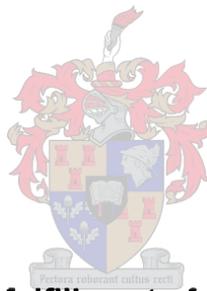


**THE DEVELOPMENT OF A XHOSA TRANSLATION OF  
THE BECK DEPRESSION INVENTORY-II**

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**Assignment presented in partial fulfillment of the requirements for the degree of  
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## **STATEMENT**

I, the undersigned, hereby declare that the work contained in this assignment is my own original work, and that I have not previously in its entirety or in part submitted it at any university for a degree.

## ABSTRACT

A review of the literature shows the Beck-Depression Inventory (BDI), and its revisions, to have received world-wide support over the past four decades as a screening instrument for depression, proving to be robust amongst various populations and in various translations. Although popular amongst health care practitioners in South Africa, the BDI and its revisions are, however, currently unstandardised amongst South African populations. This current research culminates in the development of a Xhosa translation of the latest revision of the BDI, the BDI-II that accurately reflects the contents of the BDI-II, the BDI-II-X. It is regarded as linguistically and grammatically robust enough to be easily understood by a broad spectrum of Xhosa respondents. The development of the BDI-II-X is discussed, and suggestions regarding future research are given.

## OPSOMMING

'n Oorsig van die literatuur dui aan dat die Beck Depression Inventory (BDI), en sy hersienings, oor die afgelope vier dekades wêreldwye erkenning ontvang het as 'n meet-instrument vir die identifisering van depressie, onder verskeie populasies en in verskeie vertalings. Alhoewel dit populêr onder gesondheidspraktisyne in Suid-Afrika is, bly die BDI, en sy hersienings, huidiglik ongestandardiseerd onder Suid-Afrikaanse populasies. Die navorsing wat aangebied word, word saamgevat in die ontwikkeling van 'n Xhosa vertaling van die nuutste hersiening van die BDI, die BDI-II, wat die inhoud van die BDI-II akkuraat reflekteer, die BDI-II-X. Taalkundig word die BDI-II-X beskou as 'n vertaling wat maklik onder 'n breë spektrum van die Xhosa populasie verstaanbaar is. Die ontwikkeling van die BDI-II-X word bespreek, en aanbevelings rakende toekomstige navorsing word aangebied.

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## 1. INTRODUCTION

Epidemiology studies over the past two decades have highlighted major depression as having amongst the highest prevalence levels of all psychiatric disorders in the general population, in both developed and developing countries (Kessler et al., 1994; Robins et al., 1984; World Health Organisation, 2001). Moreover, it is reported that major depression currently ranks fourth amongst the ten leading causes of the Global Burden of Disease (GBD; as measured in terms of the financial cost of lost working hours incurred within the workforce as a result of medical and psychological factors, amongst others). It is predicted that depression will rank second amongst the ten leading causes of GBD by 2020 (World Health Organisation, 2001). The World Health Organisation (WHO; 2001) emphasises that the economic burden of mental illnesses, such as depression, have been seriously underestimated. This sentiment has been echoed by studies that have underlined the significant annual cost that depression imposes upon society (Greenberg, Stiglin, Finkelstein, & Berndt, 1993a, 1993b).

In its 2001 Annual Report, the WHO identified various factors, including socio-economic factors, demographic factors (including age and sex), serious threats such as conflicts and disasters, the presence of major physical diseases, and the family environment, that determined the prevalence, onset and course of mental and behavioural disorders. A significant portion of the general population within South Africa continue to find themselves in circumstances of traumatic living that may be defined by, amongst others, high perceived levels of crime, violence, abuse, poverty, illiteracy, urbanisation, discrimination, single-parent family environments, and HIV/AIDS; and inadequate access to primary services such as running water, electricity, health care, and general support services.

These factors, amongst others, have been found to be associated with the development of depression both in South Africa (Berg, Joffe, & Nama, 1997; Carey, Stein, Zungu-Dirwayi, & Seedat, 2003; Gillis, Welman, Koch, & Joyi, 1991; Hickson & Kriegler, 1991; Hirschowitz & Orkin, 1997; Malanda, Meadows, & Catalan, 2001; Marais, de Villiers, Möller, & Stein, 1999; Mkize, 1994; Peltzer, Cherian, & Cherian, 1999; Pillay & Sargent, 1999) and abroad (Isac & Schneider, 1992; Kessler et al., 1994; Robins et al., 1984). In this regard, South Africa

remains a country vulnerable to the threat posed by depression, despite having just celebrated its first decade of democracy, as it continues to overcome the socio-economic and psychological legacy of *Apartheid* - the cost of which is measured in terms of human misery, physical and psychological disability, and economic loss.

Facing these and other stressors with inadequate coping skills or support structures vastly increases an individual's vulnerability to developing depression (WHO, 2001). The research findings of independent studies amongst South African samples regarding the prevalence of psychiatric disorders in general, and depression in particular, have supported this contention, reporting the prevalence of depression to range between 13% and 53% amongst the samples studied (Ben-Arie, Swartz, & Dickman, 1987; Ben-Arie, Swartz, Teggin, & Elk, 1983; Bhagwanjee, Parekh, Paruk, Peterson, & Subedar, 1998; Pillay, Edwards, Gambu, & Dhlomo, 2002; Gillis, Welman, Koch, & Joyi, 1991; Mkize, Nonkelela, & Mkize, 1998; Steyn et al., 2000).

Even when taking the high prevalence of depression reported in the studies above into account, research conducted in the mid-1990's by Strauss, Gagiano, van Rensburg, de Wet and Strauss (1995) concluded that major depression is being under-diagnosed by general practitioners in South Africa (reporting a 3.7% success rate), for reasons yet unknown<sup>1 2</sup>. In light of this, the importance of identifying depressed individuals so they may receive the appropriate treatment, becomes clear (Ben-Arie et al., 1987; Ben-Arie et al., 1983; Hirschowitz & Orkin, 1997), with Greenberg et al. (1993b) suggesting that greater efforts on the part of mental health practitioners at identifying sufferers of depression are warranted due to depression's potential for successful treatment.

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<sup>1</sup> It may well be that the depressogenic symptomology is co-morbid with, and possibly masked by, other physical conditions or psychological disorders that are associated with traumatic living conditions (such as poor health, post-traumatic stress disorder, or any number of anxiety disorders).

<sup>2</sup> Research by Hunt, Ariemma and Cashaw (2003) drew similar conclusions regarding the underestimation of the prevalence of depression in surveys of community samples. Their research did find, however, that disguising the purpose of the questionnaire yielded an increase in the reporting of core depressive symptoms amongst both men and women.

