

**Sense of Coherence, Constructive Thinking and Fortitude as
Components of Psychological Well-Being**

Michelle Koen

**Mini-dissertation (article format) submitted in partial fulfilment of the requirements
for the degree Magister Artium in Clinical Psychology at the Potchefstroom
University for Christian Higher Education**

**Supervisor: Prof. M.P. Wissing
POTCHEFSTROOM
2002**

This manuscript is dedicated to my father:

Belthazar Johannes Koen

2 December 1949 – 18 March 2002

RIP

TABLE OF CONTENTS

Acknowledgements	i
Summary	i i
Opsomming	iv
Letter of Consent	v
Article Guidelines for the <i>South African Journal of Psychology</i>	vi
Manuscript: Sense of Coherence, Constructive Thinking and Fortitude as Components of Psychological Well-Being	1

TABLE OF CONTENTS

Acknowledgements	i
Summary	i i
Opsomming	iv
Letter of Consent	v
Article Guidelines for the <i>South African Journal of Psychology</i>	vi
Manuscript: Sense of Coherence, Constructive Thinking and Fortitude as Components of Psychological Well-Being	1

AKNOWLEDGEMENTS

I would like to express my sincere gratitude and indebtedness to the following persons:

- Prof. Marie Wissing, my project leader and supervisor, for her vision, competent guidance, encouragement and input;
- Mrs Alet van Biljon, for her support, patience and encouragement;
- Participants, fellow students and staff members of the Potchefstroom University for Christian Higher Education for helping to make this study in the FORT-Project possible;
- My grandfather, my parents and sisters for their support and encouragement, and a special thankyou to my grandfather, whose financial assistance helped so much to make this study possible; and
- My friends, Wayne, Mariette, Izak, Issabel, Leon, Engela and Susan for their understanding, patience, support and input - you are all special and dear to me.
- The financial assistance of the National Research Foundation towards this research is hereby acknowledged. Opinions expressed in this report and conclusions arrived at are those of the author and are not necessarily to be attributed to the National Research Foundation (Grant to Prof. M.P. Wissing, Ref Nr. 15/1/3/19/0049).

SOLI DEO GLORIA

SUMMARY

SENSE OF COHERENCE, CONSTRUCTIVE THINKING AND FORTITUDE AS COMPONENTS OF PSYCHOLOGICAL WELL-BEING

Keywords: psychological well-being, sense of coherence, constructive thinking, fortitude, satisfaction with life, affect balance

This study forms part of a greater trans-university study on fortology and psychological well-being (Wissing, 1998). This specific study focuses on similarities and differences between sense of coherence (Antonovsky, 1979; 1987; 1991; 1992; 1993), constructive thinking (Epstein, 1992; 1993) and fortitude (Pretorius, 1998) as constructs contributing to an understanding of psychological well-being, and as phenomena which appear to be related to stress resistance. The constructs were analysed against the background of the fortigenic paradigm (Strümpfer, 1995) and models of well-being. The constructs were also compared to other constructs related to psychological well-being.

In a factor analysis on the total scale scores of the measuring instruments that operationalise the constructs of sense of coherence (SOC), constructive thinking (CTI) and fortitude (FORQ), a single factor was extracted which supported the hypothesis that these denotations of constructs overlap to some degree on an empirical level. By means of a further analysis of the subscale scores (where applicable), two factors were extracted, namely intra-psychic functioning and interpersonal functioning. Thus, the hypothesis that a degree of overlap would exist on an empirical level was further supported.

In a factor analysis on the total scale scores of the instruments measuring sense of coherence, constructive thinking and fortitude, together with the total scale scores of previously benchmarked indicators of general psychological well-being - satisfaction with life (Diener, Emmons, Larsen, & Griffen, 1985) and affect balance (Kammann & Flett, 1983) - as well as an indicator of psycho-pathology, namely the General Health Questionnaire (Goldberg & Hillier, 1979), a single factor was extracted, and the indicator of pathology carried a negative loading. This supports the hypothesis that there is a general psychological well-being factor and that psychological well-being is characterised by the absence of pathology. A further factor analysis on the scores of the subscales (where applicable), extracted three factors, namely an intra-psycho factor, an interpersonal factor and a psycho-pathology factor.

The overlap among the constructs of sense of coherence, constructive thinking and fortitude can be explained in terms of the stress buffering effect of all three constructs as described in the literature, and in terms of the cognitive mechanisms that underlie the processes involved.

The results of this study have implications for the development of (new) theories on psychological well-being, in that the general psychological well-being factor should be taken into account in such models. Further research should focus on the development of prevention programmes that should utilise the concepts of psychological well-being in the enhancement of quality of life.

OPSOMMING

KOHERENSIESIN, KONSTRUKTIEWE DENKE EN FORTALITEIT AS KOMPONENTE VAN PSIGOLOGIESE WELSYN

Kernwoorde: psigologiese welsyn, koherensiesin, konstruktiewe denke,
fortaliteit, lewenstevredenheid, affekbalans

Hierdie studie vorm deel van 'n groter trans-universitêre studie oor fortologie en psigologiese welsyn (Wissing, 1998). Hierdie spesifieke studie fokus op die ooreenkomste en verskille tussen die konstrakte koherensiesin (Antonovsky, 1979; 1987; 1991; 1992, 1993), konstruktiewe denke (Epstein, 1992; 1993) en fortaliteit (Pretorius, 1998) as konstrakte wat bydra tot 'n beter begrip van psigologiese welsyn, en as verskynsels wat moontlik met stresweerbaarheid saamhang. Hierdie konstrakte is ontleed teen die agtergrond van die fortigene paradigma (Strümpfer, 1995) en modelle van welsyn. Die konstrakte is ook vergelyk met ander konstrakte wat met psigologiese welsyn saamhang.

In 'n faktoranalise op die totaaltellings van die meetinstrumente wat koherensiesin (SOC), konstruktiewe denke (CTI) en fortaliteit (FORQ) meet, is 'n enkele faktor geabstraheer wat die basiese hipotese ondersteun dat denotasies van hierdie konstrakte 'n mate van oorvleueling op empiriese vlak toon. 'n Verdere analise op die sub-skaal tellings (waar toepaslik) het twee faktore geabstraheer, naamlik intrapsigiese funksionering en interpersoonlike funksionering. Hierdie resultate ondersteun die hipotese van 'n oorvleueling tussen verskynsels op 'n empiriese vlak.

In 'n verdere faktoranalise, waar die totaaltellings van die skale wat koherensiesin, konstruktiewe denke en fortaliteit meet, saam met die totaaltellings van ander aanduiders van algemene psigologiese welsyn - lewenstevredenheid (Diener, et al., 1985) en affekbalans (Kammann & Flett, 1983) - sowel as 'n meetinstrument wat psigo-patologie (Goldberg & Hillier, 1979) meet, gebruik is, is 'n enkele faktor geabstraheer, met 'n negatiewe lading vir die psigo-patologie meetinstrument. Hierdie enkele faktor ondersteun die hipotese dat daar 'n algemene psigologiese welsynfaktor bestaan, en dat psigologiese welsyn gekenmerk word deur die afwesigheid van patologie. 'n Verdere faktoranalise op die subskaal-tellings (waar toepaslik), het drie faktore geabstraheer, naamlik 'n intra-psigologiese funksioneringsfaktor, 'n interpersoonlike funksioneringsfaktor en 'n psigo-patologie faktor.

