

WORK WELLNESS, SENSE OF COHERENCE AND HEALTH OF
PROTECTION SERVICES MEMBERS

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REMARKS

The reader is reminded of the following:

- The references as well as the editorial style as prescribed by the *Publication Manual (5th edition)* of the American Psychological Association (APA) were followed in this mini-dissertation. This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University (Potchefstroom Campus) to use APA style in all scientific documents as from January 1999.
- The mini-dissertation is submitted in the form of one research article. The name of the study leader appears on the research article as it will be submitted for publication in a national journal.

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SUMMARY

Topic: Work wellness, sense of coherence and health of protection services members.

Key terms: Work wellness, work engagement, burnout, health, sense of coherence, protection services, validity and reliability.

The impact of change on organisations and the transforming role of the protection services member means that protection services members perform under more stress than members of almost any other profession. They are human and experience the same or sometimes more severe forms of depression, anxiety and other symptoms than other people.

The objectives of this study were to determine the construct validity and internal consistency of the MBI-GS, UWES, OTLQ and Health subscales of the ASSET for protection services members. The relationship between work wellness, sense of coherence and health and the development of a model of work wellness for protection services members was determined.

The research method consists of a literature review and an empirical study using a cross-sectional survey design to collect data. An availability sample ($N = 341$) from protection services members was taken. The *Maslach Burnout Inventory – General Survey* (MBI-GS), *Utrecht Work Engagement Scale* (UWES), *Orientation to Life Questionnaire* (OTLQ), *Health subscales of the ASSET* and a *Biographical questionnaire* were administered. The statistical analysis was carried out with the help of the SPSS-programme and AMOS. The statistical methods utilised in the article consisted of descriptive statistics, Cronbach alpha coefficients, exploratory factor analysis, Pearson product-moment correlation coefficients and structural equation modelling methods.

Exploratory factor analysis confirmed a two-factor model of work engagement, consisting of vigour/dedication and absorption. In previous research of protection services members, two factors in the MBI-GS could also be extracted, namely, burnout and professional efficacy. The MBI-GS and UWES both showed acceptable internal consistencies. Construct equivalence for different language groups was confirmed for the MBI-GS and UWES.

Product-moment correlation coefficients showed significant negative correlations between Burnout and Vigour/Dedication, Burnout and Sense of Coherence, Sense of Coherence and Physical Health, Sense of Coherence and Psychological Health.

There were significant positive correlations between Physical Health and Psychological Health, Professional Efficacy and Vigour/Dedication, Professional Efficacy and Absorption, Vigour/Dedication and Absorption and lastly Physical Health and Psychological Health.

A causal model of work wellness was developed. The first two hypothesis were accepted: Work Wellness consists of Burnout and Work Engagement and high levels of burnout may result in either physical or psychological health problems. The third hypothesis was only partially accepted: the path coefficient from Sense of Coherence to Work Wellness and Ill Health is significant. Sense of Coherence partially mediated the impact of Burnout as part of Work Wellness on Ill Health. The path coefficient from Sense of Coherence to Ill Health was also found to be significant, indicating that higher levels of Sense of Coherence can result in fewer health problems.

Recommendations for future research were made.

OPSOMMING

Onderwerp: Werkswelstand, koherensiesin en gesondheid van beskermingsdienste werknemers.

Sleuteltermes: Werkswelstand, werksbegeestering, uitbranding, gesondheid, koherensiesin, beskermingsdienste werknemers, geldigheid en betroubaarheid.

Die impak van verandering op organisasies tesame met die transformerende rol van beskermingsdienste impliseer dat beskermingsdienstelede onder meer druk verkeer as meeste ander professies. Hulle is ook menslik en ervaar dieselfde en somtyds erger vorms van depressie, angs en ander simptome.

Die doelstellings van die studie was om die konstruk geldigheid en interne konsekwentheid van die MBI-GS, UWES, OTLQ en Gesondheids subskale van die ASSET vir beskermingsdienstelede vas te stel. Die verhouding tussen Werkswelstand, Koherensiesin en Gesondheid is bepaal en 'n Werkswelstand model vir beskermingsdienstelede te ontwikkel.

Die navorsingsmetode bestaan uit 'n literatuur oorsig en 'n empiriese studie wat gebruik gemaak het van 'n dwarsdeursnee-opnameontwerp om data in te win. 'n Beskikbaarheid steekproef ($N = 341$) van beskermingsdienste werknemers was geneem. *Die Maslach-Uitbrandingsvraelys – Algemene Opname (MBI-GS), Utrecht-Werksbegeesteringskaal (UWES), Koherensiesin skaal (OTLQ), Gesondheids subskaal van die ASSET* en 'n *biografiese vraelys* is afgeneem. Die statistiese analise is gedoen met behulp van die SPSS-program en AMOS. Die statistiese metodes gebruik in die artikel behels beskrywende statistiek, Cronbach alpha koëffisiënte, eksploratiewe faktor analise, Pearson produkmoment-korrelasiekoëffisiënte en strukturele vergelykings modellerings metodes.

Eksploratiewe faktor analise het 'n twee faktor model van werksbegeestering wat bestaan uit Vitaliteit/Dedikasie en Absorpsie bevestig. Vorige navorsing gedoen op beskermingsdienstelede, het twee faktore uit die MBI-GS identifiseer, naamlik Uitbranding en Professionele Doeltreffendheid. Die MBI-GS en die UWES wys albei aanvaarbare interne

konsekwentheid. Konstruk ekwivalensie vir die MBI-GS en UWES vir die verskillende taal groepe, was ook bevestig.

Produkmoment-korrelasiekoëffisiënte tussen die MBI-GS, UWES, OTLQ Gesondheidssubskaal van die ASSET het 'n betekenisvolle negatiewe korrelasie tussen Uitbranding en Vitaliteit/Dedikasie, Uitbranding en Koherensiesin, Koherensiesin en Fisiese Gesondheid, Koherensiesin en Psigiese Gesondheid getoon. Betekenisvolle positiewe korrelasies is gevind tussen Fisiese Gesondheid en Psigiese Gesondheid, Professionele Effektiwiteit en Vitaliteit/Dedikasie, Professionele Effektiwiteit en Absorpsie, Vitaliteit/Dedikasie en Absorpsie en laastens Fisiese Gesondheid en Psigiese Gesondheid.

'n Oorsaaklike werkswelstand model was ontwikkel. Die eerste twee hipoteses was aanvaar; Werkswelstand bestaan uit Uitbranding en Werksbegeestering en dat hoë vlakke van Uitbranding, fisiese of psigiese gesondheidsprobleme kan veroorsaak. Die derde hipotese was slegs gedeeltelik aanvaar, die pad koëffisiënt van Koherensiesin na Werkswelstand en Swak Gesondheid is betekenisvol. Dit beteken dat Koherensiesin, Uitbranding gedeeltelik medieer as deel van Werkswelstand op Swak Gesondheid. Die pad koëffisiënt vanaf koherensiesin na Swak Gesondheid was ook betekenisvol, wat aandui dat hoër vlakke van Koherensiesin kan lei tot verminderde gesondheidsprobleme.

Aanbevelings vir toekomstige navorsing is aan die hand gedoen.

CHAPTER 1

INTRODUCTION

This mini-dissertation focuses on the work wellness, sense of coherence and health of protection services' members in South Africa.

Chapter 1 contains the problem statement, research objectives and research methodology employed. The chapter starts with a problem statement and gives an overview of related research conducted on work wellness, burnout and sense of coherence which links with this research project and its research objectives. A discussion of the research method follows, with details regarding the empirical study, research design, study population, measuring instruments and statistical analyses. This chapter concludes with a chapter summary of the chapters comprising this mini-dissertation.

1.1 PROBLEM STATEMENT

Since September 2001, the role of security in North America has gained a more intense focus (Lippert & O'Connor, 2003). In what is commonly known as a "sea change", the character of security governance is in a process of transformation. Some of these transformations include the processes of recruitment and selection, training and development, and the management of security workforces at airports (Lippert & O'Connor, 2003). A worldwide process of globalisation is linking economic, cultural and political processes of various countries into an overall whole. As a result, what happens in one part of the world, affects the rest of the globe, including South Africa (Ngema, 2002). This also has an impact on the transformation of the role of the protection services member.

In addition to the impact of globalisation on South Africa, the country is celebrating its tenth year of democracy and our rainbow nation is in its infancy. Every organisation, whether private or public, has undergone significant changes in the way they do business in that they have been forced to develop new visions and strategic goals. This has filtered through to policy and procedural changes (eg affirmative action and employment equity), which affect employees in all occupations (Beaty, Booysen & Nlomo, 2002). According to McLagan

(2002), change is a major challenge for both public and private institutions in South Africa and surveys put *change management* at the top of the list of executive concerns today.

The impact of change on organisations together with the transformation of the role of the protection services member, has resulted in security and law enforcement officers, both private and public, experiencing more stress than members of almost any other profession (June, 2000). The term "security" refers to a sort of partial protection against some kind of danger for an individual (June, 2000). It is future oriented and entails thorough planning so as to avoid or compensate for danger. Security is described as an ideal (Lippert & O'Connor, 2003). It is a fervent hope rather than an actual state of affairs; it is characterised by the calculability and predictability of the future consequences of social conduct and a programmatic effort to control these consequences. Security providers are individuals, companies or government organisations responsible for providing secure environments for others (June, 2000).

Protection services' members are routinely placed in danger and must make quick decisions. They are often also accused of having supermen or superwomen self-images, because they feel that they always have to be in control (June, 2000). They are, however, human and experience the same or more severe forms of depression, anxiety and other symptoms than other people.

When people are placed in situations where they cannot control events, especially where the events may have negative consequences, responses may include depression, rigidity and an inability to make plans (Rowe, 2000). Stress has become one of the most serious health issues in the workplace, not just for individuals, but also for organisations (Lu, 1999). Research over the past three decades has shown that the experiences of occupational stress are closely related to the health and safety of individuals and to the wellbeing of organisations (Rees & Redfern, 2000).

Occupational stress is an area of concern for most employers, as it may result in negative consequences for the individual and the organisation (Schaufeli, 2003). The link between unmanaged stress and the negative impact on health and wellbeing may all have severe physical consequences (Winefield, Gillespie, Stough, Dua & Hapuararchchi, 2002). Stress can be manifested psychologically, physically and/or behaviourally (Lai, Chan, Ko & Boey,

2000). According to Siu (2002) and Winefield et al. (2002), there is significant evidence to suggest that when left unchecked, chronic and high levels of occupational stress may be related to a lack of mental and physical wellbeing, job dissatisfaction, absenteeism, stress-related injuries, employee turnover and an intention to resign.

