

**VALIDATION OF A SCALE TO MEASURE PSYCHOSOCIAL WELL-BEING
IN AN AFRICAN CONTEXT**

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**Mini-dissertation (article format) submitted in partial fulfilment of the
requirements for the degree Master of Science in Clinical Psychology at the North-
West University (Potchefstroom Campus)**

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1. ACKNOWLEDGEMENTS

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Doctors Michael Temane and Johan Potgieter, my co-supervisors, for valuable input, stimulation of critical thinking and well-timed motivation. Without your help, this would not have been possible.

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The National Research Foundation for financial assistance. Conclusions reached are those of the authors and should not be ascribed to the NRF.

Mr. Johan Blaauw for language editing.

Willem, my husband, who was forced to read my article numerous times, for constant motivation, love and patience. I am truly blessed and grateful to have you in my life and do not have the words to thank you enough.

To my parents, Herrie and Jacoba, my brothers and sisters Bertus, Susan, Bennie, Nicola, Annerie, De Wet, Herrie and Elize, my nephews and nieces Jonette, Stephanie, Hein, Herrie and Christiaan and my family-in-law for constant support and encouragement. I thank my mom and dad for always believing in me, for the examples they set and the

manner in which they raised me – if I could choose my parents, I would choose you again with a smile! I also thank Bertus for language editing and input in one of the final drafts.

Friends who supported me throughout my studies.

God in heaven.

2. SOLEMN DECLARATION



NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT


Academic Administration (Potchefstroom Campus)

SOLEMN DECLARATION

1 Solemn declaration by student

I Snette G. van Rooy declare herewith that the mini-dissertation/dissertation/thesis entitled, Validation of a scale to measure psychosocial well-being in an African context. which I herewith submit to the North-West University as completion/partial completion of the requirements set for the Masters degree, is my own work and has not already been submitted to any other university.

I understand and accept that the copies that are submitted for examination are the property of the University.

Signature of candidate  University-number 10520519

Signed at Durban this 6th day of April 2008.

Declared before me on this 6 day of APRIL 2007

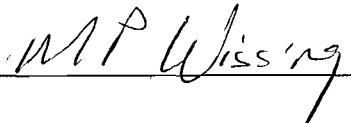
Commissioner of Oaths:

J. J. D. M. BOOYSEN PRACTISING ATTORNEY
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2 Declaration by supervisor/promotor

The undersigned declares:

- 2.1 that the candidate attended an approved module of study for the relevant qualification and that the work for the course has been completed or that work approved by the Senate has been done
- 2.2 the candidate is hereby granted permission to submit his/her mini-dissertation/dissertation or thesis
- 2.3 that registration/change of the title has been approved;
- 2.4 that the appointment/change of examiners has been finalised and
- 2.5 that all the procedures have been followed according to the Manual for post graduate studies.

Signature of Supervisor:  Date: 24/01/08

3. SUMMARY

VALIDATION OF A SCALE TO MEASURE PSYCHOSOCIAL WELL-BEING IN AN AFRICAN CONTEXT

Keywords: African; collectivism; Mental Health Continuum – Short Form; psychometric properties; psychosocial well-being; reliability; validity.

The aim of this study was to determine the psychometric properties of the Mental Health Continuum – Short Form (MHC-SF) (Keyes, 2006a) in an African context. This 14-item self-report questionnaire that measures mental health was developed in a Western individualistic context, which differs from the more collectivistic African cultural context in South Africa. The MHC-SF consists of three subscales, namely Emotional well-being, Social well-being and Psychological/personal well-being. Participants (N=1050) from urban (n=451) and rural (n=599) settlements completed the MHC-SF and other measures indicating positive and negative facets of psychosocial functioning in a one-shot cross-sectional survey design with the aid of 16 trained fieldworkers. Scales included to determine concurrent/criterion-related validity were the Affectometer 2 (short version) (AFM) (Kammann & Flett, 1983), the Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985), the Community Collective Efficacy Scale (revised) (CCES) (Carrol, Rosson & Zhou, 2005), the Generalized Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1993), the New General Self-Efficacy Scale (NGSE) (Chen, Gully & Eden, 2000), the Sense of Coherence Scale (SOC-29) (Antonovsky, 1987, 1993) and the General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979). Results indicated a Cronbach alpha reliability coefficient of 0,75 for the total MHC-SF and acceptable inter-item and item-total correlations for the items. Item 4 had an eta-squared value indicating a large effect size, and thus had a negative impact on reliability. Mean inter-item correlations ranged between 0,19 and 0,30 and item-total correlations between 0,13 and 0,51. Concurrent/criterion-related validity was satisfactory. Confirmatory factor analysis yielded three factors. A three-factor model, omitting item 4, had the best fit in structural equation modelling. Six percent of the participants were languishing,

73% were moderately mentally healthy and 21% were flourishing. More participants from the urban settlement flourish than from the rural settlement. It was concluded that the MHC-SF is reliable and valid for further use in research in an African context.

4. OPSOMMING

VALIDERING VAN 'N SKAAL WAT PSIGOSOSIALE WELSYN IN 'N AFRIKA-KONTEKS MEET

Sleutelwoorde: Afrika; kollektiwisme; Mental Health Continuum – Short Form; psigometriese eienskappe; psigososiale welsyn; betroubaarheid; geldigheid.

