

**DYNAMICS OF CONTEXT AND PSYCHOLOGICAL WELL-BEING: THE
ROLE OF SUBJECTIVE HEALTH PERCEPTIONS, PERSONALITY FACTORS
AND SPIRITUALITY.**

Qambeshile Michael Temane

**Thesis submitted for the degree Philosophiae Doctor
in Psychology at the North-West University:
Potchefstroom Campus**

Promoter: Prof. M.P. Wissing

**March 2006
Potchefstroom**

Acknowledgements

- I am grateful to my supervisor Prof. Marie Wissing for her insightful supervision of this thesis and inspiring grasp of the field of psychofortology.
- To my partner Shelley-Ann Williams for constantly supporting me in dire moments of despondence and sheer fatigue, I am in your debt.
- To my constants, my children, Lesego and Lebogang, for dissipating the languid moments with their laughter and quintessential fortitude; I am eternally grateful for your indispensable being and presence in my life. *Omnia vincit amor!*
- I thank my parents and siblings for their kinship and the glorious moments of celebrating life together and a unique spirit of *joie de vivre* pervasive in the extended family. This thesis is especially dedicated to my late father, George, for relentlessly believing in me without question.
- I would be remiss in not thanking my friends Tumi Khumalo, Kenny Kgomo and Tshepo Ntsimane for their encouragement.
- For the benevolence and undeserved favour, I thank the Almighty for all the blessings: *Gloria in excelsis Deo!*

The financial assistance of the National Research Foundation: Division for Social Sciences and Humanities and the Research Focus Area 9.1 of the North-West University towards this research, is hereby acknowledged. The opinions expressed and conclusions arrived are those of the authors and are not necessarily to be attributed to the agencies funding this study.

Contents

Acknowledgements	ii
Summary	v
Opsomming	viii
Preface	x
Letter of permission	xi
Section 1: Introduction	1
Section 2: Article 1: The role of subjective perception of health in the dynamics of context and psychological well-being	8
2.1 Guidelines: South African Journal of Psychology	9
2.2 Manuscript: The role of subjective perception of health in the dynamics of context and psychological well-being	11
Section 3: Article 2: The role of personality factors in the dynamics of context and psychological well-being	50
3.1 Guidelines: Journal of Personality and Social Psychology	51
3.2 Manuscript: The role of personality factors in the dynamics of context and psychological well-being	54
Section 4: Article 3: The role of spirituality in the dynamics of context and psychological well-being	92
4.1 Guidelines: South African Journal of Psychology	93

4.2	Manuscript: The role of spirituality in the dynamics of context and psychological well-being	95
Section 5:	Conclusions and recommendations	127
	Complete reference list	135

Summary

Dynamics of Context and Psychological Well-being: The role of subjective health perceptions, personality factors and spirituality

Keywords: Psychological well-being; hedonism; eudaimonism; positive psychology; context; subjective health perceptions; personality factors; spirituality.

There is a lacuna in the field of positive psychology as far as the conceptualisation of influences of environmental contexts on psychological well-being is concerned, and there is also a lack of credible empirical findings on the dynamics of processes involved. The aim of the current study was to test various models on the possible mediating role of subjective perceptions of health, personality factors and spirituality in the dynamics of context and psychological well-being.

Psychological well-being was conceptualised and measured multi-dimensionally as defined from a general psychological well-being, hedonic, and eudaimonic perspective. Context was defined in terms of the historical stratification in South African society by socioeconomic differentials pertaining to race, socioeconomic indices and infrastructural resources.

An availability sample of 514 participants from Potchefstroom (n=384) and Mafikeng (n=130) completed questionnaires on psychological well-being, subjective perceptions of health, personality factors and spirituality after informed consent was

obtained. Psychological well-being was measured with the Affectometer 2 (Kammann & Flett, 1983), the Sense of Coherence Scale (Antonovsky, 1987) and Satisfaction with Life Scale (Diener, Larsen and Griffin, 1985). General psychological well-being was defined and operationalised in terms of the degree of sense of coherence, satisfaction with life and affect balance; hedonic well-being in terms of the degree of satisfaction with life and affect balance, and eudaimonic well-being in terms of the degree of sense of coherence and satisfaction with life. Subjective perceptions of physical health was measure with the General Health Questionnaire of Goldberg and Hillier (1979); Agreeableness and Extraversion as personality factors with the NEO- Personality Inventory - Revised of Costa and McCrae (1992); and Spirituality with the Spiritual Well-being Scale of Paloutzian and Ellison's (1979).

The findings indicate, firstly, that perceptions of physical health (article 1), personality factors (article 2) and spirituality (article 3) mediate the relationship between contexts and psychological well-being. Secondly, that the hedonic model of psychological well-being (albeit variably conceptualised in article 1 and articles 2 and 3) overall, yielded the highest amounts of variance. Thirdly, the results also indicated differences among the two predominantly black and white samples in terms of the roles played by subjective perceptions of health, personality factors and spirituality in the relationship between contexts and psychological well-being. It is concluded that due consideration must be given to social context and the dynamics of interaction between social ecology and individual factors in order to make a meaningful contribution to the

understanding and promotion of psychological well-being. Theoretical and practical implications of these findings are indicated.

Opsomming

Die dinamiek van konteks en psigologiese welsyn: Die rol van subjektiewe persepsies van gesondheid, persoonlikheidsfaktore en spiritualiteit

Sleutelwoorde: psigologiese welsyn; hedonisme; eudaimonisme; positiewe psigologie; konteks; subjektiewe persepsies van gesondheid; persoonlikheidsfaktore; spiritualiteit.

Daar is 'n leemte in positiewe psigologie met betrekking tot die die konseptualisering van die invloed van omgewingskontekste op psigologiese welsyn, en daar is ook 'n gebrek aan geloofwaardige empiriese bevindings oor die dinamika van hierdie prosesse. Die doel van die huidige studie was om verskeie modelle, met subjektiewe persepsies van gesondheid, persoonlikheidsfaktore en spiritualiteit as mediërende faktore, te toets.

Psigologiese welsyn was multi-dimensioneel gekonseptualiseer en gemeet as algemene psigologiese welsyn, en 'n hedonistiese en eudaimonistiese perspektief. Die konteks is beskryf aan die hand van die historiese stratifikasie van die Suid-Afrikaanse samelewing met betrekking tot ras, sosio-ekonomiese indekse, en infrastruktuur.

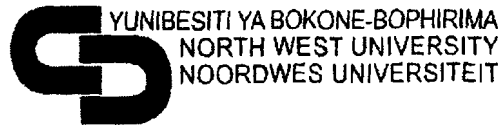
'n Beskikbaarheidsteekproef van 514 deelnemers van Potchefstroom (n=384) en Mafikeng (n=130) het vraelyste voltooi oor psigologiese welsyn, subjektiewe persepsies van gesondheid, persoonlikheidsfaktore en spiritualiteit, nadat ingeligte toestemming van die deelnemers verkry was. Psigologiese welsyn is gemeet deur die

Affectometer 2 (Kammann & Flett, 1983), Sense of Coherence Scale (Antonovsky, 1987) en die Satisfaction with Life Scale (Diener, Larsen and Griffin, 1985). Algemene psigologiese welsyn is gedefinieer en geoperasionaliseer in terme van die mate van koherensiesin, lewensbevrediging en affek balans. Subjektiewe persepsies van gesondheid is bepaal deur die General Health Questionnaire van Goldberg en Hillier (1979); Inskiklikheid (*agreeableness*) en ekstraversie (*extraversion*) as persoonlikheidsfaktore is gemeet deur die NEO-Personality Inventory – Revised van Costa en McCrae (1992); Spiritualiteit is gemeet met Paloutzian en Ellison (1979) se Spiritual Well-being Scale.

Die bevindinge dui in die eerste plek daarop dat subjektiewe persepsies van gesondheid (artikel 1), persoonlikheidsfaktore (artikel 2) en spiritualiteit (artikel 3) die verhouding tussen kontekste en psigologiese welsyn medieer. Tweedens, dat die hedonistiese model van psigologiese welsyn (alhoewel verskillend gekonseptualiseer in artikels 1, 2 en 3) die grootste mate van variansie verklaar het. Derdens, dui die resultate op verskille tussen die oorwegend swart en wit steekproewe ten opsigte van die rol van subjektiewe persepsies van gesondheid, persoonlikheidsfaktore en spiritualiteit en die verhouding tussen kontekste en psigologiese welsyn. Die gevolgtrekking word gemaak dat grondige oorweging gegee moet word aan die sosiale konteks en die dinamika van die interaksie tussen sosiale ekologie en die individuele faktore om 'n betekenisvolle bydrae tot die verstaan en bevordering van psigologiese welsyn te maak. Teoretiese en praktiese implikasies van hierdie bevindinge is aangedui.

Preface

- This thesis is presented in article format in terms of the North-West University's rule A.14.4.2 in tandem with rules A.13.7.3, A.13.7.4 and A.13.7.5 .
- The three articles comprising this thesis were submitted for review to the following journals in their order: Article 1 (South African Journal of Psychology), Article 2 (Journal of Personality and Social Psychology) Article 3 (South African Journal of Psychology). The first article has been accepted for publication and articles 2 and 3 are under review.
- The referencing and the editorial style as prescribed by the *Publication Manual (5th edition)* of the American Psychological Association (APA) were implemented, save for instances where the journal indicated otherwise as in the use of the ampersand or the conjunction in the reference list as preferred by the *South African Journal of Psychology*.
- For ease of reference, the page numbering is consecutive from the introduction to the end of the thesis. However, each individual article will be numbered from 1 on submission to a journal.
- The co-author of these articles, Prof. M.P. Wissing has submitted a letter consenting that the articles may be submitted for examination purposes in terms of Rule A.13.7.4.



**School for Psychosocial Behavioural
Sciences: Psychology**

Tel (018) 2991721

Fax (018) 2991730

E-Mail psgmpw@puk.ac.za

March 12, 2006

LETTER OF PERMISSION

Permission is hereby granted that the first author Q.M. Temane may submit the following 3 articles for the purposes of examination and obtaining a PhD degree in Psychology:

1. *The role of subjective perception of health in the dynamics of context and psychological well-being;*
2. *The role of personality factors in the dynamics of context and psychological well-being.*
3. *The role of spirituality in the dynamics of context and psychological well-being.*

M.P. Wissing

.....
Prof. M.P. Wissing

Co-author

Introduction

This study focuses on the dynamics of context and psychological well-being with specific reference to the role of subjective perceptions of physical health, personality factors and spirituality as mediating variables. Cameron, Dutton and Quinn (2003) indicated that contexts, processes and their interactions are related to positive states in individuals, groups and organisations. However, there is a lack of credible empirical findings on the dynamics of these processes. Empirical findings are necessary to find explanations for how these processes operate.

Antonovsky (1994) criticised the undue attention that has been paid to the acknowledgement of the social context of health and illness in well-being. He argued that there is a near total absence of reference to, or awareness of the larger social systems in which the mind-body relationship operates. Stokols (2003) also notes a lacuna in the field of positive psychology as far as the conceptualisation of influences of environmental contexts on psychological well-being is concerned. There is however, a growing acknowledgement of the contribution made by neighbourhood context to health outcomes (Kristenson, Eriksen, Sluiter, Starke, & Ursin, 2004) over and above individual characteristics and health behaviours (Caughy, O'Campo, & Patterson, 2001). Diez-Roux (2001) argues that health differentials are not only a function of individual differences, but also of place, or of processes influencing the spatial distribution of individuals. Staudinger, Fleeson and Baltes (1999) found evidence to support the notion that well-being composed of direct effects of living circumstances.

Macintyre, MacIver and Sooman (1993) note that context can be viewed as a function of individual resources and social infrastructure available to individuals in

particular neighbourhoods. Typically context can be indexed by some combination of area-level indicators, including economic factors (e.g., proportion of individuals above or below an income threshold), educational factors (e.g., proportion of residents above or below a set level of education), and occupational or employment related factors (e.g., proportion of employed residents). These could be factors based on data compiled for a census tract (cf. Robert, 1999). In this study, context was conceptualised in terms of the historical stratification in South African society by socioeconomic differentials pertaining to race, socioeconomic indices and infrastructural resources between Potchefstroom and Mafikeng areas in the North West Province of South Africa as indicated in the ensuing three articles.

The importance of outcomes related to contextual factors are underscored by ecological models that for example, view health outcomes as a biopsychosocial phenomenon (cf. Bronfenbrenner, 1979; Georgas, van de Vijver & Berry, 2004). According to Grzywacz and Fuqua (2000) the ecological model perspective is characterised by some of the following principles: different dimensions of well-being are reciprocally related and linked to diverse conditions in the socio-physical environment; individual and community well-being are contingent upon multiple aspects of the person/population, as well as multiple dimensions of the environment; certain individual or environmental conditions exert a disproportionate amount of influence on health and well-being; the physical and social environments are interdependent. Needless to say, a variety of conditions can influence well-being.

More specifically, Ramsey and Smit (2002) proposed a model of well-being that argues that various conditions in the environment within which a community exists play a

role in the experience of well-being. They suggest that well-being in rural communities is multidimensional arising from ecological, social, political, economic, and institutional factors. Well-being in their view is interpreted as the interrelated structural and functional conditions (physical, psychological, social and economic) of a community, including individuals and their interactions within their environment. In their model of well-being, physical well-being comprises of disease, mortality rates and life expectancy; psychological well-being is characterised by suicide rates and indicators of life satisfaction; economic well-being might be described by levels of income, poverty, unemployment, and educational attainment; and social well-being is characterised by social support and activity, personal interaction and life satisfaction. These structural and functional conditions overlap and indicate dependence. For example, a person's perception of life satisfaction is related to factors such as individual health and whether they are employed and financially sound. The thinking in this model is important to this study because of the assumption that the context within which a community exists is crucial in understanding how differences in the experience of well-being between individuals could be understood.

There are many conceptualisations of the nature of well-being including psychological well-being (cf. Ryff & Keyes, 1995; Wissing & van Eeden, 2002), subjective well-being (Diener, 2000), quality of life (Veenhoven, 2000) and happiness (Lyubomirsky & Lepper, 1999). Kahneman, Diener, and Schwarz (1999), Ryan and Deci (2001) and Waterman (1993) distinguish among two traditions in the psychological literature in the explication of psychological well-being, namely, eudaimonic and hedonic well-being. Eudaimonic well-being is exemplified by the conceptualisation of Ryff

(1989) for example, as the extent to which respondents endorse high levels of autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance. Hedonic well-being on the other hand is typified in the research on subjective well-being as elaborated by Diener and his colleagues (Diener, 2000; Kahneman et al., 1999) as respondents' affective and cognitive evaluations of their lives. Whereas eudaimonic well-being emphasises purpose, growth and meaning in life, the hedonic variant emphasises, positive affect, satisfaction with life and happiness. Keyes, Shmotkin and Ryff (2002) observed that these two forms of well-being are related but at the same time, they are distinct constructs. Wissing and van Eeden (2002) observed an overlap in the empirical denotations of various constructs measuring both the eudaimonic and hedonic variants of well-being such as sense of coherence, satisfaction with life and positive affect balance and referred to this phenomenon as the general psychological well-being factor. However, in spite of these various conceptualisations, it is significant to note there is still no unitary conceptualisation that explains all dynamics of psychological well-being (cf. Wissing, Wissing, du Toit & Temane, 2005).

In this study, psychological well-being is variously conceptualised in terms of three models, namely a general factor model (cf. Wissing & van Eeden, 2002), a hedonic model, and an eudaimonic model (cf. Kahneman et al., 1999; Ryan & Deci, 2001; Waterman, 1993). In the subsequent articles, general psychological well-being is defined in terms of the degree of sense of coherence, satisfaction with life and affect balance. Hedonic well-being is based on the degree of satisfaction with life and affect balance. Finally, eudaimonic well-being is based on the degree of sense of coherence experienced by respondents and satisfaction with life.

A person who is psychologically well can experience life as satisfying, hopeful, and meaningful, have meaningful relationships and also have the capacity to maintain a level of affective well-being in challenging times and accept support from others (cf. Wissing & van Eeden, 2002). Diener and Seligman (2004) suggest that people high in well-being function more effectively than people low in well-being. Such people are more likely to have more successful relationships, to be more productive at work, have higher incomes and have better physical and mental health. On a national level, it is possible that well-being may be an indication of how a successful nation is in fulfilling the needs, the goals, and the values of its citizens. Thus, well-being might facilitate democratic governance. Examples of mass demonstrations in 2006 against lack of delivery of services in predominantly black South African townships is in a sense an expression of discontent, a state of “unwell-being”, as it were.

Various categories of factors have been identified as predictors of psychological well-being including objective characteristics such as age, gender, education, income, marital status (cf. Csikszentmihalyi, 1999); personality (Hayes & Joseph, 2003; Schmutte & Ryff, 1997); physical health (Hojat, Gonnella, Erdmann, & Vogel, 2003; Powell, Shahabi & Thoresen, 2003); religiosity and spirituality (Larson & Larson, 2003; Levin & Chatters, 1998, etc.), social support (Kahn, Hessling & Russell, 2003; Garcia, Ramirez & Jariego, 2002); neighbourhood and place (Macintyre, MacIver, & Sooman, 1993); and individualism vs. collectivism (Diener & Diener, 1995; Veenhoven, 1993). However, in these studies the role of context is often ignored, dynamics are not considered, and the possible mediating or moderating role of these variables in the relationship between contextual aspects and the degree of psychological well-being has not been explored.

From the literature three possible important mediators were identified for purposes of further exploration in this study, namely, the subjective perception of health, personality, and spirituality. The conceptualisation of each of these possible mediating variables is addressed in the ensuing articles.

In the present study, the dynamics of contexts and individual psychological well-being will be explored by testing various models using subjective perceptions of health, personality factors, and spirituality as possible mediating variables. Whereas the latter variables have hitherto been explained as correlates of psychological well-being, in the present study these relationships would be tested using mediation with structural equation models. Findings will be reported as three articles with the following themes: The role of subjective perception of health in the dynamics of context and psychological well-being; the role of personality in the dynamics of context and psychological well-being; the role of spirituality in the dynamics of context and psychological well-being.

The aim of the first article was to determine the role of subjective perceptions of health in the dynamics of context and psychological well-being. This article has already been accepted for publication by the *South African Journal of Psychology*. The aim of the second article was to determine whether personality factors such as agreeableness and extraversion mediate the relationship between context and psychological well-being. The second article has been submitted to the *Journal of Personality and Social Psychology*. The aim of the third article was to determine whether spirituality mediates between context and psychological well-being. This article has been submitted to the *South African Journal of Psychology*.

This study on the possible mediating role of subjective perceptions of physical health, personality factors and spirituality in the dynamics of context and psychological well-being, may contribute to theories on the dynamics of well-being, highlight the manifestations of these dynamics in a South African context, and provide pointers to practical enhancement of psychological well-being in this context.

Section 2: Article 1

**The role of subjective perceptions of health in the dynamics of context and
psychological well-being**

submitted to the

South African Journal of Psychology

2.1 Guidelines for authors:

South African Journal of Psychology

1. The manuscript should be typed in 12-point font (Times Roman) double-spacing.
2. The first page should contain the title of the article, the name(s) of the author(s), as well as the address of the author to whom the correspondence should be addressed.
3. The abstract should be on a separate page.
4. The text of the article should be started on a new page.
5. Indicate the beginning of a new paragraph by indenting its first line two spaces, except when the paragraph follows a main or secondary heading.
6. The headings should all start at the left margin, and should not be numbered. The introduction to the paper does not require a heading.
7. The referencing style of the SAJP is similar to those used by the British Psychological Society and the American Psychological Association (See *SAJP Guide to Authors*)
8. In the reference list, the first line of each reference starts at the left margin; subsequent lines are indented two spaces.
9. 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. Tables should be drawn without grid-lines separating the cells in the tables. The appropriate positions in the text should be indicated.
10. 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 paper.

11. Once the article has been accepted for publication, a computer diskette must also be submitted. MS Word is the preferred text format. The manuscript number and author or author's name(s) should be clearly indicated on the diskette.
12. As the SAJP does not employ a full-time language editor, it is recommended that, once articles have been accepted for publication, authors send their manuscripts to an external language specialist for language editing. Furthermore, it is recommended that a note indicating that the manuscript had been language edited accompany the final submission of the manuscript.

2.2 Manuscript

The role of subjective perceptions of health in the dynamics of context and psychological well-being

Q. Michael Temane and Marié P. Wissing

School for Psycho-Social Behavioural Sciences, North-West University:

Potchefstroom Campus

Corresponding author: Q. M Temane
School of Psychosocial Behavioural Sciences: Psychology
North-West University
Private Bag X 6001
POTCHEFSTROOM 2530, RSA
e-mail: psgqmt@puk.ac.za

The role of subjective perceptions of health in the dynamics of context
and psychological well-being

Abstract

The purpose of this study was to establish the role played by subjective perceptions of physical health in the relationship between psychological well-being and two social contexts that are stratified by socioeconomic differentials pertaining to race, socioeconomic indices and infrastructural resources. An availability sample of 514 participants from Potchefstroom (n=384) and Mafikeng (n=130) completed questionnaires on subjective perception of health and psychological well-being. Regression equations were computed to explore the viability of relationships among context and subjective perceptions of physical health, context and psychological well-being, and psychological well-being and subjective perceptions of physical health. Structural equation models showed that subjective perceptions of physical health mediate the relationship between context and psychological well-being. Implications of findings are indicated.

The United Nations' Human Development Index which measures the quality of life in various countries shows that South Africa ranks number 119 in the world in terms of commitment to health (Human Development Report, 2004). Quality of life is a major point of focus in the South African Government's efforts to improve the lives of all its citizens (cf. Act 108 of 1996). It is known that the provision of services including health is still not ideal in rural areas as compared to urban areas on the one hand and between black and white South Africans (cf. Temane, 2001). Marmot, Ryff, Bumpass, Shipley and Marks (1997) have shown that differential access to resources in life influences health and well-being. It has been suggested that variations in the levels of social capital may account for previously unexplained between-place variations in health outcomes (Mohan, Twigg, Barnard, & Jones, 2005). Muldoon, Barger, Flory and Manuck (1998) note that quality of life includes the assessment of the functional status of the individual and the individual's appraisal of health as it affects their sense of well-being. The present study considers the role of perceptions of physical health in the relationship between context and psychological well-being from a positive psychology perspective.

The basic contention in positive psychology (cf. Seligman & Csikszentmihalyi, 2000) is that valued subjective experiences play a role in optimal psychological functioning (cf. Ryan & Deci, 2001) and these differ from individual to individual (Waterman, 1993), by gender (Roothmann, Kirsten & Wissing, 2003) and from nation to nation (Diener & Diener, 1995). It is almost axiomatic that perceptions and whatever their origins, are tinged by the context in which they obtain. In this study, the focus is on subjective perceptions of physical health and how this may be related to psychological

well-being within two contexts that are stratified by socioeconomic differentials pertaining to race, socioeconomic indices and infrastructural resources.

Some literature in health psychology (cf. Huppert & Whittington, 2003) has demonstrated the fact that the association between health status and well-being seems intuitively clear based on mind-body relationships and that the presence of illness could be negatively correlated with the experience of psychological well-being. Staudinger, Fleeson and Baltes (1999) note that questions concerning personal characteristics and contextual factors that predict global and domain-specific well-being are central to psychological research on subjective well-being and subjective physical health. Gallo and Matthews (2003), following their extensive review of literature concluded that few studies have integrated socioeconomic, cognitive or emotional, and health variables within the same methodological framework. Nevertheless, a multiplicity of variables including the profound influence of socio-economic differentials (Adams, Hurd, McFadden, Merrill, & Ribeiro, 2003; Chen, Matthews & Boyce, 2002; Cutrona, Russell, Hessling, Brown & Murry, 2000; Shibuya, Hashimoto, & Yano, 2002; Sturm, Gresenz & Mackenbach, 2002), personality factors (Emery, Huppert, & Schein, 1996), and self esteem (Kim, Kasser, & Lee, 2003) have been implicated in the relationship between subjective perceptions of health and well-being. Despite the broad range of variables putatively associated with subjective perception of physical health, findings have been inconsistent, suggesting that other factors may be involved in these dynamics. Conceptually, some models have attempted to explain the pervasive influence of ecological factors (cf. Ramsey & Smit, 2002) and biophysical factors (Grzywacz & Fuqua, 2000) on the relationship between health and well-being.

Ramsey and Smit (2002) proposed a model of well-being that argues that various conditions in the environment within which a community exists play a role in the experience of well-being. They suggest that well-being in rural communities is multidimensional, arising from ecological, social, political, economic, and institutional factors. Well-being in their view is interpreted as the interrelated structural and functional conditions (physical, psychological, social and economic) of a community, including individuals and their interactions within their environment. In their model of well-being, physical well-being comprises of disease, mortality rates and life expectancy; psychological well-being is characterised by suicide rates and indicators of life satisfaction and psychological assessment; economic well-being might be described by levels of income, poverty, unemployment, and educational attainment; and social well-being is characterised by social support and activity, personal interaction and life satisfaction. These structural and functional conditions overlap and indicate dependence. For example, a person's perception of life satisfaction (social well-being) is related to factors such as individual health (physical well-being) and whether they are employed and financially sound (economic well-being). The thinking in this model is important to this study because of the assumption that the context within which a community exists is crucial in understanding how differences in the experience of well-being between individuals could be understood.

The centrality of health in well-being is also demonstrated by the biopsychosocial model (cf. Bronfenbrenner, 1979). Grzywacz and Fuqua (2000) argue that different dimensions of well-being are reciprocally related and linked to diverse conditions in the socio-physical environment as expressed by the following: i) individual and community

well-being are contingent upon multiple aspects of the person or population, as well as multiple dimensions of the environment; ii) certain individual or environmental conditions exert a disproportionate degree of influence on health and well-being; and iii) the physical and social environments are interdependent. The model by Ramsey and Smit (2002) also demonstrates conceptually that forces within the community such as economic conditions influence community structures which then lead to variations in well-being.

Using a national probability sample, Campbell, Converse and Rodgers (1976) demonstrated that people who are dissatisfied with their physical health are also less likely to have a strong sense of well-being. Girling, Huppert, Brayne, Paykel, Gill and Mathewson (1995) showed that depressive symptoms such as loss of energy and feelings of tension and irritability were associated with poor subjective physical health. Hayes and Ross (1988) found evidence to show that good physical health predicts psychological well-being and that this relationship is not conditional on demographic characteristics. They argue that this relationship seems to be mediated intrapsychically rather than externally. Poor physical health may for example increase feelings of being rundown, experiences of demoralisation, and feelings of despondence about the future especially as compared to the premorbid condition. Diez-Roux (2001) suggests that most importantly, health differentials are not only a function of individual differences, but also of place, or of processes influencing spatial distribution of individuals.

Aneshensel and Sucoff (1996) found that youth in low socioeconomic neighbourhoods perceive greater ambient hazards such as crime, violence, drug use, etc., than those in high socioeconomic neighbourhoods. They opine that the more threatening

the neighbourhood, the more common the symptoms of depression, anxiety, oppositional defiant disorder and conduct disorder. In an attempt to explain one of the pathways through which context can influence well-being, Gallo and Matthews (2003) use the reserve capacity model to support the idea that low socioeconomic environments may kindle disproportionate levels of negative emotions and attitudes, and likewise, these variables may have deleterious effects on health by reducing the individual's capacity to manage stress.