Supported by a plethora of studies over four decades, the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and its subsequent revisions, the BDI-IA (Beck, Rush, Shaw, & Emery, 1979) and the BDI-II (Beck, Steer, Ball, & Ranieri, 1996), have received worldwide acclaim as screening instruments for depression, and been shown to be robust amongst various population groups, and in various translations (a review of the literature follows in the next section). Apart from their sound psychometric profile, their popularity amongst medical practitioners and psychologists stems from the fact that as screening instruments for depression they only aid in the more efficient identification of current depressive episodes (and/or the severity thereof), and in no way predetermine the particular treatment to be met out.

The BDI and its subsequent revisions have proven to be just as popular within South Africa, even as an unstandardised measure amongst South African samples (see Fisha, 2003; Lester & Akande 1997; Mkize, Nonkelela, & Mkize, 1998; Pillay, Edwards, Gambu, & Dhlomo, 2002; Steyn et al., 2000; Ward, Flisher, Zisis, Muller, & Lombard, 2003; Westaway & Wolmarans, 1992). Using a locally unstandardised measure amongst South African samples has two particularly noteworthy implications, however. Firstly, this implicitly assumes that depressogenic symptomology manifests itself identically within South African samples as it does those samples for which the BDI has been standardised. In other words, that South Africans experience depression identically (with the same identifying features, as highlighted by the 21-item measure) not only to other international populations, but also to one another, irrespective of cultural backgrounds and worldviews. Secondly, this implicitly assumes that the severity of depression as experienced amongst South African populations can be accurately judged using the same cut-off scores identified for those international populations for which the measure has been standardised.

It may well be that the two assumptions mentioned above hold true, but to implicitly assume that they do without any substantiation beyond 'educated guesses' is not only unscientific, but also unethical. In his seminal work on the importance of understanding mental health in the cultural context within which it occurs, Swartz (1998) highlighted the dangers associated with ignoring the individual and his/her cultural context and worldview, or belief system, in an

attempt to force the client's presenting problem into a Western-centric paradigm for understanding mental health.

It is the contention of the author that Swartz (1998) is not discounting the applicability of psychometric measures within the mental health system, but rather that he is, amongst other things, calling for the responsible application of such measures by showing that they are culturally applicable and psychometrically accurate amongst various South African populations. As one of the most popular psychometric measures in clinical practice in South Africa, the BDI-II lends itself to such an in-depth psychometric investigation amongst a South African sample.

As the first step in that direction, this research has focused on the translation of the original English version of BDI-II into Xhosa (BDI-II-X). The decision to translate and investigate this particular measure is motivated not only by the increasing prevalence amongst South African populations, but also by the vast support the BDI and its revisions have received in the psychological literature over the past four decades. Looking at the broader picture, the ultimate goal is to standardise the BDI-II-X by conducting a standardisation study upon clinical and non-clinical Xhosa samples. Without an accurately translated measure, a pilot study and subsequent standardisation study of the BDI-II-X would be meaningless. The results of such a standardisation study will afford researchers and practitioners the opportunity to ascertain whether the validity, reliability and cut-off scores of the BDI-II-X can be compared to that of the BDI-II in international settings that, in turn, could influence the degree of confidence practitioners within medical or therapeutic settings have in the BDI-II-X as a screening instrument for depression amongst South African Xhosa-speaking samples.

Findings from a standardisation study such as this could impact on the manner in which depression is identified in primary health care settings in South Africa amongst Xhosa-speaking patients. The BDI-II is structured according to the fourth edition of the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; APA, 1994) diagnostic criteria for depression (Beck et al., 1996), as are the diagnostic criteria for depression found in the Structured Clinical Interview for DSM-IV Axis-I Disorders

(SCID; First, Spitzer, Gibbon, & Williams, 1995), both of which enjoy worldwide popularity amongst clinicians making clinical diagnoses<sup>3</sup>.

Given, then, the linguistic accuracy of the BDI-II-X, should it be found wanting as a screening instrument amongst Xhosa subjects, one would need to consider investigating the efficacy of the DSM-IV diagnostic criteria for depression (and therefore also the SCID), as cultural by-products (Lock, 1987), amongst this population. Albeit indirectly, such a standardisation study could therefore also play an integral role in the investigation of cultural similarities and differences observed in the presentation and diagnosis of depression amongst South African populations.

The research presented below aims to achieve the following:

1. Justify the decision to investigate the BDI-II amongst South African samples by reviewing the strong psychometric support garnered for the BDI and its revisions over the past three decades of its development;
2. Discuss the development of the BDI-II-X; and
3. Give a broad outline for future research involving the BDI-II-X.

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<sup>3</sup> Schotte, Maes, Cluydts, De Doncker and Cosyns (1997) have reported that the BDI as a self-report measure does not always exhibit a strong correlation with various interview measures of depression (since they both measure depression in a specific and unique fashion) despite the fact that their assessment criteria may overlap to a certain degree.

## 2. LITERATURE REVIEW

### 2.1 THE BDI AND THE BDI-IA

#### 2.1.1 An historical overview

Over the past three decades, the BDI has become one of the most widely researched, and accepted, screening instruments for possible depressogenic symptomology in normal populations, and for assessing the severity of the current depressive episode in diagnosed patients (Beck et al., 1996). First introduced in 1961, the items of the BDI were derived from clinical observations regarding the attitudes and symptomology frequently presented by depressed psychiatric patients and infrequently by non-depressed psychiatric patients (Beck et al., 1961). The resulting 21 items were divided up into a number of alternative statements per item, varying in severity (intensity) of content, and rated on a 4-point scale ranging from 0 (statement with no severity) to 3 (statement with highest severity; Beck et al., 1996). Designed to be administered by trained interviewers, the BDI has become most often used as a self-administered questionnaire (Beck, Steer, & Garbin, 1988).

The original BDI of Beck et al. (1961) was later amended (BDI-IA) in 1971 and copyrighted in 1978 (Beck et al., 1979). With the BDI-IA, an attempt was made to eliminate response sets and minimise the effects of memory, while also eliminating the alternative wordings of the same responses and double negatives found in the 1961 version<sup>4</sup> (Beck et al., 1988). Lightfoot and Oliver (1985) reported a Pearson product-moment correlation coefficient between the BDI and the BDI-IA of .94, concluding that the BDI can be safely substituted with the BDI-IA.

It would appear that researchers were generally unaware of the existence of the BDI-IA since the original 1961 reference continued to be cited in most research studies (Beck et al., 1996).

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<sup>4</sup> Dahlstrom, Brooks, and Peterson (1990) reported that randomising the statement-order for each item broke up a response set to endorse either the first or the last item, resulting in significantly higher BDI scores. Beck et al. (1996) commented on this finding, saying that while this may be the case, randomising the items might make the BDI a very difficult questionnaire for those psychiatric patients who suffer from concentration deficits, or who cannot cope with the random, disorganised, ordering of the items.

