THE PSYCHOMETRIC PROPERTIES OF SCALES MEASURING PERCEIVED SOCIAL SUPPORT IN A SETSWANA-SPEAKING GROUP

Christine Motlalepule Moroeng
Hons. BA

Mini-dissertation (manuscript-format) submitted in partial fulfilment of the requirements for the degree Magister Artium in Clinical Psychology at the Potchefstroomse Universiteit vir Christelike Hoër Onderwys

Supervisor: Prof. M. P. Wissing

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SUMMARY

THE PSYCHOMETRIC PROPERTIES OF SCALES MEASURING PERCEIVED SOCIAL SUPPORT IN A SETSWANA-SPEAKING GROUP

Key words: Perceived Social Support Scale (PSS) (Procidano & Heller, 1983); psychometric properties; reliability; validity; Sense of Coherence Scale (SOC) (Antonovsky, 1987, 1993); Affectometer 2 (AFM) (Kammann & Flett, 1983); Satisfaction with Life Scale (SWLS) (Diener *et al,* 1985); General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979).

The current study is part of a greater project: "The role of psychosocial factors in the physical well-being of Black South Africans in the North West Province during a phase of transition" (Wissing, 1998) which falls under the multidisciplinary THUSA-project (Vorster, 1997; Vorster et al. 2000). (THUSA=Transition and Health during Urbanization of South Africans). As there were no scales available to measure social support in the Setswana-speaking group, this study was undertaken to determine the applicability of the Perceived Social Support Scale (PSS) of Procidano and Heller (1983) in the Setswana-speaking group. The PSS consists of two sub-scales, i.e. Perceived Social Support from Friends (PSS:FR) and Perceived Social Support from Family (PSS:FA). The PSS provides reliable and valid measures of perceived support from friends and from family in Western population groups. It could not, however, be assumed to be a reliable and valid measure in another, completely different population, as indicated by Pounonen and Ashton (1998). In an empirical study the PSS was cultural-sensitively adapted with use of a committee approach, translated into Setswana with use of the back-translation method, and evaluated in an empirical study. Participants (N=738) from various demographic strata completed the questionnaires during several field studies with the aid of field workers. Psychometric properties such as reliability, means, standard deviations, range of scores, factor structure and pattern of correlations were established for the PSS. The present Setswana versions of the PSS:FR and PSS:FA were found to be highly reliable and valid for use in the target group.

OPSOMMING

DIE PSIGOMETRIESE KENMERKE VAN SKALE WAT WAARGENOME SOSIALE ONDERSTEUNING MEET IN 'N SETSWANA-SPREKENDE GROEP

Sleutelwoorde: Perceived Social Support Scale (Procidano & Heller, 1983); waargenome sosiale ondersteuning; betroubaarheid; geldigheid; psigometriese kenmerke; koherensiesin; Sense of Coherence Scale (Antonovsky, 1987); affekbalans; Affectometer 2 (Kammann & Flett, 1983), lewenssatisfaksie; Satisfaction with Life Scale (Diener et al., 1985), General Health Questionnaire (Goldberg & Hillier, 1979).

Die huidige ondersoek is deel van 'n groter projek "The role of psychosocial factors in the physical well-being of Black South Africans in the North West Province during a phase of transition" (Wissing, 1998), wat deel vorm van die multi-dissipinêre THUSA-projek (Vorster, 1997, Vorster et al., 2000) (THUSA=Transition and Health during Urbanisation in South Africa).

Aangesien daar geen skale in Setswana beskikbaar was om sosiale ondersteuning by hierdie groep mee te evalueer nie, is hierdie studie onderneem om die toepasbaarheid van die Perceived Social Support Scale (PSS) van Procidano en Heller (1983) vir gebruik in 'n Setswana–sprekende groep te bepaal. Die PSS bestaan uit twee subskale, naamlik die Perceived Social Support from Friends (PSS:FR), en die Perceived Social Support from Family (PSS:FA). Die PSS bied betroubare en geldige metings van waargenome ondersteuning deur vriende en familie in Westerse populasies. Dit kan egter nie sondermeer aangeneem word, soos aangedui deur Pounonen and Ashton (1998), dat die PSS ook in ander, heeltemaal verskillende kulturele kontekste, geldig sal wees nie.