In the above-mentioned studies, psychological well-being has been defined and operationalised in several ways: sometimes in terms of symptoms of pathology or absence of pathology (cf. Ryff & Singer, 1998) or in terms of the presence of positive experiences (e.g., Seligman & Csikszentmihalyi, 2000). This study will approach psychological well-being from a positive psychology perspective, in which well-being is defined broadly in terms of hedonic as well as eudaimonic (cf. Ryan & Deci, 2001; Waterman, 1993) facets. The aim of this study is to establish the role of perceptions of physical health in the relationship between context and psychological well-being. The prediction based on the available literature is that subjective perceptions of health would be a significant predictor of psychological well-being given contextual differentials. The literature shows that a relationship exists between subjective perceptions of health and well-being (cf. Hayes & Ross, 1988); that contextual and intrapsychic factors are important for well-being (cf. Staudinger et al., 1999); and that conceptually, a person's perception of life satisfaction is related to factors such as individual health and whether they are employed and whether they are on a sound financial footing (cf. Ramsey & Smit, 2002). However, thus far few studies have integrated socioeconomic, cognitive or

emotional, and health variables within the same methodological framework (cf. Gallo & Matthews, 2003) and findings are inconsistent.

METHOD

Design

This is a secondary data analysis of the FORT Project (Wissing, Pretorius, & Heyns, 2000 – 2003) conducted as part of a broader project to clarify and advance the study of psychological well-being. The study employed an *a posteriori* cross-sectional research design to collect data.

Participants

An availability sample of 514 participants from Potchefstroom (n= 384) and Mafikeng (n=130) took part in this study. The first group in the sample was mainly white Afrikaans speaking undergraduate students and adults whereas the second group comprised of a comparable group of mainly black undergraduate Setswana-speaking students. The Potchefstroom sample comprised of 92 males and 288 females ranging in age from 18 to 25 years and predominantly white (313) and to a lesser extent black (56), Indian (8) and coloured (4). The participants from Mafikeng were 77 females, 51 males and were predominantly black (114), and to a lesser extent white (8) and Indian (1). In terms of age, the participants were largely represented in the category 18 to 25 years of age for both groups.

Measuring Instruments

Demographic questionnaire. Demographic information collected included age, gender and race.

Psychological well-being. Psychological well-being is operationalised in this study in line with Wissing and van Eeden's (2002) finding of a general psychological well-being factor that comprises of sense of coherence, satisfaction with life, and affect balance and that includes facets from both hedonic and eudaimonic conceptualisations of psychological well-being. The hedonic conceptualisation of psychological well-being (operationalised by satisfaction with life and affect balance) is described by Waterman (1993) as pleasant affect accompanied by satisfaction of needs. Kahneman, Diener and Schwarz (1999) conceptualise hedonic psychology as the study of happiness. The eudaimonic component contends that well-being lies in actualisation of human potential (Waterman, 1993) and is operationalised in this study by the sense of coherence scale which measures the individual's way of experiencing the world as meaningful (cf. Antonovsky, 1987, 1993).

Sense of Coherence Scale (SOC) (Antonovsky, 1987, 1993). The SOC (a 29-item scale) measures an individual's way of experiencing the world and their life in it. Core components are comprehensibility, manageability and meaningfulness. Antonovsky (1993) indicates that the SOC manifested internal reliability indices of 0.78 to 0.93 as reported in 26 different studies, and test-retest reliability indices of 0.56 to 0.96. Antonovsky (1993) also reports good content and criterion validity. Wissing et al., (1999) have illustrated the applicability

of this scale in a South African context particularly for the Setswana speaking group in the North West Province. In this study, internal reliabilities of 0.88 and 0.76 were found for the Potchefstroom and Mafikeng groups respectively.

Affectometer 2 (short version) (AFM) (Kammann & Flett, 1983). The AFM was developed to measure a general sense of well-being or general happiness. Psychological well-being is measured on an affective level by determining the balance between positive and negative affect (Kammann & Flett, 1983). The sub-scales in the AFM measure Positive Affect (PA) (10 items), Negative Affect (NA) (10 items), and Positive-Negative-affect-Balance (PNB) (PA-NA=PNB). The more positive affect predominates over negative affect, the higher the overall level of well-being (Kammann & Flett, 1983). These authors report Cronbach alpha-reliability indices of 0.88 to 0.93. Wissing et al. (1999) indicated the reliability and validity of this scale for use in an African group. Internal reliabilities of 0.83 and 0.84 were elicited for positive affect and negative affect for the Potchefstroom group and 0.64 and 0.78 in the case of the Mafikeng group for positive affect and negative affect.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985). The SWLS (a 5-item scale) was developed to give an indication of a person's general satisfaction with life. A person's evaluation of their quality of life, according to their own criteria, is measured on a cognitive-judgmental level. Diener et al. (1985) report a two month test-retest reliability index of 0.82, and a Cronbach alpha-reliability index of 0.87. Pavot and Diener (1993) also attest to the good psychometric characteristics of this scale.

Wissing et al. (1999) also found the SWL reliable and valid for use in an African context. Internal reliabilities of 0.84 and 0.65 were found for the Potchefstroom and Mafikeng groups respectively.

Subjective perceptions of health. This variable was conceptualised in terms of the General Health Questionnaire (GHQ) by Goldberg and Hillier (1979). The GHQ is aimed at detecting common symptoms, which are indicative of the various syndromes of mental disorder, and differentiates between individuals with psychopathology as a general class and those who are considered to be normal. Subscales are: Somatic Symptoms (SS), Anxiety and Insomnia (AI), Social Dysfunction (SD), and Severe Depression (DS). The scale consists of 28-items. The Cronbach alpha reliabilities reported vary from 0.82 to 0.86 (Goldberg et al., 1997), and 0.77 to 0.84 for subscales and 0.91 for the Total Scale Score in a South African sample (Wissing & Van Eeden, 2002). Goldberg et al. (1997) attest extensively to its validity. In the current study the following Cronbach alpha reliabilities were found: 0.78 (SS); 0.82 (AI); 0.77 (SD); 0.85 (DS) for the Potchefstroom group and .72 (SS); 0.82 (AI); 0.65 (SD); 0.74 (DS) for the Mafikeng group. For the total scores a Cronbach alpha of .84 and .90 was obtained for the Potchefstroom and Mafikeng groups.

Context. Context was conceptualised in terms of the stratification by socioeconomic differentials pertaining to race, socioeconomic indices and infrastructural resources between Potchefstroom and Mafikeng. Stark historical differences still abound between the two social contexts largely in terms of social demographic factors. Potchefstroom is dubbed the “City of Expertise” and boasting a university campus with commendable

resources and research capacity and throughput, an urbane atmosphere for recreational purposes, industrial, farming and mining activities as sources of potential employment, proximity to metropolitan areas through a national route linking the main centres of economic activity in South Africa. Mafikeng and its environs on the other hand, are surrounded by numerous deep rural areas characterised by poverty, lack of employment opportunities, long distances from metropolitan areas, save for the platinum mining activities in Rustenburg whose profits are also spoken for by the Bafokeng tribe and an under-resourced university campus at the stage of the data collection in 2000. In terms of models on the deleterious effects of contexts and neighbourhoods, differences are expected between participants from these two contexts.

Procedure

The scales that were used to collect the data reported in this study were bound in book format. Each questionnaire was provided with clear instructions and accompanied by a removable letter, explaining the nature of the research and ethical aspects such as voluntary participation. Participating students completed their questionnaires in groups, while the other adults who participated in the study completed their questionnaires individually, after informed consent was obtained. The students received a nominal fee for their participation and participants who requested it, were given feedback on the results. The completed questionnaires were scored by computer after the necessary programme was written and the data were cleaned. Ethical approval for the study was given by North-West University's Ethics Committee (05k10).

Data analysis

The role of mediating variables was tested with the aid of multiple regression analyses and structural equation models (Frazier, Tix, & Barron, 2004). Stepwise multiple regression models were implemented on the total data set to determine the percentage of variance explained by context in subjective perceptions of health, context and well-being and finally between subjective perceptions of health and well-being. Frazier et al. (2004) suggest that four regression analyses be computed to illustrate the mediation role of a variable. The coefficient of determination (R^2) is reported as an indication of the amount of variance explained by the independent variables. Subsequent to the regression analyses, a test of multicollinearity was employed to obviate problems associated with the high intercorrelations among explanatory variables (Everitt, 1996). If the predictor variables are uncorrelated, then the diagonal elements of the inverse correlation matrix are equal to 1.0; thus, for correlated predictors, these elements represent an "inflation factor" for the variance of the regression coefficients, due to the redundancy of the predictors. Everitt (1996.) says that a VIF greater than 10 gives some cause for concern. The F test is used to test the significance of R, which is the same as testing the significance of R^2 . This is also the same as testing the significance of the regression model as a whole. If $\text{prob}(F) < .05$, then the model is considered significantly better than would be expected by chance and we reject the null hypothesis of no linear relationship of y to the independent variables. F is a function of R^2 , the number of independent variables, and the number of cases (see Everitt, 1996)

The use of statistical significance testing as a routine procedure has been criticised (cf. Cohen, 1990; Hunter, 1997). An appeal to authors has also been made to place more

emphasis on effect sizes (cf. Thompson, 1994) as a way of attesting for the practical significance of the findings. Effect size (ES) is a name given to a family of indices that measure the magnitude of a treatment effect. Effect sizes are independent of sample size. Thus to attest to the practical significance of the regression models, effect sizes were computed based on the following formula by Steyn (1999): $f^2 = R^2 / (1 - R^2)$. A cut-off point of 0.10 (moderate effect) was set for practical significance of f^2 . There is as a wide array of formulas used to measure effect size possibly as there are tests of significance.

The hypothesized mediation relationship among context, subjective perceptions of health and psychological well-being were tested using the structural equation model in SEPATH (Statsoft Inc., 2004). The χ^2 statistic, and the Goodness of Fit Index (GFI: Jöreskog & Sörbom, 1989) and Root Mean Square Error of Approximation (RMSEA: Steiger, 1990) are reported as measures of fit. A fit index is an overall summary statistic that evaluates how well a particular covariance structure model explains the sample data. Thus, these summarise the degree of correspondence between the implied and observed covariance matrices. A large χ^2 relative to the degrees of freedom indicates a poor fit and could lead to the summary rejection of a model based on sample size and not model adequacy (cf. Yu, 2002). The GFI indicates the relative amount of variance and covariance in the sample predicted by estimates of the population. It varies between 0 and 1 and a result of 0.90 indicates a good model fit. Hu and Bentler (1995) characterise the GFI as an absolute value because it compares the hypothesised model with no model at all. The GFI does not depend on sample size explicitly in its computation (cf. Jöreskog & Sörbom, 1989). However, owing to the problem related to implications of a big sample size in χ^2 and the associated rejection of models that may have good fit, two adjunct

indices are also reported, namely: the Adjusted Goodness of Fit Index (AGFI) and the Normed Fit Index (NFI). Maiti and Mukherjee (1990) demonstrated that there is an exact monotonic relationship between χ^2 and GFI.

The RMSEA gives an indication of the overall degree of error in the hypothesised model-data fit, relative to the number of estimated parameters or the complexity of the model. The RMSEA computes average lack of fit per degree of freedom and it is possible to have near-zero lack of fit in both a complex and in a simple model as RMSEA would compute to be near zero in both. Its popularity is partly based on the fact that it does not require comparison with a null model and thus does not require one to posit a plausible model in which there is complete independence of the latent variables. The RMSEA should be 0.05 or less (Browne & Cudeck, 1993) to indicate good fit. MacCullum, Browne, and Sugarawa (1996) indicate that RMSEA values ranging from 0.08 to 0.10 indicate mediocre fit and those greater than 0.10 indicate poor fit. It should be noted that although convenience samples by their nature are limited in terms of generalisability (cf. Utsey, Brown & Bolden, 2004), several fit indices can be used in such circumstances to explore how measurement models fit the data (Jöreskog, 1993). Further, previously, convenience samples have been used to perform structural equation modelling analyses (cf. Knight, Silverstein, McCallum & Fox, 2000; Nelson & Olson, 1978; Utsey, et al. 2004).

RESULTS

Multiple regression models containing context, psychological well-being and subjective perceptions of physical health were tested jointly for both groups as suggested by Frazier et al. (2004) and also separately to study differences on the group level. Context was found to minimally predict levels of subjective perceptions of physical health in the combined group ($R^2=0.03$). The test of multicollinearity in this model yielded a variance inflation factor (VIF; Everitt, 1996; Mansfield & Helms, 1981) of 1.00. The model also yielded a small effect ($f^2=0.03$) indicating that the finding is of little practical significance. Context also poorly predicted the decomposed elements of psychological well-being (Sense of coherence: $R^2=0.02$; Affect Balance: $R^2=0.02$ and Satisfaction with life: $R^2=0.003$). The VIF in this case was also 1.00. Small effect sizes were yielded based on the foregoing findings.

In the combined group, subjective perceptions of health predicted psychological well-being with an average of 32% (Sense of coherence: $R^2=0.29$; Affect Balance: $R^2=0.33$ and Satisfaction with life: $R^2=0.16$). The variance inflation factors were all lower than 1.00 in this model. The effect sizes were moderate to high ($f^2=0.41$; 0.49; 0.19) according to the criteria determined by Steyn (1999) for regression models. Thus, practical significance of the prediction of psychological well-being by subjective perceptions of health can be ascertained.

The analysis of variance for the combined model testing the relationship among subjective perceptions of health, context and psychological well-being, showed a good overall fit ($F=205.45$, $df=1/501$, $MS=364.72$, $p=0.005$). The *F test*, in this instance is

used as a measure of the relationship between the dependent variables and the set in independent variables. The test shows that there is a relationship between subjective perceptions of health and psychological well-being.

When the 2 contexts were separated, subjective perceptions of health still adequately predicted psychological well-being as Table 1 shows, but to a different extent for the various components of psychological well-being and for the two separate contexts, namely, Potchefstroom and Mafikeng.

(Insert table 1 about here)

In the present study model fit was evaluated using χ^2 , GFI and RMSEA. The first model on the role of subjective perceptions of health in the relationship between context and psychological well-being (measured as a general factor) indicated a marginal fit ($\chi^2=14.343$, $df=4$, $p=0.006$; $GFI=0.943$, $AGFI=0.957$, $NFI=0.989$, $RMSEA=0.07$). In terms of the latter, the point estimate (RMSEA) is higher than the more stringent recommended value of 0.05 (cf. Browne & Cudeck, 1993) and Hu and Bentler's (1995) cut-off point of 0.06 but less than MacCullum et al's. (1996) accommodating estimate of 0.08 to 0.1. These results indicate that the model predicted relations that are significantly different from the relations observed in the sample, and that the model should be rejected. A further model was tested in which psychological well-being was conceptualised and measured in terms of the predominance of positive affect and satisfaction with life. This conceptualisation is in line with what is described as a hedonic view of psychological well-being in the literature. This model fit the data very well ($\chi^2=1.639$, $df=1$, $p=0.2$, $GFI=0.998$, $AGFI=0.984$, $NFI=0.997$, $RMSEA=0.03$). A third model, now combining

preponderance of positive affect with sense of coherence as conceptualisation and measurement of psychological well-being was computed. This model showed a better fit compared to the first two models ($\chi^2=0.031$, $df=1$, $GFI=1.00$, $AGFI=1.00$, $NFI=1.00$, $RMSEA=0.00$). The various fit statistics show an incremental improvement from the first model to the third model. The second and third models indicate that subjective perception of health plays a significant mediating role in the relationship between context and psychological well-being (see figures 1 and 2) especially when satisfaction with life is excluded from the configuration of psychological well-being.

(Insert Figure 1 and 2 about here)

Results from the path analyses computed for the relationships among context, subjective perceptions of health and psychological well-being indicate that the path between subjective perceptions of health and psychological well-being as observed from the standardised parameter estimates was significantly stronger than the path between context psychological well-being. These path analyses confirmed the findings in relation to the relationships observed in the regression equation, F test, and moderate effect sizes referred to above.

DISCUSSION

The results of this study show that subjective perceptions of health mediate the relationship between context and psychological well-being. Model fit varied in relation to the definition of psychological well-being in terms of the general psychological well-

being factor (in line with the conceptualisation of Wissing and Van Eeden, 2002), the hedonistically defined variant of psychological well-being, and finally a new variant comprising of sense of coherence and affect balance. From the regression analyses, as indicated in Table 1, the predominance of positive affect in the conceptualisation of psychological well-being is evident. Satisfaction with life seemed to have introduced variation in the viability of the model fit. The findings nevertheless underscore the importance of subjective perceptions of health in the relationship between context and psychological well-being.

Findings from regression analyses indicate that subjective perceptions of health predicts satisfaction with life to a lesser extent than sense of coherence and psychological well-being, and especially so in the case of the Mafikeng group. This may be explained by the fact that the Mafikeng group is from a traditionally more collectivistic cultural group from whom satisfaction with life is more strongly associated with interpersonal and social facets than with intrapsychic components (Wissing, Wissing, du Toit & Temane, 2004). Subjective perceptions of health is a more individual process and may be more susceptible to the individual's own judgment of well-being, and therefore may be more strongly related to other intrapsychic processes. Findings of the regression analyses also indicated that subjective perceptions of health predicted affect balance more strongly than sense of coherence and satisfaction with life, and equally strongly in the case of the Potchefstroom and Mafikeng groups. This prominent role of positive affect underscores Fredrickson's (2001) Broaden and Build model of Positive Emotion, in which it is argued that positive emotions and affect are the basic ingredients of psychological well-being. These results suggest the contextual embeddedness of the variants of psychological well-

being in the two social contexts as demonstrated by some of the empirical literature (cf. Oishi, Diener, Lucas, & Suh, 1999; Kitayama, Markus & Kurokawa, 2000).

The procedure suggested by Frazier et al. (2004) showed that the path between context and psychological well-being and the path between context and subjective perceptions of health were far weaker than the path between subjective perceptions of health and psychological well-being. This finding suggests at least two things: firstly, that the importance of health to psychological well-being overrides the differentials suggested by contextual factors and secondly that the constellation of psychological well-being is anything but monolithic. In terms of the latter, a cognitive appraisal of a situation as unsatisfying does not necessarily mean that life does not make sense or constrain the relationships that individual shares with others. Secondly, the regression analyses indicated that subjective perceptions of physical health adequately predicted psychological well-being jointly in both groups and when these groups were considered separately. Nevertheless, the coefficient of determination was stronger in the Potchefstroom group as compared to the Mafikeng group.

As pointed out in the introduction, specific literature linking context, subjective perceptions of health, also referred to as self-rated health, and psychological well-being through a mediation relationship is quite sparse. In a longitudinal study, Cassidy (2000) demonstrated empirically that a consistent relationship exists between home background, self-rated health and psychological well-being. This is consistent with the findings in this study indicating that subjective perceptions of health mediates the relationship between context and psychological well-being. In a different context, Bailis, Segall and Chipperfield (2003) established that a decline in self-rated health is associated with a

decline in variables such as mental health symptoms. Based on the foregoing, subjective perceptions of health is important for psychological well-being given a variety of background variables. Previous research has established that the subjective perception of health is generally considered a robust and holistic indicator of overall health (Baron-Epel et al. 2004; Franks, et al., 2003; Kaplan & Baron-Epel, 2003) in the sense of well-being (Grundy & Sloggett, 2003) over and above the objective indicators of health (Idler & Benyamini, 1997). DeNeve (1999) and Okun, Stock, Haring and Witter (1984) found that self-reported health is one of the strongest correlates of well-being compared to sociodemographic factors which when combined explain less than 15% of well-being differences between people (Campbell, Converse, & Rodgers, 1976). In this study, subjective perceptions of health explained 29% of the variance in psychological well-being for the Potchefstroom group and 18% for the Mafikeng group.

Goldman, Gleib, and Chang (2003) regard subjective perceptions of health as an important component of quality of life as it incorporates psychological well-being, social functioning, and positive affect. Baron-Epel et al. (2004) remark that the relatively high utility of this variable is premised on the assumption that individuals know and understands how they have been feeling physically and can thus give an evaluative answer to a question regarding their physical health. In this study this has been demonstrated by the attenuation of the magnitude of the beta coefficient between context and psychological well-being when the variable measuring subjective perceptions of health was added to the model.

Three limitations are acknowledged in the present study: the data set used is cross-sectional in nature and thus, predictions can only illustrated statistically and not in a

causal sense. Secondly, the sample was comprised of unequal numbers of participants for each social context. Thirdly, context was not measured directly but used heuristically to describe the social conditions of the groups. Nevertheless, the findings in this study help us to understand that subjective perceptions of health are important to understand the relationship between context and psychological well-being for these particular groups. Therefore, some support for Ramsey and Smit's (2002) thinking about conditions in the environment influencing psychological well-being is evident in the findings as well as Gallo and Matthews' (2003) reserve capacity model. There was no support in the present study however, for the findings by Hayes and Ross (1986) that the relationship between physical health and psychological well-being is not dependant on demographic factors but is internally mediated.

The implication of the present study is that the enhancement and conception of physical health may be an important entry point in the enhancement of biopsychosocial experiences of general quality of life. This is in line with Maslow's hierarchy of needs where basic needs such as health come first for the realisation of optimal functioning (cf. Rathunde, 2001). Thus, there is a need to optimise facilities of health for all sectors of the South African populace so as to impact perceptions of quality of life and general well-being. Attention needs to be paid to the enhancement of healthy lifestyles in regard to the role played by emotions in the evaluation of health on the one hand and well-being on the other. Kahn, Hessling and Russell (2003) and Taylor, Repetti and Seeman (1997) have demonstrated that cognitive-emotional factors play an important role in understanding how sociodemographic differentials have negative outcomes for health. Further research

should explore the dynamics of context, health perceptions and well-being conceptualised from a pure eudaimonic perspective in individualistic and collectivistic cultural groups.

ACKNOWLEDGEMENT

The financial assistance of the National Research Foundation: Division for Social Sciences and Humanities towards this research is hereby acknowledged. The opinions expressed and conclusions arrived are those of the authors and are not necessarily to be attributed to the National Research Foundation.

REFERENCES

- Act 108 Of 1996 Constitution of the Republic of South Africa. Pretoria: Government Printing Press.
- Adams, P., Hurd, M.D., McFadden, D., Merrill, A. and Ribeiro, T. (2003). Healthy, healthy, and wise? Tests for direct causal paths between health and socioeconomic status. *Journal of Econometrics*, 112, 3-56.
- Albrecht, G.L. and Devlieger, P.J. (1999). The disability paradox: High quality of life against all odds. *Social Science & Medicine*, 48, 977-988.
- Allik, J. and McCrae, R.R. (2004). Toward a geography of personality traits: Patterns of profiles across 36 cultures. *Journal of Cross-cultural Psychology*, 35 (1), 13-28.
- Alpass, F.M. and Neville, S. (2003). Loneliness, health and depression in older males. *Aging & Mental Health*, 7 (3), 212-216.
- Aneshensel, C.S. and Sucoff, C.A. (1996). The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior*, 37, 293-310.
- Antonovsky, A. (1987). The salutogenic perspective: Toward a new view of health and illness. *Advances, Institute for the Advancement of Health*, 4 (1), 47-55.
- Antonovsky, A. (1993). The structure and properties of the Sense of Coherence Scale. *Social Science and Medicine*, 36 (6), 725-733.
- Bailis, D.S., Segall, A. and Chipperfield, J.G. (2003). Two views of self-rated general health status. *Social Science & medicine*, 56, 203-217.
- Baron-Epel, O., Shemy, G., and Carmel, S. (2004). Prediction of survival: A comparison

- between two subjective health measures in elderly population. *Social Science & Medicine*, 58, 2035-2043.
- Bronfenbrenner, U. (1979). *The ecology of human development experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Browne, M.W. and Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen and J.S. Long (Eds.), *Testing structural equation models* (pp. 136-162). London: Sage.
- Byrne, B.M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Campbell, A., Converse, P.E. and Rodgers, W.L. (1976). *The quality of American Life*. New York: Russell Sage.
- Cassidy, T. (2000). Social background, achievement motivation, optimism and health: A longitudinal study. *Counselling Psychology Quarterly*, 13 (4), 399-412.
- Chatters, L.M. (2000). Religion and Health: Public Health Research and Practice. *Annual Review of Public Health*, 21, 335-367.
- Chen, E. Matthews, K.A. and Boyce, W.T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin*, 128 (2), 295-329.
- Cohen, J. (1990) Things I have learned (so far). *American Psychologist*, 45, 1304-1312.
- Cutrona, C.E, Russell, D.W., Hessling, R.M., Brown, P.A., and Murry, V. (2000). Direct and moderating effects of community context on the psychological well-being of African American women. *Journal of Personality and Social Psychology*, 79 (6), 1088-1101.

- DeNeve, K.M. (1999). Happy as an extraverted clam? The role of personality for subjective well-being. *Current Directions in Psychological Science*, 8 (5), 141-44.
- Diener, E. and Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653-663.
- Diener, E., Emmons, R., Larsen, R.J., and Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49 (1), 71-75.
- Diener, E. and Suh, E.M. (2000). Measuring subjective well-being to compare the quality of life of cultures. In E. Diener & E.M. Suh (Eds.) *Culture and subjective well-being*. (pp. 3-12). Cambridge, MA: The MIT Press.
- Diez-Roux, A.V. (2001). Investigating neighborhood and area effects on health. *American Journal of Public Health*, 91, 1783-1789.
- Ellison, C. (1994). Religion, life stress paradigm and the study of depression. In J.S. Levin (Ed.) *Religion in aging and health: Theoretical foundations and frontiers*. (79-121). Thousand Oaks, CA: Sage.
- Emery C.F., Huppert, F.A. and Schein, R.L. (1996). Health and personality predictors of psychological functioning in a 7-year longitudinal study. *Personality and Individual Differences*, 20 (5), 567-573.
- Everitt, B.S. (1996). *Making sense of statistics in psychology: A second-level course*. Oxford: Oxford University Press.
- Fabricatore, A.N., Handal, P.J. and Fenzel, L.M. (2000). Personal spirituality as a moderator of the relationship between stressors and subjective well-being. *Journal of Psychology and Theology*, 28, 221-228.
- Findley, J.C., Kerns, R. and Weinberg, L.D. (1998). Self-efficacy as a psychological

- moderator of chronic fatigue syndrome. *Journal of Behavioral Medicine*, 21, 351-362.
- Franks, P., Gold, M.R. and Fiscella, K. (2003). Sociodemographics, self-rated health, and mortality in the US. *Social Science & Medicine*, 56 (12), 2505-2514.
- Frazier, P.A., Tix, A.P. and Barron, K.E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology*, 51 (1), 115-134.
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218-226.
- Gallo, L.C. and Matthews, K.A. (2003). Understanding the association between socioeconomic status and physical health: Do negative emotions play a role? *Psychological Bulletin*, 129 (1), 10-51.
- Girling, D. M., Huppert, F. A., Brayne, C., Paykel, E. S., Gill, C. and Mathewson, D. (1995). Depressive symptoms in the very elderly: Their prevalence and significance. *International Journal of Geriatric Psychiatry*, 10(6), 497-504.
- Goldberg, D.P., Gater, R., Sartorius, N., Usten, T.B., Piccinelli, M., Gureje, O. and Rutter, C. (1997). The validity of two versions of the HGQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27, 191-197.
- Goldberg, D.P. and Hillier, V.F. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine*, 9, 139-145.
- Goldman, N., Gleib, D.A., and Chang, M. (2003). The role of clinical risk factors in understanding self-rated health. *Annual Epidemiology*, 14, 49-57.