Since it is impossible to ascertain which of those studies that cite the original 1961 reference actually used the BDI and which of them used the BDI-IA, the psychometric results regarding the BDI detailed in the literature review do not distinguish between the BDI and the BDI-IA, unless explicitly stated otherwise. Subsequent to its first introduction, a vast body of research has accumulated with regards to the efficacy of the BDI, and later the BDI-IA, by means of reliability and validity studies.

## **2.1.2 The psychometric properties of the BDI and BDI-IA**

### **2.1.2.1 Reliability**

A review of those studies that used the BDI from 1961 to 1986 by Beck et al. (1988) reported a mean coefficient alpha for the BDI of .86 amongst psychiatric patients and .81 amongst non-psychiatric subjects. In a comprehensive meta-analysis of all those studies reporting reliability estimates for the BDI, Yin and Fan (2000) reported an overall mean reliability coefficient of .82 and mean internal consistency of .84. Reliability estimates of .86 have been obtained cross-culturally amongst student populations for the Chinese (Shek, 1990), the Portuguese (Gorenstein, Andrade, Filho, Tung, & Artes, 1999) versions of the BDI .

#### Test-retest reliability

The test-retest reliability coefficients reported by Beck et al. (1988) range from .48 to .86 for psychiatric patients and from .60 to .83 for non-psychiatric subjects, indicating that the BDI does demonstrate substantial stability, especially for the non-psychiatric group, over a one-week period. When one considers that the BDI is a short-term measure of depression, then this 1-week stability can be regarded as satisfactory. Yin and Fan (2000) reported a mean test-retest reliability coefficient of .72 for the BDI, findings that are comparable to those of Beck et al. (1988). The relevance of the BDI's test-retest reliability is questioned by Groth-Marnat (1997), who highlights the uncertainty that surrounds whether the BDI measures state or trait characteristics (with lower test-retest coefficients to be expected in the event of the former and higher coefficients to be expected in the event of the latter).

### **2.1.2.2 Validity**

#### Content validity

Strong support has been generated for the validity of the BDI. Beck et al. (1988) reported strong evidence for the content validity of the BDI in that the BDI reflects six of the nine DSM-III criteria well, while only partially addressing two DSM-III criteria (loss of appetite and insomnia, with no reference to possible increased appetite or hypersomnia) and leaving out one of the DSM-III criteria totally (references to agitation). According to Steer and Beck (1985), increases in appetite and hypersomnia occur so frequently in normal populations that the inclusion of those two items in the BDI might result in a high rate of "false positives"; identifying individuals as depressed when they were actually not. Furthermore they noted that, as a clinically observable sign, agitation was not considered appropriate for a self-report instrument and was therefore not included in the BDI.

#### Concurrent validity

Support for the concurrent validity of the BDI, or how strongly the BDI correlates with other measures of depression, has also been established. In their meta-analysis of 25-years of research on the BDI, Beck et al. (1988) reported that the BDI not only exhibited a positive relationship with clinical assessments of depression ( $.55 \leq r \leq .96$ ) but also demonstrated positive relationships with four commonly used measures of depression (Table 1).

The strong relationship between the BDI and the Hamilton Psychiatric Rating Scale for Depression was observed in a study conducted by Brown, Schulberg and Madonia (1995), with correlations ranging between .70 and .85. The BDI has also been reported to demonstrate positive relationships with the Dempsey D30 Depression Scale ( $r = .82$ ; Vredenburg, Krames, & Flett, 1985), the Geriatric Depression Scale ( $r = .79$ ; Gatewood-Colwell, Kaczmarek, & Ames, 1989), and the Reynolds Adolescent Depression Scale ( $r = .58$ ; Atlas & DiScipio, 1992). Atlas and DiScipio (1992) conclude, however, that despite this relationship, the Reynolds Adolescent Depression Scale did not identify depression amongst their adolescent sample as effectively as the BDI did.

### Discriminant validity

With regards to the BDI's discriminant validity, Beck et al. (1988) reported on various studies that have found the BDI capable of discriminating psychiatric from non-psychiatric subjects, while Steer, Beck, Brown and Berchich (quoted in Schotte, Maes, Cluydts, De Doncker, & Cosyns, 1997) found that DSM-III major depressive outpatients obtained significantly higher BDI scores than dysthemic outpatients; attesting to the ability of the BDI to discriminate between depressive disorders. A similar study conducted by Schotte et al. (1997) amongst a sample of patients with unipolar depression found the BDI capable of distinguishing between minor, major and melancholic/psychotic unipolar depressive subgroups. Gorenstein et al. (1999) recently found the BDI to have a 96.0% success rate in correctly identifying non-depressed participants, and a 97.5% success rate in correctly identifying depressed participants amongst a sample of Brazilian college students.

Table 1:

#### *Correlation indices between the BDI and four commonly used measures of depression*

Assessment Measures	Correlation ( <i>r</i> ) Indices According to Patient Status		
	Psychiatric patients	Non-psychiatric patients	Combined samples
Hamilton Psychiatric Rating Scale for Depression (HRSD)	$.57 \leq r \leq .86$	$.73 \leq r \leq .80$	$r = .41$
Zung Self-reported Depression Scale (Zung)	$.70 \leq r \leq .83$	$.62 \leq r \leq .86$	$.76 \leq r \leq .81$
MMPI Depression Scale (MMPI-D)	$.41 \leq r \leq .70$	$.63 \leq r \leq .75$	$.57 \leq r \leq .59$
Multiple Affect Adjective Checklist Depression Scale (MAACL-D)	$.59 \leq r \leq .66$	N/A	N/A

### Construct validity

Support for the BDI's construct validity was found by Beck et al. (1988) who reported on various studies that have shown the BDI to be positively correlated with: a) biological factors such as concentrations of plasma 11-hydroxycorticosteroids (a biological correlate of depression), b) suicidal behaviours and quantity of alcohol consumption, c) student maladjustment, d) medical symptoms such as headaches, upset stomachs, and e) depressive

thoughts, loneliness, and stress, and negatively correlated with: a) biological factors such as REM latency (an indicator of sleep difficulty), b) marital adjustment, and c) social desirability.

### Factorial validity

Investigations into the factorial validity of the BDI have yielded anything from three to seven factors, depending on the factor analytic extraction procedure used (Endler, Rutherford, & Denishoff, 1999). It has also been reported that the BDI measures a general syndrome of depression that is comprised of several highly correlated factors (Clark, Cavanaugh, & Gibbons, quoted in Endler et al., 1999; Louks, Hayne, & Smith, 1989; Tanaka & Huba, quoted in Endler et al., 1999; Welch, Hall, & Walkey, 1990).