In 'n empiriese ondersoek is die PSS kultuur-sensitief aangepas met behulp van die kommittee-benadering, vertaal in Setswana met gebruik van die terugvertalingsmetode, en geëvalueer in 'n opname met 738 deelnemers uit verskillende demografiese strata gedurende verskeie veldstudies waartydens vraelyste met behulp van veldwerkers voltooi is. Psigometriese aspekte soos betroubaarheid, gemiddeldes, standaardafwykings, omvang van tellings, konstrukgeldigheid en patrone van korrelasies is vir die PSS bepaal. Dit het

geblyk dat die huidige Setswana versies van die PSS:FA en PSS:FR betroubaar en geldig is vir gebruik in die betrokke teikengroep.

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CONSENT

I hereby give consent that this manuscript may be submitted for purposes of a mini-dissertation by Christine Motlalepule Moroeng.

Marié P. Wissing

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MANUSCRIPT

THE PSYCHOMETRIC PROPERTIES OF SCALES MEASURING PERCEIVED SOCIAL SUPPORT IN A SETSWANA-SPEAKING GROUP

Christine M. Moroeng*and Marié P. Wissing

School of Psychosocial Behavioural Sciences,

Potchefstroom University for CHE,

Potchefstroom, 2520

***To whom correspondence should be addressed**

THE PSYCHOMETRIC PROPERTIES OF SCALES MEASURING PERCEIVED SOCIAL SUPPORT IN A SETSWANA-SPEAKING GROUP

ABSTRACT

Key words: Perceived Social Support Scale (PSS) (Procidano & Heller, 1983); psychometric properties; reliability; validity; Sense of Coherence Scale (SOC) (Antonovsky, 1987, 1993); Affectometer 2 (AFM) (Kammann & Flett, 1983); Satisfaction with Life Scale (SWLS) (Diener et al., 1985); General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979).

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various demographic strata completed the questionnaire during several field studies with the aid of fieldworkers. Psychometric properties such as reliability, means, standard deviations, range of scores, factor structure and pattern of correlations were established for the PSS. The present Setswana versions of the PSS:FR and PSS:FA were found to be highly reliable and valid for use in the target group.

THE PSYCHOMETRIC PROPERTIES OF SCALES MEASURING PERCEIVED SOCIAL SUPPORT IN A SETSWANA SPEAKING GROUP

This study is part of a more comprehensive research project "The role of psychosocial factors in the physical well-being of Black South Africans in the North West Province during a phase of transition" (Wissing, 1998). The above mentioned is part of the THUSA-project (THUSA = Transition and Health during Urbanization of South Africans), with the main title "Urbanization of Africans in the North West Province of South Africa: associated changes in diseases risk properties (assessment and prevention) (Vorster, 1997; Vorster et al., 2000). The specific focus of the current research is the validation of scales measuring perceived social support from family and from friends in a Setswana-speaking group in the North West Province. These scales are components of the Perceived Social Support Scale (PSS) of Procidano and Heller (1983).

One of the existing needs at present is the need for a systematic examination of the psychometric properties of scales measuring various aspects in a South African context, with its various cultural language groups. For the purposes of the THUSA-project it was also necessary to validate scales measuring social support. From a survey of the literature scales such as the Social Support Questionnairre (SSQ) of Sarason I.G., Levine, Basham, and Sarason, B.R. (1983), the Social support Scale of Barrera, Sandler, and Ramsay (1981), and the Perceived Social Support Scale (PSS) of Procidano and Heller (1983) were considered. The latter was selected, as it seems to have good psychometric

properties in various samples, it has been found useful with another South African group (Johnson, 1998), and seems to be one of the most frequently used scales to measure social support. The Perceived Social Support Scale (PSS) was designed as a measure of the extent to which an individual perceives that her/his needs for support, information and feedback are fulfilled by friends and family (Procidano & Heller, 1983) without specifying the specific kind of support.

Social support has been found to be very important in the lives of most people. It can be viewed as a generalised perception that there are people available to provide assistance regardless of the nature of the stressful events encountered (Laireiter & Baumann, 1992; Procidano & Heller, 1983). Social support is associated with experiences of quality of life (Hegelson & Cohen, 1996), psychological well-being (Cohen & Wills, 1985; Frazier, Tix, Klein & Arikian, 2000; Lazarus, Overill & Opton, 1994; Terry et al., 1993), physical well-being (Flett, Blankenstein, Hicken & Watson, 1995; Lepore, Mata & Evans, 1993; Lin, Dean, & Ensel, 1998; Reynolds & Kaplan, 1990; Shapiro et al., 2001), and work productivity and quality of worklife (Unden, 1996; Terry et al., 1993; Narayanan, Menon & Spector, 1999). As perceived social support seems to be related to various indices of physical and psychological well-being, scales measuring psychological and physical well-being were included to explore criterion-related validity in addition to construct validity.