Die mate van oorvleueling tussen die konstrukste van koherensiesin, konstruktiewe denke en fortaliteit kan verklaar word in terme van die stresbufferingseffek van die verskynsels soos in die literatuur beskryf word, en die kognitiewe meganismes wat onderliggend aan hierdie prosesse is.

Die resultate van hierdie studie het implikasies vir die ontwikkeling van (nuwe) teorieë oor psigologiese welsyn, waar die bestaan van 'n algemene psigologiese welsynfaktor in ag geneem behoort te word. Verdere navorsing behoort te fokus op die ontwikkeling van voorkomingsprogramme waarin die konsepte van psigologiese welsyn benut kan word in die uitbouing van 'n individu se lewenskwaliteit.

LETTER OF CONSENT

I hereby give consent that Michelle Koen may submit this manuscript for the purposes of a mini-dissertation.

Prof. M.P. Wissing

SOUTH AFRICAN JOURNAL OF PSYCHOLOGY

(1970 -)

An Official Journal of the Psychological Society of South Africa (PsySSA)

Incorporating : *Journal of Behavioural Sciences* (1969 - 1979), *Psychological Africana* (1962 - 1983),
South African Psychologist (1962 - 1979)

Editorial Policy

The Journal publishes contributions in English from all fields of psychology. While the emphasis is on empirical research, the Journal also accepts theoretical and methodological papers, review articles, short communications, reviews and letters containing fair commentary. Priority is given to articles which are relevant to Africa and which address psychological issues of social change and development.

Editor

C. de la Rey (University of Cape Town)

Editorial Assistant

L. Townsend (University of Cape Town)

Editorial Board

D. Foster (University of Cape Town)

G. d'Ydewalle (International Union of Psychological Science)

I. Lunt (British Psychological Society)

R. Fowler (American Psychological Association)

N. Peters (California School of Professional Psychology (SA))

B. Pillay (University of Natal)

P. Sibaya (University of Zululand)

A. Magwaza (Consultant)

Abstracted/Indexed in : *Current Contents/Social and Behavioural Sciences*, *Biological Abstracts*, *Internationale Bibliographie der Zeitschriftenliteratur (IBZ)*, *Internationale Bibliographie der Rezensionen wissenschaftlicher Literatur (IBR)*, *Psychological Abstracts*, *Research Alert*, *Social Science Citation Index*.

Psychological Society of South Africa (PsySSA) : Enquiries about membership should be addressed to the Secretary, Psychological Society of South Africa, P.O. Box 66083 Broadway 2020, Republic of South Africa. Tel: (011) 616 9373 Members receive the Journal free.

Copyright : The Psychological Society of South Africa has copyright of all materials in the South African Journal of Psychology. Decisions about copyright are made by the Editor.

Printed in the Republic of South Africa by TopCopy , 3 & 5 Cavendish Street, Claremont, 7708 , print@topcopy.co.za

Subscriptions and Advertisements : Psychological Society of South Africa, P.O. Box 66083, Broadway 2020, South Africa.
Annual Subscription (four numbers) is R 400,00 (Incl. VAT). Website : <http://psyssa-psych.co.za>. E-mail : psyssa@psych.co.za

Instructions to Authors

The original typewritten manuscripts plus two copies must be submitted to the Editor : Assoc. Professor C de la Rey, Psychology Department, University of Cape Town, Rondebosch 7701, South Africa. E-mail: sajp@psipsy.uct.ac.za

The manuscript must be accompanied by a letter stating that the paper has not been previously published, is the author(s) own original work and all listed authors must sign the letter to indicate their agreement with the submission. The manuscript should be typed in a 12 point font, double spacing with generous margins, on one side of the paper only. The first page should contain the title of the paper, the author(s) name(s) and address(es), and the name and address of the author to whom correspondence should be addressed. The abstract should be on a separate page. The text of the paper should be started on a new page. Tables and figures should be numbered consecutively and submitted on separate A4 pages attached to the manuscript. The appropriate positions in the text should be indicated. Once the article has been accepted for publication, a computer diskette must also be submitted. ASCII is the preferred text format. The diskette should be clearly marked.

The format of articles should conform to the requirements of the South African Journal of Psychology : Guide to Authors, which is based on the Publication Manual of the American Psychological Association. The SAJP Guide can be obtained from the office of the Psychological Society of South Africa at a cost of R 35,00, including VAT and postage.

Illustrations and figures : These should be prepared on A4 sheets. One set of original illustrations and figures on good quality drawing paper, or glossy photoprints, and three sets of copies, should accompany the submission. The figures should be clearly labelled on the back. Authors are requested to pay particular attention to the proportions of figures so that they can be accommodated in single (82mm) or double (179mm) columns after reduction, without wasting space. Figures should be numbered consecutively in Arabic numerals (Figure 1, Figure 2), and descriptive captions listed on a separate sheet of A4 paper. Graphs should be fully inscribed, and points should be indicated with standard symbols. All illustrations and figures should be grouped together at the end of the manuscript, and their appropriate positions in the text should be indicated.

Instructions to Authors: Following the Style Required for Submissions to The South African Journal of Psychology

- The manuscript should be typed in 12-point font, double spacing with generous margins, on one side of the paper only.
- The first page should contain the title of the paper and the author(s) name(s), and address(es), and the name and address of the author to whom correspondence should be addressed
- The abstract should be on a separate page.
- The text of the paper should be started on a new page.
- Indicate the beginning of a new paragraph by indenting its first line two spaces, except when the paragraph follows a main or secondary heading.
- The headings should all start at the left margin, and should not be numbered. The introduction to the paper does not require a heading.
- The referencing style of the SAJP is similar to those used by the British Psychological Society and the American Psychological Association.
- In the reference list, the first line of each reference starts at the left margin; subsequent lines are indented two spaces.
- Illustrations, tables, and figures should be prepared on separate A4 sheets. They should be numbered consecutively, grouped together, and attached to the end of the manuscript. The appropriate positions in the text should be indicated.
- Authors are requested to pay attention to the proportions of illustrations, tables, and figures so that they can be accommodated in single (82mm) or double (179mm) columns after reduction, without wasting space.
- Once the article has been accepted for publication, a computer diskette must also be submitted. ASCII is the preferred text format. The diskette should be clearly marked.