The lack of consensus regarding the dimensionality of the BDI might be a legacy of how the BDI was initially conceptualised both theoretically and practically. While Beck et al. (1961) noted that the BDI was designed to measure the behavioural manifestations of depression, with the 21 symptoms and attitudes found in the BDI being included solely on the verbal descriptions of the psychiatric patients, and not to reflect any particular theory of depression (Beck et al., 1996), the 21-items included in the BDI clearly measure not only those behaviours associated with depressogenic symptoms, but also the dysfunctional cognitions frequently associated with the presence of depression. Despite this lack of consensus, many researchers seem to recognise the multidimensional nature of the BDI, including affective, cognitive, physiological, and interpersonal components (Beck et al., 1988; Bouman & Kok, 1987; Endler et al., 1999; Louks et al., 1989; Vredenburg et al., 1985).

The strong support for the reliability, validity, and multidimensional factor structure of the BDI has also been replicated cross-culturally, including that of a Persian translation of the BDI used amongst Iranian college students (Hojat, Shapurian, & Mehryar, 1986), the Chinese version of the BDI amongst Chinese students (Shek, 1990), the French version of the BDI amongst French adolescents (Byrne, Baron, & Campbell, 1994), the Swedish version of the BDI amongst Swedish adolescents (Byrne, Baron, Larsson, & Melin, 1995), the Bulgarian version of the BDI amongst Bulgarian adolescents (Byrne, Baron, & Balev, 1998), the Portuguese version of the BDI amongst Portuguese students in Brazil (Gorenstein et al.,

1999), and the Spanish version of the BDI amongst non-clinical Spanish adolescents (Canals, Blade, Carbajo, & Domènech-LLaberia, 2001).

Research on the 13-item short-form of the BDI developed by Beck and Beck (1972) has echoed the positive psychometric properties found for the longer 21-item form of the BDI, and has been researched amongst a wide range of populations and translations (Beck & Beck, 1972; Beck et al., 1988; Foelker, Shewchuk, & Niederehe, 1987; Hojat, Shapurian, & Mehryar, 1986; Leahy, 1992; Volk, Pace, & Parchman, 1993). Furthermore, Beck et al. (1988) have reported that the short- and long-forms have proven in various independent studies to be strongly correlated with each other, with correlations ranging from .89 to .97.

#### Relationship with demographic variables

The meta-analysis conducted by Beck et al. (1988) highlighted conflicting research findings regarding the relationship between BDI (and BDI-IA) scores and demographic variables, including gender, age, level of education and race. Despite this, the research they reviewed seemed to suggest that women sometimes reported higher BDI scores than men, that adolescents tend to score higher than adults, and that non-white respondents tend to score higher than white respondents.

## **2.2 THE BDI-II**

### **2.2.1 The development of the BDI-II**

#### **2.2.1.1 An historical overview**

As a more updated and modernised assessment instrument, the BDI-II builds on the accumulation of psychometric data and clinical experience with the BDI and BDI-IA over three decades, and was developed as an indicator of the presence, and degree, of depressogenic symptoms (consistent with the DSM-IV diagnostic criteria) in normal populations and psychiatrically diagnosed adults and adolescent patients, 13 years and older (Beck et al., 1996).

The major differences between the BDI-II and the BDI-IA (in terms of item content), resulting from a series of item and factor analyses using the responses of 193 psychiatric patients presenting a broad spectrum of disorders, were as follows:

- (a) four items of the BDI-IA that were found to be less effective indicators of depression amongst depressive outpatients and short-term inpatients, than amongst the long-term hospitalised patients from whose clinical observations they were originally derived from, were dropped (including the items of Body Image Change, Work Difficulty, Weight Loss and Somatic Preoccupation);
- (b) new items that reflected some of the DSM-IV diagnostic criteria were added (namely those of Agitation, Worthlessness, Loss of Energy and Concentration Difficulty);
- (c) eleven of the remaining BDI-IA item labels were reworded;
- (d) the BDI-IA names of the items of reflecting insomnia and loss of appetite were renamed to Changes in Sleeping Pattern and Changes in Appetite, respectively, and statement alternatives were added to each of them so as to reflect both increases and decreases in sleep or appetite;
- (e) many of the statement alternatives within each item were reworded so as to better reflect the DSM-IV diagnostic criteria; and
- (f) the BDI-II investigates the presence of depressogenic symptomology over the past two weeks (including the day the test is taken) as opposed to the past one week, in the case of the BDI-IA.

As a result of the vast changes that were brought about to the BDI-II during its development it was necessary for it to be standardised.

#### **2.2.1.2 The standardisation of the BDI-II**

The standardisation samples used by Beck et al. (1996) consisted of 500 outpatient participants who had already been diagnosed according to DSM-III-R or DSM-IV criteria by experienced psychologists and psychiatrists, and 120 college students who served as a comparative normal group. Both groups were predominantly White.

### Reliability

The reliability study yielded the following results: a) coefficient alphas of .92 and .93 for the outpatients and the college students respectively; b) item-option characteristic curves of the outpatients showing all of the items to demonstrate increased monotonic relationships with overall self-reported depression, while 17 of the 21 items reflected the appropriate ordinal rankings so as to discriminate between respondents with varying levels of depression; and c) a significant test-retest correlation of .93 between the BDI-II scores taken at the first two therapy sessions (1-week apart) amongst a sub-sample of 26 outpatients.

### Validity

The BDI-II's construct validity was investigated by testing for convergent and divergent validity of the BDI-II using outpatient sub-samples. The most significant correlations with various other measures exhibited by the BDI-II during the standardisation study appear in Table 2.

Table 2

*Correlation indices between the BDI-II and various other assessment measures during the original standardisation study (Beck et al., 1996)*

Assessment Measure	Outpatient Sample Size (N)	Correlation ( <i>r</i> ) Indices Across Outpatient Samples
BDI-IA <sup>†</sup>	191	.93
	127	.84
Hamilton Psychiatric Rating Scale for Depression	87	.71
Beck Hopelessness Scale	158	.68
Scale for Suicide Ideation	158	.37
Beck Anxiety Inventory	297	.60
Hamilton Rating Scale for Anxiety	87	.47

<sup>†</sup> Note: the relationship between the BDI-II and the BDI-IA were tested between two separate samples during the original standardisation study.

The significant positive correlation between the BDI-II and both the Beck Anxiety Inventory and the Hamilton Rating Scale for Anxiety in Table 2 is not surprising when one considers that depression and anxiety have been found to be correlated in clinical evaluations (Beck et al., 1996). An assessment of the BDI-II's factor validity for the two samples yielded two factors for each sample, namely Somatic-Affective and Cognitive for the outpatients, and Cognitive-Affective and Somatic for the college students.