A healthy organisation is defined as an organisation that is characterised by both financial success (profitability) and a physically and psychologically healthy workforce, which over time, can maintain a healthy and satisfying work environment and organisational culture particularly through change and market turbulence (Cooper & Cartwright, 1994). From this discussion, it is clear that the impact of occupational stress on the health and wellbeing of an organisation is severe. It is important, therefore, to identify the impact of psychological and physical ill health on the work wellness of the protection services occupation.

In her study among insurance employees, Coetzer (2004) found that psychological and physical ill health is related to burnout, a lack of job resources and job demands. When one considers the role of the protection services member along with globalisation, South Africa's new democracy and the stressful conditions facing people in the protection services, it is possible to illustrate the relevance of determining the work wellness of the protection services occupation. Rothmann (2003) emphasises that research is needed regarding the causes, effects and underlying processes of the components of work wellness, such as burnout and work engagement, and the impact of negative consequences such as ill health on work wellness for all occupational groups in South Africa.

Wellbeing or work wellness is widely considered to be the underlying, conceptual basis of a salutogenic (health causing) orientation (Spangenberg, 2004). De Klerk, Boshoff and Van Wyk (2004) define the concept of work wellness as a broad construct that can be described in terms of many facets: meaning in life, work values, work involvement, job involvement, career commitment, intrinsic motivation and goal orientation. Schaufeli and Bakker (2001) classify four types of wellbeing at work which lie on two dimensions: the horizontal axis represents pleasure versus unpleasurable, while the vertical dimension relates to the mobilisation of energy. This taxonomy makes it possible to distinguish between engagement and burnout and between workaholism and a type of work called "nine to five".

Burnout and work engagement are indicators of the wellness of people in the workplace and may be combined in a model of wellness at work. Schaufeli (2003) and Schaufeli and Bakker (2004) distinguish between two dimensions, namely, identification with work (varying from cynicism to dedication) and mobilisation of energy (varying from exhaustion to vigour). This model distinguishes between burnout and work engagement. Coetzer (2004) recently found in a study among employees in a South African insurance company that work wellness can be conceptualised within two dimensions, namely, exhaustion versus vigour and cynicism versus dedication.

Maslach (1982, 1993), Maslach, Jackson and Leiter (1996), and Maslach, Schaufeli and Leiter (2001) describe burnout as a syndrome consisting of three dimensions, namely, feelings of emotional exhaustion, cynicism and professional efficacy.

- *Exhaustion* as a component of burnout, represents the basic individual stress dimension of burnout. It refers to feelings of being overextended and depleted of one's emotional and physical resources.
- The *cynicism* (or depersonalisation) component represents the interpersonal context dimension of burnout. It refers to a negative, callous or excessively detached response to various aspects of the job.
- The component of reduced *professional efficacy* or accomplishment represents the self-evaluation dimension of burnout. It refers to feelings of incompetence and a lack of achievement and productivity at work (Maslach et al., 2001).

Work engagement is defined as an energetic state in which the employee is dedicated to excellent performance at work and is confident of his or her effectiveness (Schutte, Toppinen, Kalimo & Schaufeli, 2000). It consists of the positive poles of the burnout dimensions, namely, vigour, dedication and absorption. According to Schaufeli, Salanova, González-Romá and Bakker (2002), *vigour* refers to high levels of energy and mental resilience while working, as well as a willingness to exert effort and to persist even through difficult times. *Dedication* is described as a sense of significance, enthusiasm, inspiration, pride and challenge. *Absorption* refers to a tendency to concentrate fully and to be deeply engrossed in

work. Time passes quickly as a result and one struggles to detach oneself from one's work. It also includes focused attention, a clear mind, mind and body unison, effortless concentration, complete control, loss of self-consciousness, distortion of time and intrinsic enjoyment (Cshikszentmihalyi, 1990).

In light of the above-mentioned, it seems vital that a holistic and integrated model of work wellness be determined within the protection services environment with a particular focus on the integration of burnout and work engagement and the impact of psychological and physical ill health. It is expected, however, that certain factors within this casual model will either moderate or mediate the effects of ill health on the work wellness of protection services' members.

Cooper, Dewe and O'Driscoll (2001, p. 117) define a moderator as "a variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable". Sense of coherence has been identified as having a moderating effect between the adverse characteristics of emotional exhaustion and psychosomatic symptoms (Feldt, 1997); emotional job strain and burnout (Söderfeldt, Söderfeldt, Ohlson, Theorell & Jones, 2000); conflicts at work and stress symptoms (Albertsen, Nielsen & Borg, 2001); and job autonomy and competence (Toppinen-Tanner & Kalimo, 2003). Jackson and Rothmann (in press) assert that burnout mediates the relationship between job demands and ill health, while positive affect moderates the relationship between burnout and ill health.

Sense of coherence (SOC) is seen as providing an answer to what the origins of health are (Antonovsky & Sourani, 1988). It is described as "a global orientation that expresses the extent to which one has a pervasive and enduring, though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky, 1987, p. 132). Sense of coherence is the extent to which one sees one's world as comprehensible, manageable and meaningful (Antonovsky & Sourani, 1988).

Sense of coherence consists of three dimensions. These three dimensions are described as follows (Antonovsky, 1987):

- *Comprehensibility* is the extent to which individuals perceive confronting stimuli from the internal and external environments as making cognitive sense, as information that is ordered, consistent, structured and clear. Life is currently comprehensible and is expected to be so in the future. Even though great difficulties and challenges may arise, the fundamental conviction is that these situations will make sense.
- *Manageability* is the extent to which the individual perceives that the resources at his or her disposal are adequate for him or her to cope with a problem. Events are perceived as bearable. These resources can be under one's own control or under the control of others, such as friends, colleagues and God (Strümpfer, Gouws & Viviers, 1998).
- *Meaningfulness* is the extent to which the individual feels that life does make sense emotionally. It can also be described as the emotional face of comprehensibility. Life is seen as meaningful and problems or events are seen as challenges that are worthy of emotional investment and commitment (Strümpfer et al., 1998).

It seems that there is a strong link between sense of coherence and organisational commitment (Field, Kinnunen & Mauno, 2000). When the perception exists that the organisational climate has worsened, sense of coherence will also deteriorate. This relates to increased psychosomatic symptoms and emotional exhaustion at work. When positive changes in the organisational climate are perceived, sense of coherence shows an increase in strength, leading to a decrease in psychosomatic symptoms and emotional exhaustion. A strong link between sense of coherence and wellbeing has also been found (Field et al., 2000). According to this research, it appears that sense of coherence fulfils a moderating role between ill health and wellbeing.

The moderating effect of sense of coherence between ill health and wellbeing will be investigated in this study. A moderator variable affects the direction and/or strength of the relationship between independent (predictor) variables and dependent (criterion) variables (Baron & Kenny, 1986). The influence of a moderator is the relationship between the moderator variable and the independent variable, which significantly affects the main relationship between the independent and dependent variables.

Research on health and protection services' members is limited and no research was found on the wellness of protection services' members. Three studies were found on occupational groups involved to a limited extent in the protection of others; these groups wear uniforms and make use of weapons to carry out their jobs. A study on burnout in the South African Police Services shows that occupational stress is associated with exhaustion and that passive coping strategies contribute to exhaustion and cynicism (Wiese, Rothmann & Storm, 2003). Another study on first-year military cadets at West Point in the United States of America indicates a significant negative correlation between perceived stress and work, realistic beliefs and stress management (Myers, 2004). Britt and Bliese (2003) found in a sample of US soldiers deployed on a peacekeeping mission to Bosnia that self-engagement acts as a buffer against stress. Those soldiers engaged in their jobs during times of stress showed less elevation in reports of psychological distress than those soldiers who were disengaged from their jobs. This study will focus on developing a causal model of work wellness, which will include work engagement, burnout, sense of coherence and health for protection services' members.

The research will make the following contributions to Industrial Psychology as a science:

- It will help to identify the relationship between ill health, sense of coherence and the dimensions of work wellness of protection services' members.
- A casual model of work wellness, focusing on the dimensions of burnout and work engagement will be developed, enhancing our understanding of wellness in the protection services.
- Answers will be provided on the moderating or mediating role of sense of coherence on the work wellness-ill health relationship.

1.2 RESEARCH OBJECTIVES

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

1.2.1 General objective

The general objective of this research is to develop and test a casual model of work wellness, sense of coherence and health for protection services' members in the South African context.

1.2.2 Specific objectives

The specific objectives in this research are as follows:

- To determine the relationship between health, sense of coherence and work wellness.
- To determine whether sense of coherence moderates or mediates the effect of ill health on work wellness.
- To develop a causal model of work wellness of protection services' members in the South African context.

1.3 RESEARCH METHOD

The research method consists of a literature review and an empirical study. The results obtained from the research will be presented in an article format.

1.3.1 Literature review

The literature review focuses on previous research on burnout, work engagement, ill health and sense of coherence and the relationship between these constructs. An overview is given of the conceptualisation of these constructs in the literature and on the findings in terms of measuring burnout, work engagement, ill health and sense of coherence.

1.3.2 Research design

A cross-sectional design with a survey as the data collection technique is used to achieve the research objectives. Cross-sectional designs are used to simultaneously examine groups of subjects in various stages of development, while the survey describes a technique of data collection in which questionnaires are used to gather data about an identified population (Burns & Grove, 1993). Information collected is used to describe the population at that time. This design can also be used to assess interrelationships among variables within a population. According to Shaughnessy and Zechmeister (1997), this design is best suited to address the descriptive and predictive functions associated with correlational research, whereby relationships between variables are examined.

Structural equation modelling (SEM) is used to address the problems associated with this design (Byrne, 2001). Structural equation modelling is also used to test casual models of work wellness. Structural equation modelling is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon (Byrne, 2001). Structural equation modelling conveys two important aspects of the procedure, namely

- that the casual processes under study are represented by a series of structural (i.e. regression) equations
- that these structural relations can be modelled pictorially to enable a clear conceptualisation of the theory under study

1.3.3 Study population

The study population ($N = 341$) may be defined as an availability sample of employees working in protection services. The sample consisted mainly of Afrikaans-speaking (41,90%), married men (91,50%) with a Grade 12 education (71,00%). The mean age of the participants was between 30 and 35 years, while the average length of service in the current position was more than five years.