The nature, sources and conceptualization of social support in a Setswana culture may differ in some respects from those experienced in a Western environment where the PSS was developed. Relatively unique types of social support experienced in a Setswana culture are, for example, support from traditional healers (sangomas, herbalists, ngaka, ya

ditaola, moporofeti), pastors of different religious denominations, women, men, and youth groups within the church, burial societies within the community, stokvels in the community, mogadisano (giving each group member a certain amount of money each month), diphiri (for digging graves in villages where there are no machines), initiation schools, and support from the ancestors.

The PSS with its two sub-scales has been proved to be a valid and reliable measure in Western population groups. These sub-scales, however, cannot be assumed to be reliable and valid measures of the constructs they were originally intended to measure, in another, completely different population (Paunonen & Ashton, 1998). Lonner (1990) also indicated that many tests and assessment procedures that are effective in the Western world could not be assumed to be valid in other cultures, and that prove thereof should be provided. Smith and McCarthy (1995) emphasised the importance of instrument refinement, and indicated that this is a part of a dialectic between measurement and substantive research.

Paunonen and Ashton (1998) argue that it is important to do cross-cultural adaptation of measures. This means that the psychometric properties of the test in the original culture should be compared to those found in the foreign culture. Invariance in those properties across the two cultures can then be interpreted as indicating a measure that has utility value in both cultures. That is, if all the psychometric properties are roughly the same in two different cultures, one can safely conclude that the measure is equally applicable in both. The opposite is, however, not necessarily true. The failure to find invariant psychometric properties for the scales across cultures can be due to a variety of reasons, and those reasons should be established. According to Paunonen and Ashton (1998),

important psychometric properties that should be taken into account are reliabilities (both internal consistency and test – retest), scale means and variances, factor structure, and patterns of correlations.

Reliability refers to the consistency of scores obtained by the same persons when re-examined with the same test on different occasions, or with different sets of equivalent items, or under other variable examining conditions (Anastasi, 1988). Reliability is also related to issues concerning unidimensionality, internal consistency and coefficient alpha (Clark & Watson, 1995). In this study Cronbach alpha reliability indices will be determined. Standards for acceptable reliability levels are variant. Nunnally (1978) recommended minimum standards of 0.80 and 0.90 whereas contemporary researchers view reliabilities of 0.60 to 0.70 as good or adequate (Dekovic, Janssens & Gerris, 1991).

The validity of a test concerns what the test measures and how well it does so, that is, whether the test measures what it is supposed to measure (Anastasi, 1988). Foster and Cone (1995) distinguish various kinds of validity: (a) face validity, i.e. whether the test looks appropriate for a particular use, (b) content validity, i.e. whether the test is made up of stimuli calling for construct-relevant responses, (c) criterion-related validity, i.e. whether responses to the test stimuli relate to other types of responses, either concurrently available or to be available sometime in the future, (d) construct validity, i.e. whether the empirically found factors are consistent with theory, and (e) whether predictions based on test scores add incremental value in decision making. In the current study, face validity and content validity were considered in the first phases of instrument refinement. Construct validity and criterion-related validity were then further determined through factor analysis and correlations. Confirmation of hypothesised factor structures is most

adequately established with confirmatory factor analysis, where a factor structure is explicitly hypothesised and tested for its fit with the observed covariance structure of the measured variables (Reise, Widaman & Pugh, 1993). According to Floyd and Widaman (1995) optimal factor analyses require measures on interval or quasi-interval scales. They, however, also indicated that dichotomous items can be factor-analysed using standard techniques, but that the results might be biased. In view of the illiteracy of many participants in the current study, it was opted for a social support scale with a simplistic response format, despite the above possible problem. To overcome this problem various facets of validity were determined.

In the validation of scales developed in a Western context for use in an African context, it is important to take note of Rogler's (1989) contention that culturally sensitive research actually includes the whole process of research, from planning of the project to data analysis and interpretation thereof, which is much more inclusive than only the translation and validation of measuring instruments.

The aim of this study was to determine whether the Perceived Social Support Scale (PSS) of Procidano and Heller (1983), with its sub-scales Perceived Social Support from Friends (PSS: FR) and Perceived Social Support from Family (PSS: FA), is applicable for use in a Setswana-speaking group.

METHOD

Design: The data were obtained in the context of an ex post-facto single cross-sectional survey design. The following steps were taken:

Phase 1: Evaluation of questions for culture sensitivity and comprehensibility in a research committee approach (cf. Van de Vijver & Leung, 1997).