**SENSE OF COHERENCE, CONSTRUCTIVE
THINKING AND FORTITUDE AS COMPONENTS OF
PSYCHOLOGICAL WELL-BEING**

**SENSE OF COHERENCE, CONSTRUCTIVE THINKING
AND FORTITUDE AS COMPONENTS OF
PSYCHOLOGICAL WELL-BEING**

Michelle Koen * and Mariè P. Wissing

School of Psychosocial Behavioural Sciences,

Potchefstroom University for CHE,

Potchefstroom, 2520

- **To whom correspondence should be addressed**

SENSE OF COHERENCE, CONSTRUCTIVE THINKING AND FORTITUDE AS COMPONENTS OF PSYCHOLOGICAL WELL-BEING

ABSTRACT

Key words : Sense of Coherence Scale (SOC) (Antonovsky, 1979; 1987; 1991; 1992; 1993); Constructive Thinking Inventory (CTI) (Epstein, 1992; 1993); Fortitude Questionnaire (FORQ) (Pretorius, 1998); Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffen, 1985); Affectometer 2 (AFM) (Kammann & Flett, 1983); psychological well-being; fortigenic paradigm; General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979).

This current study forms part of a greater project on fortology and psychological well-being (Wissing, 1998). This specific study focuses on the similarities and differences of the measuring instruments (SOC, CTI and FORQ) that propose to measure an individual's psychological well-being. The phenomena of sense of coherence, constructive thinking and fortitude all seem to be related to stress resistance. These constructs were analysed against the background of the fortigenic paradigm. These constructs were also compared to other constructs related to psychological well-being.

Statistical analysis of the measuring instruments extracted a single factor from the SOC, CTI and FORQ, which supports the hypothesis that denotations of these constructs would overlap to some extent on an empirical level. In a factor analysis of the total scores of the measuring instruments of the SOC, CTI and FORQ, together with the total scores of the previously benchmarked indicators of psychological well-being, SWLS and AFM,

and an indicator of pathology, GHQ, a single factor was extracted. This supports the hypothesis that there is a general psychological well-being factor.

The overlap among the constructs of SOC, CTI and FORQ can be explained in terms of the stress buffering effect of all three constructs as described in the literature, and in terms of the cognitive processes involved.

SENSE OF COHERENCE, CONSTRUCTIVE THINKING AND FORTITUDE AS COMPONENTS OF PSYCHOLOGICAL WELL-BEING

This study examines the similarities and differences between the connotations and empirical denotations of “sense of coherence” (Antonovsky, 1979; 1987; 1991; 1992; 1993), “constructive thinking” (Epstein, 1992; 1993) and “fortitude” (Pretorius, 1998) as constructs associated with the description of the nature of psychological well-being. The phenomena implied by these constructs all seem to have (at least theoretically) a stress- buffering effect, according to the above authors. It is, however, not clear whether these constructs overlap on an empirical level, or refer to separate phenomena, and to what degree they may overlap with other indices of general psychological well-being.

The constructs of sense of coherence, constructive thinking and fortitude were developed in the new salutogenic/fortigenic paradigm. Antonovsky (1979) was one of the first authors to distinguish explicitly between a pathogenic and a salutogenic perspective, and to emphasise the importance of a salutogenic perspective (Antonovsky, 1987). Strümpfer (1995) postulates that Antonovsky actually focussed on the origins of strength in general and not only on the physical aspects of health. Strümpfer (1995) called this focus on strength in general *fortigenesis*. Wissing and Van Eeden (1998) suggested, following on from Strümpfer’s ideas, that the term *psychofortology* be used to refer to the new developing sub-discipline in psychology that focuses on psychological strengths.

Although some general models of well being exist (e.g. Adams, Bezner & Steinhardt, 1997; Crose, Nicholas, Gobble & Frank, 1992; Eberst, 1984; Myers, Sweeney & Witmer, 2000; and Witmer & Sweeney, 1992) and a number of specific models of psychological well-being are beginning to emerge (for example, those of Frederickson, 2001;

Lightsey, 1996; Ryff, 1989; Ryff & Keyes, 1995 and Ryff & Singer 1996; 1998), there is currently no generally accepted model of psychological well-being (Wissing & Van Eeden, 2002). Exploration of psychological strengths is beginning to burgeon, as is indicated in the *American Psychologist* (January 2000 and January 2001 editions) and the *Journal of Humanistic Psychology* (2001 winter edition). The importance of a better understanding of the positive aspects of human functioning is stressed by authors in these two journals (for example, Seligman & Csikszentmihalyi, 2000 and Sheldon & King, 2001) and a considerable emphasis is placed on prevention strategies and the enhancement of psychological well-being with the focus on strengths and resistance resources (Black & Krishnakumar, 1998; Catalano, Berglund, Ryan, Lanczak & Hawkins, 2002; Durlak, 1998; Luybomirsky, 2001; Masten, 2001 and Wandersman & Nation, 1998).

Although many new constructs have been developed, all trying to grasp the essence of facets of psychological well-being, little research has so far been done on empirical comparisons of these constructs. Wissing and Van Eeden (2002) compared some of these constructs and found a general psychological well-being factor, in which sense of coherence, satisfaction with life and affect balance played an important role. That study did not include the constructs of constructive thinking or fortitude, and the question remains to what extent some of the denotations of these constructs may overlap with those of sense of coherence, with which they share the connotation of 'stress buffers', and whether they also share variance with satisfaction with life and affect balance, both important constructs in defining general psychological well-being. Wissing (1998) remarks that the constructs of sense of coherence, constructive thinking and fortitude all seem to be important constructs in the understanding of psychological well-being, but that there has been little empirical research on the possible

overlap in the denotations of these constructs, or studies on how these constructs are linked to other constructs such as satisfaction with life, affect balance, or general health.

Antonovsky (1993:725) defines sense of coherence as “a global orientation that expresses the extent to which one has a pervasive enduring though dynamic feeling of confidence that (1) the stimuli deriving from one’s internal and external environment in the course of living is structured, predictable and explicable, (2) the resources are available to meet demands posed by the stimuli and (3) these demands are challenges, worthy of investment and engagement”. According to Antonovsky (1992) sense of coherence is an important determinant of an individual’s position on the illness/health continuum and it facilitates movement toward the healthy side of the continuum. Sense of coherence helps an individual cope with a multitude of stressors.

Sense of coherence is operationalised with the Sense of Coherence Scale (SOC) (Antonovsky, 1987). It measures three components, namely *comprehensibility* (the manner in which internal and external stimuli are perceived as structured and predictable), *manageability* (the perception that resources at an individual’s disposal are sufficient in the management of stress, and that these resources can come from the individual him/herself, family or friends) and *meaningfulness* (the perception that an individual’s life is emotionally meaningful and that problems in life are worth investment of energy needed to cope with them). According to Antonovsky (1987) this scale measures a dispositional and perceptual orientation, and the manner in which an individual perceives his/her world and his/her life in that world. Antonovsky (1979) postulates that there are various psychological, social-structural and cultural-historical resources for the development of a strong sense of coherence, and that these resources work *against* stressors.

The concept of sense of coherence, as conceptualised by Antonovsky (1979; 1987; 1991; 1992, 1993), resonates with the concept of “environmental mastery”, as conceptualised by Ryff (1989); Ryff and Keyes (1995) and Ryff and Singer (1996; 1998), which refers to an individual’s ability to cope with stimuli from both the internal and the external environment, to use resources available to the individual and the person’s ability to see demands as challenges.