1.3.4 Measuring battery

Four questionnaires were used in the empirical study, namely, the *Maslach Burnout Inventory-General Survey* (Maslach et al., 1996), the *Utrecht Work Engagement Scale* (UWES) (Schaufeli, et al., 2002), *Orientation to Life Questionnaire* (OTLQ) (Antonovsky, 1983) and the *Health subscales of the ASSET* (Cartwright & Cooper, 2002).

The *Maslach Burnout Inventory-General Survey* (Maslach, et al., 1996) is used to measure burnout. The MBI-GS consists of 16 items that produce three scores: Exhaustion (Ex) (five items; eg "I feel used up at the end of the workday"), Cynicism (Cy) (five items; eg "I have become less enthusiastic about my work") and Professional Efficacy (PE) (six items; eg "In my opinion, I am good at my job"). These three components of the burnout construct are conceptualised in broader terms relating to the job and not just to the personal relationships that may be part of the job (Maslach et al., 2001). Maslach et al. (1996) reported that internal consistencies (Cronbach coefficient alphas) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy). All items are scored on a seven-point frequency-rating scale ranging from 0 ("never") to 6 ("daily"). High scores on Exhaustion and Cynicism, and low scores on Professional Efficacy are indicative of burnout. Storm (2002) confirmed the three-factor structure of the MBI-GS in a sample of 2 396 members of the South African Police Service (SAPS), but recommended that Item 13 should be dropped from the questionnaire. She confirmed the structural equivalence of the MBI-GS for different race groups in the SAPS. The following Cronbach alpha coefficients were obtained for the MBI-GS: Exhaustion: 0,86 to 0,88; Cynicism: 0,79 to 0,80; Professional Efficacy: 0,76 to 0,78 (Coetzer, 2004; Storm, 2002).

The *Utrecht Work Engagement Scale* (UWES) (Schaufeli et al., 2002) is used to measure the levels of engagement of the participants. The UWES includes three dimensions, namely, vigour, dedication and absorption, which are conceptually seen as the opposite of burnout and are scored on a seven-point frequency-rating scale, varying from 0 ("never") to 6 ("every day"). The questionnaire consists of 17 questions and includes questions like "I am bursting with energy every day in my work"; "Time flies when I am at work" and "My job inspires me". The alpha coefficients for the three subscales varied between 0,80 and 0,91. The alpha coefficient could be improved (α varies between 0,78 and 0,89 for the 3 subscales) 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 2 396 members of the South African Police Service: Vigour: 0,78; Dedication: 0,89; Absorption: 0,78. Coetzer (2004) obtained the following alpha coefficients from a sample of employees in an insurance company: Vigour (0,80); Dedication (0,87) and Absorption (0,69).

The *Orientation to Life Questionnaire* (OTLQ) (Antonovsky, 1983) is used to measure the construct of sense of coherence in the protection services. The questionnaire consists of 29 items. It contains items measuring the three components of sense of coherence, namely, manageability, comprehensibility and meaningfulness. The scale assesses an individual's global orientation towards coping. The Cronbach alphas ranged from 0,83 to 0,88 (Antonovsky, 1983). Rothmann (2002) reported an alpha coefficient of 0,89 for the OTLQ, which is regarded as acceptable.

The *Health subscales of the ASSET* (which stands for "An Organisational Stress Screening Evaluation Tool") were developed by Cartwright and Cooper (2002) to assess the respondents' levels of health. The Health subscales consist of 19 items arranged on two subscales: Physical Health and Psychological Health. All items on the Physical Health subscale relate to physical symptoms of stress. The role of this subscale is to give insight into Physical Health, not an in-depth clinical diagnosis. The items listed on the Psychological Health subscale are symptoms of stress-induced mental ill health. Johnson and Cooper (2003) found that the Psychological Health subscale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (GHO-12; Goldberg & Williams, 1988). Coetzer (2004) obtained the following Cronbach alpha coefficients from a sample of 613 employees in an insurance company in South Africa; Physical Health (0,79) and Psychological Health (0,89).

1.3.5 Statistical analysis

The statistical analysis is carried out with the help of the SPSS-program (SPSS, 2003) and the Amos-programme (Arbuckle, 2003). Descriptive statistics (e.g. means, standard deviations, skewness and kurtosis) are used to analyse the data. Cronbach alpha coefficients are used to determine the internal consistency, homogeneity and unidimensionality of the measuring

instruments (Clark & Watson, 1995). Coefficient alphas contain important information regarding the proportion of variance of the items of a scale in terms of the total variance explained by that particular scale.

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

Within this research the construct equivalence of the UWES and MBI-GS will be performed. Several techniques can be used to investigate construct equivalence, such as factor analysis, cluster analysis and multidimensional scaling or other dimensionality-reducing techniques (Van de Vijver & Leung, 1997). The idea behind the application of these techniques is to obtain a structure in each language, which can then be compared across all languages involved. Factor analysis is the most frequently used technique for studying construct equivalence. In this study, both exploratory and confirmatory models could have been used. On the basis of previous studies about the composition of the instrument, the choice for confirmatory factor analysis may seem obvious. The current author used exploratory factor analysis for a pragmatic reason. The MBI-GS and the UWES are recently developed measurement instruments, and only a few studies regarding their validity in South Africa were found. There were also negative experiences with the use of confirmatory models in studying the construct validity of the MBI-GS and the UWES. The problem that the author found with the confirmatory models was their fit to the data; it is unclear whether the lack of fit is a result of trivial problems or severe ones that challenge the underlying model.

Exploratory factor analysis was, therefore, used to examine construct equivalence and to enhance the reliability results of the UWES. The number of factors in the total sample of the UWES was determined by a principle components analysis. Subsequently, a direct oblimin rotation was used to determine the solution for each language cluster group. After target rotation, factors obtained in each group were compared. The agreement was evaluated by a factor congruence coefficient, Tucker's phi (Van de Vijver & Leung, 1997). Values above 0,98 are taken to point to an essential agreement between the language groups, while values

above 0,95 point to a very good agreement. This agreement implies that the factor loading of the lower and higher levels are equal to a multiplying constant. This multiplying constant is needed to accommodate possible differences in eigen values of factors for the language groups.

Covariance analysis or structural equation modelling (SEM) methods, as implemented by AMOS (Arbuckle, 1997), were used to construct and test the casual model of work wellness. Hypothesised relationships are tested empirically for goodness-of-fit with the sample data. The χ^2 statistic and several other goodness-of-fit indices summarise the degree of correspondence between the implied and observed covariance matrices. However, because the χ^2 statistic equals $(N-1)F_{min}$ this value tends to be substantial when the model does not hold and the sample size is large (Byrne, 2001). Researchers addressed the χ^2 limitation by developing goodness-of-fit indices that take a more pragmatic approach to the evaluation process.

A value <2 for $\chi^2/\text{degrees of freedom}$ rasion (CMIN/df) (Wheaton, Muthén, Alwin & Summers, 1977) indicates acceptable fit (Tabachnick & Fidell, 2001). The hypothesised relationships with the data are also tested using the following goodness-of-fit statistics: Adjusted Goodness-of-Fit Index (AGFI), Parsimony Goodness-of-Fit Index (PGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA).

1.4 DIVISION OF CHAPTERS

The chapters are presented as follows in the mini-dissertation:

Chapter 1: Introduction

Chapter 2: Research article

Chapter 3: Conclusions, limitations and recommendations

1.5 CHAPTER SUMMARY

Chapter 1 focused on the problem statement, objectives and research method in this study.

This was followed by a division of the chapters that follow.

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WORK WELLNESS, SENSE OF COHERENCE AND HEALTH OF PROTECTION SERVICES MEMBERS

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ABSTRACT

The objective of this study was to develop and test a casual model of Work Wellness for protection services' members in South Africa. A cross-sectional survey design with an availability sample ($N = 341$) was used. The MBI-GS, UWES, OTLQ and Health subscale of the ASSET were administered. The result showed that Work Wellness comprises of Burnout (consisting of Exhaustion and Cynicism) and Work Engagement (consisting of Vigour and Dedication). High levels of Burnout may lead to either physical or Psychological Health problems. Sense of Coherence partially mediates the effect of high levels of Burnout on Ill Health.

OPSOMMING

Die doelstelling van hierdie studie was om 'n oorsaaklike model van Werkswelstand vir Beskermingsdienste lede in Suid-Afrika te ontwikkel en te toets. 'n Dwarsnee-opname ontwerp met 'n beskikbaarheidssteekproef ($N = 341$) is gebruik. Die MBI-GS, UWES, OTLQ en Gesondheidssubskaal van die ASSET is geadministreer. Die resultate het getoon dat Werkswelstand uit Uitbranding (bestaande uit Uitputting en Sinisime) en Werksbegeestering (bestaande uit Energie en Toewyding), bestaan. Hoë vlakke van Uitbranding kan moontlik lei tot of Fisiese of Psigiese Gesondheidsprobleme. Koherensiesin medieer gedeeltelik die impak van hoë vlakke van Uitbranding op Gesondheid.

Globalisation is linking economic, cultural and political processes of various countries into an overall whole. As a result, what happens in one part of the world, affects the rest of the globe, including South Africa (Ngema, 2002). The terrorist acts of September 2001 in the United States of America had ripple effects throughout the world. It resulted in a more intense focus on the role of security around the world (Lippert & O'Connor, 2003). In what is commonly known as a "sea change", the character of security governance is in a process of transformation.

The main responsibility of security guards or protection services' members is the protection of individuals or the protection of property (Silva, Leong & Weinstock, 1993). Protection services' members are also responsible for the safeguarding of businesses and buildings against theft, vandalism, illegal entry or fire; screening people for weapons, explosives or contrabands; and working as bodyguards to protect others (Silva et al., 1993). According to Ackerman (1999), the traditional uniformed security guard is usually a person who is recruited from the lowest socioeconomic level and who has basic formal education and limited basic skills. These people are primarily involved with physical security that is produced by the actual or potential use of force; they also provide security through symbolic means and through the use of information technology (Lippert & O'Connor, 2003).

As part of their daily work programmes, protection services' members are routinely placed in danger and must make quick decisions. As a result, they are often accused of having supermen or superwomen self-images as they feel that they always have to be in control (June, 2000). They are, however, human and experience the same or more severe forms of depression, anxiety and other symptoms than other people.