Die doel van hierdie studie was om die psigometriese eienskappe van die Mental Health Continuum – Short Form (MHC-SF) (Keyes, 2006a) in 'n Afrika-konteks te bepaal. Hierdie 14-item-self-rapporteringsvraelys wat geestesgesondheid meet is ontwikkel in 'n Westerse individualistiese konteks, wat verskil van die meer kollektiwistiese Afrika-kultuurkonteks in Suid-Afrika. Die MHC-SF bestaan uit drie subskale, naamlik Emosionele welstand, Sosiale welstand en Psigologiese/persoonlike welstand. Deelnemers (N=1050) van stedelike (n=451) en plattelandse (n=599) gebiede het die MHC-SF en ander skale vir die bepaling van positiewe en negatiewe fasette van psigososiale funksionering voltooi in 'n eenmalige dwarsdeursnee-opnameontwerp met die hulp van 16 veldwerkers. Skale wat ingesluit is om samevallende/kriteriumverwante geldigheid te bepaal, was die Affectometer 2 (kort weergawe) (AFM) (Kammann & Flett, 1983), die Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985), die Community Collective Efficacy Scale (hersien) (CCES) (Carrol, Rosson & Zhou, 2005), die Generalized Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1993), die New General Self-Efficacy Scale (NGSE) (Chen, Gully & Eden, 2000), die Sense of Coherence Scale (SOC-29) (Antonovsky, 1987, 1993) en die General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979). Resultate dui op 'n Cronbach-alpha-betroubaarheidskoëffisiënt van 0,75 vir die totale skaal en aanvaarbare inter-item en item-totaal korrelasies vir die items. Item 4 het 'n eta-kwadraatwaarde wat 'n groot effekgrootte aantoon en het dus 'n negatiewe impak op betroubaarheid. Gemiddelde interitem-korrelasies het tussen 0,19 en 0,30 gewissel en itemtotaal-korrelasies tussen 0,13 en 0,51. Samevallende/kriteriumverwante geldigheid was bevredigend. Bevestigende faktoranalise dui op drie faktore. 'n Driefaktormodel, item 4 uitgesluit, het

die beste passing in strukturele vergelykingsmodelle getoon. Ses persent van die deelnemers was sukkelend (languishing), 73% was matig geestesgesond en 21% het floreer (flourishing). Meer deelnemers van die stedelike nedersetting as van die plattelandse nedersetting het floreer. Die gevolgtrekking is dat die MHC-SF geldig en betroubaar vir verdere gebruik in navorsing in 'n Afrika-konteks is.

5. PREFACE

5.1 Article format

For purposes of this mini-dissertation, which is part of the requirements for a professional master's degree, the article format as described by General Regulation A13.7 of the North-West University was chosen.

5.2 Selected journal

The target journal for submission of the current manuscript is the *South African Journal of Psychology*.

5.3 Letter of consent

The letter of consent from the co-authors in which they grant permission that the manuscript *Validation of a scale to measure psychosocial well-being in an African context* may be submitted for purposes of a mini-dissertation by the first author, Sinette G. van Rooy, appears on the next page.

5.4 Page numbering

In the mini-dissertation page numbers run through the whole document. For submission to the above-mentioned journal, manuscript numbering will be according to the requirements and thus start on the title page of the manuscript.

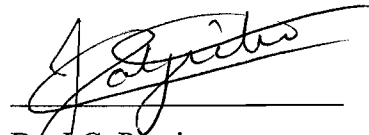
Letter of consent

We, the undersigned, hereby give consent that Sinette G. van Rooy may submit the manuscript *Validation of a scale to measure psychosocial well-being in an African context* for purposes of a mini-dissertation in partial fulfilment for a master's degree.



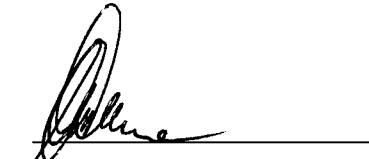
Prof. M.P. Wissing

Supervisor



Dr. J.C. Potgieter

Co-Supervisor



Dr. Q.M. Temane

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6. MANUSCRIPT

**VALIDATION OF A SCALE TO MEASURE PSYCHOSOCIAL WELL-BEING
IN AN AFRICAN CONTEXT**

6.1 Instructions to authors: South African Journal of Psychology



Instructions to authors

Submitting a manuscript

SAJP is a peer-reviewed journal publishing empirical, theoretical and review articles on all aspects of psychology. Articles may focus on South African, African or international issues. Manuscripts to be considered for publication should be e-mailed to sajp@unisa.ac.za. Include a covering letter with your postal address, email address, and phone number. The covering letter should indicate that the manuscript has not been published elsewhere and is not under consideration for publication in another journal. An acknowledgement of receipt will be e-mailed to the author within a few days and the manuscript will be sent for review by three independent reviewers. Incorrectly structured or formatted manuscripts will not be accepted into the review process.

Manuscript structure

- The manuscript should be no longer than 30 pages and no shorter than 10 pages.
- **First page:** The full title of the manuscript, the name(s) of the author(s) together with their affiliations, and the name, address, and e-mail address of the author to whom correspondence should be sent.
- **Second page:** The abstract, formatted as a single paragraph, and no longer than 300 words. A list of at least six key words should be provided below the abstract, with semi-colons between words.
- **Subsequent pages:** The text of the article. The introduction to the article does not require a heading.
- **Concluding pages:** A reference list, followed by tables and figures (if any). Each table or figure should be on a separate page. Tables and figures should be numbered consecutively and their appropriate positions in the text indicated. Each table or figure should be provided with a title (e.g., Figure 1. Frequency distribution of critical incidents). The title should be placed at the top for tables and at the bottom for figures.