## **2.2.2 The psychometric properties of the BDI-II**

### **2.2.2.1 Reliability**

Subsequent to the standardisation of the BDI-II by Beck et al. (1996), a number of replication studies have been conducted. These studies have yielded coefficient alphas for non-clinical (student and adult) samples ranging from .89 to .91 (Dozois, Dobson, & Ahnberg, 1998; Osman et al., 1997; Sanz, Navarro, & Vazquez, 2003; Steer & Clark, 1997; Whisman, Perez, & Ramel, 2000), and coefficient alphas for clinical outpatient (adolescent and adult) samples ranging from .90 to .92 (Beck et al., 1996; Grothe et al., 2005; Steer et al., 1997, 1999; Steer et al., 1998).

### **2.2.2.2 Validity**

#### **Convergent and divergent validity**

The BDI-II has been shown to correlate strongly ( $r = .93$ ) with the BDI-IA (Dozois et al., 1998) and have a more positive relationship with the Depression Subscale ( $r = .89$ ), as opposed to the Anxiety Subscale ( $r = .71$ ) of the SCL-90-R (Steer et al., 1997). Osman et al. (1997) found the BDI-II to correlate significantly and positively with both general and specific measures of depression when controlling for anxiety symptoms and the same trend was noticed between the BDI-II and general and specific measures of anxiety when controlling for depressive symptoms. They did, however, report that the BDI-II scores were more highly correlated on related depression measures than with scores on the anxiety self-report measures. Krefetz, Steer, Gulab and Beck (2002) found the BDI-II to correlate strongly ( $r = .84$ ) with the Reynolds Adolescent Depression Scale amongst a sample of psychiatric inpatients. With measures measuring general distress, Osman et al. (1997) found a significant negative correlation between the BDI-II and the Rosenberg Self-Esteem

Questionnaire, and a significant positive correlation between the BDI-II and the DASS-Stress Questionnaire.

Further evidence for the concurrent and discriminant validity of the BDI-II is provided by Steer and Clark (1997) who reported a significant positive correlation between the BDI-II and the Sociotropy ( $r = .35$ ) and Solitude ( $r = .32$ ) subscales (measuring feelings of loneliness and ambivalence about entering relationships, aspects of autonomy, assertiveness and independence) of the Sociotropy and Autonomy scales (SAS), and a non-significant negative correlation between the BDI-II and the SAS Independence subscale ( $r = -.10$ ). These findings have generally lent support to the concurrent and discriminant validity respectively, of the BDI-II.

#### Factorial validity

Factor analyses amongst student populations have, in some studies, yielded two main factors, namely Cognitive-Affective and Somatic/Somatic-Vegetative (Dozois et al., 1998; Grothe et al., 2005; Steer & Clark, 1997; Storch, Roberti, & Roth, 2004; Whisman et al., 2000), while Osman et al. (1997) identified three main factors (Negative Attitude, Performance Difficulty, and Somatic Elements). Amongst clinical adolescents, Steer et al. (1998) extracted three first-order factors, Cognitive, Somatic-Affective and Guilt/Punishment, reflective of a single second order dimension of self-reported depression. This is similar to the factor structure identified by Steer et al. (1999) amongst clinically depressed adult outpatients, where they extracted two first order factors, Somatic-Affective and Cognitive which they hypothesized to represent a second-order factor of self-reported depression.

Whisman et al. (2000) concluded that the trend of extracting two factors from the BDI-II, as opposed to the three factors that were often extracted from the BDI, is an indication that the BDI-II represents a substantial revision of the original BDI, while Dozois et al. (1998) suggested that this substantial revision may have resulted in an improvement of the factorial validity from the original BDI.

### Relationship with demographic variables

With respect to the relationship between BDI-II-scores and the demographic variables of age, sex, and ethnicity, the results have not been unanimous. Some studies reported no significant relationship between age and BDI-II-scores (Beck et al., 1996; Krefetz, Steer, & Kumar, 2003; Osman et al., 1997; Steer et al., 1997; Steer & Clark, 1997), while Steer et al. (1998) reported a positive relationship between these two variables. Even though the relationship between age and BDI-II-scores was found to be non-significant, Steer et al. (1999) reported a quadratic relationship between BDI-II-scores and age, with the severity of the self-reported depression increasing from 18 years of age to approximately 38 years of age, and then decreasing up till 82 years of age.

Beck et al. (1996), Dozois et al. (1998) and Steer and Clark (1997) all failed to find differences between males and females on BDI-II-scores, while other studies reported significant differences between males and females regarding BDI-II-scores, with women scoring significantly higher than men (Steer et al., 1997, 1999; Steer et al., 1998). Finally, no significant relationship has been found between BDI-II-scores and the participant's race/ethnicity (Beck et al., 1996; Osman et al., 1997; Steer et al., 1997, 1999; Steer et al., 1998).

From the above literature review, it is clear that a) the BDI-II compares favourably with the BDI-IA with regards to reliability and validity, b) the BDI-II shows a strong positive correlation with the BDI-IA, and c) the BDI-II might be an improvement of the BDI-IA with regards to a more clearly delineated factor structure.

What is of clinical importance, though, is how these two editions compare with regards to mean total scores and item endorsements since this would impact on their respective cut-off scores. In their standardisation study, Beck et al. (1996) found the mean BDI-II score amongst two outpatient sub-samples (21.88 and 21.63) to be 2.96 and 3.48 points higher than the mean BDI-IA score (18.92 and 18.15). This trend was clearly visible when the two instruments were compared in a calibration study using an equipercentile equating method; the equated BDI-II scores were found to be three points higher than the BDI-IA scores near

the middle of the distributions, while there were smaller differences between the two instruments in the lower regions of the distributions and larger differences at the upper regions (Beck et al., 1996).

Furthermore, Beck et al., (1996) found that outpatients tended to endorse (choosing a response option with a severity weight of greater than zero; i.e. 1, 2, or 3) significantly more items on the BDI-II than on the BDI-IA, which would obviously lead to inflated BDI-II scores amongst these samples. These findings were replicated in a number of other studies (Beck et al., 1996; Dozois et al., 1998; Steer, Clark, Beck & Ranieri, 1998).

The cut-off scores developed for the BDI-II (Beck et al., 1996) differed from those developed for the original BDI (Table 3). The increased cut-off scores developed for the BDI-II are more likely to lead to fewer false positives, but do create the opportunity for an increase in false negatives (Beck et al., 1996; Beck et al., 1988).

Table 3

*A comparison of the cut-off scores developed for the BDI and the BDI-II*

Severity of Depression	Cut-off scores according to measuring instrument	
	BDI	BDI-II
Minimal Depression	0 - 10	0 - 13
Mild Depression	10 - 18	14 - 19
Moderate Depression	19 - 29	20 - 28
Severe Depression	30 - 63	29 - 63

It is evident on the basis of the findings of the studies above that the BDI and its revisions have withstood careful scrutiny and investigation within a wide range of populations, and in diverse cultural contexts. As such, the BDI-II can be considered a measure that deserves to be investigated within the South African context, most notably as a measure translated into an African language, as much as (if not more than) any other psychological assessment measure currently in use in South Africa.