The three components of sense of coherence, namely comprehensibility, manageability and meaningfulness may also have an underlying cognitive component. This cognitive component is reflected in various other models of wellness, such as the models of wellness developed by Eberst (1984); Crose, Nicholas, Gobble and Frank (1992); Myers, Sweeney and Witmer (2000) and Witmer and Sweeney (1992). The appraisal of demands not only reflects a cognitive element but also the subjective experience of this demand by the individual concerned. The concept of psychological resources available to an individual, as implied by “manageability” also ties in with the support of family and friends as described in Pretorius’s (1998) conceptualisation of fortitude. Lightsey (1996) also refers to resources in his model of psychological well-being. A high sense of coherence may help an individual to cope with a multitude of stressors in everyday life (Antonovsky, 1991).

Constructive thinking is defined by Epstein (1992:1) as “people’s tendencies to automatically think in ways that are important for solving problems in everyday living at a minimum cost in stress”. The Constructive Thinking Inventory (CTI) of Epstein (1992) operationalises this concept. Epstein (1992) distinguishes between two types of intelligence, namely, *intellective intelligence* (which is measured using IQ-tests and helps with abstract problem-solving) and *experiential intelligence* (which helps an individual to learn from

experience and is involved in practical, social and emotional ways of functioning). Constructive thinking is indicative of an individual's coping ability and, according to Epstein (1993) several studies have shown that constructive thinking correlates well with psychological well-being. According to Epstein (1993) good constructive thinkers tend to view situations less as stressful, and more as a challenge. Good constructive thinkers are therefore able to cope well with stress. A high score on constructive thinking implies flexible thought patterns, which can be adapted to cope with (challenging) situations. Those with high scores are also aware of where their control of the situation ends.

From Epstein's (1992; 1993) conceptualisation of constructive thinking, it is apparent that automatic thought processes can help an individual to cope with the external world as well as with an internal world, which makes its own demands. Such thought patterns influence psychological well-being, as these thought patterns help the person to view situations as challenges. Epstein (1992) distinguishes between two coping mechanisms, namely emotional coping (a coping mechanism that focuses on an individual's intra-psyche world) and behavioural coping (a mechanism that helps an individual to cope with the external environment). Epstein's (1992; 1993) concept of constructive thinking may reflect aspects of the cognitive/mental dimensions, as suggested in the models developed by Eberst (1984); Crose et al. (1992) and of Adams et al. (1997). Aspects of constructive thinking may also overlap theoretically with the comprehensibility aspect of sense of coherence.

Pretorius (1998:31) defines fortitude as "the strength to manage stress and stay well, and this strength derives from an appraisal of the self, the family and support from others". Pretorius (1998) contends that fortitude is the ability to cope, despite all the stress that an individual is exposed to. Fortitude develops through an individual's interaction with,

and experiences in his/her world. From these interactions the individual develops a general view or appraisal of him/her self in his/her world. Appraisals influence individuals' behaviour and emotions in their interaction with their world. Individuals with high levels of fortitude are confident in their ability to manage stress, as fortitude influences the manner in which stress is evaluated and interpreted.

The Fortitude Questionnaire (FORQ) (Pretorius, 1998) that operationalises the construct "fortitude" reflects an evaluative sense of the self, the family situation and support from others. These dimensions influence an individual's emotions and behaviour in everyday life. According to Pretorius (1998) an individual with a high fortitude score tends to see stressors as a challenge. Thus fortitude is an important resource to help an individual to cope with stressors. Pretorius (1998) postulates that individuals with high levels of fortitude also have high levels of life satisfaction, positive affect and subjective well-being.

Fortitude, as conceptualised by Pretorius (1998), seems to have a strong social support component, but also a cognitive element in so far as the focus is on appraisal as an effective coping mechanism when dealing with stress. The experience or perception of social support is associated with psychological well-being in the models of Eberst (1984) and Adams et al. (1997); and is reflected in the life task of friendship as described by Witmer and Sweeney (1992); social health and well-being as conceptualised by Crose et al. (1992) and positive relations with others as hypothesised by Ryff (1989). Fortitude also ties in with the manageability aspect of sense of coherence, in so far as help from others may enhance an individual's sense of the manageability of his/her world. As with sense of coherence and constructive thinking, high levels of fortitude seem to help an individual to deal with stress.

From the above it can be concluded that sense of coherence is more of an orientation to life, that constructive thinking has a strong cognitive component, and that fortitude has a strong social support dimension. Despite these apparent differences, all three constructs imply that people use resources to help them to cope effectively with stress or problems. From the literature it is further clear that effective stress management is important for psychological well-being.

According to Wissing and Van Eeden (2002), operationalisations of the constructs “satisfaction with life” and “affect balance” together with an index of “sense of coherence” are good indicators of general psychological well-being. These instruments are also included in the current study as previously benchmarked indicators of psychological well-being. Satisfaction with life is defined as a global assessment of an individual’s quality of life, according to the individual’s own criteria (Diener, Emmons, Larsen & Griffen, 1985). Affect balance refers to an individual’s general level of happiness and contentment (Kammann & Flett, 1983) and focuses on the balance between positive and negative emotions associated with recent events. In order to support the validity of “psychological well-being” as a factor in measurement, the contrasting construct of psychopathology (as in Wissing & Van Eeden, 2002) was also included in the current study, as operationalised by the General Health Questionnaire of Goldberg and Hillier (1979).

The aims of the current study were to determine whether sense of coherence, constructive thinking and fortitude refer to the same or different phenomena, and whether their operationalisations overlap with other indices of general psychological well-being. Findings from this study can enhance psychologists’ understanding of the nature of

psychological well-being and provide pointers for the enhancement of psychological well-being on a practical level.

METHOD

Design

An ex post facto cross-sectional design was implemented.

Participants

The sample consisted of 384 subjects, 257 young adults/students (undergraduates and postgraduate from PUforCHE) and 127 adults from Gauteng, the North-West Province and the Freestate accumulated using the snowball method of participant selection. The sample included young (18-28 years, n=257), middle (26-40 years, n=67), middle older (41-50 years, n=35) and older (50-65 years, n=23) respondents. Five respondents did not answer the question on age. The sample included men (n=92) and women (n=288), and four respondents did not respond to the gender question.

Measuring Instruments

Sense of Coherence (SOC) (Antonovsky, 1987; 1993) The SOC (a 29-item self-report questionnaire) evaluates an individual's sense of coherence on a qualitative level, and the three components of comprehensibility, manageability and meaningfulness are included in the questionnaire. It measures an individual's way of experiencing the world and his/her life in it. Higher scores are indicative of a strong sense of coherence. Antonovsky (1993) has demonstrated that the SOC manifests internal reliability indices of 0.78 to 0.93, as reported in 26 different studies, with test-retest reliability indices of 0.56 to 0.96. Antonovsky (1993) also reports good content and criterion validity. Other authors report internal reliability indices of 0.83 to 0.89 (Korotkov, 1994; Cohen, 1997 and Kravetz, Drory & Florian, 1993).

Wissing and Du Toit (1994), Wissing and Van Eeden (1998) and Wissing, Thekiso, Stapelberg, Van Quickelberge, Choabi, Moroeng and Nienaber (1999) report reliability indices in South African populations of 0.70 to 0.91.