Phase 2: Translation, back translation and evaluation of questionnaire in a pilot group.

Phase 3: Implementation of questionnaire during several field studies (data gathering).

Phase 4: Statistical analysis of responses.

Participants: A sample of 738 black South Africans in different phases of urbanization were recruited from 11 randomly selected sites in the North West Province. Participants were stratified for level of urbanization based on living area and/or type of employment. The following strata were distinguished (number of respondents in each are indicated in brackets):

Stratum 1: Traditional landowners (in deep rural traditional villages) (n=196). In this study, traditional landowning Africans were defined as people who were living under the authority of a traditional tribal head (chief, captain or headman) in and around traditional African villages, mostly without running water and electricity.

Stratum 2: Farm workers (on commercial farms) (n=113). These participants worked on commercial farms, mostly owned by white farmers and lived in brick houses clustered together on the different farms. Running water was available for some, but not all.

Stratum 3: Informal settlers (in "squatter camps") (n=168). These participants were from the informal housing areas (informal settlements) near larger towns and lived in temporary houses made from corrugated iron and other materials. Electricity and communal water taps were available in some of these areas.

Stratum 4: Urban, "middle class" (n=250). These participants were from established townships or locations found adjacent to all towns and cities in South Africa. They lived in their own brick houses and most of them had running water and electricity.

Stratum 5: Urban "upper class" (n=11). Participants for this stratum were recruited from professional people (nurses, teachers, governmental workers, etc.) and lived in their established townships or in formerly "white" residential areas in towns and cities. The reason for the low number of participants in stratum 5 (n=11) is that the data for this group was collected before the team of psychologists joined the THUSA-project.

Participants were found in: (1) Oukasie location (near Brits). (2) Reivilo, (3) Tsokonyane, (4) Mokgareng, (5) Molelema (Taung District), Utlwanang, Beefmaster (Christiana), Wedela (Fochville), Ganyesa, (6) Magaliesburg and (7) Ikageng (Potchefstroom). The following aspects were (for reasons of the main project), exclusion criteria in the selection of participants: pregnancy, lactating mothers, subjects with any known disease, subjects with any history of chronic use of medication, subjects younger than fifteen years, intoxicated persons or people suffering from epilepsy or any illness or disability. The present group was stratified for gender (men, n = 313; women, n = 424), and age (15 – 24 years, n = 184; 25 – 34 years, n = 206; 35 – 44 years, n = 126; 45 – 54 years, n = 100; 55 – 64 years, n = 73; and >65years, n = 48).

Measuring instruments

Biographical Questionnaire. This questionnaire was constructed to facilitate the description of the participants. The information covered includes age, sex, qualifications, occupation, income, spoken language, health condition and living environment.

Perceived Social Support Scale (PSS) (Procidano & Heller, 1983). The Perceived Social Support Scale (PSS) consists of two subscales, namely the Perceived Support from Friends scale (PSS:FR) and the Perceived Social Support from Family scale (PSS:FA), and measures the extent to which an individual perceives that her/his needs for support, information and feedback are fulfilled by friends and family (Procidano & Heller, 1983). Each subscale consists of 20 items that are answered by a "yes" or "no". Procidano and Heller (1983) report an alpha coefficient of 0.88 for the PSS:FR, and 0.90 for the PSS:FA subscale. They also indicate that test-retest reliability is stable over a 1-month period (r=0.83) and that construct validity is good. Procidano and Heller (1983) reported mean scores for PSS:FR = 13.40 and PSS:FA=15.15. Wu and Lam (1993), using the PSS in a Hong Kong sample, reported lower mean scores of PSS:FR = 10.59 and PSS:FA = 11.39.

Scales measuring psychological well-being (criteria for concurrent validity). Feldt (1998) indicated that a sense of coherence is related to well-being. Wissing and Van Eeden (1994, 1998) indicated that general psychological well-being is well operationalised from a strength perspective by the Sense of Coherence Scale (SOC) (Antonovsky, 1987), the Satisfaction with Life Scale (SWLS) (Diener et al., 1985), and the Affectometer 2 (AFM) (Kammann & Flett, 1983). They also indicated that these scales correlate negatively with an index of psychopathology, namely the General Health Questionnaire. All these scales were validated for use in a Setswana–speaking group (Wissing, Thekiso, Stapelberg, Van Quickelberge, Choabi, Moroeng & Nienaber, 1999). In order to validate the PSS, positive correlations were predicted with the SOC, SWLS and AFM (affect balance), and negative correlations with the GHQ.