The word "security" is highly abstract and simply means that there is a sort of partial protection against some kind of danger for an individual or individuals (June, 2000). It is future oriented and entails planning so as to avoid or compensate for danger. Security is an ideal and not an actual state; it refers to a fervent hope that is characterised by the calculability and predictability of the future consequences of social conduct and a programmatic effort to control these consequences (Lippert & O'Connor, 2003).

Security providers are individuals, companies or government organisations responsible for providing secure environments to others (June, 2000). The outsourcing of security services of organisations to private companies contributes to the high levels of stress experienced in the security industry. The competition is severe and organisations are encouraged to outsource to the lowest bidder (Lippert & O'Connor, 2003), which often results in an inferior quality workforce. Owing to their contract worker status, these protection services' members are often characterised as people who earn low wages, have minimal training and who have high levels of turnover (Lippert & O'Connor, 2003).

The transformation of the protection services industry must, therefore, include the processes of recruitment and selection, training and development, and the management of security workforces at airports (Lippert & O'Connor, 2003). The impact of change on organisations and the transforming role of the protection services member, whether private or public, implies that protection services' members experience higher levels of stress than members of almost any other profession (June, 2000). Silva et al. (1993) assert that the people responsible for protecting society from the criminal behaviour of others, such as police officers, experience significant stress and even psychiatric disorders.

When people are placed in situations where they cannot control events, especially where the events may have negative consequences, responses may include depression, rigidity and an inability to make plans (Rowe, 2000). Occupational stress is an area of concern for most employers, as it may result in negative consequences for the individual and the organisation (Cooper & Cartwright, 1994; Schaufeli, 2003). Stress has become a very serious health issue, both for individuals and for employers (Lu, 1999). The link between unmanaged stress and the negative impact on health and wellbeing may have severe physical consequences (Winefield, Gillespie, Stough, Dua & Hapuararchchi, 2002).

Stress can manifest psychologically, physically and/or behaviourally (Lai, Chan, Ko & Boey, 2000). According to Cooper and Watson (1991), Frese (1985), McLean (1980), Siu (2002) and Winefield et al. (2002), there is significant evidence to suggest that when left unchecked, chronic and high levels of occupational stress may be

related to a lack of mental and physical wellbeing, job dissatisfaction, absenteeism, stress-related injuries, employee turnover and an intention to resign. According to Sisson (1998), individual wellbeing increases when their coping strategies are well developed. The reverse is conducive to ill-being, and the potential to the development of depression and burnout in a life-changing situation. Research has indicated a relationship between Health, perceived wellness and work stress (Dolbier, Söderstrom & Steinhardt, 2001) and between physical wellbeing and burnout (Gorter, Eijkman & Hoogenstraten, 2000).

Research over the past three decades has also shown that the experiences of occupational stress are closely related to the health and safety of individuals and to the wellbeing of organisations (Rees & Redfern, 2000). Protection services' members are no different. The specific activities of protection services' members pose a threat to their psychological and physical health (Silva et al., 1993). The emphasis placed by Rothmann (2003) on the need for further research regarding the causes, effects and underlying processes of the components of Work Wellness such as Burnout and Work Engagement and the impact of negative consequences such as Ill Health on Work Wellness for all occupational groups in South Africa, is also relevant for protection services' members. Coetzer (2004) agrees that further research on positive constructs like Work Engagement as part of a Work Wellness model should be investigated in different South African occupational groups.

A healthy organisation is defined as an organisation that is characterised by both financial success (profitability) and a physically and psychologically healthy workforce, which can, over time, maintain a healthy and satisfying work environment and organisational culture particularly through change and market turbulence (Cooper & Cartwright, 1994). From this discussion, it is clear that the impact of occupational stress on the Health and wellbeing of an organisation is severe. Psychological and physical Ill Health has also been found to be related to Burnout, a lack of job resources and job demands (Coetzer, 2004). This impacts on the overall Work Wellness of an organisation. There are, therefore, certain occupational stressors within the protection services occupation which affect the Health of protection services' members, either psychologically or physically. It is important, therefore, to identify

the impact of psychological and physical Ill Health on the Work Wellness of the protection services occupation.

Work Wellness

Wellbeing or Work Wellness is widely considered to be the underlying, conceptual basis of a salutogenic (health causing) orientation (Spangenberg, 2004). De Klerk, Boshoff and Van Wyk (2004) define the concept of Work Wellness as a broad construct that can be described in terms of many facets: meaning in life, work values, work involvement, job involvement, career commitment, intrinsic motivation and goal orientation.

Schaufeli and Bakker (2001) classify four types of wellbeing at work which lie on two dimensions: the horizontal axis represents pleasure versus unpleasurable, while the vertical dimension relates to the mobilisation of energy. This taxonomy makes it possible to distinguish between Engagement and Burnout and between workaholism and a type of work called "nine to five".

Burnout and Work Engagement are, according to Schaufeli (2003) and Schaufeli and Bakker (2004), indicators of the wellness of people in the workplace. These two constructs may, therefore, be combined in a model of wellness at work. Schaufeli (2003) and Schaufeli and Bakker (2004) distinguish between two dimensions, namely, identification with work (varying from Cynicism to Dedication) and mobilisation of energy (varying from Exhaustion to Vigour). Coetzer (2004) recently found in a study of a South African insurance company employees that Work Wellness can be conceptualised within two dimensions, namely, Burnout and Work Engagement.

Burnout is described as a syndrome consisting of three dimensions, namely, feelings of emotional exhaustion, cynicism and professional efficacy (Maslach, 1982; 1993; Maslach, Jackson & Leiter, 1996; Maslach, Schaufeli & Leiter, 2001). *Exhaustion* represents the basic individual stress dimension of Burnout. It refers to feelings of being overextended and depleted of one's emotional and physical resources. The *cynicism* component represents the interpersonal context dimension of Burnout. It refers to a negative, callous or excessively detached response to various aspects of the

job. The component of reduced *Professional Efficacy* or accomplishment represents the self-evaluation dimension of Burnout. It refers to feelings of incompetence and a lack of achievement and productivity at work (Maslach et al., 2001).

Work Engagement is defined as an energetic state in which the employee is dedicated to excellent performance at work and is confident in his or her effectiveness (Schutte, Toppinen, Kalimo & Schaufeli, 2000). It consists of the positive poles of the Burnout dimensions, namely, Vigour, Dedication and Absorption. According to Schaufeli, Salanova, González-Romá and Bakker (2002), *Vigour* refers to high levels of energy and mental resilience while working, as well as a willingness to exert effort and to persist even through difficult times. *Dedication* is described as a sense of significance, enthusiasm, inspiration, pride and challenge. *Absorption* refers to a tendency to concentrate fully and to be deeply engrossed in work. Time passes quickly and one struggles to detach oneself from one's work. It also includes 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).

In light of the above-mentioned, it seems vital that a holistic and integrated model of Work Wellness be determined within the protection services environment with a particular focus on the integration of Burnout and Work Engagement and the impact thereof on psychological and physical Ill Health. It is expected, however, that certain factors within this casual model will either moderate or mediate the effects of Ill Health on the Work Wellness of protection services' members.

A variable such as Sense of Coherence has been identified to have a moderating effect between the adverse characteristics of emotional exhaustion and psychosomatic symptoms (Feldt, 1997): emotional job strain and Burnout (Söderfeldt, Söderfeldt, Ohlson, Theorell & Jones, 2000); conflicts at work and stress symptoms (Albertsen, Nielsen & Borg 2001); and job autonomy and competence (Toppinen-Tanner & Kalimo, 2003). Sense of Coherence has also been found to be associated with positive adaptation to illness, which is associated with wellbeing (Hoover, 1983; Wyller, Holmen, Laake & Laake, 1998).

Sense of Coherence

Cooper, Dewe and O'Driscoll (2001, p. 117) define a moderator as "a variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable". The influence of a moderator is the relationship between the moderator variable and the independent variable, which significantly affects the main relationship between the independent and dependent variables (Baron & Kenny, 1986). This study focuses on the moderating or mediating effect of Sense of Coherence on the Burnout- Health relationship.

Sense of Coherence (SOC) is seen as providing an answer to what the origins of health are (Antonovsky & Sourani, 1988). It is described as "a global orientation that expresses the extent to which one has a pervasive and enduring, though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky, 1987, p. 132). Sense of Coherence is the extent to which one sees one's world as comprehensible, manageable and meaningful (Antonovsky & Sourani, 1988).

Sense of Coherence consists of three dimensions. These three dimensions are described as follows (Antonovsky, 1987):

- *Comprehensibility* is the extent to which individuals perceive confronting stimuli from the internal and external environments as making cognitive sense, as information that is ordered, consistent, structured and clear. Life is currently comprehensible and is expected to be so in the future. Even though great difficulties and challenges may arise, the fundamental conviction is that these situations will make sense.
- *Manageability* is the extent to which the individual perceives that the resources to his or her disposal are adequate for him or her to cope with a problem. Events are perceived as bearable. These resources can be under one's own control or under

the control of others, such as friends, colleagues and God (Strümpfer, Gouws & Viviers, 1998).

- *Meaningfulness* is the extent to which the individual feels that life does make sense emotionally. It can also be described as the emotional face of Comprehensibility. Life is seen as meaningful and problems or events are seen as challenges that are worthy of emotional investment and commitment (Strümpfer et al., 1998).

According to Antonovsky, (1983), Sense of Coherence has a stress buffering effect due to the influence it might have on the choice of coping strategies. Sense of Coherence is not a coping strategy by itself. Sense of Coherence was found to have a strong link with organisational commitment (Field, Kinnunen & Mauno, 2000). When the perception exists that the organisational climate has worsened, Sense of Coherence will also deteriorate. This relates to increased psychosomatic symptoms and emotional exhaustion at work. When positive changes in the organisational climate are perceived, Sense of Coherence shows an increase in strength, leading to a decrease in psychosomatic symptoms and emotional exhaustion. This is indicative of a link between Sense of Coherence and Work Wellness (Field et al., 2000). Studies have shown that a link exists between Sense of Coherence and enhanced psychological and physical wellbeing (Cohen & Dekel, 2000; Kivamaki, Feldt, Vahtera & Nurmi, 2000; Lustig, Rosenthal, Strauser & Haynes, 2000). In line with the above mentioned, it seems that Sense of Coherence fulfils a moderating role between Ill Health and Work Wellness.