### 3. THE DEVELOPMENT OF THE BDI-II-X

#### 3.1 The rationale behind the need for the BDI-II-X

The future of psychology within South Africa depends on its ability to prove itself to be relevant within the African context. As Swartz (1998) pointed out, this includes an openness towards understanding the cultural contexts within which poor mental health manifests itself within different cultures. A fair degree of caution needs to be exercised in this regard, however. On the one hand, accurately translating a measure such as the Beck Depression Inventory-II into an African language, and testing it to see whether it reflects how depression is understood and experienced within a particular cultural context, could go a long way in bridging the divide between Western and African paradigms of understanding mental health, in this case depression. On the other hand, however, the search for cultural equivalents for what some might construe as 'Western' emotional states could be interpreted as an attempt to expand the ideology of Western social systems (most notably that of positivistic biomedicine) via 'academic colonialism'. Although this point is very strongly made by Drennan and Swartz (1991), concluding that the extent to which 'Western' concepts for affective states can be rendered in non-Western languages and cultural settings should not be taken for-granted, it can be argued that this is the *status quo* whenever the DSM-IV or the SCID are used to identify symptoms of poor mental health amongst non-Western cultural populations.

It is this author's contention, that research involving the translation of psychometric measure is important, if not useful. If the research into the validity of such a translation succeeds in either validating the 'educated guesses' that depression is not experienced significantly differently amongst African and non-African populations, or succeeds in showing that there is a significant difference between the way it is conceptualised within Western paradigms of mental health and the way it is actually experienced in African populations, it would have proven worthwhile and invaluable. This would promote psychology in South Africa as a relevant medium for the upliftment of all South Africans, as opposed to its erstwhile role of subjugating a nation in its attempts to justify and promulgate an oppressive political regime.

### 3.2 Research objectives

The primary objective of this research was to develop a Xhosa translation of the BDI-II that

- (a) *accurately* reflects the semantic content of each of the items of the BDI-II; and
- (b) taking into account that there exists various dialects within the Xhosa language, the language used in the translation needed to be such that it could be understood by teenagers, adults, and the elderly; by educated as well as uneducated individuals; and by rural and urban populations.

### 3.3 Method

The BDI-II-X was developed from the BDI-II using two complementary translation techniques, namely the committee approach (Drennan & Swartz, 1991), followed by back-translation (Brislin, 1986). The BDI-II was collaboratively translated from English to Xhosa by a bilingual<sup>5</sup>, first-language Xhosa-speaking lecturer at the African Languages Department of the University of Stellenbosch, and a bilingual, first-language Xhosa-speaking, DPhil Psychology student. Using the committee approach, the combined input of the translators was discussed during the course of numerous meetings facilitated by the researcher. Once a satisfactory translation was achieved (one which was thought to accurately reflect the semantic, or conceptual, meaning of the original text), it was sent to a qualified bilingual, first-language Xhosa-speaking translator employed by the Language Centre of the University of Stellenbosch (who had not previously seen the BDI-II) to translate it back into English. The content of this English back-translation was then compared to the content of the BDI-II. The closer the two English translations compared to one another in content, the more accurate the Xhosa translation was assumed to be. Figure 1 illustrates the decision-making paradigm involved during the translation - back-translation process.

The development of the BDI-II-X was time-consuming process due to the fact that there were numerous English words and phrases for which there exist no direct Xhosa translations. As mentioned earlier, this necessitated that the *meaning* behind those particular English words

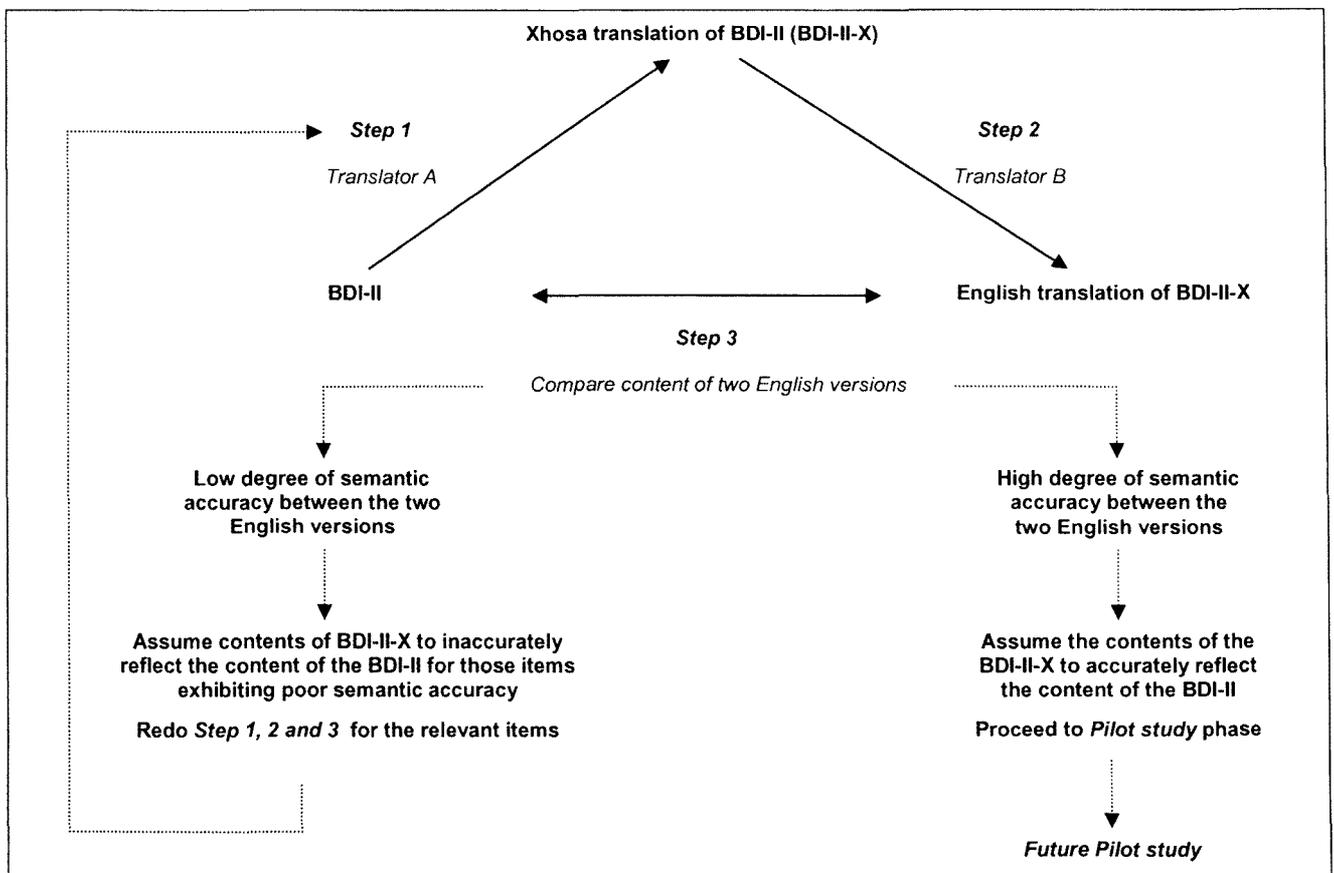
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<sup>5</sup> This implies that the translators were fully literate, as gauged by how comfortable they rated themselves, in spoken and written proficiency, in the source language (English) and the target language (Xhosa).

needed to be *described* in Xhosa<sup>6</sup>. It required numerous attempts before the English back-translation of those Xhosa descriptions accurately reflected the semantic content of the BDI-II.