Shortened Version of the Constructive Thinking Inventory (CTI) (Epstein, 1992) The total CTI consists of 108 items and the questionnaire assesses an individual's experiential intelligence by measuring automatic constructive/destructive thought patterns and the interpretation of everyday events. In the current study, two subscales were used, namely Behavioural Coping (CTI-BC) and Emotional Coping (CTI-EC), together with the Global Constructive Thinking Index (CTI-GCT) consisting of a total of 46 items. Epstein (1993) reports alpha Cronbach coefficients on these scales of 0.83 to 0.92. In a South African study, Wissing and Du Toit (1994) report alpha Cronbach coefficients of 0.82 to 0.91.

Fortitude Questionnaire (FORQ) (Pretorius, 1998) The FORQ attempts to assess an individual's ability to manage stress and stay psychologically healthy. This ability stems from the individual's perception of the self (subscale FORQ-S), the perceived support of his/her family (subscale FORQ-F) and support from others (subscale FORQ-SP). The FORQ is a self-report questionnaire consisting of 20 items. Pretorius (1998) reports alpha Cronbach coefficients that range from 0.74 to 0.85.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larson & Griffen, 1985; Pavot & Diener, 1993) The SWLS (a 5-item scale) measures a person's assessment of his/her quality of life according to his/her own criteria. The degree of life satisfaction is measured on a cognitive-judgmental level. Diener et al. (1985) reports an alpha- reliability index of 0.87 and a two-month test-retest reliability index of 0.82. Pavot and Diener (1993) also attest to the good psychometric characteristics of the scale. Wissing and Du Toit (1994), Wissing and Van

Eeden (1994, 2002) and Wissing et al. (1999) also found the SWLS reliable and valid for use in a South African context, with reliability indices of 0.67 to 0.85.

Short Form of the Affectometer 2 (AFM) (Kammann & Flett, 1983) The shortened AFM consists of 20 items and measures general happiness or sense of well-being. It is a bottom line indication of quality of life as experienced on an affective or emotional level. The overall level of well-being is conceptualised as the extent to which positive feelings (subscale AFM-PA) predominate over negative feelings (subscale AFM-NA). Kammann and Flett (1983) report alpha-reliability indices of 0.88 to 0.93, and indications of validity. Wissing and Van Eeden (1994; 2002) and Wissing et al. (1999) indicate the validity of this scale for use in a South African group with alpha-reliabilities of 0.68 to 0.90.

General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979 and Goldberg, Gater, Sartorius, Usten, Piccinelli, Gureje & Rutter, 1997) The GHQ (a 28-item version) is aimed at detecting common symptoms encountered in various syndromes of mental disorders and thus differentiates between individuals with psychopathology as a general class from those who are considered normal. A total score is obtained, as well as subscale scores for Somatic Symptoms (GHQ-SS), Anxiety and Insomnia (GHQ-AS), Social Dysfunction (GHQ-SD), and Severe Depression (GHQ-DS). Goldberg and Hillier (1979) and Goldberg et al. (1997) report internal consistency coefficients of 0.69 to 0.94. Wissing and Van Eeden (1994; 2002) and Wissing et al. (1999) report alpha reliability indices of 0.86 to 0.91 for South African samples.

Procedure

The questionnaires formed part of a greater research project into the nature of psychological well-being (Wissing, 1998). All questionnaires were bound in a booklet format and completed after participants had been invited to complete questionnaires and informed consent had been

obtained from each respondent. Feedback on the results was given to participants who requested it. After the responses of participants to the questionnaires had been recorded on computer and controlled, the questionnaires were scored with the assistance of specifically written computer programmes.

Statistical Analysis

Descriptive statistics and Cronbach alpha reliability indices were computed for each scale and/or subscale. Using the Sepath Option of Statistica, construct validity was determined by first order factor analysis on the three main scales (SOC, CTI and FORQ). Second order factor analysis was performed on the data acquired from the SOC, the CTI and the FORQ to determine the degree of overlap between the main scales. Second order factor analysis was also performed on the data from the SOC, CTI, FORQ, SWLS, AFM and GHQ to determine the degree of overlap between the scales that form the focus of the current study and other measurements of psychological well-being, as well as a measuring instrument of pathology.

RESULTS

Descriptive Statistics and Reliability Indices

The means, standard deviations, range of scores and the Cronbach alpha reliability indices for all the measuring instruments are presented in Table 1.

[Table 1]

Reliability indices are acceptable for all these measuring instruments. The reliability indices obtained in this study are similar to those reported in the literature using comparable groups. The present study found that the means and standard deviations are similar to those reported in the literature.

Construct Validity of the Scales

The construct validity of the scales used was explored with the aid of the confirmatory factor analysis option of structural equation modelling, using the Sepath Option of Statistica. The construct validity of the SOC was confirmed by a Steiger-Lind RMSEA Index of .091 (indices below .10 are acceptable), with a confidence interval of .086 - .095. This indicates a good fit with the underlying model, in that all items load on one factor, as described by Antonovsky (1993). The construct validity of the CTI was confirmed by a Steiger-Lind RMSEA Index of .077, with a confidence interval of .073 - .080. This is an acceptable fit of the hypothesised model with the data. The FORQ's construct validity was confirmed by a Steiger-Lind RMSEA Index of .076, with a confidence interval of .069 - .083. This is also an acceptable fit with the underlying model of fortitude, as described by Pretorius (1998). It can be concluded that all three scales (the SOC, the CTI and the FORQ) are valid for use in this particular study. The construct validity of the other scales had previously been demonstrated for use with South African groups by Wissing and Van Eeden, (2002).

Second Order Exploratory Factor Analyses

A second order exploratory factor analysis was conducted on the total scores as well as the subscale scores of the main measuring instruments (the SOC, the CTI and the FORQ), as well as on the total scores and subscale scores of all instruments (including the AFM, the SWLS and the GHQ) in order to determine the degree of overlap between the measuring instruments of the main constructs and previously determined indicators of psychological well-being.

Sense of Coherence, Constructive Thinking and Fortitude: Total Scores

An exploratory principal component second order factor analysis utilising the three main measuring instruments, namely the SOC, the CTI-GCT and the FORQ-T, extracted a single

factor, with all items loading highly significantly on this factor (eigenvalue = 2.18), explaining 72.70% of the total variance. This finding is in line with the hypothesis that there would be a degree of overlap between the phenomena measured by the SOC, the CTI and the FORQ. Loadings on the identified factor were SOC = 0.56, CTI-GCT = 0.52 and FORQ = 0.33. This factor can be described as general psychological well-being that aids individuals in coping with stressors.

