands and a lack of job resources were related to high levels of exhaustion. High levels of emotional exhaustion lead to stress and could result in burnout of medical practitioners (McManus et al., 2002).

The results of the canonical analysis in this study showed that there is a correlation between vigour and personal accomplishment with regard to medical practitioners. The medical practitioners proved to be absorbed in their work and have high levels of vigour (i.e. high levels of energy and mental resilience while working, and the willingness and ability to invest effort in one's work). It seems that some of the medical practitioners do feel engaged in their work. But, according to McManus et al. (2002), personal accomplishment increases stress directly as well as indirectly by increasing emotional exhaustion. Their study showed that emotional exhaustion makes doctors more stressed and stress makes doctors more

emotionally exhausted. An increasing emphasis on higher professional standards might increase stress and burnout in doctors.

The results also showed that lack of resources and high job demands leads to emotional exhaustion (i.e. the draining of emotional resources because of demanding interpersonal contact with others). This confirmed the finding of Maslach and Leiter (1997) that a work situation with overwhelming demands contributes to exhaustion. In addition, it seems that exhaustion and cynicism (depersonalisation) erodes an individual's professional efficacy. According to McManus et al. (2002), doctors use depersonalisation as a defence mechanism against stress. Levert et al. (2000) reported that emotional exhaustion and depersonalisation of psychiatric nurses were predicted by work load, lack of collegial support, role conflict and role ambiguity.

Medical practitioners lacking relevant resources seemed to become negative, callous and cynical. Therefore it can be said that medical practitioners who do have the relevant resources are engaged in their work. Schaufeli and Bakker (2002) also found that job resources were associated with engagement.

It also concluded that if medical practitioners have high job demands but do not have relevant resources, the results can be lower energy levels and a lack of enthusiasm, inspiration and pride in their work. Schaufeli and Bakker (2002) confirmed the model in an empirical study in the Netherlands. Job demands were associated with exhaustion, whereas job resources were associated with engagement. Burnout was related to health problems as well as to turnover intentions, and mediated the relationship between job demands and health problems, while engagement mediated the relationship between job resources and turnover intentions. Furthermore, Demerouti, Bakker, Nachreiner and Schaufeli (2001b) developed the Job Demand-Resources JD-R model and confirmed that job demands (e.g. physical demands, time pressure and shift work) are associated with exhaustion, whereas lacking job resources (e.g. feedback, participation in decision making and supervisory support) are associated with disengagement (Rothmann et al., 2003).

There is a practically significant relationship between burnout and engagement. Low levels of emotional exhaustion and depersonalisation and high levels of personal accomplishment (burnout) are associated with vigour, dedication and absorption (engagement). According to

Schaufeli and Bakker (2001), two dimensions of engagement are also logically related to burnout, namely vigour (exhaustion) and dedication (cynicism). Vigour refers to the activation dimension of wellbeing, while dedication refers to identification with work.

Schaufeli and Bakker (2002) found that burnout and engagement are negatively related, sharing between 10% and 25% of their variance. Storm and Rothmann (2003) found a canonical correlation of 0,51 between burnout and engagement and in this study a canonical correlation of 0,73 between burnout and engagement was found. A negative correlation ($r = -0,55$) was found between depersonalisation and dedication. Rothmann (2003) also found a negative correlation ($r = -0,42$) between cynicism and dedication. In Rothmann (2003) vigour correlated negatively with exhaustion and in this study it was proven once again. Schaufeli and Bakker (2002) also found that vigour correlated negatively with exhaustion ($r = -0,28$).

A limitation of this study was that the sample size was small and non-representative. Therefore, the findings of this study should be interpreted with caution. Furthermore, only self-report instruments were used.

RECOMMENDATIONS

Until recently little research has been done regarding positive aspects of human behaviour in the work context, while much attention has been paid to unhealthy and dysfunctional aspects. It is clear that the focus should change towards strengths of human beings in the work context. Consequently, well-being should not merely be regarded as the absence of illness or dysfunctional behaviour. Research regarding the dynamics underlying psychological strengths which could create tendencies contrary to those that produce burnout or favourable to work engagement should be conducted (Rothmann, 2003).

Since job demands play a central role in the process that might lead to burnout and health problems, reducing those demands seems to be warranted. Many preventive organisational-based strategies exist to tackle high job demands, such as job redesign, flexible work schedules and goal settings. Increasing job resources (e.g. through participative management, increasing social support and team building), on the other hand, would eventually lead to more engagement at the job, but its direct effect on burnout is small. Hence, from a

preventive point of view, decreasing job demands is to be preferred to increasing job resources (Rothmann, 2003).