Manuscript format

- The manuscript should be an MS Word document in 12-point Times Roman font with 1.5 line spacing. There should be no font changes, margin changes, hanging indents, or other unnecessarily complex formatting codes.
- American Psychological Association (APA) style guidelines and referencing format should be adhered to.
- Headings should start at the left margin, and should not be numbered. All headings should be in bold. Main headings should be in CAPITAL LETTERS.
- A line should be left open between paragraphs. The first line of a paragraph should not be indented.
- Use indents only for block quotes.
- In the reference list, a line should be left open above each reference. Do not use indents or hanging indents in the reference list.

Language and punctuation

Manuscripts should be written in English. As the SAJP does not employ a full-time or dedicated language editor, authors are requested to send their manuscripts to an external language specialist for language editing before submission.

6.2 Validation of a scale to measure psychosocial well-being in an African context

Running head: Psychosocial well-being in an African context

**VALIDATION OF A SCALE TO MEASURE PSYCHOSOCIAL WELL-BEING
IN AN AFRICAN CONTEXT**

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Abstract:

The aim of this study was to determine the psychometric properties of the Mental Health Continuum – Short Form (MHC-SF) in an African context. Participants (N=1050) from urban (n=451) and rural (n=599) settlements completed the MHC-SF and other measures of positive and negative facets of psychosocial functioning in a one-shot cross-sectional survey design. Results indicated a Cronbach alpha reliability coefficient of 0,75 for the total MHC-SF and acceptable mean inter-item correlations between 0,19 and 0,30, and item-total correlations between 0,13 and 0,51. Criterion-related validity was satisfactory. Confirmatory factor analysis yielded three factors. A three-factor model, omitting item 4, had the best fit in structural equation modelling. Six percent of the participants were languishing, 73% were moderately mentally healthy and 21% were flourishing.

Key words: African; collectivism; Mental Health Continuum – Short Form; psychometric properties; psychosocial well-being; reliability; validity.

VALIDATION OF A SCALE TO MEASURE PSYCHOSOCIAL WELL-BEING IN AN AFRICAN CONTEXT

This study focused on the validation of Keyes' Mental Health Continuum – Short Form (MHC-SF) in a Batswana cultural context. This African context is more collectivistic and differs from the more individualistic Western context (cf. Allik & McCrae, 2004).

Research in psychology and other health sciences in Africa as well as around the world recently shifted the focus from disease and pathology to health and mental health (Christopher, 1999; Myers, 2000; Ryff & Singer, 1998), and this new focus is largely represented in Positive Psychology (cf. Seligman & Csizkszentmihalyi, 2000) and Psychofortology (Wissing & van Eeden, 2002). The MHC-SF was developed within this perspective and considers the question of complete mental health.

According to Keyes (2005a, p. 100) “complete mental health is a potential protective factor against the rise of chronic physical disease with age”. Flourishing (completely mentally healthy) individuals reported the lowest prevalence of chronic conditions while languishing (mentally unhealthy) individuals showed the highest prevalence of specific chronic conditions (Keyes, 2005a). Major depression has been associated with the cause and outcome of cardiovascular disease (Keyes, 2004, 2005a). According to Keyes (2006a) the prevalence of cardiovascular disease was 8% among flourishing individuals, 12% among moderately mentally healthy (neither flourishing nor languishing) individuals, 12% among languishing individuals, 13% among individuals with depression and 19% among individuals who were languishing and had an episode of major depression in an adult sample. Depression may also influence the onset and the course of asthma, stroke, arthritis, diabetes, cancer and obesity (Keyes, 2005a). Flourishing individuals show the lowest prevalence of generalized anxiety, panic disorder and alcohol dependence (Keyes, 2006a, 2007). Keyes (2006a) argued that if the sole focus in research and in practice would be on reducing illness, mental health would not be promoted, as mental health is not synonymous with the absence of mental illness. He contends that mental illness is a burden to the society as well as the economy, while

mental health may act as a protective factor leading to a higher life expectancy and a life free of disabilities (Keyes, 2006a).

For the purpose of this study, Keyes' (2005c, 2006a, 2007) complete mental health model was used as a theoretical backdrop and the scale based on this model (the MHC-SF) was validated for use in an African context. The model and scale were developed within a Western culture (an individualistic context), while a relatively collectivistic cultural context can be distinguished in South Africa, which differs from the collectivistic cultures found in Asia (Wissing, Wissing, Du Toit & Temane, 2006). Two forms of the Mental Health Continuum exist – the long form (39 items) and the short form (14 items) (Keyes, 2006¹). The latter is a more suitable scale for epidemiological studies envisioned in South Africa and therefore will be validated in this research. Keyes' complete mental health model includes facets of mental illness (pathology) and mental health, and is holistic in nature (Keyes, 2005a, 2007). According to this model, mental health can be conceptualised in terms of five states of mental health (Keyes 2005a, 2006a). The five states are, in descending order, flourishing, moderately mentally healthy, pure languishing, pure mental illness, and completely mentally ill and languishing (Keyes, 2005a, 2006a).

