Social support as a moderator between stress and psychological well-being

Emile Vermaas
Hons. B.A. (Psychology)

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

Supervisor: **Mr. I. P. Khumalo**

Co-Supervisors: **Prof. Q.M. Temane**

Prof. M.P. Wissing

North-West University

Potchefstroom

2010

TABLE OF CONTENTS

1. ACKNOWLEDGEMENTS

"I do not know anyone who has gotten to the top without hard work. That is the recipe. It will not always get you to the top, but it will get you pretty near." – Margaret Thatcher

I wish to give acknowledgements of gratitude to the following people for aiding me in this process of authorship:

Mr. Tumi Khumalo, for his extensive and generous donations of time and effort throughout this project. Your hard work is an inspiring example.

Professors Temane and Wissing, for their invaluable contributions of wisdom and guidance during this process.

Ms. Melanie Terreblanche, for the language editing.

My father, Frans, for his inspiration, encouragement and positive attitude. Your ability to persevere serves as an example to me.

My mother, Lynnette, for her unrelenting love and support. Your tireless adaptation to my developing character has given me the support I needed to grow.

My brother, Rhys, your wisdom and resolve are impressive in even the most difficult situations. You are an inspiration to me.

Jesus, my Rock and my Salvation. Your Name is a Strong Tower in which I have found my refuge.

2. SOLEMN DECLARATION

I, Emile Vermaas, declare that the dissertation (article format) hereby submitted by me, in partial compliance with the requirements for the Magister Artium in Counselling Psychology degree at the North-West University Potchefstroom Campus, is my own independent work. I have acknowledged all material and sources used in its preparation, whether they be books, articles, reports, lecture notes, or any other kind of document, electronic or personal communication. I also certify that this assignment/report has not previously been submitted for assessment at any other unit/university/faculty, and that I have not copied - in part or whole - or otherwise plagiarised the work of other students and/or persons.

.....

Emile Vermaas

3. CONSENT

PERMISSION TO SUBMIT THIS ARTICLE FOR DEGREE PURPOSES

We, the supervisors, hereby declare that the input and effort of Emile Vermaas, in writing this article, is such that we hereby grant permission for him to submit this article for examination purposes in partial fulfilment of the requirements for the degree Magister Artium in Counselling Psychology.

Signed on this day ..... in Potchefstroom.

.....	.....
Mr. Itumeleng P. Khumalo	Prof. Q. Michael Temane

.....

Prof. Marie P. Wissing

4. SUMMARY

Social support as a moderator between stress and psychological well-being

Keywords: Social support; psychological well-being; stress; moderation; familial support; affect; satisfaction with life.

The aim of the study was to investigate whether social support moderates the relationship between stress and psychological well-being. The inverse relationship between the experience of stress and psychological well-being is supported on the one hand (Chang, 1998; Skok, Harvey, & Reddihough, 2006), while social support's reducing effect on psychological distress has also been reported (Cohen & McKay, 1984; Sherbourne & Stewart, 1991). It is possible that social support may interact with the influence of stress on well-being in such a way as to moderate the relationship.

Social support was conceptualised in terms of Pretorius' (1998) model, which describes social support as a resource of fortitude, and originates from various sources, namely, positive appraisal of self, support from family, and support from friends and others. Although social support is considered to be a well-researched phenomenon, an empirical study exploring its effect on the influence of stress on well-being in an African context is yet to be conducted.

A sample of 459 participants completed the Setswana versions of the General Health Questionnaire (GHQ; Goldberg & Hillier, 1979) to measure the experience of stress, the Affectometer 2 (AFM; Kammann & Flett, 1983) to measure the affective component of well-being, the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) to measure the cognitive component of well-being, and the Fortitude Questionnaire (FORQ; Pretorius, 1998) to measure social support. Data were collected in a quantitative, cross-sectional survey, with random sample selection. After data exploration by using descriptive statistics and inter-scale correlations, stepwise multiple regression analyses were conducted to investigate the relationships and to explore moderation effect of social support.

Results showed inverse relationships between the experience of stress, as operationalised by the GHQ subscales, and psychological well-being, operationalised by positive and negative affect (AFM-PA and AFM-NA) and satisfaction with life (SWL). Receiving social support from various sources, namely positive appraisal of self, support from family, and support

from friends and others, was found to moderate relationships between the experience of stress and the affective components of psychological well-being. Social support from family moderated most effectively of the three sources of support. It was found that social support, particularly familial support, had a protective effect on the maintenance of psychological well-being when experiencing psychological distress. It is thus a possible protective factor to be developed and encouraged in psychological interventions with individuals from this population in particular.

5. OPSOMMING

Sosiale ondersteuning as 'n moderator tussen stres en psigologiese welstand

Die doel van hierdie studie was om die moontlike modererende effek van sosiale ondersteuning op die verband tussen stres en psigologiese welstand te ondersoek. Die omgekeerde verband tussen die ervaring van stres en psigologiese welstand word enersyds ondersteun in die literatuur (Chang, 1998; Skok et al., 2006), terwyl andersyds ook aangedui word dat sosiale ondersteuning streservaring verminder (Cohen & McKay, 1984; Sherbourne & Stewart, 1991). Dit is dus moontlik dat sosiale ondersteuning ‘n modererende uitwerking op die verband tussen stres en welstand het.

Sosiale ondersteuning is in terme van Pretorius (1998) se model gekonseptualiseer. Hiervolgens is sosiale ondersteuning 'n bron van sterkte wat spruit uit self-evaluering, ondersteuning van familie, en ondersteuning van vriende en ander. Alhoewel sosiale ondersteuning as verskynsel goed nagevors is, is 'n empiriese studie wat sy modererende rol tussen stres en welstand in 'n Afrika-konteks ondersoek , nog nie uitgevoer nie.

'n Steekproef van 459 deelnemers het die Setswana-weergawes van die *General Health Questionnaire* (GHQ Goldberg & Hillier, 1979) om die ervaring van stres te meet, die *Affectometer 2* (AFM; Kammann & Flett, 1983) om die affektiewe komponent van welstand te meet, die *Satisfaction With Life Scale* (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) om die kognitiewe komponent van welsyn te meet, en die *Fortitude Questionnaire* (FORQ; Pretorius, 1998) om sosiale ondersteuning te meet, voltooi. Data is in 'n kwantitatiewe, deursnee-opname, ontwerp met ewekansige steekproef seleksie versamel. Nadat data eksplorasie met beskrywende statistiek en interskaal -korrelasies voltooi is, is stapsgewyse meervoudige regressie-analises uitgevoer om die modereringseffek van sosiale ondersteuning te verken.

Resultate toon ‘n inverse verhouding tussen die ervaring van stres, soos geoperasionaliseer deur die GHQ subskale en psigologiese welstand, geoperasionaliseer deur positiewe en negatiewe affek (AFM-PA en AFM-NA) en lewenstevredenheid (SWL). Die ontvangs van sosiale ondersteuning vanaf familie, positiewe self-evalueering, en ondersteuning van vriende en ander het ‘n modererende rol gespeel tussen streservaring en die affektiewe komponent van psigologiese welstand. Dus, is daar gevind dat sosiale ondersteuning - veral familie-ondersteuning - 'n beskermende effek het op die instandhouding van psigologiese welstand met betrekking tot die ervaring van stres. Dit is dus ‘n moontlike beskermende faktor en kan in sielkundige intervensies met individue uit hierdie populasie gefasiliteer word.

6. PREFACE

6.1 Article Format

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

6.2 Selected Journal

The target journal for submission of the current manuscript is the *South African Journal of Psychology.* Author instructions appear on the next page.

7. INSTRUCTIONS TO AUTHORS

Submitting a manuscript

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

Manuscript structure

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

Manuscript format

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

Language

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

8. MANUSCRIPT

Running head: Social support, stress and well-being

Social support as a moderator between stress and psychological well-being

Emile Vermaas, Itumeleng P. Khumalo, Q. Michael Temane and Marie P. Wissing
School for Psychosocial Behavioural Sciences, North-West University
(Potchefstroom Campus), South Africa

Correspondence to:

Mr. E. Vermaas
p/a Mr. I.P. Khumalo
School for Psychosocial Behavioural Sciences
North-West University (Potchefstroom Campus)
Private Bag X6001
Potchefstroom
2520
South Africa

ABSTRACT

The study investigated the role of social support as a moderator between the experience of stress and indices of psychological well-being. A sample of 459 Setswana-speaking participants completed a battery consisting of the General Health Questionnaire (GHQ), Satisfaction With Life Scale (SWLS), Affectometer 2 (AFM), and the Fortitude Questionnaire (FORQ). The experience of stress was measured through indices of psychological distress as indicated by the subscales of the GHQ. Sources of social support were family, positive self-appraisal, and friends and others as represented by the FORQ. Stepwise multiple regression analyses were employed to explore the moderating role of social support in the relationship between the experience of stress and psychological well-being. Social support moderated the negative influence of stress on the affective components of well-being. Support from family, in particular, was found to play a predominant role. None of the social support sources moderated the influence of stress on life satisfaction, the global cognitive appraisal component of well-being. Social support, especially from family is a relevant external variable in the promotion and maintenance of well-being in an African context. This resource can be of help in intervention programs by counselling psychologists and others. Further research into the mechanisms on which these interactions are based is recommended.