- Gulliksen, H. (1987). *Theory of mental tests*. Hillsdale, NJ: Erlbaum.
- Grundy, E. and Sloggett, A. (2003). Health inequalities in the older population: The role of personal capital, social resources and socio-economic circumstances. *Social Science & Medicine*, 56, 935-947.
- Grzywacz, J.G. and Fuqua, J. (2000). The social ecology of health: Leverage points and linkages. *Behavioral Medicine*, 26 (3), 101-114.
- Hayes, D. and Ross, C.E. (1988). Body and Mind: The effect of exercise, overweight, and physical health on psychological well-being. *Journal of Health and Social Behavior*, 27, 387-400.
- Hojat, M., Gonnella, J.S., Erdmann, J.B. and Vogel, W.H. (2003). Medical students' cognitive appraisal of stressful life events as related to personality, physical well-being, and academic performance: A longitudinal study. *Personality and Individual Differences*, 35, 219-235.
- Hu, L. and Bentler, P.M. (1999). Cut-off criterion for fit indices in covariance structure analysis. Conventional versus new alternatives. *Structural Equation Modeling*, 6 (1), 1-55.
- Human Development Report (2004) *Cultural liberty in today's diverse world*. United Nations Development Programme (UNDP). New York, NY: Hoechstetter Printing Company.
- Hunter, J.E. (1997). Needed: A ban on the significance test. *Psychological Science*, 8(1), 3-7.

- Huppert, F.A. and Whittington, J.E. (2003) Evidence for the independence of positive and negative well-being: Implications for quality of life assessment. *British Journal of Health Psychology*, 8, 107-122.
- Idler, E.L. and Benyamini, Y. (1997) Self-rated health and mortality. A review of twenty-seven community studies. *Journal of Health and Social Behavior*, 38, 21-37.
- Jones, T.G., Rapport, L.J., Hanks, R.A., Lichtenberg, P.A. and Telmet, K. (2003). Cognitive and psychosocial predictors of subjective well-being in urban older adults. *The Clinical Neuropsychologist*, 17 (1), 3-18.
- Jöreskog, K.G. (1993). Testing structural equations models. In K.A. Bollen & J.S. Long (Eds.), *Testing structural equations models* (pp. 249-316). Newbury, CA: Sage.
- Jöreskog, K.G. and Sörbom, D. (1989). *LISREL 7, a guide to the program and applications* (2ed.). Chicago, IL.: SPSS Applications.
- Kahn, J.H., Hessling, R.M. and Russell, D.W. (2003). Social support, health, and well-being among the elderly: What is the role of negative affectivity? *Personality and Individual Differences*, 35, 5-17.
- Kahneman, D., Diener, E. & Schwarz, N. (Eds.) (1999). *Well-being: The foundations of hedonic psychology*. New York: Sage.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current levels of general happiness. *Australian Journal of Psychology*, 35 (2), 259-265.
- Kaplan, G. and Baron-Epel, O. (2003). What lies behind subjective evaluation of health? status? *Social Science & medicine*, 56, 1669-1676.
-

- Kim, Y., Kasser, T. and Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea and the United States. *The Journal of Social Psychology, 143* (3), 277-290.
- Kim, Y. and Seidlitz, L. (2002). Spirituality moderates the effect of stress on emotional and physical adjustment. *Personality and Individual Differences, 32*, 1377-1390.
- Kitayama, S., Markus, H.R. and Kurokawa, M. (2000). Culture, emotion and well-being: Good feelings in Japan and the Unites States. *Cognition and Emotion, 14*, 93-124.
- Knight, B.G., Silverstein, M., McCallum, T.J. and Fox, L. S. (2000). A Sociocultural Stress and Coping Model for Mental Health Outcomes Among African American Caregivers in Southern California . *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 55*, 142-150.
- Lipsey, M. W. and Wilson, D. B. (1993). The efficacy of psychological, educational, and behavioral treatment: Confirmation from meta-analysis. *American Psychologist, 48*, 1181-1209.
- Lucas, R.E., Diener, E. & Suh, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology, 71* (3), 616-628.
- MacCullum, R.C., Browne, M.W. and Sugawara, H.M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130-149.
- Maiti, S.S. and Mukherjee, B.N. (1990). A note on the distributional properties of the Jöreskog-Sörbom fit indices. *Psychometrika, 55*, 721-726.

- Mansfield, E.R. & Helms B.P. (1981). Detecting multicollinearity. *The American Statistician*, 36 (3), 158-160.
- Marmot, M., Ryff, C.D., Bumpass, L.L., Shipley, M. and Marks, N.F. (1997). Social inequalities in health: Next questions and converging evidence. *Social Science & Medicine*, 44 (6), 901-910.
- Mohan, J., Twigg, L., Barnard, S. and Jones, K. (2005). Social capital, geography and health: A small area analysis for England. *Social Science & Medicine*, 60, 1267-1283.
- Muldoon, M.F, Barger, S.D., Flory, J.D. and Manuck, S.B. (1998). What are quality of life measurements measuring? *British Medical Journal*, 316 (7131), 542-545.
- Murberg, T., Bru, E., Svebak, S., Aarsland, T. and Dickstein, K. (1997). The role of objective health indicators and neuroticism in perceived health and psychological well-being among patients with chronic heart failure. *Personality and Individual Differences*, 22 (6), 867-875.
- Nelson, F. and Olson, L. (1978). Specification and Estimation of a Simultaneous-Equation Model with Limited Dependent Variables. *International Economic Review*, 19 (3), 695-709.
- Nunnally, J.C. and Bernstein, I.H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.
- Oishi, S., Diener, E., Lucas, R.E. and Suh, E.M. (1999). Cross-cultural variations in predictors of life satisfaction: Perspectives from needs and values. *Personality and Social Psychology Bulletin*, 25, 989-990.
- Okun, M. A., Linda K. and George, L.K. (1984). Physician- and self-ratings of health,

neuroticism and subjective well-being among men and women. *Personality and Individual Differences*, 5 (5), 533-539.

Okun, M.A., Stock, W.A, Haring, M.J. and Witter, R.A. (1984). Health and subjective well-being: A meta-analysis. *International Journal of Aging and Human Development*, 19, 111-132.

Pargament, K.I. (1997). *The Psychology of religion and coping*. New York: Guildford Press.

Pavot, W. and Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5 (2), 164-172.

Quintana, S. M. and Maxwell, S. E. (1999). Implications of recent developments in structural equation modelling for counselling psychology. *The Counselling Psychologist*, 27, 485-527.

Ramsey, D. and Smit, B. (2002). Rural community well-being: Models and application to changes in the tobacco-belt in Ontario, Canada. *Geoforum*, 33, 367-384.

Rathunde, K. (2001). Toward a psychology of optimal human functioning: What positive psychology can learn from the “experimental turns” of James, Dewey, and Maslow. *Journal of Humanistic Psychology*, 41 (1), 135-153.

Roothmann, B., Kirsten, D.K. and Wissing, M.P. (2003). Gender differences in aspects of psychological well-being. *South African Journal of Psychology*, 33 (4), 212-218.

Ross, C.E. (2000). Neighborhood disadvantage and adult depression. *Journal of health and Social Behavior*, 41, 177-187.

Ryan, R.M. and 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. and Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9 (1), 1-28.
- Seligman, M.E.P. and Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55 (1), 5-14.
- Seybold, K.S. and Hill, P.C. (2001). The role of religion and spirituality in mental and physical health. *Current Practices in Psychological Science*, 10 (1), 21-24.
- Shibuya, K., Hashimoto, H. and Yano, E. (2002). Individual income, income distribution, and self-rated health in Japan: Cross-sectional analysis of nationally representative sample. *British Medical Journal*, 324, 16-19.
- Silverstone, P.H. (1990). Changes in depression scores following life threatening illness. *Journal of Psychosomatic Research*, 8, 107-122.
- StatSoft, Inc. (2004). Electronic Statistics Textbook. Tulsa, OK: StatSoft. WEB:
<http://www.statsoft.com/textbook/stathome.html>.
- Staudinger, U.M., Fleeson, W. and Baltes, P.B. (1999). Predictors of subjective physical health and global well-being: Similarities and differences between the United States and Germany. *Journal of Personality and Social Psychology*, 76 (2), 305-319.
- Steiger, J. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25 (2), 173-180.
- Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes* (Practical significance: The use of effect sizes). Wetenskaplikebydraes – Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Sturm, R., Gresenz, C.R. and Mackenbach, J.P. (2002). Relations of income inequality and family income to chronic medical conditions and mental health disorders:

- National survey in USA. *British Medical Journal*, 324 (7328), 20-23.
- Suh, E., Diener, E., Oishi, S. and Triandis, H.C. (1998). The shifting basis of life satisfaction judgments across cultures: emotions versus norms. *Journal of Personality and Social Psychology*, 74 (2), 82-493.
- Taylor, S.E., Repetti, R.L. & Seeman, T. (1997). What is an unhealthy environment and how does it get under the skin? *Annual Review of Psychology*, 48, 411-447.
- Temane, Q.M. (2001). The impact of the lack of provision of services on quality of Life. In *Studies of social and economic conditions in South Africa: A conference of the South Africa Training Programme in Quantitative Social Science* (pp. 171-180). Durban, South Africa.
- Thompson, B. (1994). Guidelines for authors. *Educational and Psychological Measurement*, 5 (4), 837-847.
- Triandis, H.C. (1996). The psychological measurement of cultural syndromes. *American Psychologist*, 51 (4), 407-415.
- Utsey, S. O., Brown, C., and Bolden, M. A. (2004). Testing the structural invariance of the Africultural Coping Systems Inventory across three samples of African descent populations. *Educational and Psychological Measurement*, 64(1), 185-195.
- Waterman, A.S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudemonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64 (4), 678-691.

- Wissing, M.P., Pretorius, T.B. and Heyns, P.M. (2000 – 2003). A Trans-university research programme in Fortology: Clarification and advancement of psychosocial well-being. Team Research Project (PUCHE/NWU; UWC; UVS).
- Wissing, M.P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C. and Nienaber, A. (1999). The psychometric properties of scales measuring psychological well-being in an African group. Paper presented at the International Africa Psychology Congress. July, 18-23, 1999, Durban, South Africa.
- Wissing, M. P. and van Eeden, C. (2002) Empirical clarification of the nature of psychological well-being. *South African Journal of Psychology*, 32 (1), 32-44.
- Wissing, M.P. Wissing, J., Du Toit, M. and Temane, Q.M. (2002). *Towards a G-Factor in Psychological well-being*. 8th Annual South African Psychology Congress (PsySSA) 24-27 September Cape Town, South Africa.
- Yeung, R.R. and Hemsley, D.R. (1997). Personality, exercise and psychological well-being: Static relationships in the community. *Personality and Individual Differences*, 22 (1), 47-53.
- Young, J.S., Cashwell, C.S. and Shcherbakova, J. (2000). The moderating relationship of spirituality on negative life events and psychological adjustment. *Counseling and Values*, 45 (1), 49-57.
- Yu, C. (2002). Evaluating cut-off criteria of model fit Indices for latent variable models with binary and continuous outcomes. A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Education. UCLA.
-

Table 1: The relationship between subjective perceptions of health and psychological well-being in the combined and separate contexts

Context	Dependent Variable	R²	Adj. R²	MS Residual	F	p
Combined Group	SOC	.29	.29	365.36	205.45	0.00
	AFM_PNB	.33	.32	83.09	255.42	0.00
	SWLS	.22	.22	27.49	97.17	0.00
Potchefstroom	SOC	.31	.30	333.53	169.06	0.00
	AFM_PNB	.33	.33	82.79	184.10	0.00
	SWLS	.22	.22	27.01	108.27	0.00
Mafikeng	SOC	0.20	0.19	455.54	32.19	0.00
	AFM_PNB	0.32	0.31	79.68	58.81	0.00
	SWLS	0.01	0.01	26.55	3.14	0.07

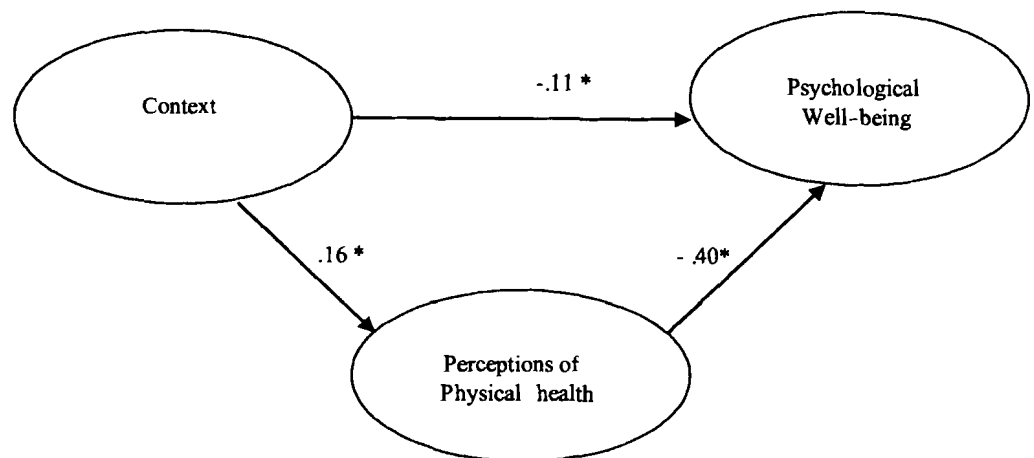


Figure 1: Perceptions of physical health as mediator between context and psychological well-being (as measured by affect balance and satisfaction with life)

*All path coefficients are significant at the 0.05 level

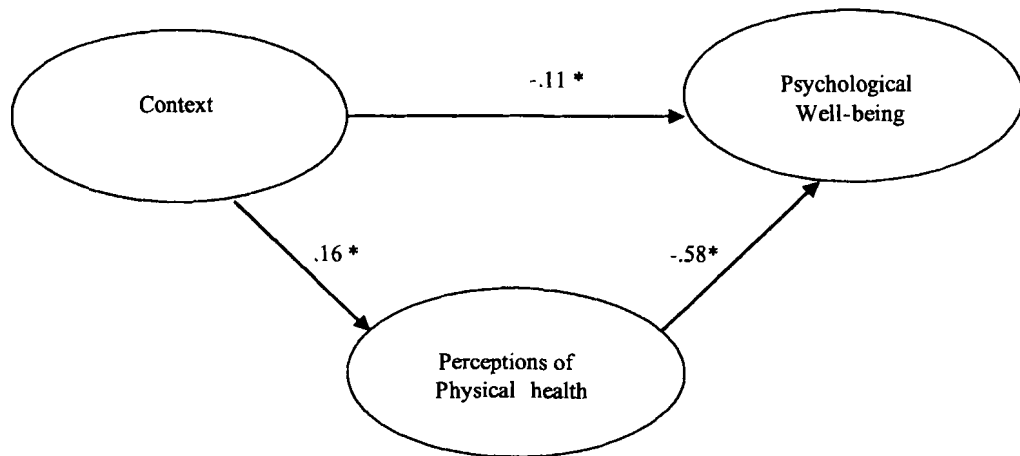


Figure 2: Perceptions of physical health as mediator between context and psychological well-being (as measured by sense of coherence and affect balance)

*All path coefficients are significant at the 0.05 level

Section 3: Article 2

**The role of personality factors in the dynamics of context and
psychological well-being**

submitted to the

Journal of Personality and Social Psychology

3.1 Guidelines for authors:

Journal of Personality and Social Psychology

<http://www.apa.org/journals/psp/description.html>

Submission. Section editors reserve the right to redirect papers as appropriate. When papers are judged as better suited for another section, editors ordinarily will return papers to authors and suggest resubmission to the more appropriate section. Rejection by one section editor is considered rejection by all; therefore a manuscript rejected by one section editor should not be submitted to another.

Submit manuscripts electronically (.rtf, PDF, or .doc) via the Manuscript Submission Portal to the appropriate section editor (see above). If submitting for the *Personality Processes and Individual Differences* section, mail one printed copy of the manuscript to the address above. For the *Interpersonal Relations and Group Processes* section, no hard copies of the manuscript are required, unless specifically requested. The *Attitudes and Social Cognition* section requires hard copies only of figures. General correspondence may be directed to the appropriate address, given within the individual sections.

All printed copies should be clear, readable, and on paper of good quality. In addition to addresses and phone numbers, authors should supply electronic mail addresses and fax numbers, if available, for potential use by the editorial office and later by the production office. Authors should keep a copy of the manuscript to guard against loss.

Masked review policy. The *Attitudes and Social Cognition* section and the *Interpersonal Relations and Group Processes* section have adopted a policy of masked review for all submissions. The cover letter should include all authors' names and institutional affiliations. The first page of text should omit this information but should include the title of the manuscript and the date it is submitted. Every effort should be made to see that the manuscript itself contains no clues to the authors' identity. Masked reviews are optional for submission to the *Personality Processes and Individual Differences* section, and authors who wish masked reviews must specifically request them when submitting their manuscripts.

Manuscript preparation. Authors should prepare manuscripts according to the *Publication Manual of the American Psychological Association (5th ed.)*. Manuscripts may be copyedited for bias-free language (see chap. 2 of the *Publication Manual*). Formatting instructions (all copy must be double-spaced) and instructions on the preparation of tables, figures, references, metrics, and abstracts appear in the *Manual*. See [APA's Checklist for Manuscript Submission](#).

Abstract and keywords. All manuscripts must include an abstract containing a maximum of 125–180 words typed on a separate page. After the abstract, please supply up to five keywords or brief phrases.

Figures. Graphics files are welcome if supplied as Tiff, EPS, or PowerPoint. High-quality printouts or glossies are needed for all figures. The minimum line weight for line art is 0.5 point for optimal printing. When possible, please place symbol legends below the figure image instead of to the side. Original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay \$255 for one figure, \$425 for two figures, \$575 for three figures, \$675 for four figures, and \$55 for each additional figure.

For further information on the content for manuscripts submitted to section of the journal, authors should refer to the editorials in the January 1995 issue of the *Attitudes and Social Cognition* section (Vol. 68, No. 1, pp. 81-82) and the January 2004 issue of the *Personality Processes and Individual Differences* section (Vol. 86, No. 1, p. 95).

References. The reference citation for any article in any *JPSP* section follows APA's standard reference style for journal articles; that is, authors, year of publication, article title, journal title, volume number, and page numbers. The citation does not include the section title. References should be listed in alphabetical order. Each listed reference should be cited in text, and each text citation should be listed in the References. Basic formats are as follows:

Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology*, 78, 53–63.

D'Souza, D. (1991). *Illiberal education: The politics of race and sex on campus*. New York: Free Press.

Hinkle, S., & Brown, R. (1990). Intergroup comparisons and social identity. Some links and lacunae. In D. Abrams & M. A. Hogg (Eds.), *Social identity theory: Constructive and critical advances* (pp. 48–70). London: Harvester-Wheatsheaf.

Supplemental materials. APA can now place supplementary materials online, which will be available via the journal's Web page as noted above. To submit such materials, please see [Supplementing Your Article With Online Material](#) for details.

Permissions. Authors are required to obtain and provide to the editor on final acceptance all necessary permissions to reproduce in print and electronic form any copyrighted work, including, for example, test materials (or portions thereof) and photographs of people. [Final files for production should be prepared as outlined in Preparing Your Accepted Manuscript for Production.](#)

Publications policies. APA policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications. APA's policy regarding posting articles on the Internet may be found at [Posting Articles on the Internet](#). In addition, it is a violation of APA Ethical Principles to publish "as original data, data that have been previously published" (Standard 8.13). As this journal is a primary journal that publishes original material only, APA policy prohibits as well publication of any

manuscript that has already been published in whole or substantial part elsewhere. Authors have an obligation to consult journal editors concerning prior publication of any data upon which their article depends.

In addition, APA Ethical Principles specify that "after research results are published, psychologists do not withhold the data on which their conclusions are based from other competent professionals who seek to verify the substantive claims through reanalysis and who intend to use such data only for that purpose, provided that the confidentiality of the participants can be protected and unless legal rights concerning proprietary data preclude their release" (Standard 8.14). APA expects authors submitting to this journal to adhere to these standards. Specifically, authors of manuscripts submitted to APA journals are expected to have available their data throughout the editorial review process and for at least 5 years after the date of publication.

Authors will be required to state in writing that they have complied with APA ethical standards in the treatment of their sample, human or animal, or to describe the details of treatment. A copy of the APA Ethical Principles may be obtained from the APA Ethics Office web site or by writing the APA Ethics Office, 750 First Street, NE, Washington, DC 20002-4242.

APA requires authors to reveal any possible conflict of interest in the conduct and reporting of research (e.g., financial interests in a test or procedure, funding by pharmaceutical companies for drug research). Authors of accepted manuscripts will be required to transfer copyright to APA.

If your manuscript is accepted for publication, please follow the guidelines for file formats and naming provided at Preparing Your Accepted Manuscript for Production. If your manuscript was mask reviewed, please ensure that the final version for production includes a byline and full author note for typesetting.

3.2 Manuscript

The role of personality factors in the dynamics of context and
psychological well-being

Q. Michael Temane and Marié P. Wissing

School for Psycho-Social Behavioural Sciences, North-West University:

Potchefstroom Campus

Corresponding author: Q. M Temane
School of Psychosocial Behavioural Sciences: Psychology
North-West University
Private Bag X 6001
POTCHEFSTROOM 2530, RSA
e-mail: psgqmt@puk.ac.za

The role of personality factors in the dynamics of context and
psychological well-being

Abstract

The purpose of this study was to determine whether personality factors mediate between contexts and psychological well-being. Context was defined in terms of differentials pertaining to race, socioeconomic indices and infrastructural resources. An availability sample of 514 participants from Potchefstroom (n=384) and Mafikeng (n=130) completed measurements on extraversion and agreeableness and psychological well-being. Regression analyses indicated the viability of relationships among context, personality and psychological well-being. Structural equation models showed that both extraversion and agreeableness mediate the relationship between context and psychological well-being.

The role of personality factors in the dynamics of context and psychological well-being.

This study considers the role of agreeableness and extraversion in the dynamics of context and psychological well-being for two socially disparate contexts. A commendable corpus of evidence linking personality factors and psychological well-being (cf. Costa & McCrae, 1980; DeNeve & Cooper, 1998; Hayes & Joseph, 2003 for reviews) exists. Evidence linking contextual factors and psychological well-being (cf. Benet-Martínez & Karakitapoglu-Aygun, 2003; Farrell, Aubry, & Coulombe, 2005; Phillips, Siu, Yeh, & Cheng, 2005; Gutiérrez, Jiménez, Hernández & Puente, 2005) has also been established. However, there is little if any evidence linking context and personality per se. Benet-Martínez and Karakitapoglu-Aygun (2003) suggest that the separation of the influential role played by context and personality factors in psychological well-being, seems at odds with recent views in cultural psychology. Whereas evidence has been established separately for contextual and personality factors as they relate to psychological well-being, few studies have integrated variables such as context, personality factors and psychological well-being into one model in an attempt to explain the dynamics of psychological well-being.

Personality factors have been shown to robustly predict psychological well-being (cf. Lucas & Fujita, 2000; Schimmack, Radhakrishnan, Oishi, Dzokoto, & Ahadi, 2002). Chan and Joseph (2000) and Hayes and Joseph (2003) demonstrated empirically that personality accounts for between 30 and 56% of the variance in a well-being measure. A meta-analysis by DeNeve and Cooper (1998) indicated that extraversion and

agreeableness were the two personality factors most predictive of well-being and are thus singularly employed in this study.

Extraversion and agreeableness are associated with social interaction (Finch & Graziano, 2001). Extraversion deals with agentic motives and social impact whereas agreeableness deals with motives for communion and maintaining positive relations with others. Agreeableness is said to have an indirect or instrumental role which leads people to encounter specific situations that in turn affect well-being. In this study extraversion and agreeableness are conceptualised as indicated by Costa and McCrae (1992). According to these authors, high levels of extraversion refer to sociability, warmth, preference for large groups of people, assertiveness, talkativeness, high activity and excitement seeking. People with high levels of extraversion are cheerful, energetic and optimistic. High levels of agreeableness refer to interpersonal tendencies such as altruism, sincerity, trust, modesty, compliance, cooperativeness, forgiveness, helpfulness and tender-mindedness. People with high levels of agreeableness are sympathetic to others and believe that they will be equally helpful in return.

Earlier research by Costa and McCrae (1980) examined the personality and well-being link across a 10-year interval. They established evidence to show that extraversion was related to positive affect (PA) and not to negative affect (NA) both cross-sectionally and longitudinally. Agreeableness was also found to correlate positively with measures of well-being (DeNeve & Cooper, 1998). However, Hayes and Joseph (2003) indicated some variations in the level of this correlation as established by a weak association between high agreeableness scores and high depression scores. Lucas and Fujita (2000) found that extraversion correlated 0.38 with pleasant affect but when multiple methods of

measurement were used to model this association, the correlation approached 0.80.

However, on reviewing pertinent literature on discrepancies surrounding personality-based causes of well-being, Diener, Oishi and Lucas (2003) concluded that for certain traits, engaging in trait-congruent behaviour is associated with higher levels of positive affect. For example, they state that extraverts are not necessarily happier in all situations.

Emmons (1995) noted that although personality traits may provide generalisations about people, they are however not complete explanations because they do not provide information about mechanisms and structures. Diener (1996) argued that when explanations of differences between groups, nations, or cultures are advanced, environmental effects can be quite explicit because life circumstances can differ dramatically. Costa and McCrae (1999) explain that cultures influence the acquired skills, habits, attitudes, interests, roles and relationships and also the behaviour that expresses personality traits. This is what Saucier and Goldberg (1996) refer to as the phenotypic view.

Lu, Gilmour and Kao (2001) found that values such as 'social integration' and human heartedness' led to happiness for the Chinese but not for the British. Diener and Scollon (2003) surmise that although material resources contribute to life satisfaction, other factors such as respect and good social relationships may be more important. In studying the life satisfaction of selected groups, Diener and Scollon (2003) found that the Maasai (a pastoral group of people with few material comforts in East Africa) came second after the richest Americans. Schimmack, Oishi and Diener, (2002) showed that frequency estimates of both pleasant and unpleasant emotions were less negatively correlated for Asian cultures as compared to non-Asian cultures who viewed emotions

such as happy and sad as opposites, whereas in the case of the former, emotions were viewed dialectically as compatible.