No research could be found on the wellness of protection services' members. Only studies regarding the protection of others, working shifts, the wearing of uniforms and making use of weapons to fulfil their tasks could be found within the South African context. In a study done in the South African Police Service, the results show that occupational stress is associated with exhaustion and that passive coping strategies contribute to exhaustion and cynicism (Wiese, Rothmann & Storm, 2003). In a comparative study between police officers, prison guards, probation officers, firefighters and emergency medical technicians, it was found that police officers and prison guards have significantly higher work-related stress than the other occupations

studied (Anson & Bloom, 1988). A study on first-year military cadets at West Point in the USA indicated that significant negative correlations exist between perceived stress and work and between realistic beliefs and stress management (Myers, 2004). Britt and Bliese (2003) found in a sample of US soldiers that self-engagement acts as a buffer against stress. When the soldiers were engaged in their work, stressors occurring outside of their immediate jobs did not correspond with higher levels of physical and psychological Health. The reason could be that engagement involves investment of cognitive resources that does not leave much capacity for interpreting the implications of a stressful environment.

Based on the above discussion, stress experienced by protection services' members may result in physical or psychological Ill Health and this might be related to Burnout and/or Work Engagement. The objective of this study, therefore, is to develop and test a causal model of Work Wellness for protection services' members, inclusive of Work Engagement, Burnout, Sense of Coherence and Health.

Based on the above discussion, the following hypotheses are formulated:

H1: Work Wellness comprises Work Engagement and Burnout.

H2: High levels of Burnout result in either physical or psychological Ill Health.

H3: Sense of Coherence moderates or mediates the effect of Burnout on Health.

METHOD

Research design

A cross-sectional design with a survey as the data collection technique was used to achieve the objectives of this research. Cross-sectional designs are used to simultaneously examine groups of subjects in various stages of development, while the survey describes a technique of data collection in which questionnaires are used to gather data about an identified population (Burns & Grove, 1993). This design is best suited to addressing the descriptive and predictive functions associated with

correlational research, whereby relationships between variables are examined (Shaughnessy & Zechmeister, 1997). Furthermore, structural equation modelling is used to address the problems associated with this design (Byrne, 2001).

Study population

The study population may be defined as an availability sample of employees working in protection services. The total population of 1 079 employees in a protection services organisation was targeted. A response rate of 35 percent was achieved, of which 341 responses (91%) could be utilised.

Descriptive information of the sample is given in Table 1.

Table 1

Characteristics of the participants

Item	Category	Frequency (percentage)
Age	Younger than 20 years	8 (2,30%)
	20 – 25 years	56 (16,40%)
	26 – 30 years	78 (22,90%)
	31 – 35 years	146 (42,80%)
	36 – 40 years	47 (13,80%)
	Older than 40 years	6 (1,80%)
Gender	Male	312 (91,50%)
	Female	26 (7,60%)
Race	African	189 (55,40%)
	Coloured	103 (30,20%)
	Asian	6 (1,80%)
	White	43 (12,60%)
Home language	Afrikaans	143 (41,90%)
	English	21 (6,20%)
	Sotho	91 (26,70%)
	Swazi	5 (1,50%)
	Ndebele	9 (2,60%)
	Xhosa	26 (7,60%)
	Zulu	12 (3,50%)
Education	Grade 10	28 (8,20%)
	Grade 11	19 (5,60%)
	Grade 12	242 (71,00%)
	Post-matric	49 (14,40%)
Marital status	Married/living together	188 (55,10%)
	Unmarried/single	143 (41,90%)
	Widowed	2 (0,60%)
	Separated/divorced	7 (2,10%)
Years employed in current position	Less than three years	93 (27,30%)
	Three to five years	79 (23,20%)
	More than five years	167 (49,00%)

The sample consisted mainly of Afrikaans-speaking (41,90%), married men (91,50%) with a Grade 12 education (71,00%). The mean age of the participants was between 30 and 35 years, while the average length of service in the current position was more than five years.

Measuring battery

The following measuring instruments were used in the empirical study:

A *biographical questionnaire* was developed to gather information about the demographic characteristics of the participants. Information gathered included age, gender, race, home language, education, marital status and years employed in current position.

The *Maslach Burnout Inventory-General Survey* (Maslach et al., 1996) was used to measure Burnout. The MBI-GS consists of 16 items that produce three scores: Exhaustion (Ex) (five items; eg "I feel used up at the end of the workday"), Cynicism (Cy) (five items; eg "I have become less enthusiastic about my work") and Professional Efficacy (Pe) (six items; eg "In my opinion, I am good at my job"). These three components of the Burnout construct are conceptualised in broader terms relating to the job and not just to the personal relationships that may be part of the job (Maslach et al., 2001). Maslach et al. (1996) reported that internal consistencies (Cronbach alpha coefficients) varied from 0,87 to 0,89 for Exhaustion, 0,73 to 0,84 for Cynicism and 0,76 to 0,84 for Professional Efficacy. Test-retest reliabilities after one year were 0,65 (Exhaustion), 0,60 (Cynicism) and 0,67 (Professional Efficacy). All items are scored on a seven-point frequency-rating scale ranging from 0 ("never") to 6 ("daily"). High scores on Exhaustion and Cynicism and low scores on Professional Efficacy are indicative of Burnout. Storm (2002) confirmed the three-factor structure of the MBI-GS in a sample of 2 396 members of the South African Police Service (SAPS), but recommended that Item 13 should be dropped from the questionnaire. The construct validity of the MBI-GS was confirmed in various studies (Coetzer & Rothmann, 2004; Storm, 2002). The following Cronbach alpha coefficients were obtained for the MBI-GS in South African studies: Exhaustion: 0,86

to 0,88; Cynicism: 0,79 to 0,80; Professional Efficacy: 0,76 to 0,78 (Coetzer, 2004; Storm, 2002).

The *Utrecht Work Engagement Scale* (UWES) (Schaufeli et al., 2002) was used to measure the levels of Work Engagement of the participants. The UWES includes three dimensions, namely, Vigour, Dedication and Absorption, which are conceptually seen as the opposite of Burnout and are scored on a seven-point frequency-rating scale, varying from 0 ("never") to 6 ("every day"). The questionnaire consists of 17 questions and includes questions like "I am bursting with energy every day in my work"; "Time flies when I am at work" and "My job inspires me". The alpha coefficients for the three subscales varied between 0,80 and 0,91. The alpha coefficient could be improved (α varies between 0,78 and 0,89 for the 3 subscales) by eliminating a few items without substantially decreasing the internal consistency of the scales. Storm and Rothmann (2003) obtained the following alpha coefficients for the UWES in a sample of 2 396 members of the South African Police Service: Vigour: 0,78; Dedication: 0,89; Absorption: 0,78. Coetzer (2004) obtained the following alpha coefficients from a sample of employees in an insurance company: Vigour (0,80); Dedication (0,87), and Absorption (0,69).

The *Orientation to Life Questionnaire* (OTLQ) (Antonovsky, 1983) was used to measure the Sense of Coherence of employees in the protection services. The questionnaire consists of 29 items. It contains items measuring the three components of Sense of Coherence, namely, Manageability, Comprehensibility and Meaningfulness. The scale assesses an individual's global orientation towards coping. The Cronbach alphas ranged from 0,83 to 0,88 (Antonovsky, 1983). Rothmann (2003) reported an alpha coefficient of 0,89 for the OTLQ, which is regarded as acceptable.

The *Health subscales of the ASSET* (which stands for "An Organisational Stress Screening Evaluation 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 Health. All items on the Physical Health subscale relate to physical symptoms of stress. The role of this subscale is to give insight into Physical Health, not an in-depth clinical diagnosis. The

items listed on the Psychological Health subscale are symptoms of stress-induced mental ill health. Johnson and Cooper (2003) found that the Psychological Health subscale has good convergent validity with an existing measure of psychiatric disorders, the General Health Questionnaire (GHO-12; Goldberg & Williams, 1988). Coetzer (2004) obtained the following Cronbach alpha coefficients from a sample of 613 employees in an insurance company in South Africa; Physical Health (0,79) and Psychological Health (0,89).

Statistical analysis

The statistical analysis is carried out with the help of the SPSS-program (SPSS, 2003) and the Amos-program (Arbuckle, 2003). Descriptive statistics (eg means, standard deviations, skewness and kurtosis) are used to analyse the data. Cronbach alpha coefficients are used to determine the internal consistency, homogeneity and unidimensionality of the measuring instruments (Clark & Watson, 1995). Coefficient alphas contain important information regarding the proportion of variance of the items of a scale in terms of the total variance explained by that particular scale.

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

Within this research the construct equivalence of the UWES and the MBI-GS were performed. Several techniques can be used to investigate construct equivalence, such as factor analysis, cluster analysis, and multidimensional scaling or other dimensionality-reducing techniques (Van de Vijver & Leung, 1997). The idea behind this application of these techniques is to obtain a structure in each language, which can then be compared across all languages involved. Factor analysis is the most frequently used technique for studying construct equivalence. In this study, both exploratory and confirmatory models could have been used. On the basis of previous

studies about the composition of the instrument, the choice for confirmatory factor analysis may seem obvious. The current author used exploratory factor analysis for a pragmatic reason. The MBI-GS and the UWES are recently developed measurement instruments, and only a few studies regarding their validity in South Africa were found. There were also negative experiences with the use of confirmatory models in studying the construct validity of the MBI-GS and the UWES. The problem that the author found with the confirmatory models was their fit to the data; the author is unclear whether the lack of fit is a result of trivial problems or severe ones that challenge the underlying model.

Exploratory factor analysis was, therefore, used to examine construct equivalence and to enhance the reliability results of the UWES. The number of factors in the total sample of the UWES was determined by a principle components analysis. Subsequently, a direct oblimin rotation was used to determine the solution for each language cluster group. After target rotation, factors obtained in each group were compared. The agreement was evaluated by a factor congruence coefficient, Tucker's phi (Van de Vijver & Leung, 1997). Values above 0,98 are taken to point to an essential agreement between the language groups, while values above 0,95 point to a very good agreement. This agreement implies that the factor loading of the lower and higher levels are equal up to a multiplying constant. This multiplying constant is needed to accommodate possible differences in eigen values of factors for the language groups.