Abstract word count = 206.

Keywords: Social support; psychological well-being; stress; moderation; familial support; affect; satisfaction with life.

Social support as a moderator between stress and psychological well-being

Psychological well-being is negatively influenced by the universal experience of stress and stress is a constant reality in life (Ciairano, Menna, Molinar, & Sestito, 2009; Chang, 1998; Kiecolt-Glaser et al., 2002; Moeini et al., 2008). It has been shown that the experiences of stress increase negative evaluations and decrease positive evaluations (Moeini et al., 2008; Skok , Harvey, & Reddihough, 2006). The negative influence of stress on well-being affects various aspects of human functioning. The experience of stress may directly cause physical illness through changes in autonomic nervous system and/or immunological functioning (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002). It may also influence physical health indirectly, through the increased use of alcohol or tobacco and/or decreased sleep that may accompany increased levels of stress (Moeini et al., 2008). The experience of stress has also been shown to negatively influence well-being by decreasing positive appraisals of quality of life and self-esteem as individuals may focus on the problem and/or on the emotions related to the problem, thus limiting their coping ability (Hinton & Earnest, 2010; Karlsen & Bru, 2002). Certain interpersonal and intrapersonal variables, such as self-efficacy (Moeini et al., 2008; Williams, Wissing, Rothmann, & Temane, 2010), dispositional optimism (Chang, 1998), social support (Skok et al., 2006), and spirituality (Emmons & Paloutzian, 2003) have been found to mitigate the negative effects of stress on psychological well-being. The current study explored the moderating role of social support on the influence of stress on well-being among an African sample.

A moderator is a variable that alters the strength of the relation between a predictor and an outcome (Baron & Kenny, 1986; Frazier, Tix, & Barron, 2004). The buffering hypothesis model of moderation suggests that the effect of stress on well-being will decrease as social support increases (Cohen & McKay, 1984; Pretorius, 1996). Social support may decrease the experience of stress by providing a reappraisal of the stressor, thereby reducing the affective, physiological and cognitive reactions that make up the experience of stress (Pretorius, 1996; Skok et al., 2006). Having someone to talk to about significant life stress, has been found to decrease the experience of stress, and thus increase the experience of well-being (Brown, Bhrolchain, & Harris, 1975). Therefore, through the utilisation of support networks, an individual's experience of stress can be decreased and its effect on well-being possibly minimised (cf. Cohen & Wills, 1985).

Social support, stress and well-being

A distinction is made between the experience of stress and the objective events or stressors that manifest it (Cohen & McKay, 1984). The experience of stress refers to the emotional, physiological and behavioural responses to events that have the potential to elicit such responses (Cohen & McKay, 1984). The current study operationalises the manifest symptoms of stress experience with indices of psychological distress as represented by Goldberg and Hillier's (1979) General Health Questionnaire. These indices measure the experience of psychological distress as manifested through somatic symptoms, anxiety and insomnia, social dysfunction and depressive symptoms (Goldberg & Hillier, 1979), and have been used to operationalise the experience of stress in previous studies (Moeini et al., 2008; Steptoe, Wardle, & Marmot, 2005). Several empirical studies have shown that stress has a significant negative influence on psychological well-being (cf. Chang et al., 2009; Segrin et al., 2007; Skok et al., 2006).

Psychological well-being is a complex construct that has been conceptualised and operationalised through various ways, models and measures (e.g. Self-Determination Theory, Ryan & Deci, 2000; Mental Health Continuum, Keyes, 2002; Psychological Well-Being, Ryff, 1989; Subjective Well-Being, Diener, 2000; General Psychological Well-being, Wissing & Van Eeden, 2002). It refers not only to the absence of mental illness, but encompasses a positive state of flourishing (Keyes, 2002; Keyes et al., 2008). The current study chose to represent psychological well-being by using three components usually inherent in the hedonic representation of well-being (Ryan & Deci, 2001), namely positive affect, negative affect and life satisfaction (Goldberg & Hillier, 1979; Diener, 2000; Diener et al., 1985). The coexistence of positive and negative affect is a necessity and is supported by empirical research studies. By interpretation it may be that optimal functioning and positive affect balance can be possible despite the experiencing of difficulties.

As an extension of a usually intrapersonal construction of well-being, Keyes (1998; 2002) proposed that social well-being is a component of the framework of being well. In a different study, Pretorius (1998) proposed that receiving social support from various sources may form part of fortitude. It may therefore make sense that social support can ameliorate the experience of stress and contribute towards the promotion and experience of psychological well-being. Social support from various sources achieves this through different ways. It helps the individuals to reappraise the stressful situation they are experiencing and allow them to choose the appropriate coping strategy for the situation (Cohen & McKay, 1984). Thus social

support contributes to making appropriate appraisals. Availability of social support also helps to provide an appropriate space for the expression of negative emotions associated with stress, therefore making the experience less detrimental (Cobb, 1976; Sherbourne & Stewart, 1991). According to Cobb (1976) social support that fosters the individual's emotional security and supports his appraisal of his/her own significance lessens his/her experience of life stress.

The current study conceptualises social support according to Pretorius' (1998) Fortitude model. The model postulates that individuals derive support from three sources, namely family, self-appraisal, and friends and others. Furthermore, the effect of support depends on the source from which the support is offered (Pretorius, 1998). This is supported by findings suggesting, for example, that receiving support from friends, as opposed to a familial source, is predictive of delinquency in adolescents (Caldwell, Silverman, Lefforge, & Silver, 2004). During stressful periods, however, adolescents usually turn to their family rather than friends for support (Frey & Rothlisberger, 1996). Social support is thus observed to be a significant factor in the promotion and/or maintenance of well-being. Yet, its moderating effect on the relationship between stress and well-being is yet to be investigated in an African context.

The African socio-cultural context, within which the current study was conducted, is described as more collectivistic of nature and is characterised by social interconnectedness and interdependence (cf. Temane & Wissing, 2006). The study was conducted among a sample of African, Setswana-speaking South Africans living in the North West Province of South Africa (see Wissing et al., 2010). The experiences of social connectedness and cohesion have been found to differ across socio-cultural contexts (Almeida, Molnar, Kawachi, & Subramanian, 2009; Christopher, 1999; Constantine & Sue, 2006). In collectivistic cultures, the concept of group cohesion and intra-group beneficence is central to individual functioning (Ryff & Singer, 1998; Sokoya, Collings, & Muthukrishna, 2005). In contrast, individualistic cultures value self-sufficiency and competitiveness more highly, and achievement and happiness may often be pursued at the expense of interpersonal relationships (Triandis & Suh, 2002). Social relationships, in particular familial relationships, are of primary importance among Africans, with concepts such as forgiveness, beneficence, and justice being utilised in the group, for the good of the group (Ryff & Singer, 1998). The primary social construct in a collectivistic context is the family, with the healthy functioning

of the family being central to the healthy functioning of its individual members (Sokoya et al., 2005).

The aim of the current study was to explore the role of social support as a moderator between experience of stress and psychological well-being. It investigated the extent to which social support moderates the relationship between psychological distress, as an intrapersonal manifestation of stress, and indices of psychological well-being.

METHOD

Design

The study employed secondary data analyses on data collected in a quantitative cross-sectional survey (FORT3; Wissing, 2008).

Participants and setting

A randomly selected sample of 459 participants, living in two geographical settings in the North West Province of South Africa participated in the study. The one geographical setting was Potchefstroom, an urban area, while the other was a rural area, Ganyesa, near Vryburg. The sample consisted of men (n=141) and women (n=318) whose age ranged between 18 and 85 years. All participants were black Setswana-speaking people.

Procedure

Fieldworkers proficient in both English and Setswana were trained in the administration of the study measures and collection of data. The identification as well as recruitment of participants was conducted by using the ESRI Arch-View software for Potchefstroom and the identification of every tenth house of Ganyesa. These methods allowed for a random selection of the participants. Data collection was conducted by trained fieldworkers through the completion of the battery of scales in structured interviews with sufficient auditing of data collection by the second author. Fieldworkers set up appointments to visit participants in their own homes for the purpose of data collection. Data collection was conducted by using structured interviews in Setswana. The scales had been translated into Setswana according to guidelines by Brislin (1970) and Van de Vijver and Leung (1997) (see Khumalo, Temane, & Wissing, 2010; Wissing et al., 1999; Wissing et al., 2010). Once the raw data had been collected, a dataset was created in SPSS version 16 and data analysis was performed.

Measuring instruments

Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985). The SWLS is a unidimensional 5-item self-report scale to measure cognitive appraisal of global life satisfaction. Diener et al. (1985) and Pavot, Diener, Colvin and Sanvik (1991) reported favourable psychometric properties in previous studies among Western samples. In the original study, Diener et al. (1985) report a Cronbach alpha of .87. The SWLS was found to be reliable and valid for use in an African context (Wissing et al., 2010; Wissing, et al., 1999). In the current study a Cronbach alpha coefficient of .79 was found.