Allik and McCrae (2004) found that black and white South Africans despite living in the same country show a tendency of collectivism and individualism. Benet-Martínez and Karakitapoglu-Aygun (2003) and Berry, Poortinga, Segall, and Dasen (2003) have argued that a possibility exists that individual differences in the endorsement of particular cultural norms and values (e.g., individualism vs. collectivism) and differences in basic personality traits are related to each other and jointly influence well-being. The findings of the available literature amply justify the observation that contextual factors are important in the experience of psychological well-being (cf. Cutrona, Russell, Hessling, Brown, & Murry, 2000; Gallo & Matthews, 2003; Lu et al., 2001; Schimmack, Oishi, & Diener, 2002). Macintyre, MacIver and Sooman (1993) note that context can be viewed as a function of individual resources and social infrastructure available to individuals in particular neighbourhoods. Typically context can be indexed by some combination of area-level indicators, including economic factors, educational factors, and occupational or employment related factors.

Ramsey and Smit's (2002) model of well-being argues that various conditions in the environment within which a community exists play a role in the experience of well-being. They suggest that well-being in rural communities is multidimensional arising from ecological, social, political, economic, and institutional factors. Well-being in their view is interpreted as the interrelated and interdependent structural and functional conditions (physical, psychological, social and economic) of a community, including individuals and their interactions within their environment. The argument in this model is

relevant for the current study because of the assumption that the context within which a community exists, is crucial for how differences in the experience of well-being between individuals could be understood.

In this study, psychological well-being is conceptualised and measured multi-dimensionally so as to open the possibility of testing models with various conceptualisations of psychological well-being, namely as defined from a hedonic perspective or more eudaimonic perspective (cf. Kahneman, Diener & Schwarz, 1999; Ryan & Deci, 2001; Waterman, 1993), or as a general psychological well-being factor as identified by Wissing and Van Eeden (2002). General psychological well-being is defined in terms of the degree of sense of coherence, satisfaction with life, and affect balance, and thus includes facets from both hedonic and eudaimonic perspectives. Hedonic conceptualisations of psychological well-being refers to the degree of happiness (affect balance) and satisfaction with life, whereas the eudaimonic conceptualization refers more to the experience of meaningfulness (as indicated, inter alia by the degree of sense of coherence experienced) (cf. Kahneman, Diener, and Schwarz, 1999; Ryan & Deci, 2001; Waterman, 1993; Wissing & Van Eeden, 2002).

Four important facets about the relationship between personality and psychological well-being of relevance for the current study, emanate from the literature: Firstly, DeNeve (1999) following her explication of the happy personality, exhorted researchers to study the processes by which personality influences well-being. Secondly, McCrae (2002) suggests that gerontologists and social scientists should include personality factors more often as independent variables than as dependent variables. Thirdly, Mroczek, Spiro and Almeida (2003) explain that although personality and well-

being are key constructs that display both dynamic and static qualities over varying time frames, little is known about the dynamic aspects. In the fourth instance, what is persistently repeated in various formulations is the fact that personality is completely interdependent with the meanings and practices of particular eco-cultural and socio-cultural contexts (Berry, Poortinga, Segall & Dasen, 2003; Markus & Kitayama, 1998).

The argument in this study is based on the notion that personality factors are stable over time (cf. McCrae, 2002) and represent an individual's disposition to respond to their circumstances. However, the individual's assessment of psychological well-being depends on the context in which they find themselves. Context is used in this study as shorthand version of the over-determined meanings of culture as implied by the manifest differences between the participants in this study who are largely white and previously advantaged and black who were disadvantaged in all spheres of life. The history of South Africans is still characterised by historical disparities of socioeconomic conditions. The aim of this article is to determine personality factors mediate between context and psychological well-being.

Method

Design

This is a secondary data analysis of the FORT Project (Wissing, Pretorius, & Heyns, 2000 – 2003) conducted as part of a broader project to clarify and advance the study psychological well-being. The study employed a *posteriori* cross-sectional research design to collect data.

Participants

An availability sample of 514 participants from Potchefstroom (n= 384) and Mafikeng (n=130) took part in this study. The first group in the sample is mainly white Afrikaans

speaking undergraduate students and adults whereas the second group comprises of a comparable group of mainly black undergraduate Setswana speaking students. In the Potchefstroom sample, participants were 288 females and 92 males, and predominantly white (313) and to a lesser extent black (56), Indian (8) and coloured (4). The participants from Mafikeng sample were 77 females, 51 males and were predominantly black (114), and to a lesser extent white (8) and Indian (1). In terms of age, the participants were largely represented in the category 18 to 25 years of age for both groups. The numbers that do not add up in the different categories are due to missing data.

Measuring instruments

Demographic questionnaire

Demographic information collected included age, gender, and race.

Psychological well-being

Sense of Coherence Scale (SOC) (Antonovsky, 1987, 1993). The SOC (a 29-item scale) measures an individual's way of experiencing the world and their life in it. Core components are comprehensibility, manageability and meaningfulness. Antonovsky (1993) indicates that the SOC manifested internal reliability indices of 0.78 to 0.93 as reported in 26 different studies, and test-retest reliability indices of 0.56 to 0.96. Antonovsky (1993) also reports good content and criterion validity. Wissing, Thekiso, Stapelberg, Van Quickelberge, Choabi, Moroeng and Nienaber, (1999) attest to the applicability of this scale in a South African context particularly for the Setswana speaking group in the North West Province. In this study, internal reliabilities of 0.88 and 0.76 were found for the Potchefstroom and Mafikeng groups respectively.

Affectometer 2 (short version) (AFM) (Kammann & Flett, 1983). The AFM was developed to measure a general sense of well-being or general happiness. Psychological

well-being is measured on an affective level by determining the balance between positive and negative affect (Kammann & Flett, 1983). The sub-scales in the AFM measure Positive Affect (PA) (10 items), Negative Affect (NA) (10 items), and Positive-Negative-affect-Balance (PNB) ($PA-NA=PNB$). The more positive affect predominates over negative affect, the higher the overall level of well-being (Kammann & Flett, 1983). These authors report Cronbach alpha-reliability indices of 0.88 to 0.93. Wissing et al. (1999) indicated the reliability and validity of this scale for use in an African group. Internal reliabilities of 0.83 and 0.84 were elicited for positive affect and negative affect for the Potchefstroom group and 0.64 and 0.78 in the case of the Mafikeng group for positive affect and negative affect.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985). The SWLS (a 5-item scale) gives an indication of a person's general satisfaction with life. A person's evaluation of their quality of life, according to their own criteria, is measured on a cognitive-judgmental level. Diener et al. (1985) report a two month test-retest reliability index of 0.82, and a Cronbach alpha-reliability index of 0.87. Pavot and Diener (1993) also contests to the good psychometric characteristics of this scale. Wissing et al. (1999) also found the SWL reliable and valid for use in an African context. Internal reliabilities of 0.84 and 0.65 were found for the Potchefstroom and Mafikeng groups respectively.

Psychological well-being as a general factor is measured by the SOC, AFM and SWLS. Hedonic conceptualisations of psychological well-being is operationalised for purposes of the current study by SWLS and AFM, whereas a more eudaimonic conceptualization is operationalised by the SOC complemented by the AFM.

Personality Factors

The *Revised NEO Personality Inventory (NEO)* measures five major dimensions or domains of personality functioning, each consisting of 48 items and each reflecting six specific facets (Costa & McCrae, 1992). In the current study, only the domain scales for Extraversion (E) and Agreeableness (A) were used. The other domains are Neuroticism, Openness, and Conscientiousness. The NEO has excellent psychometric properties (Costa & McCrae, 1992). In this study, internal reliabilities of 0.83 and 0.79 were found for extraversion and agreeableness in the Potchefstroom group and 0.74 and 0.61 were found in the Mafikeng group.

Context

Context was conceptualised in terms of the stratification by socioeconomic differentials pertaining to race, socioeconomic indices and infrastructural resources between Potchefstroom and Mafikeng. Stark historical differences still abound between the two social contexts largely in terms of social demographic factors. Potchefstroom is dubbed the “City of Expertise” and boasting a University campus with commendable resources and research capacity and throughput, an urbane atmosphere for recreational respite purposes, industrial, farming and mining activities as sources of potential employment, proximity to metropolitan areas through a national route linking the main centres of economic activity in South Africa whereas Mafikeng and its environs are surrounded by numerous deep rural areas characterised by poverty, lack of employment opportunities, long distances from metropolitan areas save for the platinum mining activities in Rustenburg whose profits are also spoken for by the Bafokeng tribe and an under-resourced university campus at the stage of the data collection in 2000. In terms of

models on the deleterious effects of contexts and neighbourhoods, differences are expected between these two study groups.

Procedure

Measures were bound in book format, and each set was accompanied by a removable letter, explaining the nature of the research, ethical aspects, voluntary participation, etc. Participating students completed their questionnaires in groups, while the other adults who participated in the study completed their questionnaires individually, after informed consent was obtained. The students received a nominal fee for their participation and the other participants who requested it, were given feedback on the results. The completed questionnaires were scored by computer after the necessary programme was written and the data were cleaned. The Ethics Committee of the North-West University gave approval of this study.

Data analyses.

The role of mediating variables was tested with the aid of multiple regression analyses and structural equation models (Frazier, Tix, & Barron, 2004). Stepwise multiple regressions models were implemented on the total data set (Potchefstroom and Mafikeng groups combined) to determine the percentage of variance explained by context in agreeableness and context in extraversion, context and psychological well-being and finally between agreeableness and psychological well-being and extraversion and psychological well-being. Frazier et al. (1996) suggest that 4 regression analyses be computed to attest for the mediation role of a variable. The coefficient of determination (R^2) is reported as an indication of the amount of variance explained by the independent variables. Subsequent to the regression analyses, a test of multi-collinearity was

employed to obviate problems associated with the high intercorrelations among explanatory variables (Everitt, 1996). If the predictor variables are uncorrelated, then the diagonal elements of the inverse correlation matrix are equal to 1.0; thus, for correlated predictors, these elements represent an "inflation factor" (VIF) for the variance of the regression coefficients, due to the redundancy of the predictors. Everitt (ibid.) says that a VIF greater than 10 gives some cause for concern. The F test is used to test the significance of R, which is the same as testing the significance of R^2 . This is also the same as testing the significance of the regression model as a whole. If $\text{prob}(F) < .05$, then the model is considered significantly better than would be expected by chance and we reject the null hypothesis of no linear relationship of y to the independent variables. F is a function of R^2 , the number of independent variables, and the number of cases (see Everitt, 1996)

The use of statistical significance testing as a routine procedure has been criticised (cf. Cohen, 1990; Hunter, 1997). An appeal to authors has also been made to place more emphasis on effect sizes (cf. Fidler, Thomason, Cumming, Finch & Leeman, 2004; Huysamen, 2005; Thompson, 1994) as a way of attesting for the practical significance of the findings. Effect size (ES) is a name given to a family of indices that measure the magnitude of a treatment effect. Effect sizes are independent of sample size. Thus to attest to the practical significance of the regression models, effect sizes were computed based on the following formula by Steyn (1999): $f^2 = R^2 / 1 - R^2$. A cut-off point of 0.10 (moderate effect) was set for practical significance of f^2 .

The hypothesized mediation relationship among context, personality and psychological well-being were further tested using the structural equation model in

SEPATH (Statsoft Inc., 2004). The χ^2 statistic, and the Goodness of Fit Index (GFI: Jöreskog & Sörbom, 1989) and Root Mean Square Error of Approximation (RMSEA: Steiger, 1990) are reported as measures of fit. The Adjusted Goodness of Fit Index (AGFI) and the Normed Fit Index (NFI) are reported as adjunct indices to the latter (cf. Maiti & Mukherjee, 1990 for the pertinent arguments). A fit index is an overall summary statistic that evaluates how well a particular covariance structure model explains the sample data. Thus, these summarise the degree of correspondence between the implied and observed covariance matrices. A large χ^2 relative to the degrees of freedom indicates a poor fit and could lead to the summary rejection of a model based on sample size and not model adequacy (cf. Yu, 2002). The GFI indicates the relative amount of variance and co-variance in the sample predicted by estimates of the population. It varies between 0 and 1 and a result of 0.90 indicates a good model fit. Hu and Bentler (1999) characterise the GFI as an absolute value because it compares the hypothesised model with no model at all. The GFI does not depend on sample size explicitly in its computation (cf. Jöreskog & Sörbom, 1989). However, owing to the problem related to implications of a big sample size in χ^2 and the associated rejection of models that may have good fit, two adjunct indices are also reported, namely, the Adjusted Goodness of Fit Index (AGFI) and the Normed Fit Index (NFI). Maiti and Mukherjee (1990) demonstrated that there is an exact monotonic relationship between χ^2 and GFI. To make χ^2 less dependent on sample size, the relative chi square will also be used adopted to evaluate global fit of the hypothesized model. According to Carmines and McIver (1981), the relative chi-square should be in the range of 2:1 and 3:1 for an acceptable

model. However, Kline (1998) states that a relative chi-square of 3 or less is acceptable. Relative chi square is obtained by dividing goodness of fit χ^2 by the degrees of freedom.

The RMSEA gives an indication of the overall amount of error in the hypothesised model-data fit relative to the number of estimated parameters or the complexity of the model. The RMSEA computes average lack of fit per degree of freedom and it is possible to have near-zero lack of fit in both a complex and in a simple model as RMSEA would compute to be near zero in both. Its popularity is partly based on the fact that it does not require comparison with a null model and thus does not require one to posit as plausible a model in which there is complete independence of the latent variables. The RMSEA should be 0.05 or less (Browne & Cudeck, 1993) to indicate good fit. MacCullum, Browne and Sugarawa (1996) indicate that RMSEA values ranging from 0.08 to 0.10 indicate mediocre fit and those greater than 0.10 indicate poor fit.

Results

Four multiple regression models containing context, psychological well-being and the personality factors namely, agreeableness and extraversion were tested, as suggested by Frazier et al. (2004). Context minimally explained the variance in personality factors for agreeableness ($R^2=0.11$, $F=60.45$, $p=0.00$) and extraversion ($R^2=0.06$, $F=34.76$, $df=1.5$, $p=0.00$). The test of multi-collinearity in this model for both personality factors yielded a variance inflation factor of 1.00 (cf. Everitt, 1996 and Mansfield & Helms, 1981). The effect sizes indicate a moderate effect for agreeableness ($f^2=0.12$) and a small effect for extraversion ($f^2=0.06$). The latter is thus not practically significant as opposed to the former.

Context also poorly predicted psychological well-being defined and measured as a

general factor ($R^2=0.01$, $F=9.46$, $df=1.5$, $p=0.002$). When psychological well-being was defined and measured from a hedonic perspective prediction was not improved ($R^2=0.002$, $F=1.45$, $df=1.5$, $p=0.23$). A similar observation was made when psychological well-being was defined and measured more eudaimonically, and there was also no increase in the amount of variance explained despite the significant prediction ($R^2=0.02$, $F=10.61$, $df=1.5$, $p=0.001$). The test of multicollinearity in these models for both personality factors yielded a variance inflation factor of 1.00 and a small effect size ($f^2=0.01$).

Overall, the third regression model for prediction of psychological well-being as general factor by the personality factors, showed an improvement in the explanation of variance for both agreeableness ($R^2=0.13$, $F=78.79$, $df=1.5$, $p=0.00$) and extraversion ($R^2=0.12$, $F=71.62$, $df=1.5$, $p=0.00$). With psychological well-being defined hedonically, there was an improvement of 6% and 15% in the prediction by agreeableness ($R^2=0.19$, $F=117.51$, $df=1.5$, $p=0.00$) and extraversion ($R^2=0.27$, $F=190.08$, $df=1.5$, $p=0.00$) respectively. Results with a more eudaimonic conceptualisation in the measurement of psychological well-being, were comparable to those of the general factor conceptualisation of psychological well-being (Agreeableness: $R^2=0.14$, $F=84.79$, $df=1.5$, $p=0.00$; Extraversion: $R^2=0.13$, $F=78.35$, $df=1.5$, $p=0.00$). The effect sizes indicated moderate effects for both agreeableness ($f^2=0.15$) and extraversion ($f^2=0.14$) in the general factor model (GFM) and improved effects in the hedonic model (HM) ($f^2=0.23$; $f^2=0.37$). The eudaimonic model (EM) also yielded moderate effects for agreeableness ($f^2=0.16$) and extraversion ($f^2=0.15$).

The fourth regression model used context and the individual personality factors as

predictors of psychological well-being. Context and agreeableness significantly explained variance in general psychological well-being (GFM) ($R^2=0.14$, $F=39.40$, $df=2.5$, $p=0.00$) as was the case with context and extraversion ($R^2=0.12$, $F=36.50$, $df=2.5$, $p=0.00$). In prediction of hedonic psychological well-being (HM), the explanation of variance increased in by 5% and 15% respectively for Agreeableness ($R^2=0.18$, $F=58.66$, $df=2.5$, $p=0.001$) and Extraversion ($R^2=0.27$, $F=94.86$, $df=2.5$, $p=0.00$). In the prediction of eudaimonic psychological well-being (EM) a comparable explanation of variance was found as in the case of psychological well-being defined as a general factor, for both context and agreeableness ($R^2=0.14$, $F=42.46$, $df=2.5$, $p=0.00$) and context and extraversion ($R^2=0.14$, $F=39.97$, $df=2.5$, $p=0.00$). All the models yielded a variance inflation factor of 1.00 and significant effect sizes ranging from 0.14 through 0.22 to 0.37. The hedonic model yielded the largest effect sizes (agreeableness: $f^2=0.22$ and extraversion: $f^2=0.37$).

When the data from the Potchefstroom and Mafikeng groups were examined separately, there were differences in how personality factors explained psychological well-being. Agreeableness explained 8% of the variance in psychological well-being in the Potchefstroom group compared to 13% in the Mafikeng group when psychological well-being was measured as a general factor (GFM). However, with a hedonic definition of psychological well-being (HM), agreeableness explained only 15% in the Potchefstroom group compared to 29% in the Mafikeng group. In the eudaimonic model (EM), agreeableness explained 14% in the Potchefstroom group as compared to 8% in the Mafikeng group. A similar pattern was observed for extraversion. In the general psychological well-being factor model (GFM), extraversion explained 13% of the

variance in the Potchefstroom group and 5% in the Mafikeng group. The hedonic model (HM) yielded incremental amounts in the variance explained in each group: for the Potchefstroom group extraversion explained 25 % of the variance as compared to 31% in the Mafikeng group. In both groups there was a marked increase in the explanation of variance when the hedonic conceptualization of psychological well-being was implemented. In the eudaimonic model (EM), agreeableness explained only 9% of the variance in psychological well-being for the Potchefstroom group compared to 14% in the Mafikeng group. Extraversion explained 6% in the Potchefstroom group and 14% in the Mafikeng group. Table 1 summarises some of the findings for the combined and separate groups for the hedonic model as it explained the most variance.

(Table 1 about here)

Regression analyses were followed up with the testing of structural equation models to verify the role of personality factors as mediators between context and psychological well-being. Model fit was evaluated using the Jöreskog Goodness of Fit Index (GFI) and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990). For the GFI, AGFI, NFI values of approximately 0.90 or greater reflect an adequate fit. Hu and Bentler (1999) recommend a point estimate value for RMSEA lower than 0.06 to indicate good fit as opposed to 0.05 according to Browne and Cudeck (1993). Model fit was computed for both agreeableness and extraversion as mediators for the relationship between context and psychological well-being. Agreeableness significantly mediated between context and psychological well-being defined as GFM (RMSEA=0.03, GFI=0.994, AGFI= 0.979, NFI=0.990; $\chi^2=7.15$, $df=4$, $p=0.12$). Similar findings were found in the case of extraversion (RMSEA=0.04 GFI=0.917, AGFI= 0.977, NFI=0.988;

$\chi^2=7.87$, $df=4$, $p=0.09$). There was no substantial change in the foregoing results when psychological well-being was defined hedonically (HM). For agreeableness: RMSEA=0.02, GFI=0.999, AGFI= 0.986, NFI=0.994; $\chi^2=1.4$, $df=1$, $p=0.23$, and for extraversion: RMSEA=0.03, GFI=0.998, AGFI= 0.983, NFI=0.991; $\chi^2=198.58$, $df=25$, $p=0.00$. When psychological well-being was defined eudaimonically (EM), a unique solution was found for agreeableness (RMSEA=0.00, GFI=1.00, AGFI= 0.999, NFI=0.911; $\chi^2=0.10$, $df=1$, $p=0.23$) and with extraversion as a mediating factor an adequately fit with the data was obtained (RMSEA=0.02, GFI=0.999, AGFI= 0.988, NFI=0.997; $\chi^2=1.266$, $df=1$, $p=0.26$). A Relative χ^2 (cf. Carmines & McIver, 1981; Kline, 1998) was computed for the EM of agreeableness to further determine the global fit of this model. A relative χ^2 0.1 was obtained suggesting a good measure of fit by this model. However, a model with a RMSEA reaching unity may be indicative of model specification problems relating to the outcome variable (cf. Loehlin, 1994) indicating a need to re-specify the outcome variable, viz., psychological well-being. Therefore, eudaimonic variant of psychological well-being was re-defined in terms of sense of coherence and satisfaction with life. A more viable finding was yielded by the model (RMSEA=0.02, GFI=0.999, AGFI= 0.988, NFI=0.997; $\chi^2=1.266$, $df=1$, $p=0.26$).

Figures 1 and 2 give a summary of the path analyses computed for the relationships among context, agreeableness and psychological well-being and context, extraversion and psychological well-being, with psychological well-being defined hedonically in both instances. In these analyses significance is assumed only after collinearity between predictor variables has been assessed. The path analyses treated each variable as a regressor upon the simultaneous and previous variables in the equation. The

path between the two personality factors and psychological well-being as observed from the path coefficients was significantly stronger than the path between context psychological well-being. These path analyses confirmed the findings in relation to the relationships observed in the regression models above, F test, and moderate effect sizes referred to above.

(Figures 1 and 2 about here)

Discussion

Structural equation model testing indicated that both agreeableness and extraversion mediate the relationship between context and psychological well-being. Largely, the findings of both the regression analyses and structural equation models are consistent but only in as far as agreeableness and extraversion are concerned. Differences in the amount of variance explained were observed when different conceptualisations of psychological well-being were concerned. The hedonic model yielded the highest explanation of variance compared to the general factor and eudaimonic models. As the coefficient of determination explains some of the information in SEM, the discussion will for the sake of parsimony focus more on the explanation of variance save where it pertains to mediation.

The differences in the sizes of the coefficient of determination in explaining psychological well-being by agreeableness and extraversion to some extent concur with the empirical findings of Chan and Joseph (2000) indicating that personality is of considerable importance in the experience of well-being (cf. also Costa and McCrae, 1980; Schmutte and Ryff, 1997). Benet-Martínez and Karakitapoglu-Aygun (2003) found that cultural syndromes of individualism and collectivism predict variations on

personality dispositions which in turn influence satisfaction with life. Personality factors are known to determine how a person perceives events and circumstances to explain psychological well-being (cf. Diener, Suh, Lucas, & Smith, 1999).

Overall the findings also indicate that the hedonic model of psychological well-being comparatively yielded the highest explanations of variance in both the combined groups and when these groups were separated as compared to the general factor and eudaimonic models. The fit indices for structural equation models indicated that for the hedonic model both agreeableness and extraversion best mediate the relationship between context and psychological well-being. DeNeve and Cooper (1998) surmised that positive affect stems primarily from the connections of individuals with others both in terms of the quantity of relationships (extraversion) but as well as in the quality of relationships (agreeableness). Thus, it would appear that experiencing pleasant affect is generally important for the nature of connections that one has with others.

In explaining the unique importance of hedonism, Lucas, Diener, Grob, Suh, and Shao (2000) have argued that extraversion predisposes individuals to pleasant emotions (hedonic well-being) across nations. On the one hand extraversion may influence psychological well-being by fostering social contact which may be seen as fun and rewarding and through social behaviour where it is motivated by the desire for harmony and by feelings of respect and duty. Veenhoven (2003) also indicated that despite the vicissitudes of hedonism, happiness is one of the aspects of psychological well-being that results from a positive preponderance of pleasant experiences over unpleasant ones.

The study also showed some differences in the size of the coefficient of determination when the two groups were looked at separately. Agreeableness was a

stronger predictor of psychological well-being defined hedonically for the Mafikeng group which is predominantly black compared to the Potchefstroom group. This was also true for extraversion. It would appear that agreeableness and extraversion have different consequences for the various conceptualisations of psychological well-being in different contexts. Benet-Martínez and Karakitapoglu-Aygun (2003) found cultural differences in the expression of extraversion among typically individualistic and collectivistic sample in their study with the individualistic sample reporting higher expressions of extraversion. It is likely that psychological well-being may have distinct cultural expressions through personality. It may be important in future studies to understand the possible consequences for the differences between normative and relational aspects of individualism and collectivism as they pertain to personality in psychological well-being.

The finding above also gives vent to the observation that personality is completely interdependent with the meanings and practices of particular eco-cultural and sociocultural contexts (Berry, Poortinga, Segall & Dasen, 2003; Markus & Kitayama, 1998). McCrae's (2001) analogy of the garrulous Frenchman and the talkative Korean who share extraverted tendencies that are expressed in culture-specific forms and language suggests how the same personality traits may be expressed differently in cultures and highlights two things: firstly, traits may be universal and secondly, context is important for the manifestation of behaviour. Triandis and Suh (2002) had noted previously that differences in personality profiles exist across cultures.

Generally the findings of this study indicate the importance of context and personality in predicting psychological well-being and they are consistent with the thinking in cultural psychology that context and personality are intertwined. As pointed

out previously, Saucier and Goldberg (1996) refer to this as the phenotypic view where culture or context in this case, influence personality and personality influences psychological well-being. In addition, the findings by Allik and McCrae (2004) that Black and White South Africans have very different personality profiles despite living in the same country for many generations is congruent with their conclusion that the distribution of self-reported personality traits is organized geographically.

However, in evaluating the findings above account should be taken of the following limitations. The data set used is cross-sectional in nature and thus, predictions can only gleaned statistically and not in a causal sense. Secondly, the sample was comprised of unequal numbers of participants for each social context. Thirdly, context was not measured directly but used heuristically to describe the social conditions of the groups. Nevertheless, the findings help us to understand the role of personality factors in psychological well-being.

The study has the possibility of the benefit in studying the role of contextual and personality variables in the same model to understand the dynamics of psychological well-being by integrating the so-called bottom-up and top-down approaches. This is especially important as Kashima (2004) notes that current theorising in personality and culture takes culture as an antecedent variable that shapes personality which in turn affects psychological processes. Thus, future studies could look at the importance of context, personality in psychological well-being within and between groups. Such studies could also measure this kind of model longitudinally to mark the “changing tides” of psychological well-being across a variety of contexts and create an understanding of the

role of both normative and relational aspects of individualism and collectivism in psychological well-being.

Acknowledgement

The financial assistance of the National Research Foundation: Division for Social Sciences and Humanities and the Research Focus Area 9.1 of the North-West University towards this research, is hereby acknowledged. The opinions expressed and conclusions arrived are those of the authors and are not necessarily to be attributed to the agencies funding this study.