Covariance analysis or structural equation modelling (SEM) methods, as implemented by AMOS (Arbuckle, 1997), were used to construct and test the casual model of Work Wellness. Hypothesised relationships are tested empirically for goodness-of-fit with the sample data. The χ^2 statistic and several other goodness-of-fit indices summarise the degree of correspondence between the implied and observed covariance matrices. However, because the χ^2 statistic equals $(N-1)F_{min}$ this value tends to be substantial when the model does not hold and the sample size is large (Byrne, 2001). Researchers addressed the χ^2 limitation by developing goodness-of-fit indices that take a more pragmatic approach to the evaluation process.

A value <2 for $\chi^2/\text{degrees of freedom}$ (CMIN/df) (Wheaton, Muthén, Alwin & Summers, 1977) indicates acceptable fit (Tabachnick & Fidell, 2001). The hypothesised relationships with the data are also tested using the following goodness-of-fit statistics: Adjusted Goodness-of-Fit Index (AGFI), Parsimony Goodness-of-Fit Index (PGFI), Normed Fit Index (NFI), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA).

RESULTS

A simple principle component analysis was conducted on the 17 items of the UWES on the total sample of protection services' members. Analysis of the eigen values (larger than 1) and the scree plot indicated that two factors could be extracted. Principle component analysis followed using a direct oblimin rotation to carry out factor analysis per language group (language group 1 consisted of Afrikaans and English-speaking respondents, while language group 2 consisted of all the African languages combined). Pattern matrices for the two languages groups are reported in Table 2.

Table 2

Pattern matrix of the 17-item UWES for the Afrikaans and English language group and the African language group

AFRIKAANS & ENGLISH			AFRICAN		
Item	Factor 1	Factor 2	Item	Factor 1	Factor 2
UWES 1	0,35	0,36	UWES 1	0,02	0,42
UWES 2	0,86	-0,08	UWES 2	0,80	-0,06
UWES 3	0,53	0,40	UWES 3	0,53	0,23
UWES 4	0,82	0,03	UWES 4	0,74	0,12
UWES 5	0,81	0,00	UWES 5	0,82	-0,11
UWES 6	-0,03	0,67	UWES 6	0,12	0,42
UWES 7	0,90	-0,19	UWES 7	0,72	0,00
UWES 8	0,73	0,03	UWES 8	0,64	0,10
UWES 9	0,71	0,11	UWES 9	0,30	0,39
UWES 10	0,82	-0,08	UWES 10	0,81	0,02
UWES 11	0,54	0,20	UWES 11	0,07	0,70
UWES 12	0,53	0,24	UWES 12	0,44	0,33
UWES 13	0,81	-0,05	UWES 13	0,70	-0,16
UWES 14	0,45	0,31	UWES 14	-0,06	0,51
UWES 15	0,50	-0,05	UWES 15	0,60	0,62
UWES 16	-0,09	0,67	UWES 16	-0,24	0,73
UWES 17	0,17	0,56	UWES 17	0,16	0,60

The pattern matrices of the two-factor solutions for the Afrikaans and English (group 1) and the African (group 2) language groups were then used as input for an exploratory factor analysis with target rotations. The two-factor structure was compared across groups by rotating one solution to the other. After target rotation, the following Tucker's phi coefficients were obtained: a) Factor 1 = 0,92, and b) Factor 2 = 0,84. Although the Tucker's phi coefficient for Factor 1 compared favourably with the guideline of 0,90, it is clear that Factor 2 showed an unacceptably low equivalence for the two language groups.

Inspection of Table 2 revealed that three items were complex and problematic. These items are: Item 9 – "I feel happy when I am engrossed in my work". This item loaded high on factor 1 for language group 1, but loaded the same on both factors for language group 2. Item 11 – "I am immersed in my work". This item loaded on different factors for language groups 1 and 2. Item 14 – "To me, my work is challenging". This item also loaded on different factors for language groups 1 and 2. Item 15 – "I am very resilient, mentally, in my job". This item loaded on different factors for the two language groups.

The possibility of semantic differences in terms of understanding the content of the items by the different language groups could have contributed to the problems experienced with the indicated items. This could have led to certain items being misunderstood by participants of some language groups, which led to inconsistent responses by the different language groups in this sample. Some items were thus replaced with items that were written in a more familiar South African vocabulary, in order to address the possible semantic problems. Item 9 – "I feel happy when I am engrossed in my work" was replaced with item 18 – "I feel happy when my attention is totally focused on my work"; Item 11 – "I am immersed in my work" was replaced with item 21 – "I enjoy devoting all my attention and energy to my work" and; Item 15 – "I am very resilient mentally in my job" was replaced with item 20 – "In my job I can comfortably deal with stressful situations and easily recover from such situations".

After the changes and the removal of one item (item 14), a simple factor analysis was conducted again. The scree plot and eigen values showed two factors, which explained 51,15 percent of the total variance. The pattern matrices for the two language groups are reported in Table 3.

Table 3

Pattern matrix of the 16-item UWES for the Afrikaans and English language group and the African language group

AFRIKAANS & ENGLISH			AFRICAN		
Item	Factor 1	Factor 2	Item	Factor 1	Factor 2
UWES 1	0,33	0,35	UWES 1	0,19	0,27
UWES 2	0,89	-0,11	UWES 2	0,81	-0,18
UWES 3	0,46	0,44	UWES 3	0,64	0,04
UWES 4	0,80	0,06	UWES 4	0,78	-0,05
UWES 5	0,80	0,02	UWES 5	0,80	-0,08
UWES 6	-0,01	0,54	UWES 6	0,27	0,16
UWES 7	0,93	-0,19	UWES 7	0,69	0,04
UWES 8	0,70	0,07	UWES 8	0,65	0,12
UWES 10	0,80	-0,02	UWES 10	0,82	-0,01
UWES 12	0,42	0,36	UWES 12	0,51	0,22
UWES 13	0,81	-0,03	UWES 13	0,69	-0,08
UWES 16	-0,13	0,61	UWES 16	-0,32	0,76
UWES 17	0,02	0,72	UWES 17	0,12	0,80
UWES 18	0,39	0,51	UWES 18	0,26	0,62
UWES 20	0,28	0,38	UWES 20	0,46	0,44
UWES 21	0,60	0,33	UWES 21	0,48	0,52

A target rotation was subsequently done on the two pattern matrices, which resulted in Tucker's phi coefficient of 0,97 for Factor 1 and 0,89 for Factor 2. Factor 1 compared favourably with the guideline of 0,90, but Factor 2 still showed an unacceptably low equivalence for the two language groups.

After inspection of Table 3, one item was identified as being complex and problematic. This was item 6: "When I am working, I forget everything else around me". This item loaded on different factors for the two language groups.

After the removal of 1 item, a simple factor analysis was conducted again. The scree plot and eigen values showed two factors, which explained 53,68 percent of the total variance. The pattern matrices for the two language groups are reported in Table 4.

Table 4

Pattern matrix of the 15-item UWES for the Afrikaans and English language group and the African language group

AFRIKAANS & ENGLISH			AFRICAN		
Item	Factor 1	Factor 2	Item	Factor 1	Factor 2
UWES 1	0,398	0,286	UWES 1	0,160	0,300
UWES 2	0,890	-1,124	UWES 2	0,799	-0,172
UWES 3	0,529	0,355	UWES 3	0,560	0,086
UWES 4	0,797	0,066	UWES 4	0,780	-0,051
UWES 5	0,827	-0,032	UWES 5	0,810	-0,081
UWES 7	0,934	-0,235	UWES 7	0,683	0,046
UWES 8	0,682	0,108	UWES 8	0,646	0,136
UWES 10	0,799	-0,036	UWES 10	0,823	0,019
UWES 12	0,452	0,336	UWES 12	0,507	0,229
UWES 13	0,828	-0,064	UWES 13	0,693	-0,045
UWES 16	-0,137	0,682	UWES 16	-0,341	0,749
UWES 17	0,084	0,707	UWES 17	0,126	0,793
UWES 18	0,410	0,531	UWES 18	0,279	0,615
UWES 20	0,334	0,340	UWES 20	0,456	0,454
UWES 21	0,651	0,283	UWES 21	0,483	0,533

The two factors were labelled as follows: a) Factor 1: Vigour/Dedication, b) Factor 2: Absorption. A target rotation was subsequently done on the two pattern matrices, which resulted in Tucker's phi coefficient of 0,98 for Vigour/Dedication and 0,94 for Absorption. Factor 1 and Factor 2 compared favourably with the guideline of 0,90 and can be regarded as acceptable.

Muller (2004) found in a study of protection services' members that two factors in the MBI could be extracted. Tucker's phi coefficients of 0,98 for Factor 1 (Burnout) and

0,95 for Factor 2 (Professional Efficacy) were obtained. These coefficients were found to be acceptable.

The descriptive statistics and alpha coefficients of the MBI GS, UWES, OTLQ and Health subscales are given in table 5.

Table 5

Descriptive statistics and alpha coefficients of the MBI-GS, UWES, OTLQ and Health subscales

Item	Mean	SD	Skewness	Kurtosis	α
MBI-GS					
Burnout	19,26	10,93	0,29	-0,29	0,85
Professional Efficacy	26,09	8,18	0,96	0,54	0,80
UWES					
Vigour/Dedication	42,02	15,87	-0,56	-0,26	0,91
Absorption	12,94	5,36	-0,34	-0,21	0,51
OTLQ					
Sense of Coherence	129,27	22,95	0,04	1,06	0,83
HEALTH SUBSCALE					
Physical Health	11,95	4,48	0,41	-0,75	0,81
Psychological Health	14,60	5,80	0,72	-0,31	0,88

Table 5 shows that acceptable Cronbach alpha coefficients varying from 0,80 to 0,91 were obtained, except for Absorption (0,51). These alpha coefficients compare reasonably well with the guideline of 0,70 (0,55 in basic research), demonstrating that a large portion of the variance is explained by the dimensions (internal consistency of the dimensions) (Nunnally & Bernstein, 1994). It is evident from Table 5 that most of the scales of the measuring instruments have relatively normal distributions, with low skewness and kurtosis.

The product moment correlation coefficients between Burnout, Work Engagement, Health and Sense of Coherence are given in Table 6.