Sense of Coherence Scale (SOC) (Antonovsky, 1987, 1993). The SOC is a 29-item self-report scale measuring the way an individual experiences the world and his/her life in it in terms of comprehensibility, manageability and meaningfulness. The SOC provides an indication of the extent to which an individual has a pervasive, enduring and dynamic feeling of confidence that (i) the stimuli deriving from internal and external environments are structured, predictable and explicable, (ii) the resources are available to meet demands posed by these stimuli, and (iii) these demands are challenges, worthy of efforts (Antonovsky, 1987). Scores can range from 29 to 203. Antonovsky (1993) reports mean scores between 117 and 152, and Strümpfer and Wissing (1998) calculated a mean score of 137 from 27 South African studies. Cronbach alpha reliabilities ranged from 0.82 to 0.95 in 26 studies according to Antonovsky (1993), and from 0.52 to 0.97 with a mean alpha of 0.87 in 27 South African studies (Strümpfer & Wissing, 1998). Reports of content, criterion and construct validity are provided by Antonovsky (1993), Flannery and Flannery (1993) and Frenz, Carey and Jorgensen (1993).

Satisfaction With Life Scale (SWLS) (Diener, Emmons, Larsen & Griffin, 1985). The Satisfaction with life scale (SWLS) measures global life satisfaction on a cognitive judgmental level, while the respondent uses his/her own subjective criteria. The SWLS is a self-report questionnaire with five items, which are answered on a seven-point scale. The range of scores extends from 5 (low life satisfaction) to 35 (high life satisfaction). Mean scores reported for South African samples are 23.45 (Wissing & Van Eeden 1994) and 23.94 (Wissing, 1996). Diener et al. (1985) report a Cronbach alpha-coefficient of 0.87 for the SWLS, and two-months test-retest reliability index of 0.82. Pavot and Diener (1993) report Cronbach alpha-coefficients of 0.80 to 0.89, and test-retest reliability

indices of 0.54 to 0.84 for month to four-year interval. Wissing and Du Toit (1994) found a Cronbach alpha-coefficient index of 0.85 in a South African group. Diener et al. (1985) and Pavot and Diener (1993) state that the SWLS has a good construct validity.

The Affectometer 2 (AFM) (Kammann & Flett, 1983). The Affectometer 2 (AFM) indicates an individual's general feelings of happiness or a sense of well-being. It is an indication of quality of life as experienced on an affective or emotional level. It is based on a balance of positive and negative emotions. In this research, the twenty-item scale was used. There are ten items which measure Positive Affect (PA), and ten items which measure Negative Affect (NA). Psychological well-being is indicated by the extent to which the positive feelings outweigh the negative feelings (PA-NA = PNB). According to Kammann and Flett (1983), the AFM is very reliable (Cronbach alpha = 0.95) and also has good validity. Using the South African population Wissing and Van Eeden (1994) found the following Cronbach alphas: 0.86 (PA), 0.90 (NA), and 0.92 (PNB).

General Health Questionnaire 28 (GHQ-28) (Goldberg & Hiller, 1979). The General Health Questionnaire 28 (GHQ) was designed by Goldberg and Hiller (1979) as a screening questionnaire aimed at detecting individuals with diagnostically identifiable psychiatric disorders. It detects common symptoms, which are encountered in the various syndromes of mental disorders and differentiates individuals with psychopathology from those considered to be normal. The GHQ is a self-administered questionnaire with 28 items. The scale has four sub-scales with seven items each. Sub-scales are: Somatic Symptoms (SS), Anxiety and Insomnia (AI), Social Dysfunction (SD) and Severe Depression (SD). For the purpose of this study, the GHQ-scoring method (0 – 0 – 1 – 1) has been used (Goldberg & Hiller, 1979). The range of scores extends from 0 (no

symptoms) to 28 (severe pathology). Mean scores on the GHQ-28, scored with the GHQ-method in a South African multicultural sample, are 1.49 (SS), 1.75 (AS), 1.25 (SD), 0.77 (DS), and 5.25 for the total score (Wissing & Van Eeden, 1994). Nienaber, De Jager, Oosthuizen and Wissing (1999) reported means of 1.03 (SS), 1.15(AS), 0.93(SD), 0.64(DS), and 3.75 (GHQ-T) for a community sample of women in South Africa. According to Goldberg et al. (1997) the GHQ has good reliability and validity indices. Goldberg and Hiller (1979) report Cronbach alpha-reliability indices ranging between 0.82 and 0.86 and validity coefficients in fifteen different centres ranging between 0.82 and 0.94. A South African sample yielded Cronbach alpha reliabilities varying from 0.77 to 0.84 for subscales and 0.91 for the total scale score (Wissing & Van Eeden, 1998).