Secondary level and tertiary interventions should be implemented to manage doctors who suffer from burnout. Secondary level interventions focus on the individual and are concerned with increasing awareness and extending the physical and psychological resources of doctors to enable them to minimize the damaging effects of stress and manage stress more effectively. Stress-management programmes that use a cognitive-behavioural approach are effective in reducing stress reactions – including burnout (see Schaufeli & Enzmann, 1998, pp. 146-168). Tertiary level interventions are targeted at individuals but their role is recuperative rather than preventative. There is well-documented evidence (Kompier & Cooper, 1999) to suggest that counselling is effective in improving the psychological wellbeing of employees and has considerable cost benefits in terms of reduced sickness absence (Rothmann, 2003).

Since emotional exhaustion seems to play a major role in stress and burnout, stress reduction programmes should probably concentrate on reducing emotional exhaustion, perhaps through reduced workload (McManus et al., 2002).

Certain limitations did occur in this study. Medical practitioners found it difficult to take part in this study due to time constraints. It was thus absolutely necessary to distribute the questionnaires to as many doctors in as many areas as possible. As a result questionnaires were distributed in six provinces of South Africa. However, a lack of willingness to take part was apparent with numerous medical practitioners. Consequently it is possible that the sample size is not a true representation of the total population size of medical doctors in South Africa. Due to this limitations some statistical techniques (e.g. structural equation modelling) could not be used.

Thus, for future research acceptable sample sizes should be used. Future research must also concentrate on the “positive” engagement psychology, as employees sometimes experience increased levels of wellbeing and positive energy in spite of a lack of resources and a stressful workload.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

In this chapter the conclusions of the study are discussed. This is followed by an analysis of the shortcomings of the study. Lastly the recommendations of the study are made.

3.1 CONCLUSIONS

Burnout is a particular, multidimensional, chronic stress reaction that goes beyond the experience of mere exhaustion. Burnout is seen as the final step in progression of unsuccessful attempts to cope with a variety of negative stress conditions. It also differs from depression. Burnout occurs in a context of anger rather than guilt and is situation-specific rather than pervasive. Individuals who are burned out at work may function normally in respect of their private life. The burnout syndrome appears as a highly variable combination of symptoms, behaviours and attitudes. Certain features of burnout are manifested more frequently than others, with patterns made unique by each person. Some signs of burnout are apparent to others, while some are covert and part of the individual's private, subjective experience. For example, certain kinds of thoughts and feelings tend to occur with some regularity in the burnout syndrome, yet they are not observable by others until the individual expresses them through words and actions. Physical symptoms may or may not be noticeable to others.

Burnout can be considered as a particular kind of prolonged job stress. An individual experiences job stress when the demands of the workplace exceed his or her adaptive responses. Job stress is generally viewed in relation to factors in the work environment that interact with a worker's personality in such a way as to disrupt the worker's psychological or physical functioning. According to Schaufeli and Bakker (2002), any occupation can be viewed from a stress perspective in terms of two elements, namely job demands and lacking job resources.

The research has concluded that increased job demands and a lack of job resources can lead to burnout. Medical practitioners have to cope not only with long working hours, but also stressful decisions that have an impact on the lives of their patients. It was found that with the increasing job demands there is a definite lack of support and resources. More attention should be paid in creating an awareness of burnout and in providing support structures to cope with this growing problem.

Chronic exhaustion can lead people to distance themselves emotionally and cognitively from their work, so that they are less involved with (or responsive to) the needs of other people or the demands of the task. Furthermore, a work situation with chronic, overwhelming demands that contribute to exhaustion or cynicism is likely to erode an individual's sense of accomplishment or effectiveness. It is, after all, difficult to gain a sense of accomplishment when feeling exhausted or when helping people toward whom one is hostile. In some situations the lack of efficacy seems to arise more clearly from a lack of relevant resources, while exhaustion and cynicism appears from the presence of work overload and social conflict (Maslach, 1998; Rothmann, 2003).

Results of a study on medical doctors in the United Kingdom (see McManus et al., 2002) showed a reciprocal causation between exhaustion and stress. The largest causal effects in the model showed a causal cycle in which high levels of emotional exhaustion caused stress and high levels of stress caused emotional exhaustion. Doctors who become emotionally exhausted become stressed. This then leads to them becoming more emotionally exhausted and even more stressed. High levels of personal accomplishment increased stress levels. In contrast, depersonalisation – treating patients as objects rather than as people – lowered stress levels. The authors suggested that this might have occurred through a Freudian type of “ego defence” mechanism.