References

- Allik, J. & McCrae, R. R. (2004). Toward a geography of personality traits: Patterns of Profiles Across 36 Cultures. *Journal of Cross-cultural Psychology*, 35 (1), 13-28.
- Andrews, F. M. & Withey, S. B. (1976). *Social Indicators of well-being*. Plenum Press: New York.
- Antonovsky, A. (1987). Unravelling the mystery of health: *How people manage stress and stay well*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1993). The structure and properties of the Sense of Coherence Scale. *Social Science and Medicine*, 36 (6), 725-733.
- Benet-Martínez, V. & Karakitapoglu-Aygun, Z. (2003). The interplay of cultural syndromes and personality in predicting life satisfaction. *Journal of Cross-cultural Psychology*, 34 (1), 38-60.
- Berry, J. W., Poortinga, Y. H., Segall, M. H. & Dasen, P. R. (2003). *Cross-cultural Psychology: Research and Applications*. Cambridge University Press: United Kingdom.
- Bock, P. K. (2000). Culture and personality revisited. *American Behavioural Scientist*, 44, 32-40.
- Browne, M. W. and Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen and J. S. Long (Eds.), *Testing structural equation models* (pp. 136-162). London: Sage.
- Campbell, A., Converse, P. E. and Rodgers, W. L. (1976). *The quality of American life*. Russell Sage Foundation: New York.

- Carmines, E. G. and McIver, J. P. (1981). Analyzing models with unobserved variables: Analysis of covariance structures (pp. 65-115). In G. W. Bohrnstedt and E. F. Borgatta (Eds.), *Social Measurement: Current Issues*. Thousand Oaks, CA: Sage Publications
- Chan, R. and Joseph, S. (2000). Dimensions of personality, domains of aspiration, and subjective well-being. *Personality and Individual Differences*, 28 (2), 347-354.
- Cohen, J. (1990). Things I have learned (so far). *American Psychologist*, 45, 1304-1312.
- Costa, P. T. and McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being. Happy and unhappy people. *Journal of Personality and Social Psychology*, 38, 668-678.
- Costa, P. T. & McCrae, R. R. (1992). Revised NEO Personality Inventory (NEO-PIR) and NEO Five-Factor Inventory (NEO-FFI) Professional Manual. Odessa, FL: Psychological Assessment Resources.
- Côté, S. & Moskowitz, D. S. (1998). On the dynamic covariation between interpersonal behaviour and affect. Prediction from neuroticism, extraversion, and agreeableness. *Journal of Personality and Social Psychology*, 75 (4), 1032-1046.
- Cutrona, C. E., Russell, D. W., Hessling, R. M., Brown, P. A. & Murry, V. (2000). Direct and moderating effects of community context on the psychological well-being of African American women. *Journal of Personality and Social Psychology*, 79 (6), 1088-1101.

- DeNeve, K. M. (1999) Happy as an extraverted clam? The role of personality for subjective well-being. *Current Directions in Psychological Science*, 8 (5), 141-144.
- DeNeve, K. M. & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124 (2), 197-229.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542-575.
- Diener, E. (1996). Traits can be powerful, but are not enough: Lessons from subjective well-being. *Journal of Research in Personality*, 30, 389-399.
- Diener, E. & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653-663.
- Diener, E., Emmons, R. A., Larsen, R. J. & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
- Diener, E., Oishi, S., & Lucas, R. (2003). Personality, culture and subjective well-being: Emotional and cognitive evaluations of life. *American Review of Psychology*, 54, 403-426.
- Diener, E. & Scollon, C. (2003). *Subjective well-being is desirable, but not the summum bonum*. Paper delivered at the University of Minnesota Interdisciplinary Workshop on Well-Being. October 23-25, 2003, Minneapolis, USA.
- Diener, E., Suh, E., Lucas, R. & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125 (2), 276-302.

- Emmons, R. A. (1995). Levels and domains in personality: An introduction. *Journal of Personality, 63*, 341-364.
- Everitt, B. S. (1996). *Making sense of statistics in psychology: A second-level course*. Oxford: Oxford University Press.
- Finch, J. F. & Graziano, W. G. (2001). Predicting depression from temperament, personality and patterns of social relations. *Journal of Personality, 69* (1), 27-55.
- Fidler, F., Thomason, N., Cumming, G., Finch, S. & Leeman, J. (2004). Editors can lead researchers to confidence intervals, but can't make them think: statistical reform lessons from medicine. *Psychological Science, 15* (2), 119-126.
- Frazier, P. A., Tix, A. P. & Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51* (1), 115-134.
- Gallo, L. C. & Matthews, K. A. (2003). Understanding the association between socioeconomic status and physical health: Do negative emotions play a role? *Psychological Bulletin, 129* (1), 10-51.
- Gutiérrez, J. L. G., Jiménez, B. M. Hernández, E. G. & Puente, C. P. (2005). Personality and subjective well-being: Big five correlates and demographic variables. *Personality and Individual Differences, 38*, 1561-1569.
- Hayes, N. & Joseph, S. (2003). Big 5 correlates of 3 measures of subjective well-being. *Personality and Individual Differences, 34*, 723-727.
- Howell, D. C. (2002). *Statistical methods for psychology* (5ed.). Australia: Duxbury.

- Hu, L. & Bentler, P. M. (1999). Cut off criterion for fit indices in covariance structure analysis. Conventional versus new alternatives. *Structural Equation Modeling*, 6 (1), 1-55.
- Hunter, J. E. (1997). Needed: A ban on the significance test. *Psychological Science*, 8 (1), 3-7.
- Huysamen, G. K. (2005). Null hypothesis significance testing: Ramifications, ruminations and recommendations. *South African Journal of Psychology*, 35 (1), 1-20.
- Jöreskog, K. G. & Sörbom, D. (1989). *LISREL 7, a guide to the program and applications* (2ed.). Chicago, Il.: SPSS Applications.
- Kahneman, D., Diener, E. & Schwarz, N. (Eds.) (1999). *Well-being: The foundations of hedonic psychology*. New York: Sage.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current levels of general happiness. *Australian Journal of Psychology*, 35 (2), 259- 265.
- Kashima, Y. (2004). Person, symbol, sociality: Towards a social psychology of a cultural dynamics. *Journal of Research in Personality*, 38, 52-58.
- Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling*, New York: Guilford Press.
- Kwan, V. S. Y., Bond, M. H. & Singelis, T. M. (1997). Pancultural explanations for life satisfaction: Adding relationship harmony to self esteem. *Journal of Personality and Social Psychology*, 73, 1038-1051.
- Lipsey, M. W. (1990). *Design sensitivity: Statistical power for experimental research*. Newbury Park: Sage Publications.

- Lu, L., Gilmour, R. & Kao, S. (2001). Cultural values and happiness: An East-West dialogue. *The Journal of Social Psychology, 141* (4), 477-493.
- Lucas, R. E, Diener, E., Grob, A., Suh, E. M., & Shao, L. (2000). Cross-Cultural Evidence for the Fundamental Features of Extraversion. *Journal of Personality and Social Psychology, 79* (3), 452-468.
- Lucas R. E. & Fujita F. (2000). Factors influencing the relation between extraversion and pleasant affect. *Journal of Personality and Social Psychology, 79*, 1039–56.
- MacCallum, R. C., Browne, M. W. & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130-149.
- Macintyre, S., Maciver, S. & Sooman, A. (1993). Area, class and health: Should we be focussing on places or people? *Journal of Social Policy, 22*, 213-234.
- Maiti, S. S. & Mukherjee, B. N. (1990). A note on the distributional properties of the Jöreskog Sörbom fit indices. *Psychometrika, 55*, 721-726.
- Mansfield, E. R. & Helms B. P. (1981). Detecting multicollinearity. *The American Statistician, 36* (3), 158-160.
- Markus, H. R. & Kitayama, S. (1998). The cultural psychology of personality. *Journal of Cross-cultural Psychology, 29*, 63-87.
- McCrae, R. R. (2001). Trait Psychology and culture: Exploring intercultural comparisons. *Journal of Personality, 69* (6), 819-846.

- McCrae, R. R. (2002). The maturation of personality psychology: Adult personality development and psychological well-being. *Journal of Research in Personality*, 36, 307-317.
- McCrae, R. R., Costa, P. T., Martin, T. A., Oryol, V. E., Rukavishnikov, A. A., Senin, I. G., Hrebícková, M. & Urbánek, T. (2004). Consensual validation of personality traits across cultures. *Journal of Research in Personality*, 38, 179-201.
- McCrae, R. R. & Costa, P. T. (1991). Adding Liebe und Arbeit: The full Five-Factor Model and well-being. *Personality and Social Psychology Bulletin*, 17, 227-232.
- Mroczek, D. K. & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology*, 75 (5), 1333-1349.
- Mroczek, D. K., Spiro, A. & Almeida, D. M. (2003). Between and within-person variation in affect and personality over days and years: How basic and applied approaches can inform one another. *Ageing International*, 28 (3), 260-278.
- Okun, M. A., Stock, W. A, Haring, M. J. & Witter, R. A. (1984). Health and subjective well-being: A meta-analysis. *International Journal of Aging and Human Development*, 19, 111-132.
- Pavot, W. & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5 (2), 164-172.
- Ramsey, D. & Smit, B. (2002). Rural community well-being: models and application to changes in the tobacco-belt in Ontario, Canada. *Geoforum*, 33, 367-384.

- 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.
- Saris, W. E. (2001). What influences subjective well-being in Russia? *Journal of Happiness Studies, 2*, 137-146.
- Saucier, G. & Goldberg, L. R. (1996). The language of personality: Lexical perspectives on the Five factor Model. In J.S. Wiggins (Ed.), *The Five Factor Model of personality: Theoretical perspectives* (pp. 21-50). New York: Guilford.
- Schimmack, U., Oishi, S. & Diener, E. (2002). Cultural influences on the relation between pleasant emotions and unpleasant emotions: Asian dialectic philosophies or individualism-collectivism. *Cognition and Emotion, 16* (6), 705-716.
- Schimmack, U., Radhakrishnan, P., Oishi, S., Dzokoto, V. & Ahadi, S. (2002). Culture, personality, and subjective well-being: Integrating process models of life satisfaction. *Journal of Personality and Social Psychology, 82* (4), 582-593.
- Schmutte, P. S. & Ryff, C. D. (1997). Personality and well-being: re-examining methods and meanings. *Journal of Personality and Social Psychology, 73* (3), 549-559.
- StatSoft, Inc. (2004). Electronic Statistics Textbook. Tulsa, OK: StatSoft. WEB: <http://www.statsoft.com/textbook/stathome.html>.

- Steiger, J. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25 (2), 173-180.
- Steyn, H. S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes* (Practical significance: The use of effect sizes). Wetenskaplikebydraes –Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Suh, M., Diener, E., Oishi, S. & Triandis, H. C. (1998). The shifting basis of life satisfaction judgments across cultures: Emotions versus norms. *Journal of Personality and Social Psychology*. 74, 482-493.
- Thompson, B. (1994). Guidelines for authors. *Educational and Psychological Measurement*, 5 (4), 837-847.
- Triandis, H. C. & Suh, E. M. (2002). Cultural influences on personality. *Annual Review of Psychology*, 53, 133-160.
- Veenhoven, R. (2003). Hedonism and happiness. *Journal of Happiness*, 4, 437-457.
- Waterman, A.S. (1993). Two conceptions of happiness: contrasts of personal expressiveness (eudaimonic) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64, 678-691.
- Watson, D. & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the Five-Factor Model. *Journal of Personality*, 60 (2), 441-476.
- Wissing, M. P., Pretorius, T. B., & Heyns, P. M. (2000 – 2003). A Trans-university research programme in Fortology: Clarification and advancement of psychosocial well-being. Team Research Project (PUCHE/NWU; UWC; UVS).

- Wissing, M. P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C. & Nienaber, A. (1999, July). The psychometric properties of scales measuring psychological well-being in an African group. Paper presented at the International Africa Psychology Congress, 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.
- Yu, C. (2002). Evaluating Cut-off Criteria of Model Fit Indices for Latent Variable Models with Binary and Continuous Outcomes. A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Education. UCLA.

Table 1: Personality factors as predictors of hedonic well-being in separate and combined group

Group	Predictor	Dependent variable	R²	F	p	β
P	Agreeableness	HM	0.15	66.97	0.00	0.39*
M			0.29	53.93	0.00	0.55*
Combined			0.19	117.51	0.00	0.44*
P	Extraversion	HM	0.25	125.00	0.00	0.50*
M			0.31	56.56	0.00	0.56*
Combined			0.27	190.08	0.00	0.52*

Note. P= Potchefstroom group; M = Mafikeng; HM=hedonic model; combined= Both groups taken together in one model

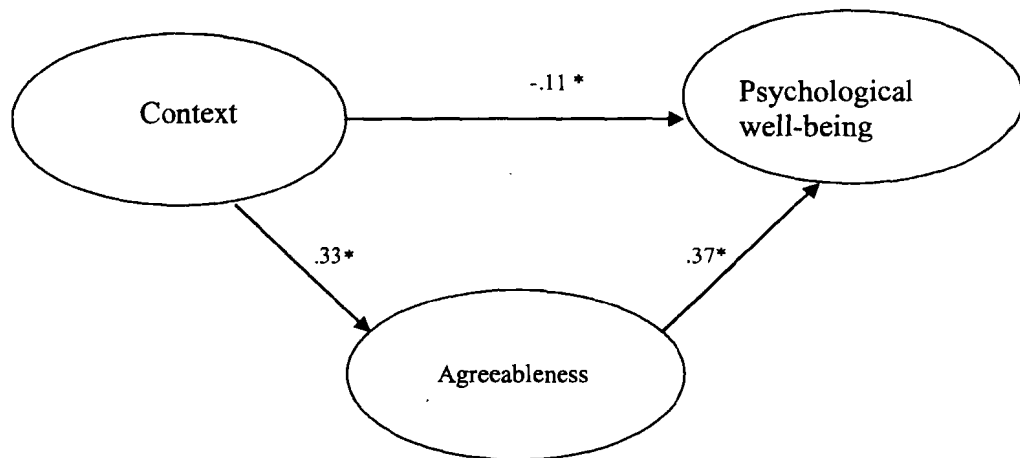


Figure 1: Relationship among context, agreeableness and psychological well-being (hedonically defined and measured by affect balance and satisfaction with life).

*All path coefficients are significant at the 0.05 level

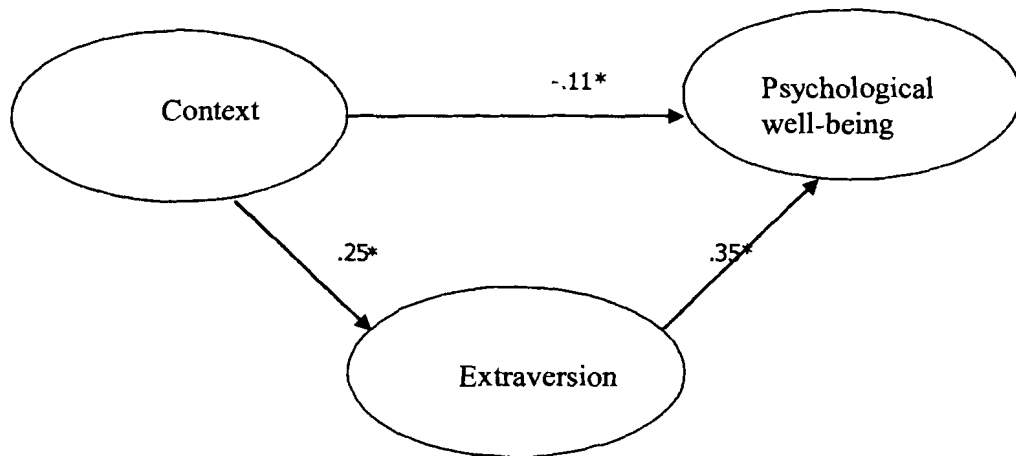


Figure 2: Relationship among context, extraversion and psychological well-being (hedonically defined and measured by affect balance and satisfaction with life).

*All path coefficients are significant at the 0.05 level

Section 4: Article 3

The role of spirituality in the dynamics of context and
psychological well-being

submitted to

South African Journal of Psychology

4.1 Guidelines for authors

South African Journal of Psychology

1. The manuscript should be typed in 12-point font (Times Roman) double-spacing.
2. The first page should contain the title of the article, the name(s) of the author(s), as well as the address of the author to whom the correspondence should be addressed.
3. The abstract should be on a separate page.
4. The text of the article should be started on a new page.
5. Indicate the beginning of a new paragraph by indenting its first line two spaces, except when the paragraph follows a main or secondary heading.
6. The headings should all start at the left margin, and should not be numbered. The introduction to the paper does not require a heading.
7. The referencing style of the SAJP is similar to those used by the British Psychological Society and the American Psychological Association (See *SAJP Guide to Authors*)
8. In the reference list, the first line of each reference starts at the left margin; subsequent lines are indented two spaces.
9. 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. Tables should be drawn without grid-lines separating the cells in the tables. The appropriate positions in the text should be indicated.
10. 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 paper.

11. Once the article has been accepted for publication, a computer diskette must also be submitted. MS Word is the preferred text format. The manuscript number and author or author's name(s) should be clearly indicated on the diskette.
12. As the SAJP does not employ a full-time language editor, it is recommended that, once articles have been accepted for publication, authors send their manuscripts to an external language specialist for language editing. Furthermore, it is recommended that a note indicating that the manuscript had been language edited accompany the final submission of the manuscript.

4.2 Manuscript

The role of spirituality in the dynamics of context and
psychological well-being

Q. Michael Temane and Marié P. Wissing

School for Psycho-Social Behavioural Sciences, North-West University:
Potchefstroom Campus

Corresponding author: Q. M. Temane
School of Psychosocial Behavioural Sciences: Psychology
North-West University
Private Bag X 6001
POTCHEFSTROOM 2530, RSA
e-mail: psgqmt@puk.ac.za

The role of spirituality in the dynamics of context and psychological well-being

Abstract

The purpose of this study was to determine whether spirituality mediates between context and psychological well-being. Context was defined in terms of differentials pertaining to race, socioeconomic indices and infrastructural resources. An availability sample of 514 participants from Potchefstroom (n=384) and Mafikeng (n=130) completed measurements on spirituality and psychological well-being. Regression analyses indicated the viability of relationships among context, spirituality and psychological well-being and differences were observed between the two contexts in the amount of variance explained. Structural equation models showed that spirituality mediates the relationship between context and psychological well-being.

Keywords: spirituality, psychological well-being, context

The role of spirituality in the dynamics of context and psychological well-being.

This article explores whether spirituality plays a mediating role in the dynamics of psychological well-being in diverse contexts. Available literature has attested to the importance of spirituality for psychological well-being and associated health outcomes (cf. Chatters, 2000; Larson & Larson, 2003; Oman & Thoresen, 2003; Pargament, 2002; Seybold & Hill, 2001) including the implied differences in spirituality by social context (cf. Banks-Wallace & Parks, 2004; Spurlock, 2005). Previous reviews and seminal papers have dealt with the distinction between religiosity and spirituality sufficiently (cf. Gall, Charboneau, Clarke, Grant, Joseph, & Shouldice, 2005; Koenig, 2004; Miller & Thoresen, 2003; Wink & Dillon, 2002; Zinnbauer et al., 1997) and thus for the purposes of this study, spirituality is viewed as a broad construct including religiosity. Spirituality as a broad phenomenon is considered endemic in every culture and every geographical community because as people search for meaning, spirituality characterises their way of life (cf. Dantley, 2005; Fabry, 1980; Paloutzian & Ellison, 1997).

Three important observations can be gleaned from the literature regarding the relationship between spirituality and psychological well-being. Firstly, Pargament, Tarakeshwar, Ellison, and Wulff (2001) note that although some studies have shown a link between spirituality and psychological well-being, the size of these links statistically has been modest and variable at most especially across groups and contexts. Secondly, Miller and Thoresen (2003) following a review of studies and issues pertaining to the relationship between spirituality and health concluded that data from the studies they reviewed suggested that spiritual factors in overall health cannot be fully understood by

examining only physical health or disease outcomes. Thirdly, spiritual beliefs and practices vary across cultures (Chiu, Emblem, van Hofwegen, Sawatzky, & Meyerhoff, 2004; Taylor, 2001) and situations (Banks-Wallace & Parks, 2004). However, as important as spirituality is for psychological well-being, few if any studies have tested its mediational role in diverse social contexts.

In another study using race and gender as independent variables, Levin, Taylor and Chatters (1994) found that African-Americans engage in spiritual practices with greater frequency than their white counterparts. Ver Beek (2000) notes that for the people from the South of the USA, spirituality is integral to their lives permeating decisions such as seeking health care and participation in social action. Spurlock (2005) found some differences in the perception of spirituality between black and white respondents in the USA.

Spirituality has been shown to moderate the relationship between the experience of stress and well-being (cf. Fabricatore, Handal & Fenzel, 2000; Kim & Seidlitz, 2002), hope and psychological well-being (Davis, 2005) and the relationship between negative life experiences and levels of depression and anxiety (Young, Cashwell & Shcherbakova, 2000). Baetz, Larson, Marcoux, Bowen, and Griffin (2002) found that adult psychiatric patients who had a high frequency of worship attendance experienced less severe depressive symptoms, shorter current length of stay in hospital and higher satisfaction with life. It has also been shown that the involvement of individuals in spiritual or religious life also positively predicts well-being (Daaleman, Cobb, & Frey, 2001; Kim, Seidlitz, Ro, Evinger & Duberstein, 2004). Such individuals are at a substantially reduced risk for substance abuse, addictions, and suicide (Gartner, 1996; Koenig & Larson, 2001)

and indications of spirituality are inversely associated with aspects of psychological distress (Williams, Larson, Buckler, Heckman & Pyle, 1991).

Spiritually well individuals express themselves through trust, honesty, integrity, altruism, compassion, and service (Chapman, 1987). Spiritual distress results when life is not given meaning and thus characterised by feelings of emptiness and despair (Frankl, 1959). Parks (2003) notes that spiritually based beliefs and practices provide strategies for finding solutions to life problems as well as peace of mind. Delgado (2005) conjectures that spiritually well individuals are capable of resolving the natural tension between that which is temporal and secular by seeking to integrate the biological, social, and psychological aspects of life. Thus, it is possible that spirituality could be considered a powerful factor in shaping many people's decisions and behaviour across several realms of life (Banks-Wallace & Parks, 2004). Leach and Lark (2004) for example, demonstrated through their findings that that spirituality was related to forgiveness. The outcomes of the experience of spirituality could be especially important where social integration were to be a value cultivated by society with roots established in polarisation.

Antonovsky (1979) argues that divine interaction, as an instance of spirituality, may affect well-being by deepening the sense of coherence, comprehensibility, and meaningfulness. Spirituality has also been seen as a tool allowing for interpretation, disclosure, adaptation and innovation to occur in people's lives. Evidence for the role of spirituality in well-being is based among others, on the buffering hypothesis (Ellison, 1994; Pargament, 1997) which states that spirituality influences well-being by facilitating adjustment to stressful life events through its influence on cognitive appraisals of the event and the subsequent regulation of emotions. Another explanation is that spirituality's

influence on well-being occurs via putative mechanisms such as the role of communities for providing fellowship and thus benefits well-being (Seybold & Hill, 2001). Delgado (2005) notes that spirituality results in a sense of inner peace and well-being because it involves faith or a willingness to believe, a search for meaning and purpose in life, a sense of connection with others, and a transcendence of the self. Based on the available literature, it would appear that it is important to understand the contextual nature of spirituality to assert its role in psychological well-being. In this study, spirituality is defined in terms of Paloutzian and Ellison's (1979) conceptualisation that is regarded as unquestionably the most widely applied sociopsychometric instrument (Moberg, 2002) and also considered as pioneering work in the measurement of a complex multidimensional concept (Spurlock, 2005).

Psychological well-being is conceptualised and measured multi-dimensionally so as to open the possibility of testing models with various conceptualisations of psychological well-being, namely as defined from a hedonic perspective or more eudaimonic perspective (cf. Kahneman, Diener & Schwartz, 1999; Ryan & Deci, 2001; Waterman, 1993), or as a general psychological well-being factor as identified by Wissing and Van Eeden (2002). General psychological well-being is defined in terms of the degree of sense of coherence, satisfaction with life, and affect balance, and thus includes facets from both hedonic and eudaimonic perspectives. Hedonic conceptualisations of psychological well-being refer to the degree of happiness (affect balance) and satisfaction with life, whereas the eudaimonic conceptualisation refers more to the experience of meaningfulness (as indicated, among others by the degree of sense of

coherence experienced) (cf. Kahneman, Diener, and Schwarz, 1999; Ryan & Deci, 2001; Waterman, 1993; Wissing & Van Eeden, 2002) and satisfaction with life.

Lopez, Prosser, Edwards, Magyar-Moe, Neufeld and Rasmussen (2002) and Bronfenbrenner (1995) contend that mental health is shaped by contextual factors such as social, cultural, and environmental forces. These contextual factors interact with biological and psychological characteristics to either enhance or constrain options available to the individual and also affect conceptions of mental illness and mental health. Marcoen (1994) opines that the spirituality of a person originates from an exchange process with the culture in which the person is embedded. Ramsey and Smit (2002) proposed a model of well-being that argues that various conditions in the environment within which a community exists play a role in the experience of well-being. They suggest that well-being in rural communities is multidimensional arising from ecological, social, political, economic, and institutional factors. The thesis of this model is important to this study because of the assumption that the context within which a community exists is crucial in understanding how differences in the experience of well-being between individuals could be understood taking into account spirituality which is purportedly endemic in all cultures. The aim of this study was to determine whether spirituality mediates between contexts and psychological well-being.

Method

Design

This is a secondary data analysis of the FORT Project (Wissing, Pretorius, & Heyns,

2000 – 2003) conducted as part of a broader project to clarify and advance the study of psychological well-being. The study employed a *posteriori* cross-sectional research design to collect data.

Participants

A convenience sample of 514 participants from Potchefstroom (n= 384) and Mafikeng (n=130) took part in this study. The first group in the sample is mainly white Afrikaans speaking undergraduate students and adults whereas the second group comprises of a comparable group of mainly black undergraduate Setswana speaking students.

In the Potchefstroom sample, participants were 288 females and 92 males who were predominantly white (313) and to a lesser extent black (56), Indian (8) and coloured (4). The participants from Mafikeng were 77 females, 51 males and were predominantly black (114), and to a lesser extent white (8) and Indian (1) and coloured (5). 5 respondents did not report their gender and therefore some of the categories will not add up. In terms of age, the participants were largely represented in the category 18 to 25 years of age for both groups.

Measuring instruments

Demographic questionnaire

Demographic information collected included age, gender, and race.