Table 6

Product-moment correlation coefficients between the MBI-GS, UWES, OTLQ and Health subscales

Item	1	2	3	4	5	6
1. Burnout	.	.	.	.	.	.
2. Professional Efficacy	-0,20 [*]
3. Vigour/Dedication	-0,37 ⁺⁺	0,71^{***}	.	.	.	.
4. Absorption	0,08	0,43 ⁺⁺	0,44 ⁺⁺	.	.	.
5. Sense of Coherence	-0,35 ⁺⁺	0,24 [*]	0,30 [*]	0,07	.	.
6. Physical Health	0,33 ⁺⁺	-0,00	-0,09	0,03	-0,32 ⁺⁺	.
7. Psychological Health	0,41 ⁺⁺	-0,09	-0,22 [*]	-0,05	-0,37 ⁺⁺	0,66 ^{***}

* $p \leq 0,05$ – statistically significant

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

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

Table 6 shows statistically significant negative correlations (practically significant, medium effect) between Burnout and Vigour/Dedication and Burnout and Sense of Coherence. Burnout shows statistically significant positive correlations (practically significant, medium effect) with Physical Health and Psychological Health. Professional Efficacy shows a statistically significant positive correlation (practically significant, large effect) with Vigour/Dedication and a statistically significant positive correlation (practically significant, medium effect) with Absorption. Vigour/Dedication shows a statistically significant positive correlation (practically significant, medium effect) with Absorption.

Sense of Coherence shows statistically significant negative correlations (practically significant, medium effect) with Physical Health and Psychological Health. Physical Health shows a statistically significant positive correlation (practically significant, large effect) with Psychological Health.

Next, a model based on the results of the product-moment correlations as well as consensus of findings based on a review of the literature on Work Wellness with

specific bearing on protection services was tested with SEM analysis. Results indicated that the model fit the data adequately. No further modification of the model was thus required. The model shows a good fit with $\chi^2 = 5,01$; GFI = 0,99, AGFI = 0,97, CFI = 0,99, IFI = 0,99, and RMSEA = 0,04. The model is given in Figure 1.

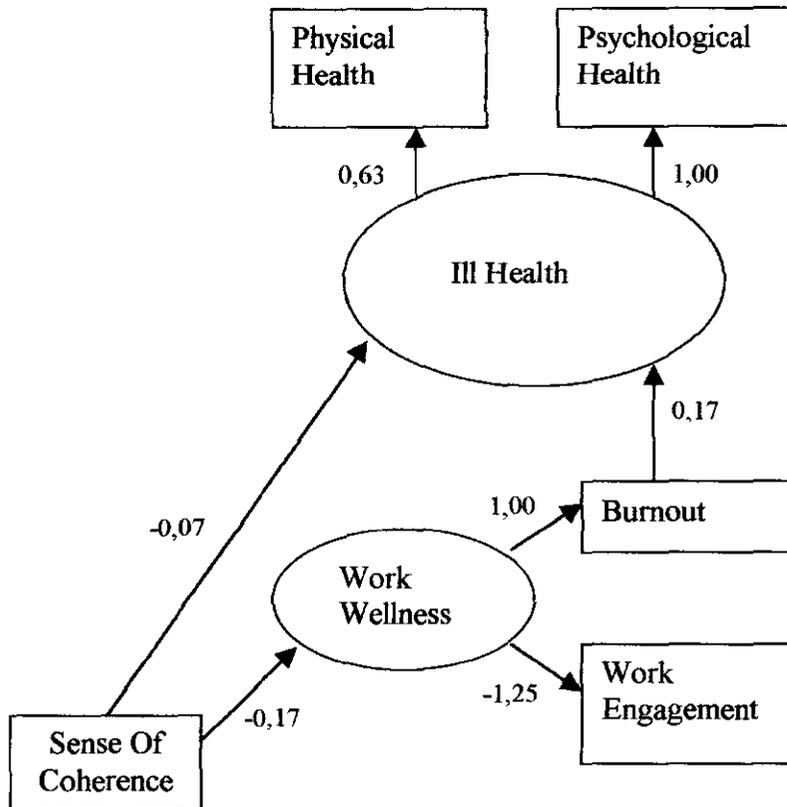


Figure 1: A causal model of Work Wellness

As can be seen in Figure 1, Work Wellness comprises of Burnout (consisting of Exhaustion and Cynicism) and Work Engagement (consisting of Vigour and Dedication). The path from Burnout to Ill Health is significant. This means that high levels of Burnout may result in either physical or psychological Health problems. The path coefficient from Sense of Coherence to Work Wellness and Ill Health is significant. This means that Sense of Coherence partially mediated the impact of Burnout as part of Work Wellness on Ill Health. The path coefficient from Sense of Coherence to Ill Health was also found to be significant, indicating that higher levels of Sense of Coherence can result in less Health problems. Thus, Sense of Coherence impact the experience of Ill Health without Work Wellness playing a role.

Based on the above-mentioned findings, both Hypothesis 1 and 2 are accepted. Hypothesis 3 is only partially accepted.

DISCUSSION

The aim of this study was to develop and test a causal model of Work Wellness for protection services' members consisting of Health and Sense of Coherence. First, exploratory factor analysis was conducted on the UWES per language group (language group 1 consisted of Afrikaans and English-speaking respondents and language group 2 consisted of all the African languages combined).

Coetzer and Rothmann (2004) found acceptable goodness of fit statistics for the three-factor structure of the UWES for employees in an insurance company. However, in other South African studies, Storm and Rothmann (2003) and Naudé (2003) found high correlations between the Work Engagement dimensions of Vigour/Dedication and Absorption and suggested that Work Engagement (as measured by the UWES) is a one-dimensional construct.

After a simple factor analysis was conducted on the UWES, a two-factor structure was identified. The two factor structure was compared across groups by rotating one solution to the other. It was found that items were complex and problematic. These items were: Items 6, 9, 11, 14 and 15. Most of the items loaded on different factors for the two language groups. Due to possible semantic problems, items 9, 11 and 15 were respectively replaced with items 18, 21 and 20. These items were written in a more familiar South African vocabulary.

After the changes and the removal of two items (items 6 and 14), a simple factor analysis was conducted again. The two factors identified were labelled as a) Factor 1: Vigour/Dedication, b) Factor 2: Absorption. Tucker's phi coefficient of 0,98 for Vigour/Dedication and 0,94 for Absorption were found after a target rotation was done in the two pattern matrices. Factor 1 and Factor 2 compared favourably with the guideline of 0,90 and can be regarded as acceptable.

In a similar study among protection services' members, Muller (2004) found that two factors in the MBI could be extracted. Tucker's phi coefficients of 0,98 for Factor 1 (Burnout) and 0,95 for Factor 2 (Professional Efficacy) were obtained. These coefficients were found to be acceptable.

Secondly, the construct validity and internal consistency of the Burnout and Professional Efficacy subscales of the MBI-GS, the Vigour/Dedication and Absorption subscales of the UWES, the Physical Health and Psychological Health subscales and the Sense of Coherence subscale of the OTLQ were determined. Cronbach alpha coefficients varying from 0,80 to 0,91 were obtained, except for Absorption (0,51). These alpha coefficients compared reasonably well with the guideline of 0,70 (0,55 in basic research), demonstrating that a large portion of the variance is explained by the dimensions (internal consistency of the dimensions) (Nunnally & Bernstein, 1994). Most of the scales of the measuring instruments had relatively normal distributions, with low skewness and kurtosis.

Pearson product moment correlations showed that Burnout correlated negatively with Vigour/Dedication and Sense of Coherence. Burnout also correlated positively with Physical Health and Psychological Health. Professional Efficacy showed a positive correlation with Vigour/Dedication and Vigour/Dedication showed a positive correlation with Absorption. Sense of Coherence showed a negative correlation with Physical Health and Psychological Health. Physical Health showed a positive correlation with Psychological Health.

Lastly, a casual model of Work Wellness for protection services' members comprising Ill Health and Sense of Coherence was developed. Work Wellness was found to be conceptualised as consisting of Burnout (exhaustion and cynicism) and work Engagement (Vigour and Dedication). High levels of Burnout will result in either physical or psychological Ill Health, ultimately impacting the Work Wellness of protection services' members. The negative impact of Burnout can be partially mediated by high levels of Sense of Coherence. Within the model a direct path were also found from Sense of Coherence to Ill Health, indicating that higher levels of Sense of Coherence can result in less physical or Psychological Health problems.

All the hypotheses were accepted except for hypothesis 3, which was only partially accepted.

RECOMMENDATIONS

The risk of protection services employees suffering from occupational stress, Burnout and possibly Ill Health is clear when considering the current situation of the protection services industry in South Africa. No research on the wellness of protection services employees could be found. Considering that protection services employees are those individuals who are responsible for the safekeeping and protection of people and property, more research on the possible negative causes of diminished wellness should be conducted. It is also recommended that research on the causes of Burnout and Ill Health in protection services employees be determined to develop a causal model of Work Wellness that could be utilised to develop wellness programmes for the protection industry.

More research should be done to determine the relationship between Health, Sense of Coherence and Work Wellness. Sense of Coherence partially mediated the effect of Burnout on Health. Further study on the mediating role of Sense of Coherence on Health is recommended, so as to understand the role that Sense of Coherence plays as a buffering personality trait against negative Health outcomes.

The exploratory factor analysis conducted on the UWES indicated a two-factor structure for the UWES, Muller (2004) found a two-factor structure for the MBI-GS as well. Further research regarding the factor structures of the UWES and the MBI-GS in South African populations should be conducted.

A limitation of this study is the cross-sectional design. No causal inferences could be drawn, despite the use of advanced structural equation modelling techniques. The causal relationships between variables were interpreted rather than established, and more complex forms of non-recursive linkages could not be examined. Another limitation is the results were obtained purely by self-report measures and this could lead to a problem referred to as “method variance” or “nuisance”.

South African employers are unaware of the huge costs that negative employee Health and wellness could result in. Issues like absenteeism, reduces productivity and Health insurance costs, were estimated in America to be in the region of \$150 billion a year more than a decade ago (Kasarek & Theorell, 1990). South African organisations should be assisted in enhancing the understanding of Work Wellness within organisations and the impact that Ill Health could have on the productivity of an organisation.

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CHAPTER 3

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide conclusions regarding the results of the empirical study of the research article. Conclusions are drawn with regard to the research objectives. Furthermore, limitations of the study are discussed. Finally, recommendations for the industry are made and research opportunities that emanate from this research are presented.