The MHC-SF only focuses on mental health, the upper part of the continuum, and thus mental illness or pathology per se will not be explored in the current validation process. The MHC-SF consists of three sub-scales indicating mental health, namely Emotional well-being (satisfaction with life, absence of negative affect and the presence of positive affect), Psychological/personal well-being (self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy) and Social well-being (social integration, social contribution, social coherence, social actualisation and social acceptance) (Keyes, 2006a). The latter component rendered this scale specifically relevant for evaluation of psychosocial well-being and health in a relatively collectivistic African context (Christopher, 1999; Ebigo, Oluka, Ezenwa, Obidigbo &

¹ Keyes e-mailed the two scales to the second author and no published article to date includes this information.

Okwaraji, 1996; Bodibe & Sodi, 1997; Berry, Poortinga, Segall & Dasen, 2002), rather than one of the traditional psychological well-being scales used in Western contexts which typically only focus on intra-psychological well-being (cf. Lopez & Snyder, 2003).

Keyes (2002) described the categories of flourishing, moderately mentally healthy, and languishing as follows: Flourishing individuals are not mentally ill and have high levels of emotional, social and psychological well-being. For the identification of flourishing an individual must have experienced at least one of the three hedonic well-being characteristics “all” or “most of the time”, as well as at least six of the eleven eudaimonic well-being characteristics “all” or “most of the time” in the past month. To be identified as languishing, an individual would have low levels of emotional, social and psychological well-being. Of the three hedonic well-being characteristics, at least one must be experienced “never” or “once or twice”, and of the eudaimonic characteristics at least six of the eleven “never” or “once or twice” in the past month (Keyes, 2006a). Individuals are classified as moderately mentally healthy when they are neither languishing nor flourishing (Keyes, 2006a). The scale has already been validated in a Western context and Keyes used it in an epidemiological study on youth in the USA where he determined the prevalence of psychological health (Keyes, 2006b). The findings showed that in America only approximately 38% of the youth were flourishing, 56% were moderately mentally healthy, and 6% of the youth were languishing (Keyes, 2006b). The incidence of mental health, the upper part of the continuum, for adults in America indicated that approximately 16% are flourishing and not mentally ill (completely mentally healthy), 51% are moderately mentally healthy and not mentally ill and 10% are languishing and not mentally ill (Keyes, 2007).

Ryan and Deci (2001) argue that well-being is currently mainly conceptualised from two different philosophical perspectives, namely hedonism and eudaimonism. Hedonism describes well-being as consisting of pleasure and happiness while eudaimonism describes well-being as more than just happiness, and as the actualisation of human potentials, meaning in life, self-realisation and purpose in life. According to Keyes (2005a) hedonic wellness is represented in the MHC-SF scale by items on emotional

well-being (item one to three), while eudaimonic wellness is measured in terms of social well-being (item four to eight) and psychological/personal well-being (item nine to fourteen).

In order to be valid and reliable, a scale should have appropriate psychometric properties. Paunonen and Ashton (1998) state that there are five psychometric properties that give an indication of cross-cultural applicability. These properties include scale means and variances, reliability, criterion-related validity and factor structure. These facets were explored for the MHC-SF in a Batswana group in the North-West province of South Africa. This is the first study to validate the MHC-SF for use in South Africa, and the first to determine the prevalence of various degrees of mental health in a South African context, as no previous South African or African research in this regard could be found. Findings may provide important information for future use in research and practice in an African context.

The aim of this study was thus (i) to determine the reliability and validity of the MHC-SF for use in a Batswana group in the North-West province of South Africa, and (ii) to determine the prevalence of the various degrees of mental health in the above-mentioned group.

METHOD

Design and Participants

A one-shot cross-sectional survey design was used. Batswana participants (N=1050) from both rural (n=599) and urban (n=451) settlements in the North-West Province of South Africa were included in this study. Two hundred and twenty nine participants were from Ikageng (an established urban settlement outside Potchefstroom), 215 participants were from an informal urban settlement adjacent to Ikageng, 281 participants were from Ganyesa (a semi-rural settlement situated on the road to Botswana) and 318 participants were from Tlakgameng (a deep rural settlement situated approximately 35 kilometres from Ganyesa). Of the 1050 participants, 392 were male and 649 were female. The distribution of ages were as follows: 228 participants were aged between 30

and 40 years, 416 participants were aged between 41 and 50 years, 248 participants were aged between 51 and 60 years, 106 participants were aged between 61 and 70 years, and 29 participants were aged between 71 and 80 years, while two participants were aged over 80. Disagreement in numbers is due to incomplete data.

Measuring Instruments

Mental Health Continuum – Short Form for adults (MHC-SF) (Keyes, 2005c).

Respondents indicate how often during the past 30 days they experienced 14 feelings – “never”, “once or twice”, “about once a week”, “2 or 3 times a week”, “almost every day” or “every day”. The three sub-scales are Emotional well-being (satisfaction with life, absence of negative affect and the presence of positive affect), Social well-being (social integration, social contribution, social coherence, social actualisation and social acceptance) and Psychological/personal well-being (self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery and autonomy).