As previously stated engagement stands in direct opposition to burnout. The negative aspects of burnout are sometimes overemphasized. Future research must concentrate on the “positive” engagement psychology as employees sometimes experience increased levels of wellbeing and positive energy even in the face of a lack of resources and a stressful workload. According to Schaufeli and Bakker (2001), research on burnout showed that some employees, regardless of high job demands and long working hours, were not burned out.

Instead, it seemed that they found pleasure in working hard and dealing with job demands. They may be seen as workaholics – that is if the perspective is one of focusing on human deficiencies rather than on strengths. In studying work engagement it is also important that researchers should consider using positively phrased, rather than negatively phrased, items to measure job resources. Based on this theoretical reasoning and after in-depth interviews were carried out with engaged employees, Schaufeli and his colleagues have defined engagement as follows: Engaged employees have a sense of energetic and effective connection with their work activities and they see themselves as able to deal with the demands of their job. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour (Schaufeli et al., in press).

The association between burnout, stress and engagement was also investigated. A positive correlation between burnout and stress was found. There is a practically significant relationship between burnout and engagement. Storm and Rothmann (2002) found a canonical correlation of 0,51 between burnout and engagement, while this study found a canonical correlation of 0,73 between burnout and engagement. The study also found that lack of resources and job demands (which are stress factors) was associated with high emotional exhaustion and depersonalisation (factors of burnout). When looking at stress and engagement, a lack of resources and job demands were associated with low vigour and low dedication.

In summary, it seems that high levels of job demands and a lack of resources are aspects that truly contribute to burnout. In the case of medical practitioners these factors lead to high levels of emotional exhaustion that make doctors more stressed and that make them even more emotionally exhausted. It is necessary to take steps to prevent and control stress in the medical profession. More studies regarding engagement of medical practitioners must be done. It is possible that some medical practitioners who do have the relevant resources can feel engaged in their work.

3.2 SHORTCOMINGS

Certain limitations did occur in this study. Medical practitioners found it difficult to take part in this study due to time constraints. It was thus absolutely necessary to distribute the

questionnaires to as many doctors in as many areas as possible. As a result questionnaires were distributed in six provinces of South Africa. The feedback was satisfying though a lack of willingness to take part was apparent with numerous medical practitioners. Consequently it is possible that the sample size is not a true representation of the total population size of medical doctors in South Africa. Thus, for future research acceptable sample sizes should be used. Due to these limitations the origin of relations could not be determined.

3.3 RECOMMENDATIONS

Until recently little research has been done regarding positive aspects of human behaviour in the work context, while much attention has been paid to unhealthy and dysfunctional aspects. It is clear that the focus should change towards strengths of human beings in the work context. Consequently, wellbeing should not just be regarded as the absence of illness or dysfunctional behaviour. Research regarding the dynamics underlying psychological strengths which could create tendencies contrary to those that produce burnout of favourable to work engagement should be conducted (Rothmann, 2003).

Since job demands play a central role in the process that might lead to burnout and health problems, reducing those demands seems to be warranted. Many preventive organisational-based strategies exist to tackle high job demands such as job redesign, flexible work schedules and goal settings. Increasing job resources (e.g. through participative management, increasing social support and team building), on the other hand, would eventually lead to more engagement at the job, but its direct effect on burnout is small. Hence, from a preventive point of view, decreasing job demands is to be preferred to increasing job resources (Rothmann, 2003).

To decrease the levels of stress and burnout of medical doctors a free counselling or psychotherapy service for doctors can be provided through a telephone helpline. A systematic approach to the problem is also needed. Enough is known about the main causes of high stress levels in doctors to address the principal organisational stressors using primary preventive interventions. According to Fith-Cozens (2003) providing teamwork and leadership training to clinicians would be an excellent start, while quite simple changes to the way work is organised appears to affect stress levels dramatically – such as having a 12 months house officer rotation in one hospital rather than two.

There can be primary preventions for individuals too: through training, career counselling and educating about error. If these strategies do not suffice, there should be secondary services providing coaching, counselling and psychotherapy, or alcohol and drug treatment readily available to staff – acknowledging that things do go wrong for most people at some time or other.

Stress is here to stay and the sooner it is accepted that tackling it is a normal part of management and an essential part of patient safety, the sooner the lives of doctors and their patients will improve.

For future research an acceptable sample sizes should be used. Large sample sizes might provide increased confidence that study findings would be consistent across similar groups. This in itself is a difficult task as doctors are reluctant to complete questionnaires due to a lack of time. Appointments should be made with medical doctors to ensure that information is collected. The relationship between burnout, stress and engagement should be investigated in a wider variety of organisations. Furthermore, more research is needed regarding engagement (which could be regarded as the “opposite” of burnout) of medical practitioners.

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