3.1 CONCLUSIONS

The general objective of this research was to develop and test a causal model of Work Wellness, Sense of Coherence and Health for protection services members that will result in a better understanding of the current Health of protection services members in the South African context. Based on the results of the research article, the following conclusions can be made:

The first objective of this study was to determine the construct validity and internal consistency of the *Maslach Burnout Inventory – General Survey* (MBI-GS), *Utrecht Work Engagement Scale* (UWES), *Orientation to Life Questionnaire* (OTLQ) and *Health subscales of the ASSET* for protection services members. A two-factor structure for the MBI-GS (Burnout and Professional Efficacy) and a two-factor structure for the UWES (Vigour/Dedication and Absorption) were obtained using exploratory factor analysis. The Tucker's phi coefficients obtained were found to be acceptable.

Cronbach alpha coefficients varying from 0,80 to 0,91 were obtained, except for Absorption (0,51). These alpha coefficients compared reasonably well with the guideline of 0,70 (0,55 in basic research), demonstrating that a large portion of the variance is explained by the dimensions (internal consistency of the dimensions) (Nunnally & Bernstein, 1994). Most of the scales of the measuring instruments had relatively normal distributions, with low skewness and kurtosis.

The second objective of the study was to conceptualise Work Wellness, Sense of Coherence and Health according to the literature. *Health* was conceptualised with two subscales, Physical and Psychological Health. Physical Health relate to physical symptoms of stress. The role of this subscale is to give an insight into Physical Health, not an in-depth clinical diagnosis. The other subscale is Psychological Health and is symptoms of stress-induced mental Ill Health.

Sense of Coherence is described as "a global orientation that expresses the extent to which one has a pervasive and enduring, though dynamic feeling of confidence that one's internal and external environments are predictable and that there is a high probability that things will work out as well as can reasonably be expected" (Antonovsky, 1987, p.132). Sense of Coherence is the extent to which one sees his or her world as comprehensible, manageable and meaningful (Antonovsky & Sourani, 1988).

Work Engagement and Burnout are indicators of the wellness of people in the work place or the organisation's *Work Wellness* (Coetzer, 2004; Schaufeli, 2003; Schaufeli & Bakker, 2004).

Work Engagement comprises of two characteristics, Vigour/Dedication and Absorption. Vigour refers to high levels of energy, mental resilience as well as a willingness to exert effort and persist; Dedication refers to a sense of significance, enthusiasm, inspiration, pride, challenge; and Absorption refer to a tendency to be fully concentrated and deeply engrossed in work.

Burnout comprises of two characteristics, Burnout and Professional Efficacy. Burnout refers to the depletion or draining of emotional and physical resources and to the development of negative, callous or excessively detached responses toward various aspects of the job. The lack of professional efficacy refers to feelings of incompetence as well as a lack of achievement and productivity at work.

Pearson product moment correlations showed that Burnout correlated negatively with Vigour/Dedication and Sense of Coherence. Burnout also correlated positively with Physical Health and Psychological Health. Professional Efficacy showed a positive

correlation with Vigour/Dedication and Vigour/Dedication showed a positive correlation with Absorption. Sense of Coherence showed a negative correlation with Physical Health and Psychological Health. Physical Health showed a positive correlation with Psychological Health.

The third objective of the study was to determine the relationship between Health, Sense of Coherence and Work Wellness by developing a causal model of Work Wellness of protection services members in the South African context. The model was developed with the help of the correlation study and SEM analysis and showed that work Engagement and Burnout are components of Work Wellness. There is a significant path coefficient from Burnout to Ill Health indicating that elevated levels of Burnout may result in psychological or physical Ill Health. The path coefficient from Sense of Coherence to Work Wellness and Ill Health is significant indicating that Sense of Coherence partially mediated the impact of Burnout as part of Work Wellness on Ill Health. The results also indicated that the path coefficient from Sense of Coherence to Ill Health was significant indicating that higher levels of Sense of Coherence can result in less Health problems. This implies that Sense of Coherence has an impact on the experience of Ill Health without Work Wellness playing a role.

The last objective of the study was to determine whether Sense of Coherence moderates or mediates the effect of Ill Health on Work Wellness. This study showed, as indicated above, that the path coefficient from Sense of Coherence to Work Wellness and Ill Health is significant which means that Sense of Coherence partially mediated the impact of Burnout as part of Work Wellness on Ill Health.

When individuals experience high levels of Burnout and have a high Sense of Coherence the effect of Burnout on their Health will be less than if their Sense of Coherence is low. Sense of Coherence has a negative correlation with Health. This means that when the individuals' Sense of Coherence is high the chances of negative Health outcomes will be smaller than that of an individual with a low Sense of Coherence.

3.2 LIMITATIONS OF THIS STUDY

The first limitation of this study was the cross-sectional design. Despite the use of advanced structural equation modeling techniques, no causal inferences could be drawn. The causal relationship between variables were interpreted and not established. More complex forms of non-recursive linkages could not be examined. To deal with the limitation of the use of a cross-sectional design, prospective longitudinal and quasi-experimental research designs are needed to further validate the hypothesised casual relationships within this study.

Secondly, as the data was collected from the different divisions and locations within the protection services organisation at different points in time, unique organisational characteristics and/or historical events may have affected the findings. Also, because of the average levels of education of the respondents, as well as the array of language and cultural groups included in the study, the interpretation of questions could have differed vastly among participants.

Thirdly, the size of the sample was a limitation to this study, specifically the distribution of language groups. Within the sample the distinction between cultural groups could not be made due to a low representation of some cultural groups. A distinction was made in terms of the language groups, i.e. an English and Afrikaans group (48,10 % representation) and a combined African language group (41,90 % representation). Gender representation specifically of woman was very small (7.60 %).

Fourthly, the results were obtained solely by self-report measures. This may lead to a problem commonly referred to as "method variance" or "nuisance". However, a review by Spector (1987) found little evidence of common method variance among self-report measures of the kinds of construct studied here. Furthermore, several authors have argued that this phenomenon is not a major threat if interactions are found (Dollard & Winefield, 1998; Wall, Jackson, Mullarkey & Parker, 1996). Another aspect to consider is that few alternative methodologies are suggested to deal with the use of self-report measures.

Fifthly, the sampling procedure created problems, and future studies could benefit from using a stratified random-sample design, which would ensure sufficient representation of the different groups in the total population and will enable generalization of findings to the total study population.

One language (English being the only language used for questionnaires) represents the sixth limitation. The possibility exists that the level of English language skills or respondents speaking English as their second, third, fourth or even lower language could have influenced the results.

Another limitation of this study was that there is a possibility that some employees who participated in this research did not totally trust the confidentiality statement set out in the covering letter accompanying the questionnaires. This could have influenced some of the results.

An eight limitation was that the surveys were given to the managers and they gave the instructions to the rest of the protection services members at each location. They completed the surveys at home or at work. Some individuals working in the same area could have discussed the answers and decided together on how they will answer.

3.3 RECOMMENDATIONS

Recommendations pertaining to the specific industry used in this study, as well as recommendations for future research, are made in this section.

3.3.1 Recommendations for the industry

South African organisations should be assisted in enhancing the understanding of Work Wellness within organisations and the impact that Ill Health could have on the productivity of an organisation. South African employers are not knowledgeable regarding the financial implications that a workforce displaying Ill Health could have on their resources. Issues like absenteeism, reduces productivity and Health insurance costs was estimated to be around \$150 billion a year more that a decade ago, in America (Kasarek, & Theorell, 1990).

On organisational level, protection services organisations should implement interventions aimed at reducing Ill Health in their organisations. According to Kompier and Kristensen (2001) interventions may be focused on three different levels, namely the primary, secondary and tertiary levels.

Primary interventions is worker-oriented interventions aim at teaching the employees to deal more effectively with experienced stress, or to modify their appraisal of a stressful situation, so that the perceived stress threats are reduced. Stressful events may lead to strain (Rowe, 2000) and it is clear in the literature that if strain is not managed, it may have a negative impact on the Health and well-being of individuals (Winefield, Gillispie, Stough, Dua & Hapuararchchi, 2002).

Secondary-level interventions can be implemented to prevent employees who are already showing signs of stress or decreased Work Wellness from getting sick and to increase their well-being and coping capacity that will influence their physical and psychological Health. Examples of such interventions are cognitive structuring, time management, conflict resolution techniques and coping strategies.

Tertiary-level interventions are implemented when the employee are suffering from Ill Health or reduced well-being as a result of (ill) Health in the workplace. These interventions are concerned with the rehabilitation of individuals that have Ill Health. These interventions will also equip employers in gaining a deeper understanding of the impact that organisational stress have on employees and ultimately their organisations and the protection services individuals to deal more effectively with daily work life.

3.3.2 Recommendations for future research

Protection services' employees are at a great risk to suffer from occupational stress, Burnout and possibly Ill Health. This is clear when considering the current situation regarding the protection services industry in South Africa and internationally. No research on the wellness of protection services' employees could be found and when considering the specific role and function that protection employees play in all areas

of the industry, more research should be conducted on the work stressors that these individuals are faced with in the environment. The research should be expanded to include the possible negative outcomes that could cause diminished wellness for protection services' employees and the organisations they work for.

It is further recommended that research on the causes of Burnout resulting in ill-Health for protection services' employees should be determined to develop a causal model of Work Wellness that could be utilized to develop wellness programmes for the protection industry. This research should be expanded to other industries in South Africa to determine the Work Wellness of employees nationally.

More research should be done to determine the relationship between Health, Sense of Coherence and Work Wellness. Sense of Coherence partially mediated the effect of Burnout on Health in this study. Further studies on the mediating role of Sense of Coherence on Health are recommended, to understand the role of Sense of Coherence as a buffering personality trait on negative Health outcomes.

Future studies should focus on the positive work-related attitudes and work behaviour. Positive constructs such as Work Engagement and the role it has on Work Wellness of employees and the causes of Work Engagement within different occupational settings should be studied. Research should also be conducted to evaluate the effectiveness of interventions implemented by organisations to combat reduced Work Wellness and Ill Health.

The exploratory factor analysis conducted on the UWES indicated a two-factor structure for the UWES. Muller (2004) found a two-factor structure for the MBI-GS as well. Further research regarding the factor structures of the UWES and the MBI-GS in South African populations should be conducted. It is recommended that the MBI-GS and the UWES should be translated into other languages used in South Africa due to possible semantic differences. This will assist in the establishment of culture-fair unbiased measurements of Burnout and Work Engagement

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