Affectometer 2 (short version) (AFM) (Kammann & Flett, 1983). The AFM measures general happiness or a general sense of well-being. In the AFM, psychological well-being is measured on an affective level by determining the balance between negative and positive affect (Kammann & Flett, 1983). A short and a long form of the AFM exist: A 20-item form and a 40-item form. The 20-item form was used in the present study. The measure consists of two sub-scales: Positive Affect (PA) and Negative Affect (NA) with affect balance indicated by PA minus NA (PNB). A higher level of well-being is obtained when PA is higher than NA (Kammann & Flett, 1983). According to the authors, the Cronbach alpha was 0,88 and 0,93. Wissing et al. (1999) found the scale applicable in the South African context. Cronbach alphas of 0,66 for PA and 0,69 for NA were found in the current study.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985). This 5-item scale was developed to give an indication of general satisfaction with life. Quality of life was evaluated, by own criteria, on a cognitive-judgemental level. The authors reported a two-month test-retest reliability index of 0,82 and a Cronbach alpha reliability

index of 0,87. The scale showed acceptable psychometric properties for use in South Africa (Wissing et al., 1999). In the current study, the Cronbach alpha reliability index obtained for the SWLS was 0,69.

Community Collective Efficacy Scale (revised) (CCES) (Carrol, Rosson & Zhou, 2005). A 7-item CCES was used in the present study and measures a community's ability to work together efficiently. Carrol et al. (2005) argue that a community's efficacy beliefs could influence collectively oriented behaviours and willingness to persist in spite of internal conflicts, social concerns or political challenges. The higher the score obtained in the CCES the stronger the feeling of belonging, and the higher the chance that the individual will be an activist (Carrol et al., 2005). The internal reliability of the total score was 0,86, according to Carrol et al. (2005). In the current study, the Cronbach alpha reliability index obtained was 0,72.

Generalized Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1993). The GSE, a 10-item scale, indicates an individual's belief in his/her ability to react successfully to difficult situations, minor pressures and his/her appropriate reaction to setbacks associated with it. Schwarzer and Jerusalem (1993) reported Cronbach alphas between 0,82 and 0,93 and also reported satisfying construct validity. In the current study, a Cronbach alpha of 0,66 was obtained.

New General Self-Efficacy Scale (NGSE) (Chen, Gully & Eden, 2000). The NGSE (an 8-item scale) was developed to provide a measurement of an individual's proneness to view the self as capable of meeting the demands of tasks in various contexts. The scale is related to, but also distinct from, self-esteem and self-efficacy in different situations. This was established through validation studies done by the authors of the NGSE, and the internal consistency reliabilities of the scale were determined to be 0,86 and 0,90. In the present study, the Cronbach alpha reliability index was 0,74.

Sense of Coherence Scale (SOC-29) (Antonovsky, 1987, 1993). The 29-item scale measures an individual's experience of the world and of life. Sense of coherence consists

of three elements, namely comprehensibility, manageability and meaningfulness. The SOC correlates positively with psychological and physical well-being (Wissing & Van Eeden, 2002). Internal reliability indices of the SOC vary from 0,78 to 0,93, while test-retest reliability indices vary from 0,56 to 0,96 (Antonovsky, 1993). The scale is reliable and valid for use in South Africa (Wissing et al., 1999). In the current study, which implemented an unfolding/two-stage approach in administration (cf. Albaum, 1997; Groves, 1990), a Cronbach alpha reliability index of 0,80 was found.

General Health Questionnaire (GHQ-28) (Goldberg & Hillier, 1979). The 28-item GHQ aims to detect symptoms of mental disorder. The scale consists of four sub-scales, namely Somatic Symptoms (SS), Anxiety and Insomnia (AI), Social Dysfunction (SD) and Severe Depression (DS). Goldberg and Hillier (1979) reported various Cronbach alphas from 0,82 to 0,86. Wissing et al. (1999) reported acceptable psychometric properties from a study with a Batswana group. The Cronbach alpha reliability index in the current study for the full scale was 0,89 and for the sub-scales 0,74 for SS, 0,74 for AI, 0,55 for SD, 0,75 for DS respectively.

Procedure

This study was conducted on the interface of two projects, firstly a study on the epidemiological aspects of health, namely the international *Prospective Urban and Rural Epidemiological – South Africa project* (PURE-SA), coordinated by Kruger and conducted by participants in AUTHeR (Vorster, 2006), and secondly a study on psychological well-being and health, namely the Fortology project (FORT 2= *Fortology: Understanding and promoting psychosocial health, resilience, and strengths in an African context* coordinated by Wissing, 2006). The participants were selected in the context of the PURE project (a larger multi-disciplinary project).

Questionnaires used were part of the FORT 2 project. The questionnaires were translated into Setswana and then back-translated into English. The two English versions of the questionnaires were compared in a research committee approach (cf. Van de Vijver & Leung, 1997). No significant problems in translation were found when comparing the

original and back-translated questionnaires. Sixteen fieldworkers, from the above-mentioned settlements were trained and assisted in the administration of the questionnaires in a structured interview format. The fieldworkers were bilingual and capable of speaking and understanding both English and Setswana. Questionnaires were completed in Setswana. The fieldworkers had an English version of the questionnaires available for reference purposes. The ethics committee of the North-West University approved the study. The approval number for the PURE project is 04M10 and that for the FORT2 project is 05K10.