Procedure

The first step was evaluation of the Perceived Social Support Scale (PSS) with regard to comprehensibility of items for the target population. The English questionnaires were translated into Sestwana by Setswana-specialists and Setswana-speaking co-researchers in the THUSA-project, using Brislin's (1970) translation-back translation principles, taking into consideration cultural differences in the use of idiomatic language as indicated by Shaw et al. (1997) and Oakland (1996).

Procedures for fieldwork were as follows : After the areas for data gathering had been selected, the leader of the THUSA-project (Prof. Este Voster) visited the area and obtained entry into the community via a contact person such as a community leader or, on the farms, the farmer's office. The necessary permission for the study in the given area was obtained by contacting the appropriate authorities, for example, the tribal chief, mayor, clinic director, hospital matron, school principal, employer, etc. Details of this

process are reported by Vorster et al. (2000). By using the contact person, the aim and method of the research was made known to the communities. Community leaders received written information that explained the rationale of the research, exclusion criteria and the research team's expectations from participants.

Individuals with a minimum qualification of matric and the ability to speak English and Setswana were identified and trained as fieldworkers. Their main role was to assist with the administration of questionnaires. In their training, it was emphasised not to influence the responses of participants. The first fieldworkers were obtained at the selected site. This proved not practical for other areas. Therefore five workers from the Potchefstroom area were selected, trained and appointed towork in the remaining areas. They were reimbursed at the end of the fieldwork. Problem-identification and resolution meetings were held at the end of each day during fieldwork as a process of early trouble-shooting and assurance of high quality research.

The test battery of the psychology group (of which the present study forms a part) was administered in three sessions with two fifteen-minute breaks to minimise the role of fatigue. Informed consent was first signed and in the case of minors, parents gave or wrote an informed permission to allow their children's participation in the study. The participants then filled in the Demographic Questionnaire at the first research station of the multidisciplinary THUSA-project before arriving at the "Psychology Station." The literate participants were divided into small groups, and completed the questionnaires in a group context under the supervision of the three Setswana-speaking researchers with the assistance of the field workers. The illiterate participants were helped on an individual basis.

Fieldwork took place over three weeks in Oukasie Location (near Brits), Reivilo, Tsokonyane, Mokgareng, Molelema (Taung-district) Utlwanang, Beefmaster (Christiana), Wedela (Fochville), Ganyesa, Magaliesburg-district, and Ikageng in Potchefstroom. Facilities varied from rooms with tables and chairs to verandas and tree shades. The participants afterwards received a food parcel and a small financial compensation for their time.

Statistical analyses

Descriptive statistics (means, standard deviations and range of scores) and Cronbach alpha reliability indices were determined for all the scales and subscales. Confirmatory factor analysis was performed on the PSS. Correlations (Pearson's correlation coefficient) between the PSS and scales measuring psychological well-being were also established.

RESULTS AND INTERPRETATION

Descriptive statistics and the reliability indices of all scales used are indicated in Table 1.

[Table 1 approximately here]

Reliability

The PSS and its subscales manifested acceptable reliability indices, which are in line with those indicated by Procidano and Heller (1983), except that PSS:FR manifested a lower reliability index in the current study. Johnson (1998) reported reliability indices of 0.81 (PSS:FR) and 0.88 (PSS:FA) in a South African sample from the Western Cape. The reliability indices for scales measuring psychological well-being and symptomatology were acceptable, except for the Social Dysfunction sub-scale of the General Health Questionnaire (which is marginally acceptable according to the criteria of Smit, 1991).

Means and variances

The mean scores of the sub-scales of the PSS were slightly lower than those obtained by Procidano and Heller (1983). The mean score for PSS-FR was 9.63, whereas Procidano and Heller reported 13.40, and the mean score for PSS-FA was 11.77, compared to the 15.15 of Procidano and Heller (1983). The reason for the slightly lower levels of perceived support in the present sample may be that the current sample was drawn from different strata while the sample for the original scale was drawn from participants comparable to the current stratum 5 only. Another reason could be the hardships experienced by many people in the current sample who live in areas where resources are scares and inhabitants may feel that help must be obtained from external resources. Wu and Lam (1993) also reported sligthly lower means in a Hong Kong sample. In the current sample the mean score obtained for PSS:FR is also lower than that obtained for PSS:FA as was the case in the original sample of Procidano and Heller (1983).