Psychological well-being

Sense of Coherence Scale (SOC-29) (Antonovsky, 1987, 1993). The SOC measures an individual's way of experiencing the world and their life in it. The core components of the SOC are comprehensibility, manageability and meaningfulness. Antonovsky (1993) indicates that the SOC manifested internal reliability indices of .78 to .93 as reported in 26 different studies, and test-retest reliability indices of .56 to .96. Antonovsky (1993) also reports good content and criterion validity. Wissing, Thekiso, Stapelberg, Van Quickelberge, Choabi, Moroeng and Nienaber, (1999) attest to the applicability of this scale in a South African context particularly for the Setswana speaking group in the North West Province. In this study, internal reliabilities of .88 and .76 were found for the Potchefstroom and Mafikeng groups respectively.

Affectometer 2 (short version) (AFM) (Kammann & Flett, 1983). The AFM was developed to measure a general sense of well-being or general happiness. Psychological well-being is measured on an affective level by determining the balance between positive and negative affect (Kammann & Flett, 1983). The sub-scales in the AFM measure Positive Affect (10 items), Negative Affect (10 items), and Positive-Negative-affect-Balance (PNB) (PA-NA=PNB). The more positive affect predominates over negative affect, the higher the overall level of well-being (Kammann & Flett, 1983). These authors report Cronbach alpha-reliability indices of .88 to .93. Wissing et al. (1999) indicated the reliability and validity of this scale for use in an African group. Internal reliabilities of .83 and .84 were elicited for positive affect and negative affect for the Potchefstroom group and .64 and .78 in the case of the Mafikeng group for positive affect and negative affect.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffen, 1985). The SWLS (a 5-item scale) was developed to give an indication of a person's general

satisfaction with life. A person's evaluation of their quality of life, according to their own criteria, is measured on a cognitive-judgmental level. Diener et al. (1985) report a two month test-retest reliability index of 0.82, and a Cronbach alpha-reliability index of 0.87. Pavot and Diener (1993) also attest to the good psychometric characteristics of this scale. Wissing et al. (1999) also found the SWLS reliable and valid for use in an African context. Internal reliabilities of .84 and .65 were found for the Potchefstroom and Mafikeng groups respectively.

Psychological well-being as a general factor is measured by the SOC, AFM and SWLS. The hedonic conceptualisation of psychological well-being is operationalised for purposes of the current study by SWLS and AFM, whereas a more eudaimonic conceptualization is operationalised by the SOC complemented by the SWLS.

Spirituality

The *Spiritual Well-Being Scale (SWS)* by Paloutzian & Ellison (1979) measures two dimensions of spirituality, namely a religious or vertical dimension based on a person's relationship with God, namely Religious Well-Being, and an existential or horizontal dimension based on a person's life satisfaction, experience of life meaning and purpose, namely Existential Well-Being. A total score for spiritual well-being is calculated by adding the sub-scale scores. The scale was found reliable and valid in several studies (Ellison & Smith, 1991; Mickley, Soeken & Belcher, 1992) with Cronbach alpha reliabilities ranging from 0.78 to 0.84 for the total scale. Egbert et al. (2004) note that this scale may well be the most reliable and well-tested instrument for assessing religiosity and spirituality. In the present study, a reliability index of 0.92 and 0.88 were found for the Potchefstroom and Mafikeng groups respectively.

Context

Historical stratification by socio-demographic indicators of race, socioeconomic status and differential access to infrastructural resources between predominantly black and white areas were used to conceptualise context. Whereas, Potchefstroom is dubbed the “City of Expertise” with a University campus with commendable resources and research capacity and throughput, Mafikeng was on the other hand, surrounded by deep rural areas tracing their under-development to the homeland era and an under-resourced university campus at the stage of data collection in 2000. Potchefstroom and its environs are characterised by an urbane atmosphere that is conducive for recreational purposes, industrial, farming and mining activities as sources of potential employment and also lies in close proximity to metropolitan areas. These metropolitan areas such as Johannesburg and Pretoria are the main centres of economic activity in South Africa linked to Potchefstroom via a national route. Poverty and lack of employment opportunities are quite rampant in the surrounding areas of Mafikeng. There are long distances between Mafikeng and the metropolitan areas. The existing centre of economic activity is the platinum mining in Rustenburg whose profits are also spoken for by the Bafokeng tribe. In terms of models on the deleterious effects of contexts and neighbourhoods, differences are expected between these two study groups.

Procedure

A booklet containing the scales identified for inclusion in the study was compiled. Each questionnaire had clear instructions for the participants and was accompanied by a removable informed consent letter, explaining the nature of the research, ethical aspects, voluntary participation, and so forth. Participating students completed their

questionnaires in groups, while the other adults who participated in the study completed their questionnaires individually, after informed consent was obtained. The students received a nominal fee for their participation. Feedback on the results was made available to participants who requested it. An algorithm was written to aid scoring of the completed questionnaires. Data cleaning procedures were implemented to safeguard the integrity of the dataset.

Data analysis

Multiple regression analyses and structural equation models were implemented to test the possible mediating role of spirituality between contexts and psychological well-being (cf. Frazier, Tix & Barron, 2004). Frazier et al. (2004) suggest that at least 4 regression analyses be computed to attest for the mediation role of a variable. The coefficient of determination (R^2) is reported as an indication of the amount of variance explained by the independent variables. Beta coefficients are also reported in addition to the R^2 .

Subsequent to the regression analyses, a test of multicollinearity was employed to obviate problems associated with the high intercorrelations among explanatory variables (Everitt, 1996). If the predictor variables are uncorrelated, then the diagonal elements of the inverse correlation matrix are equal to 1.0; thus, for correlated predictors, these elements represent an "inflation factor" for the variance of the regression coefficients, due to the redundancy of the predictors. Everitt (1996) says that a VIF greater than 10 gives some cause for concern. The F test is used to test the significance of R, which is the same as testing the significance of R^2 . F is a function of R^2 , the number of independent variables, and the number of cases (cf. Everitt, 1996)

To attest to the practical significance of the findings effect sizes (cf. Thompson, 1994) were employed following the criticisms levelled at the use of statistical significance testing as a routine procedure (cf. Cohen, 1990; Hunter, 1997). Effect size (ES) is a name given to a family of indices that measure the magnitude of a treatment effect. Effect sizes are independent of sample size. Thus to attest to the practical significance of the regression models, effect sizes were computed based on the following formula by Steyn (1999): $f^2 = R^2 / (1 - R^2)$. A cut-off point of 0.10 (medium effect) was set for practical significance of f^2 .

The hypothesized mediational role of spirituality was tested using the structural equation model in SEPATH (Statsoft Inc., 2004). The χ^2 statistic, and the Goodness of Fit Index (GFI: Jöreskog & Sörbom, 1989) and Root Mean Square Error of Approximation (RMSEA: Steiger, 1990) are reported as measures of fit. A fit index is an overall summary statistic that evaluates how well a particular covariance structure model explains the sample data. Thus, these summarise the degree of correspondence between the implied and observed covariance matrices. A large χ^2 relative to the degrees of freedom indicates a poor fit and could lead to the summary rejection of a model based on sample size and not model adequacy (cf. Yu, 2002). The GFI indicates the relative amount of variance and co-variance in the sample predicted by estimates of the population. It varies between 0 and 1 and a result of 0.90 indicates a good model fit. Hu and Bentler (1995) characterise the GFI as an absolute value because it compares the hypothesised model with no model at all. The GFI does not depend on sample size explicitly in its computation (cf. Jöreskog & Sörbom, 1989). However, owing to the problem related to implications of a big sample size in χ^2 and the associated rejection of

models that may have good fit, two adjunct indices are also reported, namely: the Adjusted Goodness of Fit Index (AGFI) and the Normed Fit Index (NFI). Maiti and Mukherjee (1990) demonstrated that there is an exact monotonic relationship between χ^2 and GFI.

The RMSEA gives an indication of the overall amount of error in the hypothesised model-data fit relative to the number of estimated parameters or the complexity of the model. The RMSEA computes average lack of fit per degree of freedom and it is possible to have near-zero lack of fit in both a complex and in a simple model as RMSEA would compute to be near zero in both. Its popularity is partly based on the fact that it does not require comparison with a null model and thus does not require one to posit as plausible a model in which there is complete independence of the latent variables. The RMSEA should be 0.05 or less (Browne & Cudeck, 1993) to indicate good fit. MacCullum, Browne, and Sugarawa (1996) indicate that RMSEA values ranging from 0.08 to 0.10 indicate mediocre fit and those greater than 0.10 indicate poor fit. Three structural equation models were tested with respect to the conceptualisation of psychological well-being as a General Factor Model (GFM), Hedonic Model (HM) a Eudaimonic Model (EM).

Results

Four multiple regression models containing context, psychological well-being and spirituality were tested as suggested by Frazier et al. (2004). Context minimally explained the variance in spirituality ($R^2 = 0.04$) and psychological well-being ($R^2 = 0.018$) variously defined as a general factor model (GFM), hedonic model (HM), and as a eudaimonic

model (EM). The test of multicollinearity in these first three models yielded a variance inflation factor (VIF; Everitt, 1996; Mansfield & Helms, 1981) of 1.00. The models yielded small to medium effect sizes ($f^2=0.04$ & $f^2= 0.22$) suggesting a finding of negligible practical significance.

In comparison to the previous models using context as an independent variable, spirituality incrementally explained the general factor model ($R^2= 0.26$). When psychological well-being was defined hedonically, the coefficient of determination improved by 13% ($R^2=0.39$) with a variance inflation factor of 1.00 and a large effect size ($f^2=0.61$) suggesting some confidence in asserting practical significance of the relationship. The beta coefficient was significant at the 95% level ($\beta=0.62$) as compared to the beta coefficient in the eudaimonic model ($\beta=0.51$). In the latter model, spirituality explained psychological well-being comparatively to the same extent as in the GFM ($R^2=0.27$).

The third regression model used context and spirituality as predictors of psychological well-being. Context and spirituality positively explained the variance in psychological well-being ($R^2= .27$) defined as GFM, with the coefficient of determination increasing by 11% for the hedonic model ($R^2=0.37$). For the eudaimonic model, the coefficient of determination was comparable to the amount of variance explained in the GFM ($R^2=0.27$). The beta coefficient for context was not significant in all the models. However, the beta coefficients for spirituality were all significant (β : GFM=0.55, HM=0.61, EM=0.51). All the models yielded a variance inflation factor of 1.00 and an average moderate effect size ($f^2=0.37$). The hedonic model all in all represented the highest explanation of variance when spirituality was regressed on psychological well-

being.

When the two groups were looked at separately, spirituality positively explained the variance in the general factor model comparatively in the Mafikeng group ($R^2=0.26$) as well as in the Potchefstroom group ($R^2=0.25$). However, when the hedonic model of psychological well-being was implemented, the coefficient of determination increased by 22% for the Mafikeng group ($R^2=0.48$) and by only 8% in the Potchefstroom group ($R^2=0.33$). The eudaimonic model yielded a coefficient of determination that was similar to the general factor model ($R^2=0.26$: Mafikeng; $R^2=0.25$: Potchefstroom group). Based on these disaggregated findings, it would appear that spirituality was a stronger predictor of the hedonic variant of psychological well-being for the Mafikeng group as compared to the Potchefstroom group. The beta coefficients were also higher for the hedonic models in both the Mafikeng ($\beta=0.692$) and Potchefstroom ($\beta=0.510$) groups as compared to the general factor and eudaimonic models. Table 1 gives a summative of spirituality as a predictor of the hedonic variant of psychological well-being for the Potchefstroom, Mafikeng and combined groups.

(Insert Table 1 about here)

In the present study model fit was evaluated using Jöreskog Goodness of Fit Index (GFI) and the Root Mean Square Error of Approximation (RMSEA; Steiger, 1990). In the combined groups, the model including spirituality as the mediating factor for the relationship between context and the general factor model of psychological well-being adequately fitted the data in terms of Jöreskog and Sörbom's (1989) GFI and also in

terms of the cut-off value set by Hu and Bentler (1999) (GFI=0.997, RMSEA=0.06, , $\chi^2=3.90$, df=4, p=0.41). The hedonic (GFI=0.997, RMSEA=0.05, $\chi^2=2.61$, df=1, p=0.10) and the eudaimonic models (GFI=0.997, AGFI=0.969, NFI=0.997, RMSEA=0.06, $\chi^2=3.11$, df=1, p=0.0.7) also yielded models with a good fit. Based on Loehlin's (1994) observation regarding a model's RMSEA reaching unity and the consequent specification problems, it was decided not to re-specify the outcome variable, viz., psychological well-being. Therefore, all the models were accepted.

Figure 1 represents the path analyses computed on the basis of the foregoing on the relationships among context, spirituality and psychological well-being. In these analyses significance is assumed only after co-linearity between predictor variables has been assessed. The path analyses treated each variable as a regressor upon the simultaneous and previous variables in the equation. The path between spirituality and psychological well-being was significantly stronger compared to the path between context psychological well-being. These path analyses confirmed the findings in relation to the relationships observed in the regression equations and moderate effect sizes referred to above.

(Insert Figure 1 about here)

Discussion

The present study showed that spirituality mediates the relationship between context and psychological well-being. These findings from the structural equation models are consistent with the findings from the regression analyses. Spirituality yielded different amounts of variance when the various conceptualisations of psychological well-being were implemented. The hedonic model of psychological well-being explained the highest

amount of variance compared to the general factor model and eudaimonic model. The results also showed that spirituality differentially predicts psychological well-being across the two groups participating in this study.

Previous studies demonstrated that spirituality moderates various relationships (cf. Davis, 2005; Fabricatore, Handal & Fenzel, 2000; Kim & Seidlitz, 2002; Young, Cashwell & Shcherbakova, 2000). The present study goes a step further by indicating a mediational role of spirituality in the dynamics of context and psychological well-being. Mediator variables help to explain how and why a relationship exists between the independent and dependent variables (Baron & Kenny, 1986). Overall the findings gave the indication that spirituality is important in the lives of people. Koenig (2004: 78-79) notes that spirituality may be important for psychological well-being for a number of reasons including: fostering a positive world-view, meaning and purpose, easier psychological integration; hope; personal empowerment; a sense of control; guidance for decision-making; answers to ultimate questions; and providing social support.

The findings also indicated that the hedonic model yielded the highest amounts of variance. This may seem at odds with the understanding that spirituality is about finding meaning. The link between spirituality and hedonic well-being might possibly exist considering the fact that the instrument used to measure spirituality does so on two levels, existential and religious well-being and not exclusively religiosity. Sulamasy (2002) also points out that spirituality can be expressed through typically the kinds of things that give pleasure such as a person's relationship with nature, music, the arts, or a set of philosophical beliefs or relationships with friends and family. Delgado (2005) contends that this quality of spirituality can be experienced as inner peace where one finds

resolution to the natural tension between that which is temporal and worldly, and that which is not, through understanding and acceptance. Ilies, Morgeson and Hahrgang (2005) argue that how one lives one's life in relation to oneself and others is as important as hedonic happiness.

Differences in the size of the coefficient were also observed between the predominantly black and white samples in this study. Previous studies have demonstrated similar differences employing sociodemographic factors such as race (Banks-Wallace & Parks, 2004; Chiu, Emblem, van Hofwegen, Sawatzky, & Meyerhoff, 2004; Delgado, 2005; Levin, Taylor & Chatters, 1994; Spurlock, 2005; Taylor, 2001; Ver Beek 2000). Most importantly, the present findings concur with the observation by Pargament, Tarakeshwar, Ellison, and Wulff (2001) that although there is a link between religiousness/spirituality and psychological well-being, the size of this link at best is variable especially across groups and contexts. Delgado (2005) notes that spirituality may manifest in various degrees influenced in part by the social and cultural environment.

However, in evaluating the findings above cognisance has to be taken of the limitations. A secondary analysis of a cross-sectional data set was implemented and thus the predictions can only be gleaned statistically and not causally. Secondly, the sample was comprised of unequal numbers of participants for each social context. Thirdly, context was not measured directly but used heuristically to describe the social conditions of the groups. Nevertheless, the findings help us to understand that spirituality plays an important role in the psychological well-being of these groups of participants.

The salutary nature of spirituality in psychological well-being is supported by a commendable corpus of research (cf. Chatters, 2000; Koenig, 2004; Ryan, Rigby, & King,

1993; Seybold & Hill, 2001). Thus it would appear that spirituality may form part of an important framework to facilitate coping among individuals to deal with unpleasant and inevitable life exigencies that in many cases are the result of the ravages of social injustices. The implications of the present findings are that spirituality can be used as a conduit for re-building the sense of community among people and cultivate better mechanisms for dealing with adversity, protest, contestation and the pursuit of the democratic ideal. Fostering spirituality can be used as a form of intervention to enhance psychological well-being and cultivate a sense of community among people to facilitate growth and development by seeking mechanisms to interface their sense of belonging and membership; shared sense of history and emotional connection; role in society; and the fulfilment of the need for psychological well-being. Such a notion of spirituality implies that society is made of interrelated parts that form a whole and that the whole is greater than the sum of its parts. John Donne, a metaphysical English poet, wrote in his Meditation XVII that ends in a remarkable exhortation: “No man is an island, entire of itself; every man is a piece of the continent, a part of the main . . . because I am involved in mankind, therefore never know for whom the bell tolls; it tolls for thee”.

Acknowledgement

The financial assistance of the National Research Foundation: Division for Social Sciences and Humanities towards this research is hereby acknowledged. Opinions expresses and conclusions arrived are those of the authors and are not necessarily to be attributed to the National Research Foundation.

References

- Antonovsky, A. (1979). *Health, stress and coping*. San Francisco, CA: Jossey-Bass.
- Antonovsky, A. (1987). *Unravelling the mystery of health: How people manage stress and stay well*. San Francisco: Jossey-Bass.
- Antonovsky, A. (1993). The structure and properties of the Sense of Coherence Scale. *Social Science and Medicine*, 36(6), 725-733.
- Baetz, M., Griffin, R., Bowen, R., & Marcoux, G. (2004). Spirituality and Psychiatry in Canada: Psychiatric Practice Compared With Patient Expectations. *Canadian Journal of Psychiatry*, 49(4), 265-271.
- Bronfenbrenner, U. (1995). The bioecological model from a life course perspective: reflections of a participant observer. In P. Moen, G.H. Elder, and K. Luscher (Eds.) *Examining Lives in Context: Perspectives on the Ecology of Human Development* (pp. 599-618). Washington, DC: American Psychological Association.
- Chapman, L. (1987). Developing a useful perspective on spiritual health: Well-being, spiritual potential and the search for meaning. *American Journal of Health Promotion*, 1(3), 31-39.
- Chatters, L.M. (2000). Religion and Health: Public Health Research and Practice. *Annual Review of Public Health*, 21, 335-367.

- Chiu, L. Emblem, J.D., van Hofwegen, L., Sawatzky, R., & Meyerhof, H. (2004). An integrative review of the concept of spirituality in the health sciences. *Western Journal of Nursing Research*, 26(4), 405-428.
- Cohen, J. (1990). Things I have learned (so far). *American Psychologist*, 45, 1304-1312.
- Daaleman, T.P., Cobb, A.K., & Frey, B.B. (2001). Spirituality and well-being: an exploratory study of the patient perspective. *Social Science & Medicine*, 53, 1503-1511.
- Davis, B. (2005). Mediators of the relationship between hope and well-being in older adults. *Clinical Nursing Research*, 14(3), 253-272.
- Delgado, C. (2005). A discussion of the concept spirituality. *Nursing Science Quarterly*, 18(2), 157-162.
- deMouplied, J. (2001). Questioning the limits of liberal tolerance. *Journal of Social Philosophy*, 32(3), 268-276.
- Diener, E., Emmons, R., Larsen, R.J. & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Ellison, C.W., & Smith, J. (1991). Toward an integrative measure of health and well-being. *Journal of Psychology and Theology*, 19(1), 35-48.
- Ellison, D. (1994). Religion, the Life Stress Paradigm, and the study of Depression. In J.S. Levin, (Ed.) *Religion in aging and health: Theoretical foundations and methodological frontiers* (pp. 79-121). Thousand Oaks, CA: Sage.

- Everitt, B.S. (1996). *Making sense of statistics in psychology: A second-level course*. Oxford: Oxford University Press:
- Fabricatore, A.N., Handal, P.J. & Fenzel, L.M. (2000). Personal spirituality as a moderator of the relationship between stressors and subjective well-being. *Journal of psychology and Theology*, 28, 221-228.
- Frankl, V.E. (1959). *Man's search for meaning*. Washington, DC : Washington Square Press.
- Frazier, P.A., Tix, A.P., & Barron, K.E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology*, 51(1), 115-134.
- Galek, K., Flannelly, K.J., Vane, A., & Galek, R. (2005). Assessing a patient's spiritual needs. *Holistic Nursing Practice*, 19(2), 62-69.
- Gall, T.L., Charboneau, C., Clarke, N.H., Grant, K., Joseph, A., & Shouldice, L. (2005). Understanding the nature and role of spirituality in relation to coping and health: A conceptual framework. *Canadian Psychology/Psychologie canadienne*, 46(2), 88-104.
- Gartner, J. (1996). Religious commitment, mental health, and prosocial behaviour: a review of empirical literature. In E.P. Shafranske (Ed.), *Religion and the clinical practice of psychology* (pp. 187-214). Washington, DC: American Psychological Association.
- Goldberg, D.P. & Hillier, V.F. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine*, 9, 139-145.

- Hay, D. (2000). Spirituality versus individualism: Why we should nurture relational consciousness. *International Journal of Children's Spirituality*, 5 (1), 37-48.
- Hu, L. & Bentler, P.M. (1999). Cut off criterion for fit indices in covariance structure analysis. Conventional versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.
- Hunter, J.E. (1997). Needed: A ban on the significance test. *Psychological Science*, 8(1), 3-7.
- Ilies, R. T., Morgeson, F. P., Nahrgang, J. D (2005). Authentic leadership and eudaemonic well-being: Understanding leader–follower outcomes. *The Leadership Quarterly*, 16, 373–394.
- Jöreskog, K.G. & Sörbom, D. (1989). *LISREL 7, a guide to the program and applications* (2ed.).Chicago, Il.: SPSS Applications.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current levels of general happiness. *Australian Journal of Psychology*, 35 (2), 259- 265.
- Kilpatrick, S.D. & McCullough, M.E. (1999). Religion and spirituality in rehabilitation psychology. *Rehabilitation Psychology*, 44(4), 388-402.
- Kim, Y. & Seidlitz, L. (2002). Spirituality moderates the effect of stress on emotional and physical adjustment. *Personality and Individual Differences*, 32: 1377-1390.
- Kim, Y., Seidlitz, L., Ro, Y, Evinger, J.S., & Duberstein, P.R. (2004). Spirituality and affect: a function of changes in religious affiliation. *Personality and Individual Differences*, 37, 861-870.

- Koenig, H.G. (2004). Spirituality, wellness, and quality of life. *Sexuality, Reproduction & Menopause*, 2(2), 76-82.
- Koenig, H.G. & Larson, D.B. (2001). Religion and mental health: evidence for an association. *International Review of Psychiatry*, 13, 67-78.
- Leach, M.M. & Lark, R. (2004). Does spirituality add to personality in the study of trait forgiveness? *Personality and Individual Differences*, 37, 147-156.
- Levin, J.S., Chatters, L.M. & Taylor, R.J. (1995). Religious effects on health status and life satisfaction among Black Americans. *Journal of Gerontology: Social Sciences*, 50B, S154-S163.
- Lipsey, M.W. (1990). *Design sensitivity: Statistical power for experimental research*. Newbury Park: Sage Publications.
- Lopez, S.J., Prosser, E.C., Edwards, L.M., Magyar-Moe, J.L., Neufeld, J.E., & Rasmussen, H.N. (2002). Putting positive psychology in a multicultural context. In C.R. Snyder, & Shane J. Lopez (eds.), *Handbook of Positive Psychology* (pp. 700-714). New York: Oxford University Press.
- Maiti, S.S. & Mukherjee, B.N. (1990). A note on the distributional properties of the Jöreskog Sörbom fit indices. *Psychometrika*, 55, 721-726.
- Mansfield, E.R. & Helms B.P. (1981). Detecting multicollinearity. *The American Statistician*, 36(3), 158-160.
- MacDonald, D.A. & Holland, D. (2002). Spirituality and boredom proneness. *Personality and Individual Differences*, 32, 1113-1119.

- Marcoen, A. (1994). Spirituality and personal well-being in old age. *Ageing and Society*, 14, 521-536.
- Mickley, J.R., Soeken, K., & Belcher, A. (1992). Spiritual well-being, religiousness and hope among women with breast cancer. *IMAGE: Journal of Nursing Scholarship*, 24(4), 267-272.
- Miller, W.R. & Thoresen, C.E. (2003). Spirituality, religion and health: an emerging research field. *American Psychologist*, 58(1), 24-35.
- Narayanasamy, A. (1999). A review of spirituality as applied to nursing. *International Journal of Nursing Studies*, 36, 117-125.
- O'Connor, D.B., Cobb, J., O'Connor, R.C. (2003). Religiosity, stress, and psychological distress. No evidence for an association among undergraduate students. *Personality and Individual Differences*, 34, 211-217.
- Paquette, M. (2004). The mind-body link enters the mainstream. *Perspectives in Psychiatric Care*, 40(1), 3-4.
- Pargament, K.I. (1997). *The Psychology of Religion and Coping*. New York: Guildford Press.
- Pargament, K.I., Tarakeshwar, N, Ellison, C.G. & Wulff, K.M. (2001). Religious coping among the religious: The relationship between religious coping and well-being in a national sample of Presbyterian clergy, elders, and members. *Journal for the Scientific Study of Religion*, 40(3), 497-513.
- Pavot, W. & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5(2), 164-172.

- Ramsey, D. & Smit, B. (2002). Rural community well-being: models and application to changes in the tobacco-belt in Ontario, Canada. *Geoforum*, 33, 367-384.
- Ryan, R.M., Rigby, S., King, K. (1993). Two types of religious internalization and their relations to religious orientations and mental health. *Journal of Personality and Social Psychology*, 65, 586-596.
- Seybold, K.S. & Hill, P.C. (2001). The role of religion and spirituality in mental and physical health. *Current Practices in Psychological Science*, 10(1), 21-24.
- Shahabi, L., Powell, L.H., Musick, M.A., Pargament, K.I., Thoresen, C.E., Williams, D., Underwood, L., & Ory, M.A. (2002). Correlates of self-perceptions of spirituality in American adults. *Annals of Behavioral Medicine*, 24(1), 59-68.
- Somlai, A.M. & Heckman, T.G. (2000). Correlates of spirituality and well-being community sample of people living with HIV disease. *Mental Health, Religion, & Culture*, 3(1), 57-70.
- Spurlock, W.R. (2005). Spiritual well-being and caregiver burden in Alzheimer's caregivers. *Geriatric Nursing*, 26(3), 154-161.
- StatSoft, Inc. (2004). Electronic Statistics Textbook. Tulsa, OK: StatSoft. WEB: <http://www.statsoft.com/textbook/stathome.html>.
- Steiger, J. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25(2), 173-180.