Sense of Coherence, Constructive Thinking and Fortitude: with relevant subscales

A second order exploratory principal components factor analysis with varimax rotation including the subscales, where relevant (namely the SOC, the CTI-EC, the CTI-BC, the FORQ-S, the FORQ-SP and the FORQ-F) was conducted, and two factors were extracted. Factor 1 manifests an eigenvalue of 3.35 and explains 55.78% of the total variance. Factor 2 manifests an eigenvalue of 1.03 and explains 17.10% of the total variance. Factor 1 reflects more intra-psychological facets, as indicated by the high loading of the SOC, the CTI-EC (emotional coping) and the FORQ-S (appraisal of the self). Factor 2 reflects more interpersonal aspects, as indicated by a higher loading of the FORQ-SP (perceived support from others) and the FORQ-F (perceived support from the family). These two factors reflect psychological well-being in terms of intrapersonal functioning and interpersonal functioning. These results support the hypothesis that the main constructs, as operationalised in this study, show a degree of overlap on an empirical level.

From the two factors extracted it would seem that psychological well-being can be conceptualised in terms of an individual's intrapersonal abilities of making sense of his/her world and his/her place within that world. The way an individual thinks about his/her world influences the meaning and perception of that world. The second factor reflects

psychological well-being in terms of interpersonal or social functioning, and individuals' perceived support from significant others. Support from significant others play (in this study) a lesser role in an individual's psychological well-being than the intra-psychic factors, but are nevertheless important. It would seem that people need other people in order to function optimally.

Factor Analysis on all Measures Using Total Scores

The result of the second order exploratory principal components factor analysis utilising the total scores of the SOC, the CTI-GCT, the FORQ-T, the AFM-PNB, the SWLS and the GHQ-T are set out in Table 2.

[Table 2]

A single factor was extracted with an eigenvalue of 3.95, and it explained 65.85% of the total variance. The GHQ-T displayed a negative loading of -0.72 on this factor. This supports the hypothesis that the SOC, the CTI, the FORQ, the SWLS and the AFM would overlap, and that these instruments would have a negative correlation with the GHQ. General psychological well-being is thus characterised by the absence of serious pathology.

Factor Analysis on all Measures using Subscale Scores

A second order exploratory principal components factor analysis with varimax rotation on the subscale scores (where applicable) of all the measuring instruments extracted three factors (see Table 3). Factor 1 manifested an eigenvalue of 6.36 and explained 48.95% of the total variance. The subscales that loaded the highest on this factor were the CTI-EC, the CTI-BC, the SOC, the FORQ-S, the AFM-PA and the SWLS. The AFM-NA had a high negative loading on Factor 1. This factor seems to focus on intrapersonal factors as operationalised

by the current measuring instruments of psychological well-being. These results confirm previous indications of a general psychological well-being factor (Wissing & Van Eeden, 1994; 2002), but also broaden the description of psychological well-being by indicating that constructive thinking (as defined by emotional coping and behavioural coping) and fortitude (perception of the self [FORQ-S]) also contribute to this factor. The high negative loading of the AFM-NA seems to confirm the absence of negative feelings where psychological well-being is high. The overlap between components of sense of coherence, constructive thinking, fortitude, satisfaction with life and affect balance is thus confirmed.

[Table 3]

Factor 2 has an eigenvalue of 1.41, and explained 10.85% of the total variance. The subscales that loaded the highest on this factor were the GHQ-SS (somatic symptoms), the GHQ-AS (anxiety and insomnia), the GHQ-SD (social dysfunction) and the GHQ-DS (symptoms of severe depression). Thus this factor reflects psychopathology, which is theoretically low or absent in an individual with high psychological well-being.

Factor 3 had an eigenvalue of 1.00 and explained 7.71% of the total variance. The subscales that loaded the highest on this factor were the FORQ-SP (perceived support from others) and the FORQ-F (perceived support from family). This factor reflects the interpersonal component of psychological well-being.

DISCUSSION

The main findings of the current study are that the constructs of “sense of coherence”, “constructive thinking” and “fortitude” overlap to a great extent in their empirical denotations, and that these constructs also overlap to a great extent with “affect balance” and

“satisfaction with life” the previously benchmarked indicators of general psychological well-being.

The nature of the overlap between the constructs of “sense of coherence”, “constructive thinking” and “fortitude” is related to the generic construct of stress resistance or stress buffering that forms part of the definition or description of each of these constructs. The overlap is more profound than just a stress buffering effect, however. The overlap seems to relate to the experience by an individual of his/her quality of life in terms of life satisfaction, the experience of meaningfulness and the experience of relatedness.

The mechanisms that seems to underlie the overlap could be cognitive judgmental processes, as seen in the *comprehensibility* aspect of the sense of coherence, constructive *thinking* and the *appraisal* aspect of fortitude, or as in coping mechanisms that utilise the aforementioned cognitive judgmental processes. Another mechanism that could be a possible explanation for the overlap, is an “optimistic explanatory style” (in other words perceiving negative events as having external causes, and being situation specific, whereas positive events are viewed as having internal causes and as typical), as described by Seligman, (1998; 2002). This “optimistic explanatory style” again refers to a cognitive process, or way in which an individual views his/her world. Such cognitive processes may also influence the immune system (Taylor, Kemeny, Reed, Bower & Gruenewald, 2000) and thus help to protect the person against the negative effects of stress. It would seem that the mechanisms that underlie the overlap of the constructs sense of coherence, constructive thinking and fortitude all have cognitive processes as a basis.

The constructs used in this study (sense of coherence, constructive thinking and fortitude) overlap with the previously benchmarked indices of a general psychological

wellbeing factor (satisfaction with life and affect balance), as was seen with the extraction of a single factor, utilising the total scale scores.

Psychological well-being seems to be a complex phenomenon that includes facets such as experiencing meaningfulness in life, the manageability of situations, a positive view of self, experiencing support from others, constructive automatic positive ways of thinking, general satisfaction with life, and more positive than negative feelings.

Waterman (1993 in Ryan & Deci, 2001) distinguishes between two broad perspectives on psychological well-being (founded on two distinct views of human nature), namely an hedonic view (which focuses on happiness, as indicated by more positive affect and life satisfaction), and an eudaimonic view (that focuses on the experience of meaningfulness and self-actualisation). Operationalisations from both points of view were included in the current study for example satisfaction with life (Diener, et al. 1985) which represents the hedonic point of view and the construct sense of coherence (Antonovsky, 1987) which represents the eudaimonic point of view. The current findings indicate that conceptualisations of psychological well-being from the hedonic and eudaimonic perspectives actually overlap on an empirical data level.

The results of this study have implications for theories of psychological well-being. As more information on the nature and origin of psychological well-being begins to surface, a more comprehensive theory can be formed. The current study seems to confirm the existence of a general psychological well-being factor as hypothesised by Wissing and Van Eeden (2002). The nature of this factor is further clarified by the unique qualities of constructive thinking and fortitude that have now been added to the model. Further studies on psychological well-being can take these findings into account.

On a practical level, the utilisation of information on psychological well-being can enhance the effect of therapy processes, and contribute to a better quality of life for people as is also indicated from the perspective of positive psychology (Seligman, 2002). Findings from the current study point to the importance of positive cognitive appraisal processes as psychological strengths. This reminds of the strengths clustered in the “wisdom” category of the virtue-in-action classification system of psychological strengths, that has been developed (Peterson & Seligman, 2002). The current study also suggest that preventive programmes can benefit from the inclusion of training in an optimistic explanatory style, and skills to solicit, maintain and give social support. A positive view of life and meaningful, supportive interpersonal relationships may help to buffer stress and / or move an individual to the more healthy side of the ease-disease continuum.