The standard deviations for the PSS:FR (3.7) and PSS:FA (4.7) are very similar to those obtained by Procidano and Heller (1983), and those reported by Johnson (1998) in another South African sample (PSS:FR = 4.22; PSS FA = 4.93).

Validity of the PSS

Factor analyses on the PSS. The results of a confirmatory first order principal component factor analysis with varimax rotation is reported in Table 2.

[Table 2 approximately here]

From Table 2, it is clear that two major factors emerged with eigenvalues greater than 1, and explaining 20.69% and 5.68% of the variance respectively. In the case of Factor 1, fifteen of the 20 items of the PSS:FA sub-scale loaded significantly, i.e. >0.3, *with items*

3, 4, 16, 19 and 20 not loading significantly. This factor represents social support from the family. In the case of Factor 2, only 9 of the items of the PSS:FR-sub-scale loaded > 0.30, with item 7 loading negatively. Factor 2 reflects social support perceived from friends. Items 4, 8, 14, 16 and 17 of the PSS:FR-sub-scale loaded, contrary to expectation, significantly on Factor 1.

In a confirmatory factor analysis with the maximum likelihood method of factor extraction and varimax rotation, the same pattern of results was obtained, with factor 1 (eigenvalue = 5.24) explaining 13.1% and factor 2 (eigenvalue = 3.87) explaining 9.7% of the variance. In this case 15 items from PSS:FA loaded >0.30 on Factor 1, and now 14 items of PSS:FR loaded >0.30 on Factor 2 in the expected direction. An exploratory factor analysis with the maximum likelihood method of factor extraction (and varimax rotation) revealed the same results.

A confirmatory factor analysis with the SEPATH-option of Statistica indicated a good fit of the hypothesised model, with a Steiger-Lind RMSEA of 0.050, and a 90% confidence interval of 0.048 to 0.053. All the parameter estimates for the latent factor Perceived Social Support from Family were significant, except item 3 ("Most other people are closer to their family than I am"). Fifteen of the twenty parameter estimates for the latent variable Perceived Social Support from Friends were significant, with items 2, 6, 15, 18, and 20 the exceptions, and item 7 loading significantly negatively. Item 7 was "I feel that I am on the fringe in my circle of friends". These six items were those that were reversibly scored. It might have been that the wording was ambiguous or difficult to understand for some respondents, and therefore produced inconsistent results. In the case of Factor 1, item 3 was also reversibly scored. Other items reversibly scored on PSS:FA were 4, 16, 19, and 20. In these cases items did, however, contribute significantly as expected.

Although all the items did not load as expected on the sub-components, two factors consistently emerged on the PSS in line with the hypothesised components of perceived support from family, and perceived support from friends, independent of the method of analysis. The construct validity of the PSS thus seems to receive some support in this sample of Setswana-speaking people.

Correlations between the PSS and scales measuring psychological well-being. The obtained correlations among the (sub)scales are in accordance with the hypothesised pattern, and support the concurrent validity of the PSS (See Table 3).

[Table 3 approximately here]

The PSS manifests significant negative correlations with symptoms of depression (GHQ:DS) and negative affect (AFM:NA), and significant positive correlations with indicators of psychological health / well-being (i.e. SOC, SWLS, AFM:PA and AFM:PNB). The fact that the pattern of correlations among these scales is the same as in other (western) samples, supports criterion-related validity, and further supports the cross-cultural validity of the PSS.

CONCLUSION

The Perceived Social Support Scale (PSS) of Procidano and Heller (1983), and its sub-scales measuring perceived support from friends (PSS:FR) and family (PSS:FA), manifested acceptable reliability indices in a Setswana-speaking group, in line with reliabilities indicated by Procidano and Heller (1983), and that reported by Johnson (1998) in a non-Setswana speaking South African sample from the Western Cape. Confirmatory and exploratory factor analyses supported the construct validity of the PSS,

and correlations with indices of psychological well-being and symptomatology supported the criterion-related validity of the scales. It can thus be concluded that, according to the criteria mentioned by Panounen and Ashton (1998), the PSS and its sub-scales (PSS:FR and PSS:FA) seem to have cross-cultural utility, and the current translated version can be considered applicable for use in a Setswana-speaking group. This scale can, however, be further refined for use in a Setswana-speaking group by excluding or adaptation of ambiguous or not significantly contributing items .