Affectometer-2 (AFM; Kammann & Flett, 1983). The Affectometer is a 20 item self-report scale to measure general sense of well-being or happiness, focusing on the affective functioning of an individual (Kammann & Flett, 1983). This measure comprises two sub-scales, namely Positive affect (PA) and Negative affect (NA). The total scale gives an index of positive affect balance (PNB) which is the extent to which positive feelings predominate over the negative. Kammann and Flett (1983) reported good reliability and validity, with Cronbach alpha coefficients of between 0.88 and 0.93. Furthermore, Wissing and Van Eeden (2002) found the scale to be reliable in an African sample, and reported a Cronbach alpha of 0.86. Wissing et al. (2010) report satisfactory psychometric properties of the Setswana version of the AFM. In the current study Cronbach alpha coefficients of .69 and .72 were found for Positive affect and Negative affect sub-scales respectively.

Fortitude Questionnaire (FORQ; Pretorius, 1998). The FORQ is a 20-item self-report questionnaire measuring fortitude. Fortitude is the ability to manage stress on the basis of positive appraisal of social support as received from self, family members, friends and others (Pretorius, 1998). Pretorius (1998) determined from factor analysis that the scale consists of three subscales, namely Positive appraisal of self, Support from family, and Support from friends and others, and reported a Cronbach alpha of .85 for the total scale. Khumalo, Wissing and Temane (2008) found a Cronbach alpha of .86 among mainly Setswana-speaking students.

In the current study, principal components exploratory factor analysis of the scale was conducted in order to determine the scale's underlying factor structure in the present data. As shown in Table 1, three major factors and one minor factor emerged. One item (item 20) loaded on the fourth and minor factor. In the original scale development and validation study,

Social support, stress and well-being

Pretorius (1998) found that the items loaded on three factors, with seven items loading on each of the first two factors, and six items loading on the third. Upon review of item content in the current study, the first factor was found to represent "support from family" (FORQ-F1), the second factor represented "positive self-assessment" (FORQ-F2), and the third one tapped on "support from friends and others" (FORQ-F3). Except for item 20, which does not load on any of the three factors, this structure is similar to that reported by Pretorius (1998). However, the item that loaded on a fourth factor in this data, loaded on factor 2 in Pretorius' findings. It is observed that item 20, which reads *I am no good at all,* is the only negatively phrased statement in the entire scale, and thus its exclusion from further interpretation is justified on the basis of being such an outlier. In the current study Cronbach alphas of .87 for the total scale, .84 for factor 1 (FORQ-F1; Support from family), .74 for factor 2 (FORQ-F2; positive self-appraisal), and .72 for factor 3 (FORQ-F3; support from friends and others) were found.

< Table 1 approximately here >

General Health Questionnaire (GHQ; Goldberg & Hillier, 1979). The GHQ is a 28-item scale consisting of four subscales, namely Somatic Symptoms (SS), Anxiety and Insomnia (AS), Social Dysfunction (SD) and Depressive Symptoms (DS). The scale measures the degree of psychological distress and the inability to carry out normal healthy functions (Goldberg & Hillier, 1979; Goldberg et al., 1997). This index has also been successfully applied to indicate the experience of stress as manifested in indices of psychological distress (Steptoe et al., 2005). The construct validity of the scale was supported by the four-factor structure as found by Goldberg and Hillier (1979). Similar findings have been replicated in African samples (see Wissing et al., 1999; Wissing & Van Eeden, 2002). In the current study, Cronbach alpha coefficients of .79 for somatic symptoms (SS), .81 for anxiety and insomnia (AS), .65 for social dysfunction (SD), and .77 for depressive symptoms (DS) were found.

Ethical aspects

The current study formed part of a large multi-disciplinary research project, namely FORT3 (The prevalence of levels of psychosocial health: Dynamics and relationships with biomarkers of (ill) health in South African social context; Ethics number: NWU-00002-07-A2) coordinated by Wissing (2008). In the process of collecting data the following ethical aspects were observed, namely voluntary participation, informed consent, confidentiality and

respect for the personal integrity of the participants. Data were collected by trained and paid bilingual fieldworkers under the supervision of a qualified psychologist. Permission to conduct secondary data analysis was obtained from the project leader and researchers for the purposes of the current study.

Data analysis

Data exploration and description. Descriptive statistics, namely means and standard deviations, were computed to present the central tendency and dispersion of the data. Reliability indices given by Cronbach alpha coefficients are also reported. Inter-scale correlations among all the scales used in the study were computed to indicate the associations and relationships between the constructs including direction and strength of these relationships. Pearson correlation coefficients are reported with statistical significance.

Moderation. A moderator is a variable, the presence of which affects the direction or strength of a relationship between an independent and a dependent variable (Baron & Kenny, 1986; Frazier et al., 2004; Holmbeck, 1997). In moderation analysis, it is expected and theoretically hypothesised that a relationship or correlation exists between the independent variable and the dependent variable (Frazier et al., 2004). The relationship between stress (independent variable) and psychological well-being (dependent variable) was initially established. After which, simple and multiple regression analyses were performed in a three-step hierarchical order, involving the dependent, independent and moderator variables. The current study considered the experience of stress (GHQ-SS; GHQ-AS; GHQ-SD; GHQ-DS) as independent variables and psychological well-being (AFM-PA; AFM-NA; SWLS) as dependent variables. Prior to regression analyses, a factor analysis was performed on the FORQ in order to explore the construct validity of the scale in the current sample. The factors established by this analysis (FORQ-F1; FORQ-F2; FORQ-F3) are considered the moderator variables. These factors were identified as support from family (FORQ-F1), positive self-appraisal (FORQ-F2), and support from friends and others (FORQ-F3).

In line with the guidelines by Frazier et al. (2004) for moderation using multiple regression, the following steps were undertaken: 1) Transform independent and moderator variables by centering or standardising continuous variables. 2) Compute product terms, that represent the interaction between independent and moderator variables, by multiplying the two. 3)

Social support, stress and well-being

Structure the equation by entering variables and then entering the product terms into the regression equation.

Interpretation of the results of this analysis follows the guidelines by Frazier et al. (2004). In these guidelines, it is suggested that the regression coefficient (B) be interpreted in its unstandardised form, instead of in its standardised form (β), because in equations that include interaction terms – as is the case in moderation analysis – the β coefficients are not properly standardised, and thus not interpretable. With regard to the interpretation of the significance of moderation, Frazier et al. (2004) suggest that the single degree of freedom *F* test, representing stepwise change in variance explained as a result of the addition of product terms, provides the information needed. The effect of the experience of stress on well-being was determined by interpreting the unstandardised regression coefficients, and the significance of the moderating effect of social support on this relationship was interpreted by using the single degree of freedom *F* test.

RESULTS

Means and standard deviations, Cronbach alpha and Pearson correlation coefficients are presented in Table 2. Nunnally (1978) has suggested that scales should have a Cronbach alpha of at least .70 for them to be considered reliable. Most of the scales in this study can thus be considered reliable, with only AFM-PA and GHQ-SD attaining Cronbach alphas of .69 and .65 respectively, which may be deemed acceptable according to Clark and Watson (1995), who recommend a cut-off point of .60.

The interpretation of Cronbach alpha coefficients is also dependent on the number of items in a scale (cf. Cortina, 1993; Streiner, 2003). In general, the higher the number of items in a scale, the larger the value of the Cronbach alpha will be (cf. Clark & Watson, 1995; Cortina, 1993; Schmitt, 1996). According to John and Benet-Martinez (2000), and Streiner (2003) alphas larger than .90 indicate that the scale has a large degree of item redundancy. All scales in this study had alphas smaller than .90, and thus fulfil the requirements of acceptable reliability.

< Insert Table 2 approximately here >

Inter-scale Pearson correlation coefficients range from -0.47 to 0.72. As expected, social support, as indicated by FORQ-F1, FORQ-F2 and FORQ-F3 correlated positively with both

measures of psychological well-being, namely satisfaction with life (SWLS) and positive affect (AFM-PA). Correlations between "support from family" and both "satisfaction with life" and "positive affect" have a medium effect size (cf. Field, 2005). The three FORQ subscales indicating sources of social support were negatively related to negative affect. The correlation coefficients ranged from -0.12 to -0.29 which are indicative of small effect sizes. Satisfaction with life correlated negatively with negative affect with a correlation coefficient of -0.36, which is indicative of a medium effect size.