- Steyn, H.S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgrootte Wetenskaplikebydraes – Reeks B: Natuurwetenskappe* Nr. 117.
Potchefstroom: PU vir CHO.
- Strawbridge, W., Sherna, S.J., Cohen, R.D., Roberts, R.E., & Kaplan, G.A. (1998).
Religiosity buffers effects of some stressors on depression but exacerbates others.
Journal of Gerontology, 59B, S118-S126.
- Taylor, E.J. (2001). Spirituality, culture, and cancer care. *Seminars in Oncology Nursing*,
17 (3), 197-205.
- Thompson, B. (1994). Guidelines for authors. *Educational and Psychological
Measurement*, 5(4), 837-847.
- Thoresen, C.E. (1999). Spirituality and health: Is there a relationship? *Journal of Health
Psychology*, 4(3), 291-300.
- Ver Beek, K.A. (2000). Spirituality: a development taboo. *Development in
practice*, 10(1), 31-43.
- Williams, D.R., Larson, D.B., Buckler, R.E., Heckman, R.C., & Pyle, C.M. (1991).
Religion and psychological distress in a community sample. *Social Science
and Medicine*, 32, 1257-1262.
- Wink, P. & Dillon, M. (2002). Spiritual development across the adult life course:
Findings from a longitudinal study. *Journal of Adult Development*, 9(1), 79-94.
- Wissing, M.P., Pretorius, T.B., & Heyns, P.M. (2000 – 2003). A Trans-university
research programme in Fortology: Clarification and advancement of
psychosocial well-being. Team Research Project (PUCHE/NWU; UWC; UVS).

- Wissing, M.P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C. & Nienaber, A. (1999). The psychometric properties of scales measuring psychological well-being in an African group. Paper presented at the International Africa Psychology Congress. July, 18-23, 1999, 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.
- Young, J.S., Cashwell, C.S., & Shcherbakova, J. (2000). The moderating relationship of spirituality on negative life Events and Psychological Adjustment. *Counseling and Values*, 45(1), 49-57.
- Zinnbauer, B.J., Pargament, K.I., Cole, B., Rye, M.S., Butter, E.M., Belavich, T.G., Hipp, K.M., Scott, A.B., Kadar, J.I. (1997). Religion and Spirituality: Unfuzzifying the fuzzy. *Journal for the Scientific Study of Religion*, 36(4), 549-564.

Table 1: Spirituality as a predictor of hedonic psychological well-being (PWB) in separate and combined group

Group	Predictor	R²	F	p	Beta Coefficient
P	Spirituality	0.33	187.41	0.00	0.58*
M		0.48	115.47	0.00	0.69*
Combined		0.38	306.52	0.00	0.62*

Note. P= Potchefstroom group; M = Mafikeng; Combined= Both groups taken together in one model

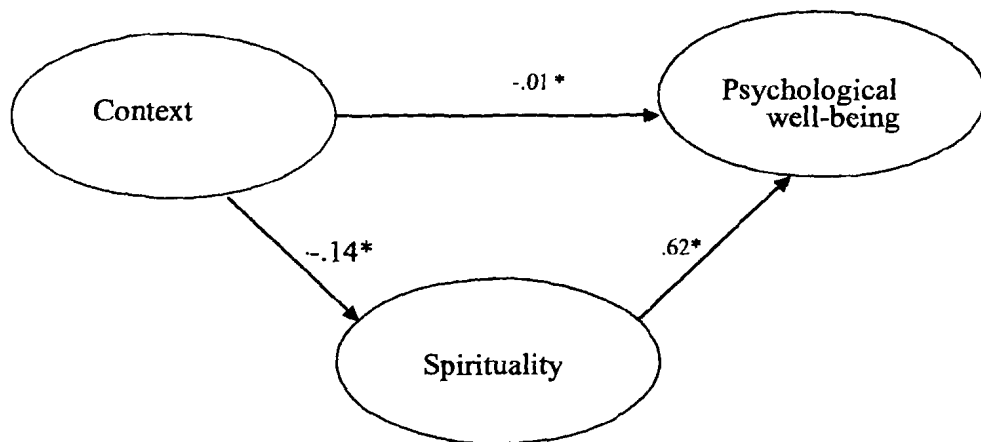


Figure 1: Relationship among context, spirituality and psychological well-being (hedonically defined and measured by affect balance and satisfaction with life)

Section 5: Conclusions and recommendations

The general aim of the study was to explore the dynamics of contexts and psychological well-being by testing various models using subjective perceptions of physical health, personality factors and spirituality as mediating factors.

The findings indicate that perceptions of physical health (article 1), personality factors (article 2) and spirituality (article 3) mediate the relationship between context and psychological well-being. The findings from structural equation models were generally consistent with the findings from the regression analyses. However, effect sizes (cf. Cohen, 1990; Hunter, 1997; Steyn, 1999) for subjective perceptions of health were higher compared to the effect sizes for personality factors and spirituality indicating that the findings for subjective perceptions of health had the highest practical significance.

Although previous studies demonstrated that personality factors were by far the most significant determinants of psychological well-being (cf. Hayes & Joseph, 2003; Yeung & Hemsley, 1997) the findings in this study indicated that on the contrary, subjective perceptions of health were the stronger predictor of psychological well-being. The findings underscore the importance of subjective perceptions of health in the relationship between context and psychological well-being. Health has been considered to be one of the major preoccupations in third world countries (cf. Caldwell, 1993; Robert & Sheiham, 2002) and thus perhaps is a central concern to the respondents in this study.

Previous comparable studies have only demonstrated the importance of perceptions of physical health for psychological well-being (cf. Baron-Epel, Shemy & Carmel, 2004; Gee & Takeuchi, 2004; Huppert & Whittington, 2003) without such findings indicating the role of variables such as personality factors and spirituality. In this

study, there was a benefit in using a similar data set where all 3 sets of observations gave an indication of the relative strength of subjective perceptions of health in psychological well-being. Goldman, Gleib and Chang (2003) regard subjective perceptions of health as an important component of quality of life as it incorporates psychological well-being, social functioning and positive affect. Davies and Ware (1981) considered perceived health status as a construct encompassing current health, prior health, health outlook, resistance to illness, and health worries and concerns. Thus, it is important for policymakers to facilitate access to health and reduce inequalities that are usually associated with health provision in the public sector (cf. Temane, 1999). This could be achieved by using existing networks within such communities to promote healthy lifestyles in terms of encouraging teenagers to abstain from drinking alcohol, smoking, consuming balanced diets, and interventions to cultivate social capital as instances of promoting psychological well-being.

The findings also demonstrated that the hedonic model of psychological well-being (albeit variably conceptualised in article 1 and articles 2 and 3) overall, yielded the highest amounts of variance. Conceptually, this may seem at odds with the popular thinking that in the case of spirituality a more eudaimonic model would have produced the highest amounts of variance. However, Keyes (2003) conjectures that the sense of well-being akin to hedonism, also includes social connectedness and contribution. This sense of well-being is similar to Durkheim's *collective effervescence* or Turner's *communitas* (cf. Olaveson, 2001) that offers individuals the opportunity to create meaning in their interaction with others. Ilies, Morgeson and Nahrgang (2005) make the observation that how one lives one's life in relation to oneself and others is as important

as hedonic happiness. Hopkinson and Pujari (1999) regard hedonism as a mechanism for creating the opportunity for the individual dream, for creating enchantment and the establishment of a sense of community, a camaraderie based on a common bond of experience considered special or sacred. Veenhoven (2003) notes that despite the vicissitudes of hedonism, happiness is one of the aspects that results from a preponderance of pleasant experiences over unpleasant ones. Therefore, the findings regarding the hedonic model make sense. In terms of this finding it may be important to obtain a national index of well-being in South Africa that is based on both objective and subjective conditions that may influence psychological well-being.

Differences were observed among the two predominantly black and white samples in terms of the roles played by subjective perceptions of health, personality factors and spirituality in the relationship between contexts and psychological well-being. This is consistent with other research indicating differences among predominantly collectivistic and individualistic cultures (cf. Benet-Martínez & Karakitapoglu-Aygun, 2003; Triandis, 1996) and therefore indicate that the dynamics of well-being are different in the two groups that participated in the study. The finding may also highlight one of two observations, firstly, Basabe, Paez, Valencia, Gonzalez, Rimé and Diener (2002) make the point that cultural dimensions are partly associated with ecological and economic factors as the definition of context in this study suggests. Secondly, Triandis (1996) argued that the defining attributes of individualist Western samples include emphasis on hedonism, whereas the collectivist samples include emphasis on behaviour consistent with norms, role, and obligations where collectivists are often socialised to enjoy doing their duty. In both these instances, cognisance should be taken of the

importance of giving consideration to defining the factors that are important for psychological well-being in various societies as these have implications for a wide variety of interventions that could be implemented to cultivate and nurture quality of life especially in a society characterised by much socio-political polarisation.

The findings of this study attenuate with the model proposed by Ramsey and Smith (2002) in regard to the importance of contextual factors in well-being. On a broader theoretical level, the eco-epidemiological approach as espoused by Stokols (1996) have a bearing on these findings. According to this approach, there is an inherent connectedness among structures, such as populations, communities, single individuals and biological systems.

The idea of communities as active participants in the promotion of positive change in individual, family, and community circumstances by improving physical, economic, and social conditions, is embedded in the ecosystem approach. However, it is also quite clear that there are still questions regarding the specific role of neighbourhood social and material contexts in producing and maintaining inequalities in health and life chances (cf. Cummins, Macintyre, Davidson & Ellaway, 2005) and psychological well-being. This in itself is quite reminiscent of the concern raised by Poland, Coburn, Robertson and Eakin (1998) about the assumption of equality and social justice which seems to be made by some models. Beck, van der Maeson, Thomése and Walker (2001) introduced the concept of *social quality* to undergird some of these models. They observed that the level of social quality experienced by communities is necessary for meaningful change to occur. Social quality is the extent to which citizens are able to participate in the social and economic life of their communities under conditions which

enhance their well-being and individual potential. This can be achieved if cognisance is taken of the following: the degree of socioeconomic security, level of social inclusion, the extent of social cohesion (and the nature of national social cohesion) and the extent of empowerment experienced by citizens. In line with a developing corpus of literature indicating that quality ties to others and the characteristics of a neighbourhood influence well-being and health outcomes (Ryff & Singer, 2000) it can be concluded that due consideration must be given to the social ecology of functioning in a society to make a meaningful statement about its well-being.

Recommendations

Overall, the findings indicate the importance of the role played by subjective perceptions of health, personality factors and spirituality in the dynamics of context and psychological well-being. Given the socio-economically disparate conditions of living in South Africa, credence must be given to the enhancement of psychological well-being. It is known that societies function on a wide variety of levels and the knowledge gleaned from positive psychology lends the possibility of enhancing this functioning. However, extant in the community psychology literature is the exhortation that meaningful community participation is the basic requirement in the design, implementation and evaluation of community-based interventions (Sandler, Ostrom, Bitner, Ayers, Wolchik, & Danies, 2005; Whitehead, Kriel, & Richter, 2005). As pointed out, information is a key challenge and facilitator at the same time to make the foregoing a reality. Access to information has been indicated as a key problem of living in economically challenged communities. The 2006 turbulence in the township of Khutsong in Carletonville

regarding the 'transfer' of this municipality area to another province was quite characteristically an instance of lack of information. It is generally acknowledged that situations that make people feel more secure and positive about themselves can lead to greater acceptance of negative and threatening information.

It is the considered opinion of the author that psychological strengths can be cultivated in societies previously characterised by contestation primarily as most of these are visible in their realisation. Khumalo, Wissing and Temane (2005) identified a cluster of strengths as a factor, namely, temperance and justice. Strengths such as citizenship, self-regulation, prudence, fairness, modesty, leadership, forgiveness and integrity characterise this factor. Given the history of South Africa, this is a cluster of strengths that are characteristically intrinsic in nature that could be amenable to an intervention programme. The benefit of intrinsic factors has been linked to optimal functioning and high levels of self-actualisation (cf. Kasser & Ryan, 1993). However, this is at variance with the popular culture of endemic consumerism linking extrinsic factors such as elitism and materialism as symbols of success. Attempts could be made through school curricula, healthcare use and attendance and provisioning of housing to respond to the cultivation of these strengths. The three targeted areas often are used in advertising as definition of upward mobility, high quality of life, security and culmination of needs. There is need for broader structural change supported by public to make this even a remote reality.

Therefore a recommendation can be made on three levels as an attempt to enhance psychological strengths through various interventions such as character education, positive youth development and promotion of community well-being to impact social quality and the development of positive citizenship. Firstly, character is a

facet often associated with personality functioning and its expression on an ethical level. Character education deals with relations between and among individuals and among groups, conditions of civil society and significant public issues (Howard, Berkowitz & Schaeffer, 2004). Character education decidedly prepares individuals to make ethical judgments and to act on them. The curriculum on character education could include strengths such as prudence, forgiveness, spirituality, and self-regulation, to build citizens who would be able to be engaged with societal responsibilities on a variety of levels. The role of subjective perceptions of health, personality factors and spirituality in the success of the attempt to enhance psychological strengths cannot be over-emphasised.

Secondly, positive youth development has been identified as a mechanism to combat adolescent risk behaviours and associated health problems such as teenage pregnancy and substance abuse. This approach is based on the belief that efforts to change youth behaviour should focus on building strengths that are both internal and external to youth (Kegler, Young, Marshall, Bui, & Rodine, 2005; Larson, 2000). Positive youth development focuses attention on the roles that families, schools, and communities play in creating environments that promote strengths. Morrisey and Werner-Wilson (2005) in their study on the relationship between out-of-school activities and positive youth development found a link between attitudes towards family and community and between attitudes towards community and positive development such as prosocial behaviour. In another study, Keller, Best, Lock and Marcenko (2005) found home characteristics such as parental education, played an important role in the decision to participate in youth programmes. Therefore, the context of positive youth development is also important to plan simultaneously as it has implications for the outcomes.

Thirdly, various studies have indicated the positive role played by communities in enhancing psychological well-being (cf. Morrisey & Werner-Wilson, 2005; Neuhauser, Schwab, Syme, & Bieber, 1998; Pollack, 2004; Yassi, Fernandez, Fernandez, Bonet, Tate & Spiegel, 2003). Neuhauser et al. (1998) regard the involvement of community members in public health planning, implementation and even evaluation as an alternative and promising approach. Yassi et al. (2003) in their study on community participation in a multisectoral intervention found that community involvement through existing organisations played a key role in the success of their project. They found that the adoption by the community of the multidimensional ecosystem approach worked most effectively. However, cognisance needs to be taken of the fact that barriers may impede participation in projects despite the best intentions of projects. Whitehead et al. (2005) identified some of the following barriers in a South African rural community: gaining access, group composition, inclusion and exclusion, language and ownership of the project. The author believes that the use of a developmental approach will go a long way in cascading information about positive citizenship based on the enhancement of psychological strengths.

Complete Reference list

Act 108 Of 1996 Constitution *of the Republic of South Africa*. Pretoria: Government

Printing Press.

Adams, P., Hurd, M. D., McFadden, D., Merrill, A. & Ribeiro, T. (2003). Healthy, healthy, and wise? Tests for direct causal paths between health and socioeconomic status. *Journal of Econometrics*, 112, 3-56.

Albrecht, G. L. & Devlieger, P. J. (1999). The disability paradox: High quality of life against all odds. *Social Science & Medicine*, 48, 977-988.

Allik, J. & McCrae, R. R. (2004). Toward a geography of personality traits: Patterns of profiles across 36 cultures. *Journal of Cross-cultural Psychology*, 35 (1), 13-28.

Alpass, F. M. & Neville, S. (2003). Loneliness, health and depression in older males. *Aging & Mental Health*, 7 (3), 212-216.

Andrews, F. M. & Withey, S. B. (1976). *Social Indicators of well-being*. Plenum Press: New York.

Aneshensel, C. S. & Sucoff, C. A. (1996). The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior*, 37, 293-310.

Antonovsky, A. (1979). *Health, stress and coping*. San Francisco, CA: Jossey-Bass.

Antonovsky, A. (1987). The salutogenic perspective: Toward a new view of health and illness. *Advances, Institute for the Advancement of Health*, 4 (1), 47-55.

Antonovsky, A. (1993). The structure and properties of the Sense of Coherence Scale. *Social Science and Medicine*, 36 (6), 725-733.

- Antonovsky, A. (1994). A sociological critique of the “well-being” movement. *Advances: The Journal of Mind-Body Health*, 10(3), 6-12.
- Baetz, M., Griffin, R., Bowen, R. & Marcoux, G. (2004). Spirituality and Psychiatry in Canada: Psychiatric Practice Compared With Patient Expectations. *Canadian Journal of Psychiatry*, 49(4), 265-271.
- Bailis, D. S., Segall, A. & Chipperfield, J.G. (2003). Two views of self-rated general health status. *Social Science & medicine*, 56, 203-217.
- Baron-Epel, O., Shemy, G., & Carmel, S. (2004). Prediction of survival: A comparison between two subjective health measures in elderly population. *Social Science & Medicine*, 58, 2035-2043.
- Basabe, N., Paez, D., Valencia, J., Gonzalez, J.L., Rimé, B. & Diener, E. (2002). Cultural dimensions, socioeconomic development, climate, and emotional hedonic level. *Cognition and Emotion*, 16 (1), 103-125.
- Beck, W., van der Maeson, L., Thomése, F. & Walker, A. (2001). *Social quality: A vision for Europe*. The Hague, Netherlands: Kluwer Law International.
- Benet-Martínez, V. & Karakitapoglu-Aygun, Z. (2003). The interplay of cultural syndromes and personality in predicting life satisfaction. *Journal of Cross-cultural Psychology*, 34 (1), 38-60.
- Berry, J. W., Poortinga, Y. H., Segall, M. H. & Dasen, P. R. (2003). *Cross-cultural Psychology: Research and Applications*. Cambridge University Press: United Kingdom.

- Bock, P. K. (2000). Culture and personality revisited. *American Behavioural Scientist*, 44, 32-40.
- Bronfenbrenner, U. (1979). *The ecology of human development experiments by nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1995). The bioecological model from a life course perspective: reflections of a participant observer. In P. Moen, G.H. Elder, and K. Luscher (Eds.) *Examining Lives in Context: Perspectives on the Ecology of Human Development* (pp. 599-618). Washington, DC: American Psychological Association.
- Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen and J.S. Long (Eds.), *Testing structural equation models* (pp. 136-162). London: Sage.
- Byrne, B.M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Erlbaum.
- Caldwell, J. C. (1993). Health transition: the cultural, social and behavioural determinants of health in the Third World. *Social Science and Medicine*, 36 (2), 125-135.
- Cameron, K. S., Dutton, J. E. & Quinn, R. E. (Eds.) (2003). Foundations of positive organizational scholarship. In K. S. Cameron, J. E. Dutton, and R. E. Quinn. *Positive organizational scholarship: Foundations of a new discipline* (pp. 3-13), Berrett-Koehler Publishers, Inc.: San Francisco, CA.

- Campbell, A., Converse, P.E. & Rodgers, W.L. (1976). *The quality of American Life*. New York: Russell Sage.
- Carmines, E. G. & McIver, J. P. (1981). Analyzing models with unobserved variables: Analysis of covariance structures (pp. 65-115). In G. W. Bohrnstedt & E. F. Borgatta (Eds.), *Social Measurement: Current Issues*. Thousand Oaks, CA: Sage Publications
- Cassidy, T. (2000). Social background, achievement motivation, optimism and health: A longitudinal study. *Counselling Psychology Quarterly*, 13 (4), 399-412.
- Caughy, M. O., O'Campo, P. J. & Patterson, J. (2001). A brief observational measure of neighborhoods. *Health & Place*, 7, 225-236.
- Chan, R. & Joseph, S. (2000). Dimensions of personality, domains of aspiration, and subjective well-being. *Personality and Individual Differences*, 28 (2), 347-354.
- Chapman, L. (1987). Developing a useful perspective on spiritual health: Well-being, spiritual potential and the search for meaning. *American Journal of Health Promotion*, 1(3), 31-39.
- Chatters, L. M. (2000). Religion and Health: Public Health Research and Practice. *Annual Review of Public Health*, 21, 335-367.
- Chen, E. Matthews, K. A. & Boyce, W. T. (2002). Socioeconomic differences in children's health: How and why do these relationships change with age? *Psychological Bulletin*, 128 (2), 295-329.

- Chiu, L. Emblem, J. D., van Hofwegen, L., Sawatzky, R., & Meyerhof, H. (2004). An integrative review of the concept of spirituality in the health sciences. *Western Journal of Nursing Research*, 26(4), 405-428.
- Cohen, J. (1990) Things I have learned (so far). *American Psychologist*, 45, 1304-1312.
- Costa, P. T. & McCrae, R. R. (1980). Influence of extraversion and neuroticism on subjective well-being. Happy and unhappy people. *Journal of Personality and Social Psychology*, 38, 668-678.
- Costa, P. T. & McCrae, R. R. (1992). Revised NEO Personality Inventory (NEO-PIR) and NEO Five-Factor Inventory (NEO-FFI) Professional Manual. Odessa, FL.: Psychological Assessment Resources.
- Côté, S. & Moskowitz, D. S. (1998). On the dynamic covariation between interpersonal behaviour and affect. Prediction from neuroticism, extraversion, and agreeableness. *Journal of Personality and Social Psychology*, 75 (4), 1032-1046.
- Cummins, S., Macintyre, S., Davidson, S., & Ellaway, A. (2005). Measuring neighbourhood social and material context: Generation and interpretation of ecological data from routine and non-routine sources. *Health and Place*, 11, 249 – 260.
- Cutrona, C.E, Russell, D.W., Hessling, R.M., Brown, P.A. & Murry, V. (2000). Direct and moderating effects of community context on the psychological well-being of African American women. *Journal of Personality and Social Psychology*, 79 (6), 1088-1101.

- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist*, 54, 821-827.
- Daaleman, T. P., Cobb, A. K. & Frey, B. B. (2001). Spirituality and well-being: an exploratory study of the patient perspective. *Social Science & Medicine*, 53, 1503-1511.
- Davis, B. (2005). Mediators of the relationship between hope and well-being in older adults. *Clinical Nursing Research*, 14(3), 253-272.
- De Hollander, A. E. M. & Staatsen, B. A. M. (2003). Health, environment and quality of life: An epidemiological perspective on urban development. *Landscape and Urban Planning*, 65, 53-62.
- Delgado, C. (2005). A discussion of the concept spirituality. *Nursing Science Quarterly*, 18(2), 157-162.
- deMouplied, J. (2001). Questioning the limits of liberal tolerance. *Journal of Social Philosophy*, 32(3), 268-276.
- DeNeve, K. M. (1999). Happy as an extraverted clam? The role of personality for subjective well-being. *Current Directions in Psychological Science*, 8 (5), 141-44.
- DeNeve, K. M. and Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124 (2), 197-229.
- Diener, E. (1996). Traits can be powerful, but are not enough: Lessons from subjective well-being. *Journal of Research in Personality*, 30, 389-399.

- Diener, E. (2000). Subjective well-being. The science of happiness and a proposal for a national index. *American Psychologist*, 55, 34-43.
- Diener, E. & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653-663.
- Diener, E., Emmons, R., Larsen, R. J. & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49 (1), 71-75.
- Diener, E., Oishi, S. & Lucas, R. (2003). Personality, culture and subjective well-being: Emotional and cognitive evaluations of life. *American Review of Psychology*, 54, 403-426.
- Diener, E. & Scollon, C. (2003). *Subjective well-being is desirable, but not the summum bonum*. Paper delivered at the University of Minnesota Interdisciplinary Workshop on Well-Being. October 23-25, 2003, Minneapolis, USA.
- Diener, E. & Seligman, M. E. P. (2004) Beyond money: Toward an economy of well-being. *Psychological Science in the Public Interest*, 5 (1), 1-31.
- Diener, E. and Suh, E. M. (2000). Measuring subjective well-being to compare the quality of life of cultures. In E. Diener & E.M. Suh (Eds.) *Culture and subjective well-being* (pp. 3-12). Cambridge, MA: The MIT Press.
- Diener, E., Suh, E., Lucas, R. & Smith, H. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125 (2), 276-302.
- Diez-Roux, A. V. (2001). Investigating neighborhood and area effects on health. *American Journal of Public Health*, 91, 1783-1789.

- Ellison, C. (1994). Religion, life stress paradigm and the study of depression. In J.S. Levin (Ed.) *Religion in aging and health: Theoretical foundations and frontiers*. (79-121). Thousand Oaks, CA: Sage.
- Ellison, C. W. & Smith, J. (1991). Toward an integrative measure of health and well-being. *Journal of Psychology and Theology*, 19(1), 35-48.
- Emery C. F., Huppert, F. A. and Schein, R. L. (1996). Health and personality predictors of psychological functioning in a 7-year longitudinal study. *Personality and Individual Differences*, 20 (5), 567-573.
- Emmons, R. A. (1995). Levels and domains in personality: An introduction. *Journal of Personality*, 63, 341-364.
- Everitt, B.S. (1996). *Making sense of statistics in psychology: A second-level course*. Oxford: Oxford University Press.
- Fabricatore, A. N., Handal, P. J. & Fenzel, L. M. (2000). Personal spirituality as a moderator of the relationship between stressors and subjective well-being. *Journal of Psychology and Theology*, 28, 221-228.
- Farmer, M. M. & Ferraro, K. F. (1997). Distress and perceived health. *Journal of Health and Social Behavior*, 39, 298-311.
- Fidler, F., Thomason, N., Cumming, G., Finch, S. & Leeman, J. (2004). Editors can lead researchers to confidence intervals, but can't make them think: statistical reform lessons from medicine. *Psychological Science*, 15 (2), 119-126.
- Finch, J. F. & Graziano, W. G. (2001). Predicting depression from temperament, personality and patterns of social relations. *Journal of Personality*, 69 (1), 27-55.

- Findley, J. C., Kerns, R. & Weinberg, L. D. (1998). Self-efficacy as a psychological moderator of chronic fatigue syndrome. *Journal of Behavioral Medicine, 21*, 351-362.
- Frankl, V. E. (1959). *Man's search for meaning*. Washington, DC : Washington Square Press.
- Franks, P., Gold, M. R. & Fiscella, K. (2003). Sociodemographics, self-rated health, and mortality in the US. *Social Science & Medicine, 56* (12), 2505-2514.
- Frazier, P. A., Tix, A. P. and Barron, K. E. (2004). Testing moderator and mediator effects in counseling psychology research. *Journal of Counseling Psychology, 51* (1), 115-134.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218-226.
- Galek, K., Flannelly, K. J., Vane, A. & Galek, R. (2005). Assessing a patient's spiritual needs. *Holistic Nursing Practice, 19*(2), 62-69.
- Gall, T. L., Charboneau, C., Clarke, N. H., Grant, K., Joseph, A. & Shouldice, L. (2005). Understanding the nature and role of spirituality in relation to coping and health: A conceptual framework. *Canadian Psychology/Psychologie canadienne, 46*(2), 88-104.
- Gallo, L. C. & Matthews, K. A. (2003). Understanding the association between socioeconomic status and physical health: Do negative emotions play a role? *Psychological Bulletin, 129* (1), 10-51.