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TABLE 1: Means, variances and reliability indices for scales measuring social support, psychological well-being and symptomatology (N = 738)

(Sub)scales	Mean	SD	Range		Cronb
			min	max	alpha
Social Support					
(PSS FR) Perceived Social Support Friends	9.63	3.7	1	19	.67
(PSS FA)Perceived Social Support Family	11.77	4.7	0	20	.84
(PSS T) Perceived Social Support Total	21.4	7.5	3	39	0.85
Psychological Well-Being					
(SOC) Sense of Coherence	121.86	20.20	64	197	0.70
(SWLS) Satisfaction With Life	22.27	6.03	5	35	0.67
(PA) Positive Affect	36.04	6.48	14	50	0.68
(NA) Negative Affect	27.42	8.35	10	48	0.77
(PNB) Pos-Neg. Affect-balance	8.62	11.36	-25	40	□
Symptomatology					
(SS) Somatic symptoms	2.46	2.16	0	7	0.77
(AS) Anxiety and Insomnia	2.57	2.07	0	7	0.84
(SD) Social Dysfunction	2.25	1.65	0	7	0.52
(DS) Severe Depression	2.04	1.87	0	7	0.70
(GHQ-T) GHQ-Total	9.32	6.00	0	28	0.86

Note: SD = Standard deviation; □ = Chronbach alpha for PNB could not be calculated because this value consists of the sum of NA and PA

TABLE 2: Confirmatory principal component factor analysis of the PSS with varimax rotation

PSS Item no.	Factor 1	Factor 2	Comm.
PSS:FA 1	.52	.06	.31
PSS:FA 2	.63	-.00	.39
PSS:FA 3	.01	.13	.14
PSS:FA 4	.06	.04	.12
PSS:FA 5	.66	-.06	.41
PSS:FA 6	.66	-.07	.42
PSS:FA 7	.42	.06	.21
PSS:FA 8	.66	.03	.44
PSS:FA 9	.58	-.07	.34
PSS:FA 10	.63	-.01	.42
PSS:FA 11	.60	.01	.38
PSS:FA 12	.61	-.04	.40
PSS:FA 13	.63	-.00	.43
PSS:FA 14	.63	-.06	.44
PSS:FA 15	.64	-.05	.42
PSS:FA 16	.13	.07	.18
PSS:FA 17	.59	-.08	.35
PSS:FA 18	.54	-.08	.28
PSS:FA 19	.25	-.04	.16

PSS:FA 20	-.19	.20	.14
PSS:FR 1	.08	.61	.23
PSS:FR 2	-.14	.37	.16
PSS:FR 3	.41	.35	.26
PSS:FR 4	.46	.04	.25
PSS:FR 5	.34	.53	.30
PSS:FR 6	-.08	.18	.12
PSS:FR 7	-.20	-.45	.23
PSS:FR 8	.58	.05	.35
PSS:FR 9	.32	.22	.16
PSS:FR 10	.46	.27	.28
PSS:FR 11	.42	.41	.29
PSS:FR 12	.44	.46	.34
PSS:FR 13	.26	.33	.18
PSS:FR 14	.43	.20	.25
PSS:FR 15	-.08	.25	.13
PSS:FR 16	.48	.07	.26
PSS:FR 17	.50	.13	.27
PSS:FR 18	-.14	.16	.09
PSS:FR 19	.43	.34	.29
PSS:FR 20	-.18	28	12
Eigenvalues	8.28	2.08	
% Var.Expl	20.69%	5.68%	

TABLE 3: Correlations between the PSS:FA, PSS:FR and PSS:T on the one hand, and indices of psychological well-being on the other hand

Indices of psychological well-being	Perceived Social Support Scale		
	PSS:FA	**PSS:FR**	**PSS:Total**
SOC	.18*	.18*	.20*
SWLS	.08*	.14*	.12*
AFM:PA	.13*	.19*	.18*
AFM:NA	-.12*	-.11	-.13*
AFM:PNB	.16*	.19*	.20*
GHQ:SS	-.04	.00	.03
GHQ:AS	-.02	.04	.04
GHQ:SD	-.04	-.03	-04
GHQ:DS	-.13*	-.10*	-.13*
GHQ:TOT	-.06	-.02	-.05

Note: SOC = Sense of Coherence; SWLS = Satisfaction With Life Scale; PA = Positive Affect; NA – Negative Affect; PNB = Positive – Negative Affect Balance; SS = Somatic Symptoms; AS = Anxiety and Insomnia; SD = Social Dysfunction; DS = Severe Depression; GHQ:TOT = Total on General Health Questionnaire; *= $p<0.05$.