Tables 3-5 report results of stepwise hierarchical multiple regression analyses to test for the moderator effects of FORQ-F1, FORQ-F2 and FORQ-F3 in the relationship between the GHQ sub-scales (GHQ-SS, GHQ-AS, GHQ-SD and GHQ-DS) and positive and negative affect (AFM-PA and AFM-NA) and satisfaction with life (SWLS), which are indicators of psychological well-being. A stepwise regression process is reported in each table. The first step shows how the independent variable predicts the dependent variable without influence from the moderator in the model. The second step of the model includes the independent and moderator variables entered simultaneously in the model to predict the dependent variable. Step 3 shows the prediction of the dependent variable by the interaction effect of the independent and moderator variables. With this, it was possible to investigate and report the moderator effect of social support by considering the unstandardised regression coefficients (B) and the change in the coefficients of determination (ΔR^2) and its significance.

Table 3 shows how the experience of stress as measured by GHQ-SS, GHQ-AS, GHQ-SD and GHQ-DS influences the positive affect experienced by individuals in this sample and how social support affects this relationship. These indices of the experience of stress, when entered alone, yield significant prediction of positive affect. As expected, all of their regression coefficients (B) are negative. They range between -.80 and -1.15. Depressive symptoms most significantly predicted positive affect, $F(442) = 40.58$, $p=.008$, and explained 9% of the variance in positive affect ($R^2 = 0.09$). Product terms were computed for all three factors of social support in which each interacted with indices of the experience of stress. The results of the regression analyses between these product terms and positive affect are shown in step 3. The only ones that yielded significant change in the coefficient of determination (R^2) were FORQ-F1XGHQ-AS, $F(442)= 37.00$, $p=.012$ and FORQ-F1XGHQ-DS, $F(442)= 31.65$, $p= 0.008$. The rest of the product terms for social support yielded no significant changes in R^2 as indicated by a significance of F change value larger than 0.05.

< Insert Table 3 approximately here >

Table 4 shows how the experience of stress influences the negative affect (step 1) and the moderating effect of social support on this relationship (steps 2 and 3). The experience of stress, when entered alone, yields significant prediction of negative affect. The regression coefficients range between 1.10 and 1.45. Five product terms yielded significant change in R^2. These were FORQ-F1XGHQ-AS, F(442)= 23.87, p= .042, FORQ-F1XGHQ-DS, F(442)=22.07, p=.008, FORQ-F2XGHQ-AS, F(442)= 28.87, p=.050, FORQ-F2XGHQ-DS, F(442)= 29.05, p=.001 and FORQ-F3XGHQ-DS, F(445)= 21.47, p= 0.036. The rest of the product terms for social support yielded no significant changes in R^2 as indicated by a significant change in the F ratio larger than 0.05.

< Insert Table 4 approximately here >

In table 5 satisfaction with life is the dependent variable. Step 1 shows how the experience of stress influences the satisfaction with life. The experience of stress significantly predicts satisfaction with life. The regression coefficients range between -.78 and -1.18. None of the FORQ and GHQ interaction terms yielded any significant change in the coefficient of determination (R^2). All their significant change in F ratio values were larger than 0.05 and thus signified insignificant moderation effects.

< Insert Table 5 approximately here >

DISCUSSION

The aim of the study was to explore whether social support moderated the relationship between experience of stress and psychological well-being. The experience of stress was operationalised through the measures of psychological distress, as manifested in depressive symptoms, somatic symptoms, anxiety and insomnia and social dysfunction, represented by the subscales of the General Health Questionnaire (Goldberg & Hillier, 1979; Steptoe et al., 2005). Well-being was represented as positive affect, negative affect and life satisfaction (Diener, 2000; Diener et al., 1985; Kammann & Flett, 1983). The three sources of social support were positive self-appraisal, support from family, and support from friends and others as operationalised through the Fortitude model of Pretorius (1998).

Social support, stress and well-being

The main finding was that receiving social support from various sources moderated the relationship between the experience of stress and the emotional markers of psychological well-being. Support from family significantly moderated the negative effect of two indices of psychological distress, namely anxiety and insomnia as well as depressive symptoms, on positive and negative affect. The relationship between depressive symptoms and negative affect was moderated by all three sources of social support. Positive self-appraisal and family support additionally moderated the relationship between anxiety and insomnia and negative affect. Social support was not found to have a moderating influence on the relationship between psychological distress and life satisfaction.

Positive Affect. Social support from family was found to moderate the negative influence of stress, as manifested in anxiety and insomnia, and depressive symptoms, on positive affect. In other studies, anxiety and insomnia, and depressive symptoms have been found to decrease the frequency and intensity of positive emotions (cf. Davidsdottir, 2007; Diener, 2000; Steptoe et al., 2005). Anxiety and depression influence positive affect by preventing the person from participating in activities that produce positive affect, diminishing the positive affect produced by those activities, or both (Hinton & Earnest, 2010; Karlsen & Bru, 2002). The current study found that social support from family moderated the effect of stress on positive affect. According to Bal et al. (2003) social support may help in reframing the anxiety and depressive symptoms, and change their importance and allow for the experience of positive affect with less hindrance. It may also allow the individuals to appraise their own ability to deal with anxiety and depression more positively, thus enabling the experience of more positive affect in the face of stress (Cobb, 1976; Simpson et al., 2006). Familial social support, from both nuclear and extended family, particularly in more collectivistic communities, helps cushion the negative life stressors such as divorce and spousal death (Diener et al., 2000).

Similarly, supportive social systems may persuade individuals to adopt more protective coping strategies in order to deal with anxiety and depressive symptoms. This challenges individuals to act on stressors or engage in the situation more actively, thus alleviating the negative influence of stress on positive affect (Bal et al., 2003; Cohen & McKay, 1984). Social support may also cushion the effects of stress on positive affect by providing opportunities for various collaborative problem-solving activities and active coping strategies (Moscardino et al., 2010), or giving occasion to active expression of problems and promoting

help-seeking behaviours (Judd et al., 2006; Kaniasty & Norris, 2000). The findings of the current study, therefore, suggest that support from familial sources mitigate the negative influence of stress on the experience of positive affect.

Negative Affect. The experience of stress, as manifested in anxiety and insomnia, and depressive symptoms, predicts an increase in the experience of negative affect. Both correlation and regression results have demonstrated this relationship in the current sample. However, the study also found that the influence of the experience of stress on negative affect is significantly moderated by receiving social support. Support from family, friends and others, and positive self-appraisal were found to be of significant value in cushioning the effect of stress on well-being.

The devastating effect of stress on negative affect has been reported by several researchers (Davidsdottir, 2007; Judd et al., 2006; McClaren & Challis, 2009). The experience of stress can lead to increased feelings of frustration, helplessness and hopelessness (Hinton & Earnest, 2010), loneliness and isolation (Klineberg et al., 2006; Moscardino et al., 2010) as well as immune dysregulation (Kiecolt-Glaser et al., 2002).

It was found that social support from all three sources measured in this study, mitigated the effects of depressive symptoms on negative affect. Social support may accomplish this moderation by increasing the availability of interpersonal connections, decreasing isolation and loneliness of stressed individuals (Segrin et al., 2007; Moscardino et al., 2010). Additionally, social support from family and self-appraisal may influence the effect of anxiety and insomnia by allowing for expression of unpleasant emotions, thereby increasing the individuals' sense of belonging, and reducing the perceived threat from the stressful situation (McClaren & Challis, 2009). Whatever the mechanism, social support is found to significantly diminish the effect of stress on the experience of negative affect.

Satisfaction with Life. Satisfaction with life was found to be negatively associated with stress, as reported in other empirical studies (e.g. Chang, 1998; Judd et al., 2006; Segrin et al., 2007). Indices of psychological distress were associated with lower levels of life satisfaction. The interaction of social support and stress in a regression equation did not yield a significant moderating effect. That is, none of the sources of social support influenced the effect of stress on the respondents' appraisal of life satisfaction. This may be due to the fact that satisfaction with life, which is a cognitive-judgemental appraisal of well-being, is stable over a long-term

period (cf. Diener, 2000; Diener & Ryan, 2009). It may therefore be inferred that social support influences relationships between stress and temporary affective components of psychological well-being more effectively than it does relationships between stress and more stable cognitive appraisals of well-being.

Additional explanations may involve the socio-cultural context of the sample. Collectivistic cultures consider interpersonal relationships central to well-being in general (Christopher, 1999; Triandis & Suh, 2002). Social cohesion may, therefore, be taken for granted when respondents make cognitive appraisals of their well-being. In this way, social support may not be perceived as an influencing factor in the relationship between stress and life satisfaction, as the cognitive appraisals of life satisfaction take social connectedness into account inherently. Furthermore, several studies have found variations in the appraisal of satisfaction with life over a sample of several countries and cultures (Cummins, 1998; Mallard, Lance, & Michalos, 1997; Sam, 2001). Individualistic cultures show high correlations with subjective appraisals of life satisfaction in various datasets (Cummins, 1998). This relation is credited to individualist taking personal responsibility for successes or difficulties experienced in life (Cummins, 1998), and implies that collectivists place an onus of such a responsibility on the group. This would account for variance in the influence of stress on satisfaction with life over various contexts. Therefore, the lack of moderation effects from social support on the relationship between experience of stress and life satisfaction can be further credited to the collectivistic socio-cultural context of the study.