Data Analysis

Descriptive statistics and reliability indices were determined in Statistica. Nunnally and Bernstein (1994) recommended a reliability of 0,70 as sufficient in construct validation research, whereas Clark and Watson (1995) stated that contemporary researchers classify reliabilities between 0,60 and 0,70 as good or adequate. The Cronbach alpha mainly measures internal consistency and is limited in establishing unidimensionality (Clark & Watson, 1995). Therefore, mean inter-item correlations as well as item-total correlations were also determined as they give an indication of the extent to which the items measure a single construct or factor (Smith & McCarthy, 1995). According to Clark and Watson (1995) these correlations should be between 0,15 and 0,50 for a broad construct. The effect size for each item was calculated in SPSS, using partial eta-squared. An eta-squared value of 0,10 has a moderate to large effect size (Cohen, 1977).

Concurrent/criterion-related validity was established through correlations with other scales measuring positive and negative facets of psychosocial functioning. Construct validity was established, firstly via confirmatory factor analyses using the maximum likelihood method of factor extraction (Floyd & Widaman, 1995). Secondly, construct validity was determined via the testing of structural equation models. According to Browne and Cudeck (1993), root mean square error of approximation (RMSEA) values of between 0,05 and 0,08 indicate a fair fit, while values larger than 0,10 indicate an unacceptable fit. GFI, AGFI, PGI and APGI indices of 0,90 indicate a good fit (Muncer & Campbell, 2004).

The percentage of respondents in each of the mental health categories of flourishing, moderately mentally healthy and languishing was also determined.

RESULTS

Descriptive statistics, reliability indices and effect size for MHC-SF

Descriptive statistics, effect size and reliability indices for the MHC-SF are reported in Table 1. The Cronbach alpha reliability coefficient for the total MHC-SF was 0,75. The mean inter-item correlations ranged between 0,19 and 0,30, while the item-total correlations ranged between 0,13 and 0,51 for the MHC-SF in this relatively collectivistic South African group. The Cronbach alpha reliability coefficient for the total MHC-SF and the mean inter-item and item-total correlations were within the expected range as proposed by Clark and Watson (1995) and Nunnally and Bernstein (1994). Items with the highest means were items 9 to 14 (*“that you liked most parts of your personality, good at managing the responsibilities of your daily life, that you had warm and trusting relationships with others, that you have experiences that challenge you to grow and become a better person, confident to or express your own ideas and opinions, that your life has a sense of direction or meaning to it”*). These items form part of the Psychological/personal well-being subscale, with means ranging between 3,05 and 3,63 respectively. The item with the lowest mean is item 4 (*“that you had something important to contribute to society”*), with a mean score of 1,70. This item also has an effect size larger than 0,10 and thus has a negative effect on the results.

[Table 1]

Validity of the MHC-SF

Criterion-related validity

Correlations of the MHC-SF with other scales measuring positive and negative facets of psychosocial functioning were used to indicate concurrent/criterion-related validity (see Table 2). The MHC-SF correlated positively with positive facets of psychosocial functioning and negatively with negative facets of psychosocial functioning, as expected.

[Table 2]

All the correlations are statistically significant, except the correlations between the Social well-being subscale of the MHC-SF and the Community Collective Efficacy Scale, and total Anxiety and Insomnia, Social Dysfunction and Severe Depression subscales of the General Health Questionnaire.

Construct Validity

A confirmatory factor analysis was conducted with the maximum likelihood method of factor extraction on the items within each of the three subscales of the MHC-SF. For each of the subscales all items loaded as expected. Results are reported in Table 3.

[Table 3]

The hypothesis of one factor per subscale of the MHC-SF is confirmed. An exploratory factor analysis with the maximum likelihood method of factor extraction on the 14 items yielded two factors. Items 1 to 3 loaded on a factor (hedonic well-being) and items 4 to 14 loaded on a separate factor (eudaimonic well-being). This finding supports the theoretical backdrop of Keyes' model (2005a; 2006a; 2006b), which postulates a hedonic and an eudaimonic underlying component.

Confirmatory factor analysis was also performed with testing of structural equation models in Statistica and results are indicated in Table 4.

[Table 4]

The three-factor model b (omitting item 4) produces the best fit. The RMSEA of 0,09 is close to a satisfactory fit of 0,08, while the GFI/AGFI and PGI/APGI indicate a satisfactory fit of the model.

Prevalence of Mental Health

The prevalence of mental health in this relatively collectivistic African context is reported in Table 5. Of the 1050 participants, 6% were languishing, 73% were moderately mentally healthy and 21% were flourishing. More participants from the urban settlements than from the rural settlements flourished. In Ikageng, the formal urban settlement, 33% of the participants were flourishing and in the informal urban settlement, 28% of the participants were flourishing. In Ganyesa (semi-rural), the settlement with the most languishing participants, 14% of the participants were languishing. In Tlakgameng (deep rural) 96% of the participants were moderately mentally healthy, 2% were languishing and 2% were flourishing.

[Table 5]

DISCUSSION

The Mental Health Continuum – Short Form (Keyes, 2006a), and its subscales measuring Emotional, Social and Psychological/Personal Well-being showed adequate reliability and validity in this Batswana African group.

No data regarding the MHC-SF's descriptive statistics have been published and thus no comparison could be drawn between the current findings and findings for America. The item means varied between 1,70 and 3,63, with a range of 0 to 5.

The Cronbach alpha reliability, mean inter-item and item-total correlations were within the expected ranges (cf. Clark & Watson, 1995). Item 4's item-total correlation of 0,13 is relatively low. It may be that item 4 is a less valid question in this context. This is supported by the facts that without item 4 the total Cronbach alpha reliability coefficient for the MHC-SF would be 0,76 instead of 0,75 for the total scale and that the eta-squared value for item 4 indicates that the item is biased. The reason for this might be the formulation of the item. The formulation of item 4, "*that you had something important to contribute to society*", places the focus on own contribution and worth. In collectivistic cultures, people are more interdependent within their groups and family (Triandis, 2001).