REFERENCES

- Adams, T., Bezner, J. & Steinhardt, M. (1997). The Conceptualisation and Measurement Perceived Wellness: Integrating Balance Across and Within Dimensions. American Journal of Health Promotion, 11(3), 208-218.
- Antonovsky, A. (1979). Health, Stress and Coping. San Francisco: Jossey-Bass.
- Antonovsky, A. (1987). Unravelling the Mystery of Health. How People Manage Stress And Stay Well. California: Jossey-Bass.
- Antonovsky, A. (1991). The Structural Sources of Salutogenic Strengths. In Cooper, C.L. & Payne, R. (Eds). Personality and Stress: Individual Differences in The Stress Process. New York: Wiley.
- Antonovsky, A. (1992). Complexity, Conflict, Chaos, Coherence, Coercion and Civility. Opening Address to 12th International Conference on Social Science and Medicine, Peebles, Scotland, 14-18 September.
- Antonovsky, A. (1993). The Structure and Properties of the Sense of Coherence Scale. Social Science and Medicine, 36(6), 725-733.
- Black, M.M. & Krishnakumar, A. (1998). Children in Low-income, Urban Settings. Interventions to Promote Mental Health and Well-being. American Psychologist, 53(6), 635-646.
- Catalano, R.F., Berglund, M.L., Ryan, J.A.M., Lanczak, H.S. & Hawkins, J.D. (2002). Positive Youth Development in the United States: Research Findings on Evaluations Of Positive Youth Development Programs. Prevention and Treatment, 5, Article 15, Posted on the Internet, June 24, 2002. APA. File: //A:\pre0050015a.htm.
- Cohen, O. (1997). On the Origins of Sense of Coherence: Sociodemographic

- Characteristics, or Narcissism as a Personality Trait. Social Behaviour and Personality, (25) 1, 49-58.
- Croese, R., Nicholas, D.R., Gobble, D.C. & Frank, B. (1992). Gender and Wellness: A Multidimensional Systems Model for Counselling. Journal of Counselling And Development, 71, 149-156.
- Diener, E., Emmons, R.A., Larsen, R.J. & Griffen, S. (1985a). The Satisfaction with Life Scale. Journal of Personality Assessment, 49(1), 71-75.
- Diener, E., Larsen, R.J., Levine, S. & Emmons, R.A. (1985b). Intensity and Frequency: Dimensions of underlying positive and negative affect. Journal of Personality and Social Psychology, 48(5), 1253-1265.
- Durlak, J.A. (1998). Common Risk and Protection Factors in Successful Prevention Programs. American Journal of Orthopsychiatry, 68(4), 512-520.
- Eberst, R.M. (1984). Defining Health: A Multidimensional Model. Journal of School Health, 54(3), 99-104.
- Epstein, S. (1992). Constructive Thinking and Mental and Physical Well-being. In: Life Crises and Experiences of Loss in Adulthood. Hillsdale, New Jersey: LEA Publishers.
- Epstein, S. (1993). Manual for the Constructive Thinking Inventory. University of Massachusetts at Amherst.
- Frederickson, B.L. (2001). The Role of Positive Emotions in Positive Psychology : The Broaden and Build Theory of Positive Emotion. American Psychologist, 56(3), 218-226.
- Goldberg, D.P. & Hillier, V.F. (1979). A scaled version of the General Health Questionnaire. Psychological Medicine, 9, 139-145.

- Goldberg, D.P., Gater, R., Sartorius, N., Usten, T.B., Piccinelli, M., Gureje, O. & Rutter, C. (1997). The Validity of Two Versions of the GHQ in the WHO Study of Mental Illness in General Health Care. Psychological Medicine, 27, 191-197.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A Scale to Measure Current Levels of General Happiness. Austrian Journal of Psychology, 35(2), 259-265.
- Korotkov, D.L. & Hannah, T.E. (1994). Extraversion and Emotionality as Proposed Superordinate Stress Moderators: A Prospective Analysis. Personality and Individual Differences, 16(5), 787-792.
- Kravetz, S., Drory, Y. & Florian, V. (1993). Hardiness and Sense of Coherence and their Relation to Negative Affect. European Journal of Personality, 7, 233-244.
- Lightsey, O.R. (JR). (1996). What leads to Wellness? The Role of Psychological Resources in Well-being. The Counselling Psychologist, 24(4), 589-735.
- Lyubomirsky, S. (2001). Why are Some People Happier than Others? The Role of Cognitive and Motivational Processes in Well-being. American Psychologist, 56(3), 239-249.
- Masten, A.S. (2001). Ordinary Magic. Resilience Processes in Development. American Psychologist, 56(3), 227-238.
- Myers, J.E., Sweeney, T.J. & Witmer, J.M. (2000). The Wheel of Wellness Counselling For Wellness: A Holistic Model for Treatment Planning. Journal of Counselling and Development, 78, 251-266.
- Pavot, W. & Diener, E. (1993). Review of the Satisfaction of Life Scale. Psychological Assessment, 5(2), 164-172.

- Peterson, C. & Seligman, M.E.P. (2002). VIA Inventory of Strengths (VIA-IS).
<http://www.psych.upenn.edu/seligman/viastrengthsinventory.htm> (assessed on 22/08/02)
- Pretorius, T.B. (1998). Fortitude as Stress-resistance: Development and Validation of the Fortitude Questionnaire (FORQ). Belville: University of the Western Cape.
- Ryan, R.M. & Deci, E.L. (2001). On Happiness and Human Potentials: A Review of Research on Hedonic and Eudaimonic Well-being. Annual Review of Psychology, 52, 141-166.
- Ryff, C.D. (1989). Happiness Is Everything, or Is It? Explorations on the Meaning of Psychological Well-being. Journal of Personality and Social Psychology, 57(6), 1069-1081.
- Ryff, C.D. & Keyes, C.L.M. (1995). The Structure of Psychological Well-being Revisited. Journal of Personality and Social Psychology, 69(4), 719-727.
- Ryff, C.D. & Singer, B. (1996). Psychological Well-being: Meaning, Measurement and Implications for Psychotherapy Research. Psychotherapy and Psycho-Somatics, 65, 14-23.
- Ryff, C.D. & Singer, B. (1998). The Contours of Positive Human Health. Psychological Inquiry, 9(1), 1-28.
- Seligman, M.E.P. & Csikszentmihalyi, M. (2000). Positive Psychology. An Introduction. American Psychologist, 55(1), 5-14.
- Seligman, M.E.P. (1998). *Learned Optimism: How to Change Your Mind and Life*. (2nd Ed.). New York : Pocket Books.
- Seligman, M.E.P. (2002). Positive Psychology, Positive Prevention and Positive Therapy. In: C.R. Snyder & S. Lopez (Eds). Handbook of Positive Psychology.