The protocol employed during the translation – back-translation process successfully addressed two primary challenges, namely: ensuring that the final Xhosa translation was meaningful within the psychological context within which it would be applied, while also ensuring that the language usage was appropriate for as broad a spectrum of the Xhosa-speaking population as possible; and ensuring that the back-translation process proceeded as objectively as possible.

Figure 1 A translation - back-translation decision-making paradigm.



<sup>6</sup> There does not exist a *direct* translation in Xhosa for the word 'depression'. While there is an alternative word, "ukudakumba", which literally means 'to feel down', this word does not necessarily carry the same emotional connotation as the word 'depressed', because one may feel 'down' and not necessarily be depressed.

### **3.4 Results and discussion**

The content of the final translation of the BDI-II-X is analysed below along two fronts, namely item-by-item and as a whole. The author, being illiterate in Xhosa, has relied heavily on the personal communication with each of the translators during the course of the translation process to undertake this analysis. Only those items of the BDI-II-X that contain words and/or phrases that differ significantly from the BDI-II in terms of *direct* translation (in other words, where the *meaning* of the English words needed to be described in Xhosa) will be discussed.

#### **3.4.1 The BDI-II-X: item-by-item**

##### The instructions

Reading the instructions, the reader is asked to circle the number (either 0, 1, 2, or 3) next to the statement they have picked for each item. The word 'circle' has no direct Xhosa translation in this context, and is therefore translated as 'biyela' which literally means 'put inside'<sup>7</sup>.

##### Item 2: Pessimism

The word 'pessimism', having no direct Xhosa equivalent, has been translated into Xhosa as a description, 'ukuthanda ukubona ububi kwinto yonke', which literally means 'to like to see the bad in everything'.

##### Item 3: Past failure

In Xhosa, the word 'past' is translated as 'ixesha elidlulileyo', meaning 'the past tense' or 'the past time'. This translation is, however, inappropriate when using the phrase 'past failure', and as such it is translated as 'Ukungaphumeleli kwixesha elidlulileyo', literally meaning 'not to succeed in the past'.

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<sup>7</sup> Within the context of using the word 'circle' as a noun, as in the sentence *show me the circle*, it would then be translated into Xhosa as 'isangqa'.

### Item 5: Guilty feelings

The phrase 'guilty feeling' is translated in the BDI-II-X as 'isazela', meaning 'conscience'. It is possible to translate the English phrase directly, as 'ukuziva unesazel', literally meaning 'to feel guilty', or 'imizwa enesazela', meaning 'feeling that [you] are guilty'. This is an instance where, although the translation might have been made directly, the choice of translation came down to the translators' 'feel' for what might sound more appropriate, given the context of what the item was attempting to measure, namely the degree to which the respondent has something on their conscience or not.

### Item 11: Agitation

With no direct Xhosa equivalent for the word 'agitation', the connotations associated with the word has been described instead as 'ukungabi nakuzinza', literally meaning 'not to be able to be still', akin to pacing up and down. Although it can be argued that there are numerous other connotations that can be associated with agitation (such as anger, impatience and so forth), the translators were of the opinion that within the context of the Xhosa language, the description of an inability to remain still in one place would be interpreted by the average Xhosa individual as a sure sign of someone being agitated.

### Item 13: Indecisiveness

Without an equivalent direct Xhosa translation, 'indecisiveness' is described as 'ukungafikeleli kwizigqibo', literally meaning 'not to be able to reach decisions'.

### Item 17: Irritability

As was the case with Item 11, 'Agitation', it was necessary to describe an appropriate connotation associated with the concept of 'irritability'. The Xhosa translation of 'ukukhawulezelwa ngumsindo', which literally means 'becoming angry quickly', was decided upon as the most distinctive description of someone being irritable. It is noted that the descriptions of Item 11 and Item 17 might overlap somewhat for certain respondents, but only further research on the BDI-II-X, including item analyses, will be able to determine whether this overlap is in any way significant or not.

#### Item 18: Changes in appetite

The word 'appetite' could also not be translated directly into Xhosa. Instead, it was described in the Xhosa translation as 'umdlawokutya', literally meaning to have an 'interest in food'.

#### Item 19: Concentration difficulty

Finally, there is no direct translation for 'concentration' in Xhosa. As such, it is translated as 'ukuzikisa ingqondo', which literally means 'to make the mind stable'. Any respondent who therefore struggles with concentration difficulties, would be struggling to 'make [their] mind stable' enough for them to focus on a given task.

It is clear from the above that the Xhosa language is an eloquent, descriptive one that often attempts to describe the essence of a particular English word or phrase. This has resulted in a translated questionnaire that is lengthier in Xhosa than it is in English, taking longer to read and complete. It will be important to investigate how this might influence the completion of the BDI-II-X in particular, where it will be necessary for Xhosa-speaking respondents to hold long sentences or phrases in their memory simultaneously, while comparing just how appropriate each one is in describing how they have experienced the past two weeks prior to the assessment. A possibility exists that this might tire out or frustrate older respondents, respondents with co-morbid Attention Deficit Hyperactive Disorder, those respondents with memory-deficit related disorders or those respondents who are very irritable or agitated at the time of the assessment, all of whom might struggle with memory retention or motivation.

### **3.4.2 The BDI-II-X: An overall analysis**

Looking at the overall process of translating the BDI-II into Xhosa, the primary obstacle faced by the translators was the non-equivalence of certain English and Xhosa words and phrases, and the fact that some Xhosa words tend to have cultural connotations that might not be shared by their English counterparts, necessitating the translator to find alternative words that are linguistically accepted, and culturally acceptable, by Xhosa people.