Familial Support. Support from family was the only one of the three sources of support that moderated influences of anxiety and insomnia (AS) and depressive symptoms (DS) on both negative and positive affect. It moderated anxiety and insomnia's prediction of both negative and positive affect, as well as depressive symptoms' prediction of both negative and positive affect. The other two sources of support moderated fewer relationships, with positive self-appraisal moderating two relationships, those of AS and DS on negative affect, and support from friends and others only moderating one relationship, that of DS on negative affect. Thus, familial support moderated between stress and well-being more effectively than support from friends and others or positive self-appraisal. A number of possible explanations can be given for this. Individuals may receive support from family more frequently than from any other source, or it may be that support is qualitatively more effective when received from familial sources. The current finding of the importance of the family in experiences of well-

being is in line with findings from studies in a Western context (e.g. Delle Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2010).

Regardless of the mechanism, familial support is shown to mitigate the negative effects of stress on well-being more effectively than any other source of support in the current study. This finding is similar to findings of other studies undertaken in similar socio-cultural contexts (cf. Almeida et al., 2009; Moscardino et al., 2010; Skok et al., 2006; Westaway, Seager, Rheeder, & Van Zyl, 2005). As discussed previously, the current study's socio-cultural context is considered collectivistic (cf. Triandis & Suh, 2002; Wissing & Temane, 2008). Sokoya et al. (2005) found that familial support is essential to psychological well-being in such contexts. Wong et al. (2005) found that the more collectivistic a culture, the higher its reliance on familial support, whereas more individualistic cultures valued self-reliance and support from others more highly. This may explain why familial support seems to be a stronger moderator than self-reliance and support from others in this sample. As Ryff and Singer (1998) describe the context, the ultimate good for an individual in a collectivistic culture is that of the group. Relationships with others are fostered and protected by actions such as altruistic beneficence, forgiveness and forbearance (Ryff & Singer, 1998). Individuals in this group will hold to allocentric values, where relationships with others take precedence over any personal advancement (Sokoya et al., 2005; Triandis & Suh, 2002). As was shown in the current study, individuals' closest relational group, the family, moderates the negative effects of stress on psychological well-being more effectively than any other source of support.

Limitations

A number of limitations are noted. Firstly, the cross-sectional design of the study does not indicate influence over time between the independent and dependent variables, as they were all measured at the same point in time, and not again. Stressful experiences are transient in nature, and the assessment of current and post-stress experiences can be a challenging task, requiring several studies over time. Secondly, this study explored the moderating effect of social support on the association between the experience of stress and psychological well-being. It did not explore mediating effects, which have a different functional mechanism (cf. Baron & Kenny, 1986). The findings are thus limited in their interpretation to moderation only. Thirdly, there may be other mediator or moderator variables, in addition to social

support, that may have a protective role on psychological well-being during the experience of stress. Additionally, well-being is only defined in terms of hedonic conceptualisations, which emphasise the promotion of happiness and subjective well-being, in contrast to eudaimonic conceptualisations, which include life purpose and meaning. This limits the scope of the definition and discussion of well-being to hedonic paradigms. Finally, stressors or sources of stress were not measured in the current study, and could have given additional insight into the experience of stress. Despite these limitations, the present findings make a relevant contribution by documenting the influence of social support on the relationship between the experience of stress and well-being in an African sample.

Conclusion and recommendations.

The current study demonstrated the benefits of receiving social support when experiencing stress. Individuals receiving social support experience significantly less deleterious effects from the experience of stress on their psychological well-being. Familial sources of support, in particular, are shown to diminish the effects of stress on well-being. This supports findings concerning family's central role in psychological well-being in collectivist cultures (Sokoya et al., 2005; Triandis & Suh, 2002) and contributes to research investigating the promotion of psychological well-being in South Africa.

Qualitative studies into the processes and mechanisms through which families and family members provide support are suggested. While the importance of familial support in this context was established, the process by which it influences the relationship between experience of stress and well-being was not explored in the study. Additional dynamics in the relationship between stress and psychological well-being may be explored by using structural equation modelling, with possible mediating effects of social support being investigated. Furthermore, longitudinal studies, investigating social support's effect on stress over time will aid in understanding causality in the relationship between stress and well-being, as well as in exploring possible longer term benefits of social support on this relationship. Additionally, such studies may explore factors relating to eudaimonic conceptualisations of well-being by including measures for meaning in times of stress and hope for resolution of difficult situations.

Psychologists and therapists in South Africa may note that familial sources of support have a significant influence on the relationship between stress and psychological well-being. Such a

finding suggests that familial sources of support be integrated into interventions with individual clients for improved therapeutic effectiveness. Initiatives involving dyadic relationships between therapists and clients in a group context may be utilised. Encouraging people to utilise sources of support when experiencing stress may be recommended. Furthermore, educating family members and friends of clients to employ techniques such as active listening and empathy could aid individual therapeutic processes. Social support was recognised by Antonovsky (1987) as one of the general resistance resources contributing to a sense of coherence.

REFERENCES

Almeida, J., Molnar, B. E., Kawachi, I., & Subramanian, S. V. (2009). Ethnicity and nativity status as determinants of perceived social support: Testing the concept of familism. *Social Science & Medicine, 68*(10), 1852-1858.

Antonovsky, A. (1987). *Unraveling the mystery of health: How people manage stress and stay well*. San Franscisco: Jossey-Bass Publishers.

Bal, S., Crombez, G., Van Oost, P., & Debourdeaudhuij, I. (2003). The role of social support in well-being and coping with self-reported stressful events in adolescents. *Child Abuse & Neglect, 27,* 1377-1395.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.

Brislin, R. W. (1970).Back translation for cross-cultural research. *Journal of Cross-cultural Psychology, 1*, 185-216.

Brown, G. W., Bhrolchain, M. N., & Harris, T. (1975). Social class and psychiatric disturbance among women in an urban population. *Sociology, 9*(2), 225-254.

Caldwell, R. M., Silverman, J., Lefforge, N., & Silver, N. C. (2004). Adjudicated Mexican American Adolescents: The Effects of Familial Emotional Support of Self-Esteem, Emotional Well-Being, and Delinquency. *The American Journal of Family Therapy, 32,* 55-69.

Chang, E. C. (1998). Does dispositional optimism moderate the relation between perceived stress and psychological well-being?: A preliminary investigation. *Personality and Individual Differences, 25*(2), 233-240.

Chang, E. C., D'Zurilla, T. J., & Sanna, L. J. (2009). Social problem solving as a mediator of the link between stress and psychological well-being in middle-adulthood. *Cognitive Therapy and Research, 33*(1), 33-49.

Christopher, W. C. (1999). Toward a tripartite factor structure of mental health: Subjective well-being, personal growth and religiosity. *The Journal of Psychology, 135*(5), 486-500.

Ciairano, S., Menna, P., Molinar, R., & Sesito, L. A. (2009). The relationships between perceived stress for the future coping strategies in times of social uncertainty: A study of Italian adolescents. *Journal of Psychology and Counselling, 1*(1), 005-018.

Clark, L. A. & Watson, D. (1995). Constructing Validity: Basic Issues in Objective Scale Development. Psychological Assessment, 7(3), 309-319.

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine, 38*(5), 300-314.

Cohen, S., & McKay, G. (1984). Social support, stress, and the buffering hypothesis: A theoretical analysis. In A. Baum, S.E. Taylor, & J.E. Singer (Eds.) *Handbook of Psychology and Health,* (pp. 253-267). New Jersey: Hillsdale.

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310-357.

Constantine, M. G., & Sue, D. W. (2006). Factors contributing to optimal human functioning in people of color in the United States. *The Counseling Psychologist, 34* (2), 228-244.

Cortina, J. M. (1993). What is Coefficient Alpha? An examination of theory and applications. *Journal of Applied Psychology, 78,* 98-104.

Cummins, R. A. (1998). The second approximation to an international standard for life satisfaction. *Social Indicators Research, 43,* 307-334.

Davidsdottir, S. (2007). Explained Variance in Stress: The Role of Negative Affect, Lifestyle, and Positive Affect. *Psychology Journal, 4*(3), 142-152.

Delle Fave, A., Brdar, I., Freire, T., Vella-Brodrick, D. & Wissing, M. P. (2010). The eudaimonic and hedonic components of happiness. *Social Indicators Research,* DOI 10.1007/s11205-010-9632-5.

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research, 31*(2), 103-157.

Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist, 55*(1), 34.

Diener, E., & Emmons, R. A. (1984). The independence of positive and negative affect. *Journal of Personality and Social Psychology, 47*(5), 1105-1117.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75.

Diener, E., Gohm, C. L., Suh, E., & Oishi, S. (2000). Similarity of the relations between marital status and subjective well-being across cultures. *Journal of Cross-cultural Psychology, 31* (4), 419-436.

Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology, 54*, 403-426.

Diener, E., & Ryan, K. (2009). Subjective well-being: A general overview. *South African Journal of Psychology, 39*(4), 391–406.