- Sheldon, K.M. & King, L. (2001). Why Positive Psychology is Necessary. American Psychologist, 56(3), 216-217.
- Strümpfer, D.J.W. (1995). The Origins of Health and Strength: from 'Salutogenesis' to 'fortigenesis'. South African Journal of Psychology, 25, 81-89.
- Taylor, S.E., Kemeny, M.E., Reed, G.M., Bower, J.E. & Gruenewald, T.L. (2000). Psychological Resources, Positive Illusions and Health. American Psychologist, 55, 99-109.
- Wandersman, A. & Nation, M. (1998). Urban neighbourhoods and Mental Health. Psychological Contributions to Understanding Toxicity, Resilience and Interventions. American Psychologist, 53(6), 647-656.
- Wissing, M.P. (1998). A Trans-University Research Programme on Fortology: Clarification and Advancement of Psychosocial Well-being. Unpublished Research Proposal: PUforCHE.
- Wissing, M.P. & Du Toit, M.M. (1994). Relations of NEO-PI-R Dimensions (NEO-FFI) To Sense of Coherence (SOC) and Other Measures of Psychological Well-Being. 23rd International Congress of Applied Psychology. July 7-22, Madrid, Spain.
- Wissing, M.P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C. & Nienaber, A.W. (1999). The Psychometric Properties of Scales Measuring Psychological Well-being in an African group. Paper presented at the International Psychology Congress, July 18-23, Durban, South Africa.
- Wissing, M.P. & Van Eeden, C. (1994). Psychological Well-being: Measurement and

Construct Clarification. 23rd International Congress of Applied
Psychology. July 17-22, Madrid, Spain.

Wissing, M.P. & Van Eeden, C. (1998). Psychological Well-being: A Fortigenic
Conceptualisation and Empirical Clarification. In: Schlebusch, L. (Ed).
South Africa Beyond Transition. Proceedings of the 3rd Annual Congress
Of the Psychological Society of South Africa, 10-12 September 1997,
Durban, South Africa.

Wissing, M.P. & Van Eeden, C. (2002). Empirical Clarification of the Nature of
Psychological Well-being. South African Journal of Psychology, 32(1), 32-44.

Witmer, J.M. & Sweeney, T.J. (1992). A Holistic Model for Wellness and Prevention
Over the Life Span. Journal of Counselling and Development, 79, 140-148.

Table 1: Descriptive statistics and reliability indices for all scales (N=384)

Subscale	Mean	Standard Deviation	Range		Cronbach alpha
			Min	Max	
GHQ-SS	1.52	1.86	0.00	7.00	.78
GHQ-AS	1.62	2.02	0.00	7.00	.82
GHQ-SD	1.12	1.65	0.00	7.00	.77
GHQ-DS	.84	1.65	0.00	7.00	.85
GHT-T	5.09	5.80	0.00	27.00	.82
CTI-GCT	99.40	16.62	40.00	142.00	.91
CTI-EC	80.20	16.99	30.00	120.00	.93
CTI-BC	54.16	7.33	28.00	70.00	.83
SOC	137.52	22.06	54.00	195.00	.88
FORQ-S	20.48	3.68	10.00	28.00	.80
FORQ-SP	18.01	3.77	6.00	24.00	.85
FORQ-F	19.94	4.89	7.00	28.00	.87
FORQ-T	58.43	9.46	28.00	80.00	.88
AFM-PA	37.59	5.73	18.00	50.00	.83
AFM-NA	20.76	6.71	10.00	48.00	.84
AFM-PNB	16.82	11.09	-23.00	40.00	-
SWLS	24.85	5.89	5.00	35.00	.84

NB: (-) The cronbach alpha of the AFM-PNB cannot be calculated, as that value is the sum of PA and NA. GHQ-SS = General Health Questionnaire – Somatic Symptoms, GHQ-AS = General Health Questionnaire – Anxiety and Sleeplessness, GHQ-SD = General Health Questionnaire – Social Dysfunction, GHQ-DS = General Health Questionnaire – Symptoms of Severe Depression, GHQ-T = General Health Questionnaire – Total Score, CTI-GCT = Constructive Thinking Index – Global Constructive Thinking, CTI-BC = Constructive Thinking Index – Behavioural Coping, CTI-EC = Constructive Thinking Index – Emotional Coping, SOC = Sense of Coherence, FORQ-S = Fortitude Questionnaire – Perception of Self, FORQ-SP = Fortitude Questionnaire – Perceived Support from Others, FORQ-F = Fortitude Questionnaire – Perceived Family Support, FORQ-T = Fortitude Questionnaire – Total

Score, AFM-PA = Affectometer –Positive Affect, AFM-NA = Affectometer – Negative Affect, AFM-PNB = Affectometer – Positive-Negative Affect Balance, SWLS = Satisfaction with Life Scale.

Table 2: Second order factor analysis on the total scores of all measuring instruments.

(N=384)

Scale	Factor
GHT – T	-.72
CTI – GCT	.82
SOC	.87
FORQ – T	.74
AFM – PNB	.90
SWLS	.81
Eigenvalue	3.95
% Variance Explained	65.85

NB: GHT – T = General Health Questionnaire – Total Score, CTI – GCT = Constructive Thinking Index – Global Constructive Thinking, SOC = Sense of Coherence, FORQ – T = Fortitude Questionnaire – Total Score, AFM – PNB = Affectometer – Positive-Negative Affect Balance, SWLS = Satisfaction with Life Scale.

Table 3: Second order factor analysis on the scales and subscales of all measuring instruments.

(N=384).

(Sub)scale	Factor 1	Factor 2	Factor 3	Communalities
GHQ – SS	-.18	-.79	-.05	.67
GHQ – AS	-.30	-.81	-.10	.75
GHQ – SD	-.21	-.74	-.14	.61
GHQ – DS	-.34	-.67	-.13	.59
CTI – EC	.80	.30	-.03	.73
CTI – BC	.80	.17	.02	.67
SOC	.76	.33	.20	.73
FORQ – S	.78	.17	.26	.71
FORQ – SP	.37	.02	.71	.64
FORQ – F	.06	.15	.82	.70
AFM – PA	.70	.19	.42	.71
AFM – NA	-.69	-.37	-.23	.66
SWLS	.64	.25	.38	.61
Eigenvalue	6.36	1.41	1.00	
% Variance	48.95	10.85	7.71	
Explained				

NB: GHQ – SS = General Health Questionnaire – Somatic Symptoms, GHQ - AS = General Health Questionnaire – Anxiety and Sleeplessness, GHQ - SD = General Health Questionnaire – Social Dysfunction, GHQ-DS = General Health Questionnaire – Symptoms of Severe Depression, CTI-BC = Constructive Thinking Index – Behavioural Coping, CTI-EC = Constructive Thinking Index – Emotional Coping, SOC = Sense of Coherence, FORQ-S = Fortitude Questionnaire – Perception of Self, FORQ-SP = Fortitude Questionnaire – Perceived Support from Others, FORQ-F = Fortitude Questionnaire – Perceived Family Support, AFM-PA = Affectometer –Positive Affect, AFM-NA = Affectometer – Negative Affect, SWLS = Satisfaction with Life Scale.