Be that as it may, however, the feedback received from all the translators involved in this project concludes the following:

- (a) that the content of the BDI-II-X *accurately* reflects the content of the BDI-II, if not always literally, then in meaning;
- (b) that the BDI-II-X is written in standard Xhosa, and in a very simple, and easy-to-understand language style; and
- (c) that the BDI-II-X is appropriate across all of the various Xhosa dialects, and can be easily understood by a wide range of Xhosa populations, including:
  - i. children, adults and the elderly;
  - ii. rural and urban populations (albeit that urban populations might use more slang in their everyday, informal communication); and
  - iii. educated and, within reason, uneducated populations

The success of this project lies in the development of a measure that is considered accurate enough to be considered ready for further investigation. Before the next step, a pilot study amongst non-clinical first-language Xhosa-speaking respondents, can be taken, however, it is necessary to register the BDI-II-X with the owners of the BDI-II, Harcourt Assessment, Incorporated, who hold all the rights associated with the BDI, its revisions and its translations.

## 4. FUTURE RESEARCH

### 4.1 Broad considerations

Future research on the BDI-II-X needs to begin with a pilot study of this measure amongst a sample of non-clinical Xhosa respondents. A brief outline for such a pilot study is given below. It should not be considered prescriptive, or exclusive, in any way, but only as an indication of what the first pilot study of the BDI-II-X could look like.

It is important that the pilot study be, first-and-foremost, manageable, and secondly, meaningful in its results. To meet these two criteria, the pilot study needs to access a readily available population, from which to obtain respondents; obtain data from a sample size capable of yielding statistically meaningful results; and not attempt to investigate too many aspects of the BDI-II-X – less will prove to be more. Student populations have proven popular over the years in psychological research, in that the ease with which they can be accessed in large numbers has made research studies very easy to manage. It is therefore suggested that the pilot study make use of samples of non-clinical Xhosa students studying at the various tertiary institutions in the Western Cape.

Meaningful research is driven by addressing gaps in the existing literature. The first gap is highlighted by a review of the South African literature, where it is clear that there exists a need for the investigation of the psychometric properties of the BDI-II amongst South African samples. Not only would an evaluation of the psychometric properties of the BDI-II-X serve to address that need, but it would also lay the foundation for an in-depth investigation into the reliability and validity of the BDI-II-X within a South African context, and an African context in particular, by way of a standardisation study.

The second gap is highlighted by the international literature, where the variable nature of the factor structure of the BDI and the BDI-II has been brought to light. Identifying the factor structure of the BDI-II-X will be important in understanding the presentation of depressogenic

symptomology amongst Xhosa respondents. It has been argued that, due to cultural differences, depression may manifest itself differently in African populations (Drennan & Swartz, 1991; Swartz, 1998) than in, say, American or European populations. The extraction of the underlying factor structure of the BDI-II-X could highlight possible similarities or differences in the presentation of depressogenic symptomology between these two, culturally distinct, groups.

In summary then, the research objectives of the pilot study would involve determining the psychometric properties of the BDI-II-X amongst a sample of non-clinical Xhosa students studying at tertiary institutions in the Western Cape. Furthermore, such a pilot study would simultaneously aid in the identification, and addressing, of the possible pitfalls that may be encountered in the standardisation study that would follow it.

## **4.2 Method**

### **4.2.1 Participants**

The non-clinical sample for the pilot study should include a sample of at least 210 non-clinical adolescent and adult Xhosa students studying at the major tertiary institutions in the Western Cape, whose ages range upwards from 16-years of age. Although the literature is divided regarding the sample sizes necessary to obtain statistically meaningful results when conducting factor analyses, with the items-to-participants ratio ranging from 1:5 to 1:10 (Field, 2000; Nunnally, 1978), the sample size above would satisfy the strictest of criteria for studying the factor structure of the 21-item BDI-II-X.

### **4.2.2 Measures and procedure**

After having obtained permission from the necessary authorities at each of the tertiary institutions, prospective participants are approached to partake in what should be described to them as a 'quick, general mood survey'. Students might be more guarded in their responses were they to know that the questionnaire measures their levels of depression. Furthermore, participants should be assured that their responses are completely confidential

and that they do not have to provide any personal, identifying information such as their name or student number.

The students that indicate that they wish to participate in the survey are asked to complete three questionnaires. The first questionnaire gathers general demographic information about the student, including their gender, age, course of study, whether they live on campus or at home, whether they are single or in a relationship or marriage, and so forth. The second questionnaire is the BDI-II-X. It might be prudent to title the questionnaire 'General Mood Questionnaire', as this might be perceived as less intimidating and clinical as the abbreviation 'BDI-II-X'. The third questionnaire offers the student to provide feedback regarding the 'Mood Questionnaire' itself, with respect to whether it was easy to understand, whether there were any confusing or ambiguous sentences, and so forth. This qualitative data will be valuable in assessing the face validity of the BDI-II-X.

Although it is initially assumed that the student sample is a non-clinical one, some students might present with mild to severe depression. This will only be evident after their BDI-II-X score has been calculated – a procedure that does not take place within the presence of the student. It would therefore be the ethical responsibility of the researchers to provide each and every student who participates in the survey with the contact details and other relevant information of their local (or campus) counselling centre.

#### **4.2.3 Statistical procedures**

The statistical analysis of the results of the first pilot study should be limited to the reliability and factorial validity of the BDI-II-X, an investigation into any possible relationship between a participant's BDI-II-X score and his or her demographic information, and a comparison between male and female participants' scores.

The reliability of the BDI-II-X is measured by way of the internal consistency of the BDI-II-X. This is determined by calculating Cronbach's coefficient alpha. An item-analysis should also be conducted by calculating the corrected item-total correlations (the correlation between an

item and the total score if the item score is not included in the total score). In determining the significance of the corrected item-total correlations on the .05 level, a Bonferroni adjustment ( $\alpha/21$ ) should be used to control for the familywise error rate in each sample.

The factorial validity is investigated by determining the factor structure of the BDI-II-X using a principal component factor analysis. Factors are extracted using Kaiser's criterion and the scree plot (Field, 2000). Since previous research on the BDI has indicated that the inventory reflects related factors, an oblique rotation of factors will be used to maximise the loadings of items onto the extracted factors.

## 5. CONCLUSION

This research has succeeded in developing a semantically accurate Xhosa translation of the English BDI-II, setting the platform for future psychometric research on a measure that has been shown to be robust between population groups and across language or cultural barriers (predominantly in the Western-world). The attempt at translating the BDI-II into Xhosa has been made with an eye on challenging the field of psychology (more specifically psychiatry) to validate the criteria that are currently used in diagnosing depression amongst Xhosa populations, and should not be seen as an implicit acknowledgement or acceptance of those criteria. Rather, it was attempted with the aim of starting a process of enquiry into the manner in which a state of prolonged flattened affect is conceptualised within the Xhosa culture. Time, and further research, will tell whether the BDI-II-X is linguistically suitable across the various Xhosa populations groups mentioned earlier.

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