- Garcia, M. F. M., Ramirez, M. G. R. & Jariego, I. M. (2002). Social support and locus of control as predictors of psychological well-being in Moroccan and Peruvian immigrant women in Spain. *International Journal of Intercultural Relations*, 26, 287-310.
- Gartner, J. (1996). Religious commitment, mental health, and prosocial behaviour: a review of empirical literature. In E.P. Shafranske (Ed.), *Religion and the clinical practice of psychology* (pp. 187-214). Washington, DC: American Psychological Association.
- Gee, G. C. & Takeuchi, D. T. (2004). Traffic stress, vehicular burden and well-being: A multilevel analysis. *Social Science & Medicine*, 59, 405-414.
- Georgas, J., van de Vijver, F. J. R. & Berry, J. W. (2004). The ecocultural framework, ecosocial indices, and psychological variables in cross-cultural research. *Journal of Cross-cultural Psychology*, 35(1), 74-96.
- Girling, D. M., Huppert, F. A., Brayne, C., Paykel, E. S., Gill, C. & Mathewson, D. (1995). Depressive symptoms in the very elderly: Their prevalence and significance. *International Journal of Geriatric Psychiatry*, 10(6), 497-504.
- Goldberg, D.P., Gater, R., Sartorius, N., Usten, T.B., Piccinelli, M., Gureje, O. & Rutter, C. (1997). The validity of two versions of the HGQ in the WHO study of mental illness in general health care. *Psychological Medicine*, 27, 191-197.
- Goldberg, D. P. & Hillier, V. F. (1979). A scaled version of the General Health Questionnaire. *Psychological Medicine*, 9, 139-145.
- Goldman, N., Gleib, D.A. & Chang, M. (2003). The role of clinical risk factors in understanding self-rated health. *Annual Epidemiology*, 14, 49-57.

- Gulliksen, H. (1987). *Theory of mental tests*. Hillsdale, NJ: Erlbaum.
- Grundy, E. & Sloggett, A. (2003). Health inequalities in the older population: The role of personal capital, social resources and socio-economic circumstances. *Social Science & Medicine*, 56, 935-947.
- Gutiérrez, J. L. G., Jiménez, B. M. Hernández, E. G. & Puente, C. P. (2005). Personality and subjective well-being: big five correlates and demographic variables. *Personality and Individual Differences*, 38, 1561-1569.
- Grzywacz, J. G. & Fuqua, J. (2000). The social ecology of health: Leverage points and linkages. *Behavioral Medicine*, 26 (3), 101-114.
- Hay, D. (2000). Spirituality versus individualism: Why we should nurture relational consciousness. *International Journal of Children's Spirituality*, 5 (1), 37-48.
- Hayes, N. and Joseph, S. (2003). Big 5 correlates of 3 measures of subjective well-being. *Personality and Individual Differences*, 34, 723-727.
- Hayes, D. & Ross, C. E. (1988). Body and Mind: The effect of exercise, overweight, and physical health on psychological well-being. *Journal of Health and Social Behavior*, 27, 387-400.
- Hojat, M., Gonnella, J. S., Erdmann, J. B. & Vogel, W. H. (2003). Medical students' cognitive appraisal of stressful life events as related to personality, physical well-being, and academic performance: A longitudinal study. *Personality and Individual Differences*, 35, 219-235.

- Hopkinson G. C. & Pujari D. (1999). A factor analytic study of the sources of meaning in hedonic consumption. *European Journal of Marketing*, 33 (3), 273 – 294.
- Howard, R. W., Berkowitz, M. W. & Schaeffer, E. F. (2004). Politics of character education. *Educational Policy*, 18 (1), 188 – 215.
- Howell, D. C. (2002). *Statistical methods for psychology* (5ed.). Australia: Duxbury.
- Hu, L. & Bentler, P. M. (1999). Cut-off criterion for fit indices in covariance structure analysis. Conventional versus new alternatives. *Structural Equation Modeling*, 6 (1), 1-55.
- Human Development Report (2004) *Cultural liberty in today's diverse world*. United Nations Development Programme (UNDP). New York, NY: Hoechstetter Printing Company.
- Hunter, J. E. (1997). Needed: A ban on the significance test. *Psychological Science*, 8(1), 3-7.
- Huppert, F. A. & Whittington, J. E. (2003). Evidence for the independence of positive and negative well-being: Implications for quality of life assessment. *British Journal of Health Psychology*, 8, 107-122.
- Huysamen, G. K. (2005). Null hypothesis significance testing: Ramifications, ruminations and recommendations. *South African Journal of Psychology*, 35 (1), 1-20.
- Idler, E. L. & Benyamini, Y. (1997) Self-rated health and mortality. A review of twenty-seven community studies. *Journal of Health and Social Behavior*, 38, 21-37.

- Ilies, R. T., Morgeson, F. P. & Nahrgang, J. D. (2005). Authentic leadership and eudaemonic well-being: Understanding leader–follower outcomes. *The Leadership Quarterly*, 16, 373–394.
- Jason, L. A., Witter, E. & Torres-Harding, S. (2003) Chronic fatigue syndrome, coping optimism and social support. *Journal of Mental Health*, 12 (2), 109-118.
- Jones, T. G., Rapport, L. J., Hanks, R. A., Lichtenberg, P. A. & Telmet, K. (2003). Cognitive and psychosocial predictors of subjective well-being in urban older adults. *The Clinical Neuropsychologist*, 17 (1), 3-18.
- Jöreskog, K. G. & Sörbom, D. (1989). *LISREL 7, a guide to the program and applications* (2ed.). Chicago, IL.: SPSS Applications.
- Kahn, J. H., Hessling, R. M. & Russell, D. W. (2003). Social support, health, and well-being among the elderly: What is the role of negative affectivity? *Personality and Individual Differences*, 35, 5-17.
- Kahneman, D., Diener, E. & Schwarz, N. (Eds.) (1999). *Well-being: The foundations of hedonic psychology*. New York: Sage.
- Kammann, R. & Flett, R. (1983). Affectometer 2: A scale to measure current levels of general happiness. *Australian Journal of Psychology*, 35 (2), 259-265.
- Kaplan, G. & Baron-Epel, O. (2003). What lies behind subjective evaluation of health? status? *Social Science & medicine*, 56, 1669-1676.
- Kashima, Y. (2004). Person, symbol, sociality: Towards a social psychology of a cultural dynamics. *Journal of Research in Personality*, 38, 52-58.

- Kasser, T. & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410 - 422.
- Kegler, M. C., Young, K. H., Marshall, L., Bui, D. & Rodine, S. (2005). Positive youth development linked with prevention in a Vietnamese American community: Successes, challenges, and lessons learned. *Journal of Adolescent Health*, 37, S69 – S79.
- Keller, T. E., Bost, N. S., Lock, E. D. & Marcenko, M. O. (2005). Factors associated with participation of children with mental health problems in structured youth programs. *Journal of Emotional and Behavioral Disorders*, 13 (3), 141 – 151.
- Keyes, C. L. M. (2003). Complete mental health: an agenda for the 21st century. In C. L. M. Keyes, and J. Haidt (Eds.). *Flourishing positive psychology and the life well-lived* (pp. 293-312). Washington, DC: American Psychological Association.
- Keyes, C. L. M., Shmotkin, D. & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology*, 82(6), 1007-1022.
- Khumalo, I. P., Wissing, M. P. & Temane, Q. M. (2005). Exploring the validity of the VIA-Inventory of strengths in an African context. Unpublished manuscript, North-West University (Potchefstroom Campus), Potchefstroom.
- Kilpatrick, S. D. & McCullough, M. E. (1999). Religion and spirituality in rehabilitation psychology. *Rehabilitation Psychology*, 44(4), 388-402.

- Kim, Y., Kasser, T. & Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea and the United States. *The Journal of Social Psychology, 143* (3), 277-290.
- Kim, Y. & Seidlitz, L. (2002). Spirituality moderates the effect of stress on emotional and physical adjustment. *Personality and Individual Differences, 32*, 1377-1390.
- Kim, Y., Seidlitz, L., Ro, Y, Evinger, J. S. & Duberstein, P. R. (2004). Spirituality and affect: a function of changes in religious affiliation. *Personality and Individual Differences, 37*, 861-870.
- Kitayama, S., Markus, H. R. & Kurokawa, M. (2000). Culture, emotion and well-being: Good feelings in Japan and the Unites States. *Cognition and Emotion, 14*, 93-124.
- Kline, R. B. (1998). *Principles and Practice of Structural Equation Modeling*, New York: Guilford Press.
- Koenig, H. G. (2004). Spirituality, wellness, and quality of life. *Sexuality, Reproduction & Menopause, 2*(2), 76-82.
- Koenig, H. G. & Larson, D. B. (2001). Religion and mental health: evidence for an association. *International Review of Psychiatry, 13*, 67-78.
- Kristenson, M. Eriksen, H. R., Sluiter, J. K., Starke, D. & Ursin, H. (2004). Psychobiological mechanisms of socioeconomic differences. *Social Science & Medicine, 58*, 1511-1522.
- Kwan, V. S. Y., Bond, M. H. & Singelis, T. M. (1997). Pancultural explanations for life satisfaction: Adding relationship harmony to self esteem. *Journal of Personality and Social Psychology, 73*, 1038-1051.

- Larson, R. W. (2000). Toward a psychology of positive youth development. *The American Psychologist*, 55, 170 – 183.
- Larson, D. B. & Larson, S. S. (2003). Spirituality's potential relevance to physical and emotional health: A brief review of quantitative research. *Journal of Psychology and Theology*, 31(1), 37-51.
- Leach, M. M. & Lark, R. (2004). Does spirituality add to personality in the study of trait forgiveness? *Personality and Individual Differences*, 37, 147-156.
- Levin, J. S. & Chatters, L. M. (1998). Religion, health and psychological well-being in older adults: Findings from three national surveys. *Journal of Aging and Health*, 10(4), 504-531.
- Levin, J. S., Chatters, L. M. & Taylor, R. J. (1995). Religious effects on health status and life satisfaction among Black Americans. *Journal of Gerontology: Social Sciences*, 50B, S154-S163.
- Lipsey, M. W. & Wilson, D. B. (1993). The efficacy of psychological, educational, and behavioral treatment: Confirmation from meta-analysis. *American Psychologist*, 48, 1181-1209.
- Lopez, S. J., Prosser, E. C., Edwards, L. M., Magyar-Moe, J. L., Neufeld, J. E. & Rasmussen, H. N. (2002). Putting positive psychology in a multicultural context. In C. R. Snyder, & Shane J. Lopez (eds.), *Handbook of Positive Psychology* (pp. 700-714). New York: Oxford University Press.
- Lu, L., Gilmour, R. & Kao, S. (2001). Cultural values and happiness: An East-West dialogue. *The Journal of Social Psychology*, 141 (4), 477-493.

- Lucas, R. E, Diener, E., Grob, A., Suh, E. M., and Shao, L. (2000). Cross-Cultural Evidence for the Fundamental Features of Extraversion. *Journal of Personality and Social Psychology*, 79 (3), 452-468.
- Lucas, R.E., Diener, E. and Suh, E. (1996). Discriminant validity of well-being measures. *Journal of Personality and Social Psychology*, 71 (3), 616-628.
- Lucas R. E. and Fujita F. (2000). Factors influencing the relation between extraversion and pleasant affect. *Journal of Personality and Social Psychology*, 79, 1039–56.
- Lyubomirsky, S. U. and Lepper, H. S. (1999) A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46(2), 137-155.
- MacCullum, R.C., Browne, M.W. and Sugawara, H.M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, 1, 130-149.
- MacDonald, D.A. and Holland, D. (2002). Spirituality and boredom proneness. *Personality and Individual Differences*, 32, 1113-1119.
- Macintyre, S., Maciver, S. and Sooman, A. (1993). Area, class and health: Should we be focussing on places or people? *Journal of Social Policy*, 22, 213-234.
- Maiti, S.S. and Mukherjee, B.N. (1990). A note on the distributional properties of the Jöreskog-Sörbom fit indices. *Psychometrika*, 55, 721-726.
- Mansfield, E.R. & Helms B.P. (1981). Detecting multicollinearity. *The American Statistician*, 36 (3), 158-160.
- Marcoen, A. (1994) Spirituality and personal well-being in old age. *Ageing and Society*, 14, 521-536.

- Markus, H. R. & Kitayama, S. (1998). The cultural psychology of personality. *Journal of Cross-cultural Psychology, 29*, 63-87.
- Marmot, M., Ryff, C. D., Bumpass, L. L., Shipley, M. & Marks, N. F. (1997). Social inequalities in health: Next questions and converging evidence. *Social Science & Medicine, 44* (6), 901-910.
- McCrae, R. R. (2001). Trait Psychology and culture: Exploring intercultural comparisons. *Journal of Personality, 69* (6), 819-846.
- McCrae, R. R. (2002). The maturation of personality psychology: Adult personality development and psychological well-being. *Journal of Research in Personality, 36*, 307-317.
- McCrae, R. R., Costa, P. T., Martin, T. A., Oryol, V. E., Rukavishnikov, A. A., Senin, I. G., Hrebicková, M. & Urbánek, T. (2004). Consensual validation of personality traits across cultures. *Journal of Research in Personality, 38*, 179-201.
- McCrae, R. R. & Costa, P. T. (1991). Adding Liebe und Arbeit: The full Five-Factor Model and well-being. *Personality and Social Psychology Bulletin, 17*, 227-232.
- Mickley, J. R., Soeken, K. & Belcher, A. (1992). Spiritual well-being, religiousness and hope among women with breast cancer. *IMAGE: Journal of Nursing Scholarship, 24*(4), 267-272.
- Miller, W. R. & Thoresen, C. E. (2003). Spirituality, religion and health: an emerging research field. *American Psychologist, 58*(1), 24-35.
- Mohan, J., Twigg, L., Barnard, S. & Jones, K. (2005). Social capital, geography and

- health: A small area analysis for England. *Social Science & Medicine*, 60, 1267-1283.
- Morrisey, K. M. & Werner-Wilson, R. J. (2005). The relationship between out-of-school activities and positive youth development: An investigation of the influences of communities and family. *Adolescence*, 40 (157), 67 – 85.
- Mroczek, D. K. & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology*, 75 (5), 1333-1349.
- Mroczek, D. K., Spiro, A. & Almeida, D. M. (2003). Between and within-person variation in affect and personality over days and years: How basic and applied approaches can inform one another. *Ageing International*, 28 (3), 260-278.
- Muldoon, M. F, Barger, S. D., Flory, J. D. & Manuck, S. B. (1998). What are quality of life measurements measuring? *British Medical Journal*, 316 (7131), 542-545.
- Murberg, T., Bru, E., Svebak, S., Aarsland, T. & Dickstein, K. (1997). The role of objective health indicators and neuroticism in perceived health and psychological well-being among patients with chronic heart failure. *Personality and Individual Differences*, 22 (6), 867-875.
- Narayanasamy, A. (1999). A review of spirituality as applied to nursing. *International Journal of Nursing Studies*, 36, 117-125.
- Neuhauser, L., Schwab, M., Syme, M. & Bieber, S. L. (1998). Community participation in health promotion: Evaluation of the California wellness guide. *Health Promotion International*, 13 (3), 211 – 222.

- Nunnally, J. C. and Bernstein, I. H. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.
- O'Connor, D. B., Cobb, J. & O'Connor, R.C. (2003). Religiosity, stress, and psychological distress. No evidence for an association among undergraduate students. *Personality and Individual Differences*, 34, 211-217.
- Oishi, S., Diener, E., Lucas, R. E. & Suh, E. M. (1999). Cross-cultural variations in predictors of life satisfaction: Perspectives from needs and values. *Personality and Social Psychology Bulletin*, 25, 989-990.
- Okun, M. A., Linda, K. & George, L. K. (1984). Physician- and self-ratings of health, neuroticism and subjective well-being among men and women. *Personality and Individual Differences*, 5 (5), 533-539.
- Okun, M. A., Stock, W. A, Haring, M. J. & Witter, R. A. (1984). Health and subjective well-being: A meta-analysis. *International Journal of Aging and Human Development*, 19, 111-132.
- Olaveson, T. (2001). Collective effervescence and communitas: Processual models of ritual and society in Emile Durkheim and Victor Turner. *Dialectical Anthropology*, 26, 89 – 124.
- Paquette, M. (2004) The mind-body link enters the mainstream. *Perspectives in Psychiatric Care*, 40(1), 3-4.
- Pargament, K. I. (1997). *The Psychology of religion and coping*. New York: Guildford Press.
- Pargament, K. I., Tarakeshwar, N, Ellison, C. G. & Wulff, K. M. (2001). Religious coping among the religious: The relationship between religious coping and well-

- being in a national sample of Presbyterian clergy, elders, and members. *Journal for the Scientific Study of Religion*, 40 (3), 497-513.
- Pavot, W. & Diener, E. (1993). Review of the Satisfaction with Life Scale. *Psychological Assessment*, 5 (2), 164-172.
- Poland, B., Coburn, D., Robertson, A. & Eakin, J. (1998). Wealth, equity, and health care: A critique of a “population health” perspective on the determinants of health. *Social Science and medicine*, 46 (7), 785 – 798.
- Pollack, W. S. (2004). Parent-child connections: The essential component for positive youth development and mental health, safe communities, and academic achievement. *New Directions for Youth Development*, 103, 17 – 30.
- Powell, L. H., Shahabi, L. & Thoresen, C. E. (2003). Religion and Spirituality: Linkages to physical health. *American Psychologist*, 58(1), 36-52.
- Ramsey, D. & Smit, B. (2002). Rural community well-being: Models and application to changes in the tobacco-belt in Ontario, Canada. *Geoforum*, 33, 367-384.
- Rathunde, K. (2001). Toward a psychology of optimal human functioning: What positive psychology can learn from the “experimental turns” of James, Dewey, and Maslow. *Journal of Humanistic Psychology*, 41 (1), 135-153.
- Robert, S. (1999). Socioeconomic position and health: the independent contribution of community socioeconomic context. *Annual Review Sociology*, 25, 489-516.
- Robert, Y. & Sheiham, A. (2002). The burden of restorative dental treatment for children in Third World countries. *International Dental Journal*. 52 (1), 1-9.

- Roothmann, B., Kirsten, D. K. & Wissing, M. P. (2003). Gender differences in aspects of psychological well-being. *South African Journal of Psychology*, 33 (4), 212-218.
- Ross, C. E. (2000). Neighborhood disadvantage and adult depression. *Journal of Health and Social Behavior*, 41, 177-187.
- 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.
- Ryan, R. M., Rigby, S. & King, K. (1993). Two types of religious internalization and their relations to religious orientations and mental health. *Journal of Personality and Social Psychology*, 65, 586-596.
- 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. and Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9 (1), 1-28.
- Ryff, C. D. and Singer, B. (2000). Interpersonal flourishing: A positive health agenda for the new millennium. *Personality and Social Psychology Review*, 5, 30-44.
- Sandler, I., Ostrom, A., Bitner, M. J., Ayers, T. S. Wolchik, S. and Daniels, V. (2005). Developing effective prevention services for the real world: A Prevention

- Service Development Model. *American Journal of Community Psychology*, 35 (3/4), 127 – 142.
- Saris, W. E. (2001). What influences subjective well-being in Russia? *Journal of Happiness Studies*, 2, 137-146.
- Saucier, G. & Goldberg, L. R. (1996). The language of personality: Lexical perspectives on the Five factor Model. In J.S. Wiggins (Ed.), *The Five Factor Model of personality: Theoretical perspectives* (pp. 21-50). New York: Guilford.
- Schimmack, U., Oishi, S. & Diener, E. (2002). Cultural influences on the relation between pleasant emotions and unpleasant emotions: Asian dialectic philosophies or individualism-collectivism. *Cognition and Emotion*, 16 (6), 705-716.
- Schimmack, U., Radhakrishnan, P., Oishi, S., Dzokoto, V. & Ahadi, S. (2002). Culture, personality, and subjective well-being: Integrating process models of life satisfaction. *Journal of Personality and Social Psychology*, 82 (4), 582-593.
- Schmutte, P. S. & Ryff, C. D. (1997). Personality and well-being: re-examining methods and meanings. *Journal of Personality and Social Psychology*. 73 (3), 549-559.
- Seligman, M. E. P. & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55 (1), 5-14.
- Seybold, K. S. & Hill, P. C. (2001). The role of religion and spirituality in mental and physical health. *Current Practices in Psychological Science*, 10 (1), 21-24.

- Shahabi, L., Powell, L. H., Musick, M. A., Pargament, K. I., Thoresen, C. E., Williams, D., Underwood, L. & Ory, M. A. (2002). Correlates of self-perceptions of spirituality in American adults. *Annals of Behavioral Medicine*, 24(1), 59-68.
- Shibuya, K., Hashimoto, H. & Yano, E. (2002). Individual income, income distribution, and self-rated health in Japan: Cross-sectional analysis of nationally representative sample. *British Medical Journal*, 324, 16-19.
- Silverstone, P. H. (1990). Changes in depression scores following life threatening illness. *Journal of Psychosomatic Research*, 8, 107-122.
- Somlai, A. M. & Heckman, T. G. (2000). Correlates of spirituality and well-being community sample of people living with HIV disease. *Mental Health, Religion, & Culture*, 3(1), 57-70.
- Spurlock, W. R. (2005) Spiritual well-being and caregiver burden in Alzheimer's caregivers. *Geriatric Nursing*, 26(3), 154-161.
- StatSoft, Inc. (2004). Electronic Statistics Textbook. Tulsa, OK: StatSoft. WEB: <http://www.statsoft.com/textbook/stathome.html>.
- Staudinger, U. M., Fleeson, W. & Baltes, P. B. (1999). Predictors of subjective physical health and global well-being: Similarities and differences between the United States and Germany. *Journal of Personality and Social Psychology*, 76 (2), 305-319.
- Steiger, J. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25 (2), 173-180.

- Steyn, H. S. (1999). *Praktiese betekenisvolheid: Die gebruik van effekgroottes* (Practical significance: The use of effect sizes). Wetenskaplikebydraes – Reeks B: Natuurwetenskappe Nr. 117. Potchefstroom: PU vir CHO.
- Stokols, D. (1996) Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion*, 10, 282 – 298.
- Stokols, D. (2003) The ecology of human strengths. In L.G. Aspinwall and U.M. Staudinger. *A psychology of human strengths: Fundamental questions and future directions for a positive psychology* (pp. 331-343). American Psychological Association: Washington, DC.
- Strawbridge, W., Sherna, S. J., Cohen, R. D., Roberts, R. E. & Kaplan, G. A. (1998). Religiosity buffers effects of some stressors on depression but exacerbates others. *Journal of Gerontology*, 59B, S118-S126.
- Sturm, R., Gresenz, C.R. & Mackenbach, J.P. (2002). Relations of income inequality and family income to chronic medical conditions and mental health disorders: National survey in USA. *British Medical Journal*, 324 (7328), 20-23.
- Suh, E., Diener, E., Oishi, S. & Triandis, H. C. (1998). The shifting basis of life satisfaction judgments across cultures: emotions versus norms. *Journal of Personality and Social Psychology*, 74 (2), 82-493.
- Taylor, E.J. (2001). Spirituality, culture, and cancer care. *Seminars in Oncology Nursing*, 17 (3), 197-205.
- Taylor, S. E., Repetti, R. L. & Seeman, T. (1997). What is an unhealthy environment and how does it get under the skin? *Annual Review of Psychology*, 48, 411-447.

- Temane, Q. M. (2001). The impact of the lack of provision of services on quality of Life. In *Studies of social and economic conditions in South Africa: A conference of the South Africa Training Programme in Quantitative Social Science* (pp. 171-180). Durban, South Africa.
- Thompson, B. (1994). Guidelines for authors. *Educational and Psychological Measurement*, 5 (4), 837-847.
- Thoresen, C. E. (1999). Spirituality and health: Is there a relationship? *Journal of Health Psychology*, 4(3), 291-300.
- Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American Psychologist*, 51 (4), 407-415.
- Triandis, H. C. & Suh, E. M. (2002). Cultural influences on personality. *Annual Review of Psychology*, 53, 133-160.
- Veenhoven, R. (1993). *Happiness in nations: Subjective appreciation of life in 56 nations*. Rotterdam: Erasmus University.
- Veenhoven, R. (2003). Hedonism and happiness. *Journal of Happiness*, 4, 437-457.
- Veenhoven, R. (2004) *Subjective measures of well-being*. Discussion paper no. 2004/07, WIDER, United Nations University.
- Ver Beek, K. A. (2000). Spirituality: a development taboo. *Development in practice*, 10(1), 31-43.
- Waterman, A. S. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudemonia) and hedonic enjoyment. *Journal of Personality and Social Psychology*, 64 (4), 678-691.

- Watson, D. & Clark, L. A. (1992). On traits and temperament: General and specific factors of emotional experience and their relation to the Five-Factor Model. *Journal of Personality*, 60 (2), 441-476.
- Whitehead, K. A., Kriel, A. J. & Richter, L. M. (2005). Barriers to conducting a community mobilization intervention among youth in a rural South African community. *Journal of Community Psychology*, 33 (3), 253 – 259.
- Williams, D. R., Larson, D. B., Buckler, R. E., Heckman, R. C., & Pyle, C. M. (1991). Religion and psychological distress in a community sample. *Social Science and Medicine*, 32, 1257-1262.
- Wink, P. & Dillon, M. (2002). Spiritual development across the adult life course: Findings from a longitudinal study. *Journal of Adult Development*, 9(1), 79-94.
- Wissing, M. P., Pretorius, T. B. & Heyns, P. M. (2000 – 2003). A Trans-university research programme in Fortology: Clarification and advancement of psychosocial well-being. Team Research Project (PUCHE/NWU; UWC; UVS).
- Wissing, M. P., Thekiso, S., Stapelberg, R., Van Quickelberge, L., Choabi, P., Moroeng, C. & Nienaber, A. (1999). The psychometric properties of scales measuring psychological well-being in an African group. Paper presented at the International Africa Psychology Congress. July, 18-23, 1999, 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.
- Wissing, M. P. Wissing, J., du Toit, M. & Temane, Q. M. (2002). *Towards a G-Factor in Psychological well-being*. 8th Annual South African Psychology Congress (PsySSA) 24-27 September Cape Town, South Africa.

- Yassi, A., Fernandez, N., Fernandez, A., Bonet, M., Tate, R. B. & Spiegel, J. (2003). Community participation in a multisectoral intervention to address health determinants in an inner-city community in Central Havana. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 80 (1), 61 – 80.
- Yeung, R. R. & Hemsley, D. R. (1997). Personality, exercise and psychological well-being: Static relationships in the community. *Personality and Individual Differences*, 22 (1), 47-53.
- Young, J. S., Cashwell, C. S. & Shcherbakova, J. (2000). The moderating relationship of spirituality on negative life events and psychological adjustment. *Counseling and Values*, 45 (1), 49-57.
- Yu, C. (2002). Evaluating cut-off criteria of model fit Indices for latent variable models with binary and continuous outcomes. A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Education. UCLA.
- Zinnbauer, B. J., Pargament, K. I., Cole, B., Rye, M. S., Butter, E. M., Belavich, T. G., Hipp, K. M., Scott, A. B. & Kadar, J. I. (1997). Religion and Spirituality: Unfuzzifying the fuzzy. *Journal for the Scientific Study of Religion*, 36(4), 549-564.