Emmons, R. A., & Paloutzian, R. F. (2003). The psychology of religion. *Annual Review of Psychology. 54*(1), 377-402.

Field, A. (2005). *Discovering statistics using SPSS* (2ed). London: Sage Publications.

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.

Frey, C. U., & Rothlisberger, C. (1996). Social support in healthy adolescents. *Journal of Youth and Adolescence, 25,* 17-31.

Goldberg, D. P., & Hillier, V. (1979). A scaled version of the general health questionnaire. *Psychological Medicine, 9*(1), 139-145.

Goldberg, D., Gater, R., Sartorius, N., Ustun, T., Piccinelli, M., Gureje, O., & Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine, 27*(1), 191-197.

Hinton, R., & Earnest, J. (2010). Stressors, Coping, and Social Support Among Women in Papua New Guinea. *Qualitative Health Research, 20,* 224-238.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65*(4), 599-610.

John, O. P., & Benet-Martínez, V. (2000). Measurement: reliability, construct validation, and scale construction. In H. T. Reis, & C. M. Judd (Eds.), Handbook of research methods in social and personality psychology (pp. 339-369). Cambridge, UK: Cambridge University Press.

Judd, F., Jackson, H., Fraser, C., Murray, G., Robins, G., & Komiti, A. (2006). Understanding suicide in Australian farmers. *Social Psychiatry and Psychiatric Epidemiology, 41,* 1-10.

Kammann, R., & Flett, R. (1983). Affectometer 2: A scale to measure current level of general happiness. *Australian Journal of Psychology, 35*(2), 259-265.

Kaniasty, K., & Norris, F.H. (2000). Help-seeking Comfort and Receiving Social Support: The Role of Ethnicity and Context of Need. *American Journal of Community Psychology, 28*(4), 545-581.

Karlsen, B., & Bru, E. (2002). Coping styles among adults with type 1 and type 2 diabetes. *Psychology, Health & Medicine, 7*(3), 245-259.

Keyes, C.L.M. (2002). The Mental Health Continuum: From Languishing to Flourishing in Life. *Journal of Health and Social Behaviour, 43*(2), 207-222.

Keyes, C. L. M., & Ryff, C. D. (2003). Somatization and mental health: A comparative study of the idiom of distress hypothesis. *Social Science & Medicine, 57*(10), 1833-1845.

Khumalo, I.P., Temane, Q.M., & Wissing, M.P. (2010). Development and Initial Validation of a General Psychological Well-being Scale (GPWS) in an African Context. *Journal of Psychology in Africa, 20*(1), 13-22.

Khumalo, I.P., Wissing, M.P, & Temane, Q.M. (2008). Exploring the validity of the values-in-action inventory of strengths (VIA-IS) in an African context. *Journal of Psychology in Africa, 18*(1), 133-142.

Kiecolt-Glaser, J.K., McGuire, L., Robles, T.F., & Glaser, R. (2002). Psychoneuroimmunology: Psychological influences on immune function and health. *Journal of Consulting and Clinical Psychology, 70,* 537-547.

Klineberg, E., Clark, C., Bhui, K. S., Haines, M. M., Viner, R. M., Head, J., Woodley-Jones, D., & Stansfeld, S. A. (2006). Social support, ethnicity and mental health in adolescents. *Social Psychiatry and Psychiatric Epidemiology, 41*(9), 755-760.

Mallard, A.G.C., Lance, C.E., Michalos, A.C. (1997). Culture as a moderator of overall life satisfaction relationships. *Social Indicators Research, 40,* 259-284.

McLaren, S., & Challis, C. (2009). Resilience among men farmers: The protective roles of social support and sense of belonging in the depression-suicidal ideation relation. *Death Studies, 33,* 262-276.

Moeini, B., Shafii, F., Hidarnia, A., Babaii, G. R., Birashk, B., & Allahverdipour, H. (2008). Perceived stress, self-efficacy and its relations to psychological well-being status in Iranian male high school students. *Social Behavior and Personality: An International Journal, 36*(2), 257-266.

Moscardino, U., Scrimin, S., Capello, F., & Altoè, G. (2010). Social support, sense of community, collectivistic values, and depressive symptoms in adolescent survivors of the 2004 Beslan Terrorist Attack. *Social Science & Medicine, 70,* 27-34.

Nunnally, J.C. (1978). *Psychometric Theory* (2nd Ed.). New York: McGraw-Hill.

Pavot, W., Diener, E., Colvin, C.R., & Sandvik, E. (1991). Further Validation of the Satisfaction With Life Scale: Evidence for the Cross-Method Convergence of Well-Being Measures. *Journal of Personality Assessment, 57*(1), 149-161.

Pretorius, T. (1996). Gender and the health-sustaining and stress-reducing functions of social support: A south african study. *Journal of Social Behavior & Personality, 11*(5), 193-208.

Pretorius, T. (1998). Fortitude as stress-resistance: Development and validation of the fortitude questionnaire (FORQ). *University of the Western Cape, Bellville.*

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52,* 141-166.

Ryff, C. D. (1989). Happiness is everything, or is it?: Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*(6), 1069-1081.

Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry, 9*(1), 1-28.

Sam, D. L. (2001). Satisfaction with life among international students: An exploratory study. *Social Indicators Research, 53,* 315-337.

Schmitt, N. (1996). Uses and Abuses of Coefficient Alpha. *Psychological Assessment, 8*(4), 350-353.

Segrin, C., Hanzal, A., & Donnerstein, C. (2007). Social skills, psychological well-being, and the mediating role of perceived stress. *Anxiety, Stress & Coping, 20*(3), 321-329.

Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Science & Medicine, 32*(6), 705-714.

Simpson, J., Haines, K., Lekwuwa, G., Wardle, J., & Crawford, T. (2006). Social support and psychological outcome in people with Parkinson's disease: Evidence for a specific pattern of associations. *British Journal of Clinical Psychology, 45,* 585-590.

Skok, A., Harvey, D., & Reddihough, D. (2006). Perceived stress, perceived social support, and wellbeing among mothers of school-aged children with cerebral palsy. *Journal of Intellectual & Developmental Disability, 31*(1), 53-57.

Sokoya, G.O., Collings, S.J., & Muthukrishna, N. (2005). Exploring the complexities of gender roles and psychological wellbeing in farm-families: Implications for agricultural extension, management and research. *South African Journal of Agricultural Extension, 34*(1), 122-135.

Steptoe, A., Wardle, J., & Marmot, M. (2005). Positive affect and health-related neuroendocrine, cardiovascular, and inflammatory processes. *Proceedings of the National Academy of Science, 102* (18), 6508-6512.

Streiner, D.L. (2003). Starting at the Beginning: An Introduction to Coefficient Alpha and Internal Consistency. *Journal of Personality Assessment, 80*(1), 99-103.

Temane, Q.M. & Wissing, M.P. (2006). The Role of Subjective Perception of Health in the Dynamics of Context and Psychological Well-Being. *South African Journal of Psychology, 36*(3), 564-581.

Triandis, H.C., & Suh, E.M. (2002). Cultural Influences on Personality. *Annual Review of Psychology, 53,* 133-160.

Van de Vijver, T. & Leung, K. (1997). *Methods and data analysis for cross-cultural research.* London: Sage.

Westaway, M. S., Seager, J. R., Rheeder, P., & Van Zyl, D. G. (2005). The effects of social support on health, well-being and management of diabetes mellitus: A black south African perspective. *Ethnicity & Health, 10*(1), 73-89.

Williams, S., Wissing, M.P., Rothmann, S., & Temane, Q.M. (2010). Self-efficacy, Work, and Psychological Outcomes in a Public Service Context. *Journal of Psychology in Africa, 20*(1), 43-52.

Wissing, M. P. (2008). *The prevalence of levels of psychosocial health: Dynamics and relationships with biomarkers of (ill)health in South African social contexts (FORT3).* NRF research project-protocol, NWU, Potchefstroom.

Wissing, M.P, & Temane, Q.M (2008). The Structure of Psychological Well-Being in Cultural Context: Towards a Hierarchical Model of Psychological Health. *Journal of Psychology in Africa*, *18*(1), 45-56.

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. *Presentation made at the International African Psychology Congress, Durban,* 18-23.

Wissing, M. P., Thekiso, S. M., Stableberg, R., Van Quickelberg, L., Choabi, P., Moroeng, C., Nienaber, A., Temane, Q. M., Vorster, H. H. (2010). Validation of three Setswana measures for psychological wellbeing. *South African Journal of Industrial Psychology, 36*(2), Art. #860, 8 pages. DOI: 10.4102?sajip.v36i2.860.

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.

TABLE 1

Exploratory principal component factor analysis with direct oblimin rotation on items of the Fortitude questionnaire

	Factors				
Item	1	2	3	4	Comm.
1		.708			.47
2		.526		.343	.46
3		.661			.43
4		.575			.47
5		.588			.42
6	.427				.40
7			-.407		.43
8		.350			.37
9		.638			.48
10			-.497		.55
11			-.416		.44
12	.579				.54
13			-.784		.61
14	.738				.62
15	.656				.57
16	.810				.65
17	.833				.58
18	.606				.53
19			-.789		.58
20				.768	.60
Eigen values	6.4	1.44	1.32	1.04	.
% Variance explained	32.04	7.19	6.60	5.22	.