The focus should fall on the collective contribution to the group and not on own contribution, as the question implies. The MHC-SF will manifest a better internal consistency if item 4 is adapted or omitted. Item 4 might be adapted in an African context to *“that we all contribute to society”* or *“that we had something important to contribute to society”*.

Most correlations with the MHC-SF support concurrent/criterion-related validity (cf. Paunonen & Ashton, 1998). The correlations were statistically significant at $p < 0,05$, except for the correlations between the Social Well-being subscale and the Collective Community Efficacy Scale and the total and subscales correlations of the General Health Questionnaire, specifically the correlations with the Anxiety and Insomnia, Social Dysfunction and Severe Depression subscales. A possible reason for the poor correlation with the CCES might be item selection. The items of the CCES were selected based on their relevance to community functioning regarding the management of “tradeoffs and conflicts” (Carrol et al., 2005, p.5). This specific factor of the CCES assesses the capacity of a community to manage conflicts, while taking into consideration the available resources and shared access (Carrol et al., 2005).

Confirmatory principal components factor analysis with the maximum likelihood method of factor extraction was performed on each subscale of the MHC-SF and one factor emerged in each subscale. These three factors as proposed by Keyes (2006a) were found in the responses of this African group. With confirmatory factor analysis in structural equation modelling, the model with the best fit was a three-factor model, where item 4 was omitted. The RMSEA value of this model was close to a satisfactory fit (cf. Browne & Cudeck, 1993), while GFI/AGFI and PGI/APGI indicated an acceptable fit. It can thus be concluded that the MHC-SF has acceptable reliability and validity in an African context. The finding of two factors in an exploratory factor analysis is in line with the hedonic and eudaimonic distinction in Keyes’ (2005a; 2006a; 2006b) model and provides further support for the construct validity of this scale in an African context.

The prevalence of mental health for this Batswana African group was more or less similar to that reported for American youth and adults, except that more American adults were languishing than was found in the present study. Fewer American adults and more American youths were flourishing than was found in the present study. More than two thirds of the participants in the current study were mentally moderately healthy. According to Serumaga-Zake and Naudé (2002) poverty in the North-West province is twice as high as the average for South Africa. This, together with AIDS and other chronic health problems, may influence the relatively higher percentage of people who are mentally moderately healthy and the smaller number of flourishing people in this South African context. Keyes (2005a) states that flourishing individuals function better than moderately mentally healthy individuals do. According to Keyes' (2005b) complete mental health model a person can be moderately mentally healthy while having a mental illness, but as the current study did not explore pathology or mental illness, this distinction can not be drawn.

In the current study the mentally healthiest participants were from the formal urban settlement, where 33% of the participants were flourishing. Only 3% of the participants of the same settlement were languishing. Possible reasons for this finding might be that these participants' basic needs were met. In the informal urban settlement 5% of the participants were languishing, 67% were moderately mentally healthy and 28% were flourishing. The participants from the semi-rural settlement were the most languishing of the four settlements included. Of the 281 participants, 40 were languishing. These participants most likely knew what the "good life" looked like, but because of poverty were unable to achieve it. Most of the deep rural participants (96%) indicated being moderately mentally healthy, while 2% were flourishing and 2% were languishing. The most probable explanation may be that the current finding for the deep rural participants, the relatively strong tendency towards the mean, may be an artefact of the unfamiliarity with the research situation. However, this finding should be explored further, especially in qualitative research. It might be that the item content of the MHC-SF had lower relevance or familiarity to the participants from Tlaskgameng (cf. Van de Vijver & Hambleton, 1996; Van de Vijver & Tanzer, 2004), that they were less used to

questionnaires and research procedures, had fewer resources due to poverty, illnesses and unemployment (cf. Easterlin, 2006), and lower acute crime. It might also be that they had fewer difficulties – which was unlikely.

Keyes' model seems to be applicable also in a non-Western African context, and the MHC-SF reliable and valid for further use in, for example, epidemiological studies in this collectivistic context. A contribution of the current study is the establishment of baseline information regarding flourishing, moderately mentally healthy and languishing individuals in the North-West province. More proactive interventions should be developed, aimed at the maintenance and promotion of mental health rather than at the sole alleviation of disease. Interventions aimed at the prevention and earlier detection of mental illness, especially in the rural settlements, should be developed. The effectiveness of these interventions could be determined based on the baseline information which was established in this study.

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Table 1**Descriptive statistics, effect size and reliability indices per item of the MHC-SF**

Item	M	SD	Range Min – Max	Eta- squared	Item-total Correl.	Mean inter- item Correl.
MHC-SF1	2,57	0,72	0 – 5	0,07	0,47	0,28
MHC-SF2	2,74	0,71	0 – 5	0,05	0,51	0,30
MHC-SF3	2,37	0,72	0 – 5	0,06	0,49	0,28
MHC-SF4	1,70	0,76	0 – 5	0,11	0,13	0,19
MHC-SF5	2,25	0,74	0 – 5	0,06	0,33	0,22
MHC-SF6	2,62	0,73	0 – 5	0,04	0,41	0,25
MHC-SF7	2,35	0,73	0 – 5	0,03	0,41	0,26
MHC-SF8	2,44	0,73	0 – 5	0,04	0,33	0,22
MHC-SF9	3,63	0,74	0 – 5	0,03	0,29	0,24
MHC-SF10	3,27	0,73	0 – 5	0,06	0,42	0,27
MHC-SF11	3,13	0,74	0 – 5	0,05	0,30	0,22
MHC-SF12	3,11	0,75	0 – 5	0,08	0,22	0,20
MHC-SF13	3,05	0,73	0 – 5	0,02	0,36	0,24
MHC-SF14	3,32	0,73	0 – 5	0,07	0,37	0,24

Table 2

Criterion-related validity: Correlations between MHC-SF factors and other scales measuring positive and negative facets of psychosocial functioning

	MHC-SF EWB	MHC-SF SWB	MHC-SF PWB	MHC-SF Tot
AFM-PA	0,44	0,26	0,41	0,51
AFM-NA	-0,27	-0,09	-0,20	-0,25
AFM-PNB	0,44	0,21	0,38	0,47
SWLS	0,38	0,34	0,15	0,39
CCES	0,06	0,05	0,41	0,27
GSE	0,20	0,17	0,41	0,38
NGSE	0,17	0,07	0,40	0,31
SOC	0,20	0,10	0,34	0,30
GHQ SS	-0,23	-0,07	-0,19	-0,22
GHQ AS	-0,19	-0,02	-0,17	-0,17
GHQ SD	-0,15	0,01	-0,21	-0,16
GHQ DS	-0,19	0,02	-0,24	-0,16
GHQ Tot	-0,23	-0,02	-0,24	-0,23

Note: MHC-SF EWB = Mental Health Continuum – Short Form Emotional Well-being; MHC – SF SWB = Mental Health Continuum – Short Form Social Well-being; MHC – SF PWB = Mental Health Continuum – Short Form Psychological Well-being; MHC-SF Tot = Mental Health Continuum – Short Form Total; AFM-PA = Affectometer 2 – Positive Affect; AFM-NA = Affectometer 2 – Negative Affect; AFM-PNB = Affectometer 2 – Positive-Negative-Affect-Balance; SWLS = Satisfaction With Life Scale; CCES = Community Collective Efficacy Scale (revised); GSE = Generalized Self-Efficacy Scale; NGSE = New General Self-Efficacy Scale; SOC = Sense of Coherence Scale / Antonovsky Orientation to Life Questionnaire; GHQ SS = General Health Questionnaire Somatic Symptoms; GHQ AS = General Health Questionnaire Anxiety and Insomnia; GHQ SD = General Health Questionnaire Social Dysfunction; GHQ DS =

General Health Questionnaire Severe Depression; GHQ Tot = General Health
Questionnaire

Correlations in bold are significant at $p < 0.05$.

Table 3

Confirmatory factor analyses on subscales within the MHC-SF using the maximum likelihood method of factor extraction

Subscale	Item	Factor loadings	Eigenvalue	% variance explained
Emotional Well-being	1	-0,73		
	2	-0,71		
	3	-0,66		
			1,46	48,64
Social Well-being	4	-0,30		
	5	-0,52		
	6	-0,56		
	7	-0,53		
	8	-0,47		
			1,19	23,84
Psychological Well-being	9	-0,50		
	10	-0,57		
	11	-0,47		
	12	-0,44		
	13	-0,51		
	14	-0,53		
			1,53	25,46

Table 4

Evaluation of different latent structure models within the MHC-SF (testing of one, two, three or four latent structure models)

Latent structure	Chi²	df	PGI/APGI	GFI/AGFI	RMSEA
Independence	2380,97	91			
Single factor	913,20	77	0,86/0,80	0,85/0,79	0,12
Two factors	937,66	77	0,87/0,82	0,86/0,81	0,12
Three factors a	732,39	77	0,91/0,87	0,90/0,86	0,10
Three factors b	571,87	65	0,92/0,89	0,91/0,88	0,09
Four factors a	874,65	79	0,88/0,85	0,87/0,83	0,11
Four factors b	783,07	78	0,90/0,87	0,89/0,85	0,10

Note: Single factor = item 1-14; Two factor = items 1-3 (hedonic) vs. items 4-14 (eudaimonic); Three factors a = items 1-3 (Emotional Well-being), items 4-8 (Social Well-being) and items 9-14 (Psychological Well-being); Three factors b = items 1-3 (Emotional Well-being), items 5-8 (Social Well-being omitting item 4) and items 9-14 (Psychological Well-being); Four factors a = Items 1-3 (Emotional Well-being); items 4-5 (Social Well-being 1), items 6-8 (Social Well-being 2) and items 9-14 (Psychological Well-being); Four factors b = Items 1-3 (Emotional Well-being), item 4 (Social Well-being 1), items 5-8 (Social Well-being 2) and items 9-14 (Psychological Well-being)

Table 5**The prevalence of the various degrees of mental health in an African context**

Community	Number of Participants	Languishing	Moderately Mentally Healthy	Flourishing
Ikageng (Formal Urban)	229	3%	64%	33%
Ikageng (Informal Urban)	215	5%	67%	28%
Ganyesa (Semi-Rural)	281	14%	59%	27%
Tlakgameng (Deep Rural)	318	2%	96%	2%
Total % per category	1043	6%	73%	21%