Note: Values less than 0.3 are not displayed

TABLE 2

Means and standard deviations and inter-scale correlations:

Variables	Mean	SD	α	1	2	3	4	5	6	7	8	9	10
1 FORQ-F1	17.87	4.26	.84	1	.57	.60	.39	.35	-.15	-.19	-.21	-.14	-.28
2 FORQ-F2	18.41	3.60	.74		1	.54	.38	.43	-.27	-.29	-.28	-.22	-.28
3 FORQ-F3	17.29	3.85	.72			1	.32	.34	-.18	-.18	-.18	-.12	-.22
4 SWL	18.59	7.34	.79				1	.41	-.37	-.27	-.26	-.19	-.27
5 AFM-PA	34.99	6.65	.69					1	-.20	-.27	-.31	-.22	-.30
6 AFM-NA	25.28	7.39	.72						1	.39	.35	.29	-.30
7 GHQ-SS	1.74	2.03	.79							1	.72	.50	.55
8 GHQ-AS	2.02	2.17	.81								1	.54	.63
9 GHQ-SD	1.89	1.75	.65									1	.47
10 GHQ-DS	1.31	1.77	.77										1

** Correlation is significant at the .01 level (2-tailed)

Note: All correlations were significant to the 0.01 level.

TABLE 3

Testing moderator effects using Hierarchical multiple regression for GHQ (independent variable) and FORQ (moderator), predicting positive affect (dependent variable)

	AFM-PA									
	B	SE B	95% CI		Beta	R 2	ΔR^2	F	ΔF	Sig. ΔF
Step 1 GHQ-SS	-.90	.15	-1.19	-.61	-.28	.08	.	38.13	.	.
Step 2 GHQ-SS	-.72	.14	-.99	-.44	-.22	.17	.	45.91	.	.
Step 2 FORQ-F1	.41	.06	.30	.53	.31		.		.	.
FORQ-F1XGHQ-SS	-.02	.03	-.07	.03	-.13	.17	.00	30.78	.61	.437
Step 1GHQ-AS	-.96	.13	-1.22	-.70	-.33	.11	.	52.13	.	.
Step 2 GHQ-AS	-.78	.13	-1.03	-.52	-.26	.19	.	51.67	.	.
Step 2 FORQ-F1	.39	.06	.28	.51	.30		.		.	.
FORQ-F1XGHQ-AS	-.06	.03	-.11	-.01	-.11	.20	.01	37.00	6.41	.012
Step 1 GHQ-SD	-.80	.17	-1.14	-.47	-.22	.05	.	22.05	.	.
Step 2 GHQ-SD	-.63	.16	-.95	-.31	-.17	.15	.	39.65	.	.
Step 2 FORQ-F1	.43	.06	.32	.55	.33		.		.	.
FORQ-F1XGHQ-SD	-.04	.03	-.10	.02	-.06	.16	.00	26.96	1.51	.220
Step 1 GHQ-DS	-1.06	.17	-1.39	-.73	-.29	.08	.	40.58	.	.
Step 2 GHQ-DS	-.77	.17	-1.09	-.44	-.21	.16	.	43.30	.	.
Step 2 FORQ-F1	.39	.06	.27	.51	.29		.		.	.
FORQ-F1XGHQ-DS	-.08	.03	-.13	-.02	-.12	.18	.01	31.65	7.14	.008
Step 1 GHQ-SS	-.91	.15	-1.20	-.61	-.27	.08	.	35.71	.	.
Step 2 GHQ-SS	-.54	.15	-.83	-.25	-.16	.21	.	56.85	.	.
Step 2 FORQ-F2	.63	.07	.48	.77	.38		.		.	.
FORQ-F2XGHQ-SS	-.03	.03	-.09	.03	-.04	.21	.00	38.20	.92	.338
Step 1 GHQ-SS	-.95	.14	-1.23	-.67	-.31	.09	.	45.74	.	.
Step 2 GHQ-AS	-.64	.14	-.90	-.37	-.21	.22	.	61.97	.	.
Step 2 FORQ-F2	.61	.07	.47	.76	.37		.		.	.
FORQ-F2XGHQ-AS	-.04	.03	-.10	.02	-.05	.22	.00	41.82	1.41	.235
Step 1 GHQ-SD	-.84	.18	-1.18	-.49	-.22	.05	.	22.79	.	.

Step 2 GHQ-SD	-.51	.17	-.84	-.19	-.14	.20	.	54.42	.	.
Step 2 FORQ-F2	.66	.07	.51	.80	.40		.		.	.
FORQ-F2XGHQ-SD	-.02	.04	-.09	.06	-.02	.20	.00	36.27	.17	.683
Step 1 GHQ-DS	-1.15	.17	-1.48	-.81	-.30	.09	.	45.01	.	.
Step 2 GHQ-DS	-.75	.17	-1.08	-.43	-.20	.22	.	61.21	.	.
Step 2 FORQ-F2	.61	.07	.47	.76	.37		.		.	.
FORQ-F2XGHQ-DS	.00	.04	-.08	.08	.00	.22	.00	40.72	.01	.938
Step 1 GHQ-SS	-.90	.15	-1.19	-.61	-.28	.08	.	36.61	.	.
Step 2 GHQ-SS	-.73	.14	-1.01	-.44	-.22	.16	.	43.37	.	.
Step 2 FORQ-F3	.61	.09	.43	.79	.30		.		.	.
FORQ-F3XGHQ-SS	-.07	.04	-.15	.02	-.07	.17	.00	29.79	2.37	.125
Step 1 GQH-AS	-.98	.14	-1.25	-.71	-.32	.10	.	50.19	.	.
Step 2 GHQ-AS	-.82	.13	-1.09	-.56	-.27	.18	.	50.32	.	.
Step 2 FORQ-F3	.60	.09	.42	.77	.29		.		.	.
FORQ-F3XGHQ-AS	-.06	.04	-.14	.01	-.07	.19	.01	34.51	2.55	.111
Step 1 GHQ-SD	-.85	.17	-1.19	-.51	-.23	.05	.	23.83	.	.
Step 2 GHQ-SD	-.70	.17	-1.03	-.38	-.19	.15	.	39.20	.	.
Step 2 FORQ-F3	.65	.09	.47	.82	.32		.		.	.
FORQ-F3XGHQ-SD	-.02	.05	-.12	.08	-.02	.15	.00	26.14	.16	.686
Step 1 GHQ-DS	-1.12	.17	-1.46	-.79	-.30	.09	.	43.64	.	.
Step 2 GHQ-DS	-.89	.17	-1.22	-.56	-.24	.17	.	45.02	.	.
Step 2 FORQ-F3	.59	.09	.41	.77	.29		.		.	.
FORQ-F3XGHQ-DS	-.06	.04	-.14	.03	-.06	.17	.00	30.69	1.85	.170

TABLE 4

Testing moderator effects using Hierarchical multiple regression for GHQ (independent variable) and FORQ (moderator), predicting negative affect (dependent variable)

	AFM-NA									
	B	SE B	95% CI		Beta	R 2	ΔR^2	F	ΔF	Sig. ΔF
Step 1 GHQ-SS	1.45	.16	1.13	1.76	.39	.16	.	81.20	.	.
Step 2 GHQ-SS	1.39	.16	1.07	1.71	.38	.16	.	42.30	.	.
Step 2 FORQ-F1	-.12	.07	-.25	.02	.08		.		.	.
FORQ-F1XGHQ-SS	.04	.03	-.02	.10	.22	.16	.00	28.79	1.64	.201
Step 1GHQ-AS	1.21	.15	.91	1.51	.36	.13	.	63.84	.	.
Step 2 GHQ-AS	1.16	.16	.85	1.46	.34	.13	.	33.50	.	.
Step 2 FORQ-F1	-.12	.07	-.25	.02	-.08		.		.	.
FORQ-F1XGHQ-AS	.06	.03	.00	.12	.09	.14	.01	23.87	4.14	.042
Step 1 GHQ-SD	1.25	.19	.87	1.63	.29	.09	.	41.82	.	.
Step 2 GHQ-SD	1.18	.19	.80	1.56	.28	.10	.	23.90	.	.
Step 2 FORQ-F1	-.16	.07	-.30	-.03	-.11		.		.	.
FORQ-F1XGHQ-SD	.04	.04	-.04	.11	.05	.10	.00	16.26	.98	.324
Step 1 GHQ-DS	1.42	.19	1.05	1.79	.34	-.11	.	56.66	.	.
Step 2 GHQ-DS	1.35	.20	.97	1.74	.32	.12	.	29.19	.	.
Step 2 FORQ-F1	-.09	.07	-.23	.05	-.06		.		.	.
FORQ-F1XGHQ-DS	.09	.03	.02	.16	.13	.13	.01	22.07	7.05	.008
Step 1 GHQ-SS	1.45	.16	1.14	1.77	.40	.16	.	82.04	.	.
Step 2 GHQ-SS	1.27	.17	.95	1.60	.35	.18	.	49.10	.	.
Step 2 FORQ-F2	-.31	.08	-.47	-.15	-.17		.		.	.
FORQ-F2XGHQ-SS	.05	.04	-.02	.12	.07	.19	.00	33.64	2.39	.123
Step 1 GHQ-SS	1.22	.15	.92	1.51	.35	.13	.	63.45	.	.
Step 2 GHQ-AS	1.04	.16	.73	1.35	.30	.16	.	41.11	.	.
Step 2 FORQ-F2	-.34	.08	-.50	-.18	-.19		.		.	.
FORQ-F2XGHQ-AS	.07	.04	.00	.14	.09	.16	.01	28.87	3.86	.050

Step 1 GHQ-SD	1.22	.19	.85	1.60	.29	.09	.	41.26	.	.
Step 2 GHQ-SD	1.03	.19	.65	1.40	.25	.13	.	32.75	.	.
Step 2 FORQ-F2	-.40	.08	-.56	-.23	-.22		.		.	.
FORQ-F2XGHQ-SD	.04	.04	-.05	.13	.04	.13	.00	22.08	.78	.379
Step 1 GHQ-DS	1.38	.19	1.01	1.75	.33	.11	.	54.16	.	.
Step 2 GHQ-DS	1.15	.19	.78	1.53	.28	.14	.	36.62	.	.
Step 2 FORQ-F2	-.35	.08	-.52	-.18	-.19		.		.	.
FORQ-F2XGHQ-DS	.16	.05	.07	.25	.16	.17	.02	29.05	12.08	.001
Step 1 GHQ-SS	1.39	.16	1.07	1.70	.38	.15	.	76.59	.	.
Step 2 GHQ-SS	1.31	.16	1.00	1.63	.36	.16	.	42.01	.	.
Step 2 FORQ-F3	-.25	.10	-.45	-.06	-.11		.		.	.
FORQ-F3XGHQ-SS	.06	.05	-.03	.15	.06	.16	.00	28.56	1.55	.214
Step 1 GQH-AS	1.18	.15	.88	1.48	.34	.12	.	60.02	.	.
Step 2 GHQ-AS	1.10	.15	.80	1.41	.32	.13	.	34.04	.	.
Step 2 FORQ-F3	-.27	.10	-.47	-.07	-.12		.		.	.
FORQ-F3XGHQ-AS	.02	.05	-.07	.11	.02	.13	.00	22.71	.17	.680
Step 1 GHQ-SD	1.21	.19	.84	1.58	.29	.09	.	41.20	.	.
Step 2 GHQ-SD	1.14	.19	.77	1.51	.27	.11	.	26.10	.	.
Step 2 FORQ-F3	-.32	.10	-.52	-.12	-.14		.		.	.
FORQ-F3XGHQ-SD	-.09	.06	-.20	.01	-.08	.11	.01	18.45	2.93	.090
Step 1 GHQ-DS	1.35	.19	.98	1.71	.32	.11	.	52.31	.	.
Step 2 GHQ-DS	1.24	.19	.87	1.61	.30	.12	.	29.76	.	.
Step 2 FORQ-F3	-.26	.10	-.47	-.06	-.12		.		.	.
FORQ-F3XGHQ-DS	.10	.05	.01	.19	.10	.13	.01	21.47	4.44	.036

TABLE 5

Testing moderator effects using hierarchical multiple regression for GHQ (independent variable) and FORQ (moderator), predicting satisfaction with life (dependent variable)

	SWL									
	B	SE B	95% CI		Beta	R 2	ΔR^2	F	ΔF	Sig. ΔF
Step 1 GHQ-SS	-1.05	.17	-1.38	-.73	-.29	.08	.	40.37	.	.
Step 2 GHQ-SS	-.86	.16	-1.18	-.54	-.24	.16	.	42.33	.	.
Step 2 FORQ-F1	.43	.07	-.30	.56	.28		.		.	.
FORQ-F1XGHQ-SS	-.03	.03	-.09	.03	-.16	.16	.00	28.50	.87	.351
Step 1GHQ-AS	-.94	.15	-1.24	-.64	-.28	.07	.	34.34	.	.
Step 2 GHQ-AS	-.74	.15	-1.04	-.44	-.22	.15	.	39.90	.	.
Step 2 FORQ-F1	.42	.07	.29	.56	.28		.		.	.
FORQ-F1XGHQ-AS	-.01	.03	-.07	.04	-.02	.15	.00	26.67	.22	.638
Step 1 GHQ-SD	-.84	.20	-1.22	-.46	-.20	.04	.	18.46	.	.
Step 2 GHQ-SD	-.66	.19	-1.02	-.29	-.16	.13	.	33.23	.	.
Step 2 FORQ-F1	.46	.07	.33	.59	.31		.		.	.
FORQ-F1XGHQ-SD	-.01	.04	-.08	.06	-.01	.13	.00	22.13	.08	.773
Step 1 GHQ-DS	-1.16	.19	-1.54	-.79	-.28	.08	.	37.18	.	.
Step 2 GHQ-DS	-.85	.19	-1.23	-.48	-.20	.15	.	37.53	.	.
Step 2 FORQ-F1	.41	.07	.27	.54	.27		.		.	.
FORQ-F1XGHQ-DS	-.05	.03	-.12	.02	-.07	.15	.00	25.86	2.31	.130
Step 1 GHQ-SS	-.99	.17	-1.32	-.66	-.27	.07	.	35.55	.	.
Step 2 GHQ-SS	-.54	.16	-.85	-.23	-.15	.24	.	69.09	.	.
Step 2 FORQ-F2	.77	.08	.62	.93	.42		.		.	.
FORQ-F2XGHQ-SS	-.05	.03	-.12	.02	-.07	.24	.00	46.98	2.33	.127
Step 1 GHQ-SS	-.88	.16	-1.18	-.57	-.26	.07	.	31.51	.	.
Step 2 GHQ-AS	-.48	.15	-.76	-.19	-.14	.24	.	68.24	.	.
Step 2 FORQ-F2	.78	.08	.63	.94	.43		.		.	.

FORQ-F2XGHQ-AS	-.06	.03	-.13	.00	-.08	.24	.01	46.89	3.43	.065
Step 1 GHQ-SD	-.78	.19	-1.16	-.40	-.19	.04	.	16.10	.	.
Step 2 GHQ-SD	-.37	.18	-.72	-.02	-.09	.23	.	64.34	.	.
Step 2 FORQ-F2	.81	.08	.66	.97	.45		.		.	.
FORQ-F2XGHQ-SD	-.04	.04	-.12	.05	-.04	.23	.00	43.12	.75	.388
Step 1 GHQ-DS	-1.11	.19	-1.48	-.74	-.27	.07	.	34.52	.	.
Step 2 GHQ-DS	-.65	.18	-1.00	-.30	-.16	.23	.	66.50	.	.
Step 2 FORQ-F2	.84	.09	.67	1.01	.41		.		.	.
FORQ-F2XGHQ-DS	-.04	.04	-.12	.05	-.04	.23	.00	44.59	.81	.369
Step 1 GHQ-SS	-1.02	.16	-1.34		-.28	.08	.	38.43	.	.
Step 2 GHQ-SS	-.80	.16	-1.11	-.49	-.22	.19	.	52.99	.	.
Step 2 FORQ-F3	.77	.10	.58	.96	.34		.		.	.
FORQ-F3XGHQ-SS	.00	.05	-.09	.09	.00	.19	.00	35.25	.00	.987
Step 1 GQH-AS	-.96	.16	-1.30	-.65	-.28	.08	.	37.97	.	
Step 2 GHQ-AS	-.75	.15	-1.04	-.46	-.22	.19	.	52.81	.	.
Step 2 FORQ-F3	.77	.10	.58	.96	.34		.		.	
FORQ-F3XGHQ-AS	.03	.04	-.06	.12	.03	.19	.00	35.33	.49	.483
Step 1 GHQ-SD	-.80	.19	-1.18	-.42	-.19	.04	.	17.09	.	.
Step 2 GHQ-SD	-.62	.18	-.97	-.26	-.15	.17	.	44.47	.	.
Step 2 FORQ-F3	.82	.10	.62	1.01	.36		.		.	.
FORQ-F3XGHQ-SD	.07	.05	-.04	.17	.06	.17	.00	30.24	1.65	.199
Step 1 GHQ-DS	-1.18	.19	-1.55	-.81	-.28	.08	.	38.84	.	.
Step 2 GHQ-DS	-.86	.18	-1.22	-.51	-.21	.19	.	52.60	.	.
Step 2 FORQ-F3	.77	.10	.58	.96	.34		.		.	.
FORQ-F3XGHQ-DS	-.05	.05	-.13	.04	-.04	.19	.00	35.40	1.00	.319